

Assessing Gender Dysphoria

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degree of

Doctor of Philosophy (Clinical Psychology)

under the supervision of Associate Professor Bethany
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Statement of Original Authorship

I, Sarah J. Bowman, declare that this dissertation, is submitted in fulfilment of the requirements for the award of Doctor of Philosophy (Clinical Psychology) in the Graduate School of Health at the University of Technology Sydney.

This dissertation is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the dissertation.

This document has not been submitted for qualifications at any other academic institution.

This research is supported by the Australian Government Research Training Program.

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Abstract

Trans and gender diverse people who experience gender dysphoria often report higher rates of mental health concerns than the general population. Some trans and gender diverse individuals may choose to engage in social, medical, and surgical interventions, others may seek psychological support, and others may use a combination of these approaches'. Evidence-based psychological assessment requires a multi-modal approach that consists of clinician interviews, diagnostic interviews and patient-reported (self-report) outcome measures (PROMs). However, current PROMs used in the psychological assessment of gender dysphoria are limited and insufficient, especially when used with youth. The aim of this program of research was to improve the psychological assessment of gender dysphoria, focussing on PROMs. Firstly, a systematic review, conducted in line with the Consensus-based Standards for the Selection of Health Measurement Instruments (COSMIN) methodology, identified five PROMs that assessed gender dysphoria. This study (Study 1) found that none of the identified PROMs were suitable for use with adolescents and that they needed further development to improve their content validity and trustworthiness. Secondly, a PROM of gender dysphoria, the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2), was developed for use with both adolescents and adults. Studies two, three and four focus on the development and validation (Study 2), further validation in a clinical sample (Study 3), and an assessment of interpretability (Study 4) of the GPSQ-2. The findings suggest that the GPSQ-2 is a valid, brief, easy to use tool for assessing experiences of gender dysphoria. This program of research has clinical implications for the psychological assessment and treatment of adolescents and adults who experience gender dysphoria.

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List of Abbreviations

APA	American Psychiatric Association
AusPATH	Australian Professional Association for Trans Health
CFA	Confirmatory factor analysis
CFI	Comparative fit index
COSMIN	Consensus-based Standards for the Selection of Health Measurement Instruments
DSM	Diagnostic and Statistical Manual of Mental Disorders
ECV	Explained common variance
GRADE	Grading of Recommendations Assessment, Development and Evaluation
HBIGDA	Harry Benjamin International Gender Dysphoria Association
ICC	Intraclass correlations coefficient
ICD	International Classification of Diseases
KR20	Kuder-Richardson 20
MIC	Minimal important change
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PROMs	Patient-reported outcome measures
PROSPERO	International Prospective Register of Systematic Reviews
PUC	Percent of uncontaminated correlations
REDCap	Research Electronic Data Capture
RMSEA	Root mean square error of approximation
SDC	Smallest detectable change
SEM	Standard error of measurement
SOC	Standards of Care

SRMR	Standardised root mean residuals
WHO	World Health Organization
WPATH	World Professional Association for Transgender Health
WLSMV	Weighted least square mean and variance adjusted

List of Measures

BIS	Body Image Scale (Lindgren & Pauly, 1975)
DMGIDQ	Dimensional Measure of Gender Identity Questionnaire (Haghighat et al., 2019)
GAD-7	Generalized Anxiety Disorder – 7 (Spitzer et al., 2006)
GCLS	Gender Congruence and Life Satisfaction Scale (Jones et al., 2019b)
GFA	Gender Feeling Amplitude Measure (Riley, 2017)
GIDYQ-AA	Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults (Deogracias et al., 2007)
GMRS	Gender Minority Stress and Resilience Scale (Testa et al., 2015)
GPSQ	Gender Preoccupation and Stability Questionnaire (Hakeem et al., 2016)
GPSQ-2	Gender Preoccupation and Stability Questionnaire – 2 nd Edition (Bowman, Hakeem, et al., 2021)
GRRS	Gender Identity Reflection and Rumination Scale (Bauerband & Galupo, 2014)
K-10	Kessler Psychological Distress Scale (Kessler et al., 2002)
PHQ-9	Patient Health Questionnaire – 9 (Johnson et al., 2002; Kroenke et al., 2001)
RCGIS	Recalled Childhood Gender Identity Scale (Zucker et al., 2006)
STIS	Strength of Transgender Identity Scale (Barr et al., 2016)
TC ³	Trans Collaborations Clinical Check-in (Holt et al., 2019)
TCBS	Transgender Community Belongingness Scale (Barr et al., 2016)
TCS	Transgender Congruence Scale (Kozee et al., 2012)
TG AIM	Transgender Adaptation and Integration Measure (Sjoberg et al., 2006)

TIIS	Transgender Identity Stigma Scale (Chakrapani et al., 2017)
TIS	Transgender Identity Survey (Bockting et al., 2020)
T-PIM	Transgender Positive Identity Measure (Riggle & Mohr, 2015)
TSAS	Trans and Gender Diverse Social Anxiety Scale (Ho & Mussap, 2020)
TVQ	Transsexual Voice Questionnaire for Male-to-Female Transsexuals (Dacakis et al., 2013)
UGDS	Utrecht Gender Dysphoria Scale (Cohen-Kettenis & van Goozen, 1997)
UGDS-GS	Utrecht Gender Dysphoria Scale – Gender Spectrum (McGuire et al., 2019)

Terminology

Agender: A term to describe someone who does not identify with any gender.

Assigned female at birth: A person who was thought to be female when born and initially raised as a girl.

Assigned male at birth: A person who was thought to be male when born and initially raised as a boy.

Brotherboy and Sistergirl: Aboriginal and Torres Strait Islander people may use these terms in a number of different contexts, however they can be used to refer to trans and gender diverse people. Brotherboy typically refers to masculine spirited people who were assigned female at birth. Sistergirl typically refers to feminine spirited people were assigned male at birth.

Cisgender: A term for someone whose gender identity aligns with their sex assigned at birth.

Gender diverse: A term to describe people who do not conform to their society or culture's expectations for males and females. Being transgender is one way of being gender diverse, but not all gender diverse people are transgender.

Gender dysphoria: A term that describes the distress experienced by a person due to incongruence between their gender identity and their sex assigned at birth.

Gender fluid: A person whose gender identity varies over time.

Gender identity: A person's innermost concept of self as male, female, a blend of both or neither. One's gender identity can be the same or different from their sex assigned at birth.

Medical transition: The process by which a person changes their physical sex characteristics via hormonal intervention to more closely align with their gender identity.

Non-binary: A term to describe someone who doesn't identify exclusively as male or female.

Social transition: The process by which a person changes their gender expression to more closely align with their gender identity.

Surgical transition: The process by which a person changes their physical sex characteristics via surgery to more closely align with their gender identity.

Trans/transgender: A term for someone whose gender identity is not congruent with their sex assigned at birth.

Trans boy/male/man: A term to describe someone who was assigned female at birth who identifies as a boy/male/man.

Trans girl/female/woman: A term to describe someone who was assigned male at birth who identifies as a girl/female/woman.

Adapted from Telfer et al. (2017).

Statement of Contributions of Co-authors

Sarah J. Bowman is responsible for the design, data collection, data analysis, data interpretation, and authorship of all chapters presented in this dissertation.

John McAloon provided advice on the data design and analysis for Studies 1 and 2 and provided feedback on the text of all chapters presented in this dissertation.

Bethany M. Wootton provided advice on the data design and analysis for Studies 2, 3, and 4, and provided feedback on the text of all chapters presented in this dissertation.

Daniel Demant provided advice on the data design and analysis for Studies 2, 3, and 4, and provided feedback on the text of all chapters presented in this dissertation.

Liam J. Casey assisted with the data analysis for Study 1 and provided feedback on the text of Study 1.

Az Hakeem assisted with the data analysis for Study 2 and provided feedback on the text of Study 2.

List of Papers and Presentations Arising from This Dissertation

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1. **Bowman, S. J.**, Casey, L. J., McAloon, J., & Wootton, B. M. (2021). Assessing gender dysphoria: A systematic review of patient-reported outcome measures. *Psychology of Sexual Orientation and Gender Diversity*, advance online publication. <https://doi.org/10.1037/sgd0000486>
2. **Bowman, S. J.**, Hakeem, A., Demant, D., McAloon, J., & Wootton, B. M. (2021). Assessing gender dysphoria: Development and validation of the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2), *Journal of Homosexuality*, under review.
3. **Bowman, S. J.**, Demant, D., McAloon, J., & Wootton, B. M. (2022). The development and validation of the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2): A replication and extension, to be submitted.
4. **Bowman, S. J.**, Demant, D., McAloon, J., & Wootton, B. M. (2022). Interpretability of the Gender Preoccupation and Stability Questionnaire - 2nd Edition (GPSQ-2), to be submitted.

Other Papers Contributed to in Course of Candidature

1. Nic Giolla Easpaig, B., Fox, R., & **Bowman, S.** (2018). The status of diverse sexualities and genders in community psychology research and practice: Reflections from the Trans-Tasman context. *The Australian Community Psychologist*, 29(1), 108-120.
2. Casey, L. J., **Bowman, S. J.**, Power, E., McAloon, J., & Wootton, B. M. (2021). A cognitive-behavioral exploration of the psychological impact of the Australian Marriage law postal survey: A reflexive thematic analysis.

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Conference Presentations

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2. **Bowman, S. J.**, Casey, L. J., Wootton, B. M., & McAloon, J. (2021, July 8). *Assessing gender dysphoria: A systematic review of patient-reported outcome measures* [paper presentation]. PROMs 2020 Conference ‘Down Under’, Sydney, Australia.
3. **Bowman, S. J.**, Hakeem, A., Demant, D., McAloon, J., & Wootton, B.M. (2021, August 6). Assessing gender dysphoria: Development and validation of the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2) [paper presentation]. AusPATH 2021 Conference, Darwin, Australia. Abstract accepted, conference deferred to 2022 due to COVID-19.

Other Presentations

1. **Bowman, S. J.** (2019, February 13). *Assessing gender dysphoria* [presentation for Graduate School of Health research seminar]. Graduate School of Health, University of Technology Sydney, Australia.
2. **Bowman, S. J., & Casey, L. J.** (2018, April 10). *Sexual and gender identity development* [workshop for Master of Clinical Psychology students]. Graduate School of Health, University of Technology Sydney, Australia.
3. **Bowman, S. J., & Casey, L. J.** (2019, April 16). *Sexual and gender identity development* [workshop for Master of Clinical Psychology students]. Graduate School of Health, University of Technology, Sydney, Australia.
4. **Bowman, S. J., & Casey, L. J.** (2020, April 14). *Sexual and gender identity development* [workshop for Master of Clinical Psychology students]. Graduate School of Health, University of Technology, Sydney, Australia.
5. **Bowman, S. J., & Casey, L. J.** (2021, April 14). *Sexual and gender identity development* [workshop for Master of Clinical Psychology students]. Graduate School of Health, University of Technology Sydney, Australia.
6. **Bowman, S. J., & Riley, E.** (2019, June 12). *Working with transgender and gender diverse clients* [presentation for Sydney Local Health District training and education day]. Concord Hospital Medical and Education Centre, Sydney, Australia.

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Chapter 1: Dissertation Overview

“There exists a relatively small group of people ... who want to "change their sex." This phenomenon has occasionally been described in its principal symptoms by psychiatrists and psychologists in the past; but a deeper awareness of the problem, and ... its therapeutic implications, was largely neglected It has been considered only during the last (roughly) thirteen years and then with much hesitation” (Benjamin, 1966, p.4).

This chapter provides an overview of the aims, scope, and structure of the dissertation and includes a prelude to the language and terminology used throughout the dissertation.

1.1 Aims

Trans and gender diverse people may seek the assistance of a psychologist for a multitude of reasons including assessment, assistance navigating the process of transitioning, and psychological/family therapy (Coleman et al., 2012). While gender diversity has been present throughout history (Knudson et al., 2020), it has, until recently, been largely ignored or indeed viewed as harmful (Poteat et al., 2019). Consequently, high-quality psychology-based research into the construct of gender dysphoria is minimal (Austin et al., 2021). Psychologists working in this field are challenged by an increasing prevalence of gender dysphoria (Zucker, 2017), a lack of established theoretical models developed specifically for trans and gender diverse populations (Beek, Cohen-Kettenis, & Kreukels, 2016), and a deficit in validated assessment tools for assessing mental health in people who experience gender dysphoria (Valentine & Shipherd, 2018). The overall aim of the current program of

research is to enhance the psychological assessment of gender dysphoria in order to further facilitate research in this area, as well as to assist mental health professionals who work with this patient group.

1.2 Scope

The scope of the dissertation is limited to adolescents and adults who experience distress that is associated with an incongruence between their gender identity and assigned sex at birth (gender dysphoria). While the dissertation includes occasional discussions of childhood gender variant expression and/or identity where appropriate, the assessment of children prior to puberty is not evaluated. The exclusion of children is attributed to: 1) the varying developmental needs of children, when compared to adolescents and adults (Telfer et al., 2017); and 2) the desire not to over-pathologise (Winter, 2017a) what is considered normal childhood behaviour (Butler et al., 2018).

1.3 Structure

The current dissertation is based on four original research studies prepared during my candidature. The articles are linked by an exegesis chapter that highlights the clinical contributions of the research while establishing the foundation for the subsequent stage of research. These articles consist of a combination of published and unpublished work that represent a dissertation by compilation. Given the nature of a dissertation by compilation there is some unavoidable repetition present throughout the dissertation (Jackson, 2013). The developmental nature of the research necessitates that Study 2 (currently under review) be published before Studies 3 and 4 can be submitted for publication. For the purposes of consistency, the seventh edition of the *Publication Manual of the American Psychological Association* (American Psychological Association, 2020b) has been used throughout the dissertation.

Australian English has been adopted throughout the dissertation, American spelling has been retained where appropriate or necessary for publication.

Chapter 2 provides an overview of the literature including an outline of gender dysphoria, as well as the clinical and diagnostic guidelines and associated controversies associated with diagnostic classification. The chapter also includes an overview of the evolving assessment and therapeutic options for trans and gender diverse individuals, including psychological therapy. In summary, the chapter highlights the need for improved assessment tools for assessing individuals with gender dysphoria, including the development of valid and reliable patient-reported outcome measures (PROMs).

Chapter 3 provides an overview of the COSMIN methodology, including the taxonomy and guidelines for performing systematic reviews: *COSMIN Methodology for Systematic Reviews of Patient-reported Outcome Measures (PROMs)* (Mokkink, Prinsen, et al., 2018); and *COSMIN Methodology for Assessing Content Validity of PROMs* (Terwee et al., 2017). The measure development process utilised throughout the dissertation is based on the concepts of reliability, validity, responsiveness, and interpretability that have been established as part of the COSMIN taxonomy.

Chapter 4 (Study 1) includes a systematic review that seeks to advance the literature on the assessment of gender dysphoria. This manuscript is published in *Psychology of Sexual Orientation and Gender Diversity* (Bowman, Casey, et al., 2021). The review was conducted in accordance with the COSMIN guidelines for assessing systematic reviews and included an assessment of each PROM's development, content validity, structural validity, internal consistency, cross-cultural validity/measurement invariance, reliability, hypothesis testing for construct validity, and responsiveness.

Chapter 5 addresses the limitations of the literature identified in the systematic review and the selection of the Gender Preoccupation and Stability Questionnaire (GPSQ) for further development. The chapter further addresses the need for a measure of gender dysphoria that can be used with both adolescents and adults. This includes an overview of adolescent experiences of legal recognition and puberty that need to be accounted for in the development of a new measure of gender dysphoria, the Gender Preoccupation and Stability Questionnaire – 2nd edition (GPSQ-2).

Chapter 6 (Study 2) describes the development and validation of the 14-item GPSQ-2 in adolescent and adult populations. This manuscript is currently under review in the *Journal of Homosexuality* (submitted May 20, 2021). The manuscript describes the development of the GPSQ-2, including how the measure was revised from the original GPSQ, pilot testing, and a validation study. The GPSQ-2 was found to be a structurally sound measure of gender dysphoria with two factors: preoccupation and stability.

Chapter 7 explores the clinical and research utility of the GPSQ-2. The chapter provides an analysis of the benefits and limitations associated with the use of a community sample and the need for further validation using a clinical sample. Modifications to the methodology include steps taken to reduce the administration burden associated with assessing distress and to increase the scope of the assessment of construct validity. Lastly the chapter outlines the steps to replicate and extend the evidence-base and trustworthiness of the GPSQ-2.

Chapter 8 (Study 3) examines further the reliability and construct validity of the GPSQ-2 in a clinical adult population. Journal submission of the manuscript is pending the publication of the manuscript outlined in Chapter 6 (Study 2). When used with a clinical adult population the GPSQ-2 was found to be a reliable and valid

measure of gender dysphoria. The results highlight the importance of mental health professionals adopting an individualised patient focussed approach to assessment.

Chapter 9 outlines the evidence-base that supports the trustworthiness of the GPSQ-2. This includes an analysis of subscale anomalies that were identified in a clinical sample. Lastly the chapter introduces the concept of interpretability and outlines the steps necessary to assign meaning to the scores obtained using the GPSQ-2 and further explore between-group differences by gender identity.

Chapter 10 (Study 4) discusses the interpretability of the GPSQ-2 and the distribution of scores by binary (transmasculine and transfeminine) and non-binary subgroups. Journal submission of the manuscript is pending the publication of the manuscript outlined in Chapter 6 (Study 2). The chapter also evaluates the usefulness of the GPSQ-2 single item assessment of an individual's confidence to live a satisfied life, as well as cut-points for the qualitative interpretation of GPSQ-2 scores (i.e., not at all distressed, not very distressed, somewhat distressed, and highly distressed). The results show there are different experiences of gender dysphoria between binary and non-binary participants.

Chapter 11 concludes the research with a synthesis of the main findings of each study, as well as discussing them in the context of the broader literature. The strengths and weakness of the research are addressed as well as the need for further longitudinal research to assess the responsiveness of the GPSQ-2 and the assessment of minimal important change. In the section entitled Clinical Implications the role of the GPSQ-2 in the multi-modal assessment of trans and gender diverse patients is discussed. Similarly, in the section entitled Theoretical Implications, the role of the GPSQ-2 in the further development of models of gender dysphoria by gender identity is discussed. Future directions for the research are proposed including: 1) the

development of an adolescent specific assessment PROM of gender dysphoria; 2) assessment of treatment efficacy to reduce gender dysphoria; and 3) the integration of models of gender dysphoria and minority stress.

1.4 Language and Terminology

The use of respectful and non-stigmatising language that is consistent with human rights is a fundamental aspect of trans and gender diverse health research (Bouman et al., 2017). There are, however, circumstances within the text that necessitate the use of terminology that is outdated and may be considered pathologising. The use of such language is limited to instances where it is contextually necessary.

It is also noted that across disciplines there are multiple instances where language may vary. Despite the psychological focus of the current research the term *patient* will be used in preference to *client* (excluding published or submitted research articles). This has been done primarily for consistency with the guidelines for developing PROMs that form the methodology for the current research and to be consistent with other allied health or medical fields that may utilise the term.

Terminology, such as *gender dysphoria* or *gender incongruence*, can be used as both a descriptive term and as a diagnostic label. When used as a diagnostic label, as per the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5; American Psychiatric Association [APA], 2013a) and *International Classification of Diseases* (11th rev.; ICD-11; WHO, 2021a), the capitalised form will be used.

1.4.1 Trans and Gender Diverse

Throughout the dissertation the terminology *trans and gender diverse* is used to inclusively describe the multitude of individuals who do not identify with either their assigned sex at birth or the cultural expectations of males and females. This

includes, but is not limited to, individuals who identify as female, male, transfemale, transmale, transfeminine, transmasculine, transsexual, non-binary, gender-queer, gender fluid, gender-neutral and agender. It is acknowledged that individuals may identify with more than one of these classifications and that their gender identification may change over time. Furthermore, the terms transfeminine and transmasculine will be used to collectively describe individuals who identify within a feminine or masculine binary narrative. Similarly, non-binary will be used to collectively identify individuals who do not ascribe to a binary notion of gender.

1.5 Impact of COVID-19

The recruitment of participants for the dissertation has been impacted by COVID-19. Impacts include a cumulative delay of approximately 12 months and a reduction in the potential number of research participants for Study 3 (Chapter 6).

In Study 2 (Chapter 6), the pilot study (stage 2) was delayed by approximately 6 months due to issues with the recruitment of adolescents for face-to-face interviews. Specific complications included the cancellation of face-to-face adolescent support groups, which were intended to be used to promote the research and to conduct face-to-face interviews. Subsequent changes to the protocol (for updated ethics approval see Appendix B) involved updates to the process for obtaining parental consent and the move to using video conferencing software. The net impact has been one of time delay only.

In Study 3 (Chapter 8), additional delays of approximately six months, were encountered in the recruitment of participants. The shift to online tele-health impacted the use of mental health waiting rooms to promote the research. Subsequent changes to the protocol (for updated ethics approval see Appendix B) involved the addition of email and social media to promote the research. The cumulative time delays of

approximately 12 months, have reduced the available recruitment time for Study 3.

This has likely resulted in a reduced number of research participants.

Chapter 2: Introduction and Literature Review

2.1 Nature of Gender Dysphoria

Gender dysphoria is a construct used to describe the distress that may be experienced in trans and gender diverse populations when an individual's gender identity is incongruent with their assigned sex at birth (Coleman et al., 2012). Experiences of gender dysphoria vary greatly between individuals and over time (Coleman et al., 2012) and may be triggered by both internal and external events that challenge the person's gender identification (Warwick & Shumer, 2021). Trajectories for trans and gender diverse individuals vary substantially with some people seeking a combination of social, medical, and surgical interventions to transition while others' may exist outside of binary definitions of gender or to be flexible in their gender expression (Byne et al., 2018). Individuals who experience ongoing symptoms of gender dysphoria may benefit from psychological therapy as an adjunct, or alternative, to social, medical, or surgical interventions to help validate their gender identity (Diamond et al., 2011) and to build resilience (Byne et al., 2018).

Current estimates are that up to 1% of adults (Kuyper & Wijzen, 2014) and up to 3% of adolescents (Eisenberg et al., 2017) exhibit gender variant expression and/or identity. While it is unclear how many of these individuals experience gender dysphoria, the research has indicated that presentations of gender dysphoria have changed substantially over the last decade. This includes a substantial increase in prevalence (i.e., from approximately 150/100,000 in 2007 to 350/100,000 in 2015; Meerwijk & Sevelius, 2017) and the number of referrals to specialist clinics (Zucker, 2017), a decline in the age of initial adolescent presentation (i.e., from approximately 17 years in 1987 to 14 years in 2011; de Vries & Cohen-Kettenis, 2012; Dettore et al., 2015; Edwards-Leeper & Spack, 2012) and an increase in those who identify as non-

binary¹ (Richards et al., 2016). With a continued increase in the visibility of people who are trans and gender diverse in the media (Mocarski et al., 2019) and people ‘coming out’ at a younger age (Dèttore et al., 2015), it is likely that this population will continue to grow in coming years.

An alternate conceptualisation of gender dysphoria that has emerged during the course of my PhD candidature is the view that gender dysphoria consists of both internal stressors associated with gender congruence as well as external stressors that are associated with minority stress and social stigma that is rooted in cisnormative ideals of gender (Bockting et al., 2020; Galupo et al., 2020; Riggs et al., 2015). Additional forms of gender related minority stress include distal (discrimination, rejection, victimisation, and gender non-affirmation) and proximal (negative expectations, concealment, and internalised transphobia) stressors (Hendricks & Testa, 2012; Meyer, 2003). These stressors are grounded in social expectations of gender (Testa et al., 2015), that are a result of a person’s gender incongruence or atypical gender expression, and not considered to be inherent to being trans or gender diverse (Coleman et al., 2012). Resilience factors associated with trans and gender diverse experiences of minority stress include community connectedness and pride (Testa et al., 2015).

The potential for prolonged experiences of distress in trans and gender diverse populations can lead to increased levels of anxiety and depression (Heylens et al., 2014), as well as substance use disorders, self-harm, and/or suicidality (Zucker et al., 2016). For trans and gender diverse adults, experiences of psychological distress have been found to be 1.6 times higher than their cisgender² peers (Leonard et al., 2012).

¹ Non-binary refers to people who do not identify exclusively as male or female.

² Cisgender refers to somebody whose sense of gender corresponds with their sex assigned at birth.

This includes lifetime prevalence rates of up to 60% for a depressive disorder and 28% for anxiety disorders (Heylens et al., 2014), compared to a matched comparison of 26% for any mental disorder (Alonso & Lépine, 2007). In addition, a meta-analysis of studies has suggested that up to one in three adults with gender dysphoria has experienced either self-harm, suicidal ideation, or attempted suicide (Zucker et al., 2016). These experiences are often exacerbated for young people who are more likely to resist the idea of a fixed binary notion of gender and are often still exploring their own gender identity (Smith et al., 2015). Given the increase in trans and gender diverse youth, the negative impact of psychological distress is becoming an increasingly important challenge for health professionals.

2.1.1 Summary

Gender dysphoria is a descriptive term used to describe the distress that may result when an individual's gender identity is incongruent with their sex assigned at birth. Estimates suggest that 1-3% of individuals exhibit gender variant expression and/or identity with a recent increase in the number of trans and gender diverse presentations and a decline in the age of initial presentation. Experiences of gender dysphoria can result in increased levels of anxiety, depression, self-harm, and suicidality. Treatment for gender dysphoria may include social, medical, or surgical interventions as well as psychological therapy.

2.2 Clinical and Diagnostic Guidelines

2.2.1. Early Approaches

The clinical and diagnostic assessment of individuals experiencing an incongruence between their gender identity and assigned sex at birth has varied substantially over the past fifty years and continues to be a topic of rich debate (Ashley, 2021; Ong et al., 2017). The descriptive term *transsexual* was introduced by

Dr. Magnus Hirschfeld in 1923 (Winters, 2005) and by the late 1940's had become the predominate term for describing somebody who "wished to change their sex" (i.e., sought to affirm their gender identity through surgical or other procedures; Benjamin, 1966; Schilt, 2009).

In 1966 Dr. Harry Benjamin published *The Transsexual Phenomenon* (Benjamin, 1966) where he defines transsexualism and differentiates transsexualism from transvestism and homosexuality. In this text, Benjamin defines transsexuals as individuals who wish to change their gender, do not get respite from dressing as their preferred gender, and where indicated, may benefit from medical or surgical interventions for their emotional wellbeing (Benjamin, 1966). By contrast, Benjamin describes transvestites as individuals who typically identify with their assigned gender at birth and may either dress occasionally or full-time as a different gender with no conscious desire for surgical interventions. Benjamin adopted Kinsey et al. (1948), viewing of homosexuality as a continuum, from completely heterosexual to completely homosexual, that is based on the individual's gender identity and partner's sex. Despite Benjamin's enlightened views on transsexualism, his assumption that transvestites are heterosexual and transsexuals are homosexual (with regards to their assigned sex at birth) are no longer supported (American Psychiatric Association [APA], 2013a).

In a challenge to the prevailing diagnostic narrative of transsexualism, Fisk introduced *gender dysphoria syndrome* to describe the "dissatisfaction, anxiety, restlessness, and discomfort . . . concerning the individual's gender of assignment or rearing" (Fisk, 1974, pp. 387-388). In doing so Fisk moved away from the "rather unproductive" (p. 387) differential diagnosis by recognising that both homosexuals and transvestites would likely benefit from therapeutic interventions. Instead of a

potentially stigmatising diagnosis of transsexualism, Fisk adopted a phenomenological (person-centred) assessment of gender dysphoria which includes an assessment of the “patient’s status here and now and ... how well or how badly a person has been coping and will cope with life in [their] gender of choice” (p.387).

Fisk’s (1974) holistic approach to patient needs was inclusive of psychological, vocational, grooming, and legal guidance to aid in the transition to the affirmed gender. This included meeting with other former patients employed as counsellors to provide additional guidance and real-world experience of the transition process. Despite Fisk’s broad-minded approach to the medical necessity of gender affirming therapy, his views on patient screening and assessment maintained a *gatekeeping*³ narrative that included an evaluation of factors such as physical ‘passability’, vocational skills, ego, and self-esteem. Patients who did not meet the necessary requirements had their gender affirming therapy put on “hold” for up to four years, with the option of undergoing behavioural therapy to “improve the overall stability of their life-style” (p. 390), before being re-considered eligible for treatment. This represents a considerable challenge when the access to gender affirming surgery could be considered the means for increasing one’s self-esteem and emotional stability.

2.2.2. Contemporary Approaches

Three organisations that have shaped the contemporary clinical and diagnostic guidelines for the provision of healthcare for trans and gender diverse individuals are the World Health Organisation, the Harry Benjamin International Gender Dysphoria Association/World Professional Association for Transgender Health, and the

³ Gatekeeping refers to the control of access to gender affirming treatment.

American Psychiatric Association. The history, contributions and controversies of each organisation's contributions are discussed below.

World Health Organisation. In 1970, the World Health Organisation (WHO) endorsed the diagnosis of *Trans-sexualism* [sic] in the Sexual Deviations and Disorders chapter of the ICD-9 (WHO, 1977). This was defined as a “sexual deviation centred around fixed beliefs that the overt bodily sex is wrong” (p. 159). With the release of the ICD-10, Transsexualism was relocated to the newly formed Gender Identity Disorders sub category of the Mental and Behavioural Disorders chapter (WHO, 1993). In recognition of the advances in research and changing social attitudes and human rights (Reed et al., 2016) the most recent version of the classification, the ICD-11, adopted the diagnosis of *Gender Incongruence of Adolescence and Adulthood* (Table 2.1) and relocated it to the newly formed Conditions Related to Sexual Health chapter (WHO, 2021a). Other changes include the removal of the requirement for individuals to experience psychological discomfort or distress due to gender incongruence in the diagnostic criteria. The changes were made to ensure that access to healthcare was not compromised and to recognise that “trans-related and gender diverse identities are not conditions of mental ill health and classifying them as such can cause enormous stigma” (WHO, 2021b).

Table 2.1

International Classification of Diseases 11th Revision Descriptor for Gender

Incongruence of Adolescence and Adulthood

Gender Incongruence of Adolescence and Adulthood is characterised by a marked and persistent incongruence between an individual's experienced gender and the assigned sex, which often leads to a desire to 'transition', in order to live and be accepted as a person of the experienced gender, through hormonal treatment, surgery or other health care services to make the individual's body align, as much as desired and to the extent possible, with the experienced gender. The diagnosis cannot be assigned prior the onset of puberty. Gender variant behaviour and preferences alone are not a basis for assigning the diagnosis.

Note.

World Health Organisation (2019)

Research with trans and gender diverse individuals during the development of the ICD-11 found overall support for the changes to terminology and diagnostic classification (Beek, Cohen-Kettenis, Bouman, et al., 2016). Key concerns expressed included the need to reduce stigma while retaining access to healthcare and insurance. Differences in opinion regarding the retention of the diagnosis were attributed to variations in healthcare systems, government funded or insurance-based, and the subsequent need for an ICD diagnosis. In countries where a diagnosis is required to access treatment, or reimbursement of costs, the benefits of a diagnosis were seen to outweigh the negative impact of stigma (Beek, Cohen-Kettenis, Bouman, et al., 2016).

Harry Benjamin International Gender Dysphoria Association/World Professional Association for Transgender Health. At the Sixth International Gender Dysphoria Symposium in 1979 the attendees voted to establish the Harry Benjamin International Gender Dysphoria Association (HBIGDA; World Professional

Association for Transgender Health [WPATH]; 2021a). Later in 2007 the HBIQDA was renamed the World Professional Association for Transgender Health (WPATH) to shift the focus from mental ill health to positive views on health and wellbeing (Allée, 2009). During the symposium the attendees also voted to adopt the first *Standards of Care (SOC)* clinical guidelines to inform the assessment and treatment of trans and gender diverse individuals. The *SOC* have continued to be revised and are currently in the seventh version (7th ed.; SOC-7; Coleman et al., 2012). Version eight of the *SOC* is currently in draft with a planned release in 2022⁴ (WPATH, 2021b).

The WPATH *SOC-7* is considered to be the most influential guideline on the health of trans and gender diverse individuals (Zucker et al., 2016). While the guideline defines gender dysphoria as “discomfort or distress that is caused by a discrepancy between a person’s gender identity and that person’s sex assigned at birth” (Coleman et al., 2012, p. 166), the *SOC-7* does not recommend that a formal diagnosis of Gender Dysphoria is necessary to access treatment. This approach was informed by WPATH’s 2010 statement calling for the de-pathologisation of gender variance (WPATH, 2010), as past versions of the *SOC* have been criticised by many for being overly pathologising and inhibiting access to medical and surgical care, particularly those in the trans and gender diverse community (Bockting et al., 2004; Matte et al., 2009).

American Psychiatric Association. In 1980, the American Psychiatric Association (APA) introduced *Transsexualism* as a descriptive diagnosis (Beek, Cohen-Kettenis, & Kreukels, 2016) for adolescents and adults in the Psychosexual Disorders chapter of the *Diagnostic and Statistical Manual of Mental Disorders* (3rd

⁴ The author notes that a confidential draft version of the SOC-8 has been released for the purposes of public comment. Given the confidential nature of this document it precludes its inclusion in the current research.

ed.; DSM-III; APA, 1980). The diagnosis of Transsexualism focussed on the “persistent sense of discomfort and inappropriateness about one’s anatomic sex” and “a persistent wish to be rid of one’s genitals and to live as a member of the other sex” (pp. 261-262) for a period of two years.

With a shift from expert consensus to being grounded in research evidence (Beek, Cohen-Kettenis, & Kreukels, 2016), the *DSM-IV* (4th ed.; APA, 1994) and *DSM-IV-TR* (4th ed.; text rev.; APA, 2000) replaced Transsexualism with *Gender Identity Disorder*. The new diagnosis included a focus on “a strong and persistent cross-gender identification”, “persistent discomfort with his or her sex and a sense of inappropriateness in the gender role of that sex”, and “the disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning” and that the “disturbance is not concurrent with a physical intersex condition” (APA, 2000, p. 581). Criticism of the revised edition included the use of binary language to describe gender, stigmatising language, and the co-location of the diagnostic criteria with those for paraphilia and paedophilia, the use of sexuality specifier, and that variations of gender identity should not be considered a mental disorder (Karasic, 2020; Winters, 2005).

In 2013, the APA introduced the diagnosis of *Gender Dysphoria*⁵ in the *DSM-5* (5th ed.; APA, 2013a) to describe the distress, and associated impairment in functioning, that may be the result of an incongruence between a person’s assigned sex at birth and their gender identity. The diagnostic criteria for adolescents and adults are contained in Table 2.2 Changes to the diagnosis to reduce stigma include removing the term “disorder” from the title and relocating the diagnosis from the

⁵ The author notes that a text revision of the *DSM-5* (5th ed., text rev; *DSM-5-TR*; APA, 2022) was released on the 18th March 2022 and applauds the use of improved, culturally sensitive and less stigmatising, language.

Sexual and Gender Identity Disorders chapter to its own chapter (APA, 2013c). Other changes include a shift from a dichotomous definition of gender (male/female) to viewing gender as a continuous spectrum, the addition of a post-transition and disorder of sex development specifiers, and the removal of the sexual orientation subtype specifier.

While the revised criterion for Gender Dysphoria may be somewhat effective in reducing stigma and deemed necessary by the APA to provide access to care (APA, 2013b), it is not without a degree of controversy (Davy & Toze, 2018). Despite the shift in nomenclature, Ashley (2021) argues that the operationalisation of the diagnosis of Gender Dysphoria has not changed significantly and that it retains many of pathologising elements of the previous diagnosis of Gender Identity Disorder. Furthermore, the use of gender dysphoria as a diagnostic classification risks confusion as individuals who experience gender dysphoria may not necessarily meet the threshold for a diagnosis of Gender Dysphoria (Davy & Toze, 2018). These arguments, both for and against, highlight the “limits of applying a medical model (that requires a diagnosis to justify treatment) to mental health and well-being” (Bockting & Ehrbar, 2005, p. 132).

2.2.3 Summary

The clinical and diagnostic guidelines informing the assessment and treatment of trans and gender diverse patients have advanced considerably since the introduction of Transsexualism in the 1920's. Key improvements include the recognition that gender dysphoria is not a psychiatric disorder, that gender exists on a spectrum, and the need to reduce stigma without compromising access to healthcare. Despite these advances inconsistencies remain that may result in the over-pathologisation of trans and gender diverse healthcare.

Table 2.2

DSM-5 Criteria for Gender Dysphoria in Adolescents and Adults

A. A marked incongruence between one's experienced/expressed gender and assigned gender, of at least 6 months' duration, as manifested by at least two of the following:

1. A marked incongruence between one's experienced/expressed gender and primary and/or secondary sex characteristics (or in young adolescents, the anticipated secondary sex characteristics).
2. A strong desire to be rid of one's primary and/or secondary sex characteristics because of a marked incongruence with one's experienced/expressed gender (or in young adolescents, a desire to prevent the development of the anticipated secondary sex characteristics).
3. A strong desire for the primary and/or secondary sex characteristics of the other gender.
4. A strong desire to be of the other gender (or some alternative gender different from one's assigned gender).
5. A strong desire to be treated as the other gender (or some alternative gender different from one's assigned gender).
6. A strong conviction that one has the typical feelings and reactions of the other gender (or some alternative gender different from one's assigned gender).

B. The condition is associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify if:

With a disorder of sex development (e.g., a congenital adrenogenital disorder such as 255.2 [E25.0] congenital adrenal hyperplasia or 259.50 [E34.50] androgen insensitivity syndrome).

Coding note: Code the disorder of sex development as well as gender dysphoria.

Specify if:

Post transition: The individual has transitioned to full-time living in the desired gender (with or without legalization of gender change) and has undergone (or is preparing to have) at least one cross-sex medical procedure or treatment regimen—namely, regular cross-sex hormone treatment or gender reassignment surgery confirming the desired gender (e.g., penectomy, vaginoplasty in a natal male; mastectomy or phalloplasty in a natal female).

Note.

American Psychiatric Association (2013a)

2.3 Gender Dysphoria

The current program of research views gender dysphoria through a psychological lens that focusses on the reduction of pathological distress that may be associated with an individual's subjective experience of gender incongruence. Specifically, this refers to distress that is associated with impediments in well-being, quality of life, and self-fulfilment. This is differentiated from a medical diagnosis in the *DSM-5* which views Gender Dysphoria as a disorder and the *ICD-11* which discounts the distress associated with gender incongruence. This viewpoint corresponds with Fisk's (1974) operationalisation of gender dysphoria to address the dissatisfaction, anxiety, restlessness, or discomfort that an individual may experience and to do this using a person-centred approach that focusses on the patient's current and future coping. The literature (e.g., *DSM-5*, *ICD-11*, and *SOC-7*) has consistently divided the trans and gender diverse population into three subgroups, based on puberty and legal age of majority: childhood, adolescence, and adulthood. While the adolescent and adult categories share the same diagnostic criteria in the *DSM-5* and *ICD-11*, they are seen as discrete developmental categories with different biopsychosocial trajectories, as outlined below.

2.3.1 Gender Dysphoria in Adulthood

Adult (typically 18 years of age or over; American Psychological Association, 2020a) experiences of gender incongruence and associated gender dysphoria (distress associated with gender incongruence) vary significantly both within and between individuals (Coleman et al., 2012). This includes people with different gender identities (e.g., female, male, trans female, trans male, trans feminine, trans masculine, transsexual, non-binary, gender queer, gender fluid, agender or gender neutral),

trajectories (zero⁶, partial⁷ or full transition⁸ with or without medical and surgical treatment) and varying degrees of distress (if present) or other psychological challenges. Individuals may seek assessment from a psychologist or other approved mental health professional for the purposes of legal documentation (i.e., changes to legal documents or supporting letters), and medical or surgical referrals. Where indicated, some adults may also benefit from psychological therapy to reduce the distress that may be associated with an individual's experience of gender incongruence.

2.3.2 Gender Dysphoria in Adolescence

Adolescence is considered to range from the onset of puberty (10 – 12 years of age) to the physiological maturity (approximately 19 years of age; American Psychological Association, 2020a). In addition to the variables associated with adult presentations, the management of adolescent populations needs to account for differing degrees of emotional maturity, experiences of trauma, the impact of puberty, and, for those under the age of majority, a reliance on parental/legal guardians for decision making and support (Telfer et al., 2017). This includes a more thorough assessment, identification, and management of co-morbid mental health issues, and a staged approach to medical and surgical treatments. Adolescent presentations may include a high proportion of co-existing Attention Deficit Hyperactivity Disorder, Autism Spectrum Disorder, and Eating Disorders, and these conditions should be addressed and managed in concert with the gender dysphoria and not viewed as an impediment to treatment (Telfer et al., 2017). Family therapy may also be beneficial to help manage change, expectations, and relationships between family members.

⁶ Zero transition refers to somebody who does not live in the affirmed gender.

⁷ Partial transition refers to somebody who may live in the affirmed gender for some of the time or in specific circumstances.

⁸ Full transition refers to somebody who lives in the affirmed gender full time.

2.3.3 Alternative Models of Gender Dysphoria

As noted in Chapter 2.1, alternative models of gender dysphoria have focussed on the impact of social stigma and cisnormative ideals of gender (Bockting et al., 2020; Galupo et al., 2020; Riggs et al., 2015). For instance, Lindley and Galupo (2020) propose that gender dysphoria can be represented as a proximal stressor of Meyer's (2003) minority stress model. This research is notable as it focuses primarily on social aspects of gender congruence as opposed to internalised gender related distress.

Different conceptualisations of gender dysphoria have ramifications for the psychological assessment, formulation, and development of a treatment plan. Additional constructs of gender related distress that may be associated with proximal stress (Lindley & Galupo, 2020) include the processing of internalised transphobia (Lindley & Galupo, 2020) and feelings of shame and self-hatred (Bockting et al., 2020). Lastly, a proximal stress conceptualisation of gender dysphoria supports the development of resilience skills that promote positive social networks (Lindley & Galupo, 2020) that focus on community connectedness and pride (Testa et al., 2015).

2.3.4 Summary

The current program of research focusses on the role that psychologists have in reducing distress associated with gender dysphoria. Experiences of distress, and associated treatment options, vary both between individuals and over time with specific challenges during adolescence that are associated with developmental changes and puberty. Emerging research includes the hypothesised relationship between social stressors and gender dysphoria.

2.4 Assessing Gender Dysphoria

The WPATH *SOC-7* clinical guideline is the current benchmark used to guide the assessment of suitability for gender affirming medical or surgical treatment (Zucker et al., 2016). Additional guidelines that can be utilised to inform the clinical assessment of trans and gender diverse patients include the *Endocrine Treatment of Gender-Dysphoric/Gender-Incongruent Persons: An Endocrine Society Clinical Practice Guideline* (Hembree et al., 2017), and the *Australian Standards of Care and Treatment Guidelines for Trans and Gender Diverse Children and Adolescents* (Telfer et al., 2017). Both the WPATH *SOC-7* and *Endocrine Society Clinical Practice Guideline* have been endorsed by the American Psychological Association (American Psychological Association, 2015) and the *Australian Standards of Care* have been endorsed by the Australian Professional Association for Trans Health (AusPATH; 2018).

2.4.1 Adult Assessment

WPATH Standards of Care-7 model. The *SOC-7* recommends that adult assessment of trans and gender diverse individuals include the following: A) “persistent, well-documented gender dysphoria” (p. 227); B) capacity to make an informed decision and consent for treatment; C) age of majority in a given jurisdiction; and D) if significant medical or mental health concerns are present, they must be reasonably well controlled (Coleman et al., 2012). The assessment should also include questioning around the history and development of gender dysphoric feelings and the availability of support. With respect to the assessment of informed consent, patients should be informed of the options available for treatment and the associated limitations, risks and benefits of each option including the potential impact on fertility and options for fertility preservation (Coleman et al., 2012).

While the SOC-7 has become substantially more flexible in its application and recognition of individual needs, it has been criticised for not clearly outlining the prerequisites for an assessment of gender dysphoria prior to treatment (Ashley, 2021). Despite the acknowledgement that a formal diagnosis, as per the *DSM* or *ICD*, can “facilitate access to health care and can guide further research into effective treatments” (p. 169), the guidelines request only an assessment of gender dysphoria and do not specifically document the requirement for a diagnosis of Gender Dysphoria to access treatment. In contrast, the Endocrine guidelines recommend that clinicians “confirm the diagnosis of persistent Gender Dysphoria/Gender Incongruence” (Hembree et al., 2017, p. 3872).

Informed Consent Model. The informed consent model of adult trans and gender diverse healthcare is a non-affiliated approach that seeks to overcome the barriers (Morenz et al., 2020) and pathologisation (Bockting et al., 2004) associated with the WPATH *SOC-7* and *Endocrine Society Clinical Practice Guideline* approaches to assessment. The informed consent model emphasises the patient’s ability to make an informed decision regarding their healthcare and any future medical interventions with an acknowledged understanding of the risks and benefits of such a decision (Schulz, 2018). Under this model a patient may inform their medical provider that they wish to receive gender affirming medical healthcare as a human right and that they are aware of the potential social, occupational, financial, and mental and physical health outcomes of treatment (Informed Consent for Access to Trans Healthcare, n.d.). As such, a referral or formal assessment of gender dysphoria, is not required for an individual to access treatment.

In comparison to the 1970’s, where it was considered to be a hazardous mistake to provide surgery “simply upon request” (Laub & Fisk, 1974, p. 388), the

informed consent model represents a significant step towards trans and gender diverse depathologisation, autonomy and self-determination. The informed consent model, however, is not universally practised (Shuster, 2019), and may not meet regional prerequisites for a diagnosis to access healthcare or reimbursement of healthcare costs by insurance companies.

2.4.2 Adolescent Assessment

Within the Australian context the *Australian Standards of Care and Treatment Guidelines for Trans and Gender Diverse Children and Adolescents* (Telfer, Tollit, Pace, & Pang, 2017) provides detailed additional guidelines for the assessment of adolescents. In many instances the adolescent will be working with a multidisciplinary team consisting of clinicians who have expertise in paediatrics, adolescent medicine, paediatric endocrinology, gynaecology, andrology, clinical psychology, child and adolescent psychiatry, fertility services, speech therapy, and nursing (Telfer et al., 2017). When working with trans or gender diverse adolescents the *Australian Standards of Care* recommend an assessment of: A) developmental history, gender identity, cognitive and emotional functioning; B) family support, dynamics and functioning; C) social, educational and vocational functioning; D) diagnostic assessment of Gender Dysphoria, noting that both the *DSM-5* and *ICD-10* are “widely used for diagnostic purposes internationally” (p. 18); E) ability to consent to medical intervention in collaboration with patients, physician or endocrinologist; F) treatment of co-existing mental health difficulties with ongoing assessment of risk for self-harm and suicide; and G) counselling with adolescents and their parents on the options for gender affirming healthcare. The *Australian Standards of Care* further suggest that psychological support should be offered in order to: A) assist in exploring one’s gender identity; B) provide developmentally appropriate counselling on the

impact of medical interventions, fertility, and the options for fertility preservation; and C) provide counselling for the adolescent and caregivers on the options for gender affirming medical procedures and surgeries (Telfer et al., 2017).

2.4.3. Psychological Assessment

Historically, clinical assessment of trans and gender diverse patients have been carried out in accordance with standards of care guidelines for the purposes of either supporting documentation or for referrals for medical or surgical treatments. In instances, however, where an individual is seeking additional psychological assessment and therapy, psychologists also need to conduct a further multimodal assessment beyond what is required by the guidelines to inform their case conceptualisation and treatment. While the guidelines provide an overview of some of the areas that need to be assessed in a clinical interview, they do not refer to a structured diagnostic interview, such as the Structured Clinical Interview for DSM-5 (SCID; First et al., 2016), or other validated assessment tools or patient-reported outcome measures (PROMs; also referred to as self-report measures). Thus, while the *SOC-7* and *Australian Standards of Care* are necessary tools for performing clinical assessments to inform medical interventions, they do not satisfy the requirements for an evidence-based multimodal psychological assessment expected of a clinical psychologist.

Evidence-based multimodal assessment is grounded in the use of research and theory to determine the constructs to be assessed, as well as the tools, and process to be used to aid the assessment. The information used in the multi-modal assessment is then used to aid the formulation and development of an affirming treatment plan (Knutson & Koch, 2021) that has been customised to meet the individual's needs and values (American Psychological Association, 2005; Hunsley & Mash, 2007).

Multimodal assessments, utilising clinical interviews, diagnostic interviews, PROMs, and direct observation, are effective in building a thorough clinical picture from multiple perspectives (Moses et al., 2020). By using multiple assessment tools, the clinician is able to build rapport (Sommers-Flanagan & Sommers-Flanagan, 2015) and obtain an objective and thorough assessment (Joiner et al., 2005) that is free from clinician bias (Silverman & Ollendick, 2005). There is currently a lack of research investigating evidence-based tools to inform the assessment of individuals with gender dysphoria. For example, a systematic review of social stress and mental health in trans and gender diverse populations in the United States failed to identify any structured diagnostic interviews for gender dysphoria (Valentine & Shipherd, 2018). Therefore, it is important for more research to focus on the development of validated assessment tools to improve the assessment of gender dysphoria.

PROMs are the most commonly used assessment tool among psychologists in clinical practice (Moses et al., 2020). PROMs are validated paper and pencil, or computerised tools, designed to collect unobservable health-related information directly from the patient. PROMs are valuable for establishing an initial hypothesis (Joiner et al., 2005), monitoring treatment effectiveness (Hunsley & Mash, 2007), and helping to assess topics that may initially be embarrassing for the patient (Moses et al., 2020). By providing insight into the patient's perspective of their mental health PROMs can assist in providing individualised care that complements information obtained from clinician ratings (Joiner et al., 2005). When using PROMs with patient's who experience Autism Spectrum Disorder clinicians should be aware of the potential for patients to interpret questions in a manner that was not intended (Kerns et al., 2021). The most commonly used PROMs to assess gender dysphoria are outlined below.

2.4.4 Commonly Used Assessment Tools

While the abovementioned standards of care documents do not provide guidance on the use of specific assessment tools, including PROMs, the Adolescent Gender Identity Research Group (Dèttore et al., 2015) and Shulman et al. (2017) provide a comprehensive list of PROMs that can be used as part of a multi-modal assessment of adolescents and adults experiencing gender dysphoria. Specific Adolescent Gender Identity Research Group recommendations for assessment of gender dysphoria symptoms include: Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults (GIDYQ-AA; Deogracias et al., 2007), Utrecht Gender Dysphoria Scale (UGDS; Cohen-Kettenis & van Goozen, 1997), Recalled Childhood Gender Identity Scale (RCGIS; Zucker et al., 2006), and Body Image Scale (BIS; Lindgren & Pauly, 1975). Despite the recency of the Adolescent Gender Identity Research Group recommendations, the majority of the recommended assessment tools have been criticised for their use of outdated definitions of gender dysphoria, stigmatising language (Shulman et al., 2017), and for failing to account for people who identify as gender neutral or gender queer (Hakeem, Črnčec, Asghari-Fard, Harte, & Eapen, 2016). For example, the GIDYQ-AA is limited by its binary view of gender and use of outdated concepts of gender dysphoria (e.g., ‘thought of self as opposite sex’, and ‘cross-dressing at home’). Similarly, the UGDS also utilises a binary structure and a focus on outdated, gender related, behaviours and stereotypes (e.g., ‘a boy’s/man’s life is more attractive to me than a girl’s/woman’s life’ and ‘I dislike urinating in a standing position’). In contrast, the RCGIS is administered to adolescents and adults to measure gender identity and related behaviour and parental attachment during childhood (0-12 years). While the RCGIS may provide longitudinal data on individual trajectories, its focus on behaviour, which has a high level of

variability in childhood, and gender stereotypes (e.g., ‘as a child, I experimented with cosmetics (make-up) and jewellery’) limits its diagnostic usefulness. Lastly, the BIS may have potential for use as a screener for comorbid eating disorders in trans and gender diverse populations, but has limited utility in assessing gender dysphoria.

Measures for adult populations recommended by Shulman et al. (2017) for assessing trans and gender diverse adults include the Gender Identity Reflection and Rumination Scale (GRRS; Bauerband & Galupo, 2014), Gender Minority Stress and Resilience Scale (GMRS; Testa et al., 2015), Strength of Transgender Identity Scale (STIS; Barr et al., 2016), Transgender Adaptation and Integration Measure (TG AIM; Sjoberg et al., 2006), Transgender Community Belongingness Scale (TCBS; Barr et al., 2016), Transgender Congruence Scale (TCS; Kozee et al., 2012), Transgender Positive Identity Measure (T-PIM; Riggle & Mohr, 2015), and Transsexual Voice Questionnaire for Male-to-Female Transsexuals (TVQ; Dacakis et al., 2013). These measures are however limited in their clinical utility for assessing gender dysphoria (as defined in the current research). Only the GRRS rumination and preoccupation with others’ perceptions subscales are considered appropriate for the assessment of gender dysphoria. The remaining scales assess related, but distinct, constructs of gender incongruence such as: minority stress (GMRS); transgender identity (STIS and T-PIM); and transgender congruence (TCS). Such measures may be more appropriate for a broader study of gender incongruence or research into alternative conceptualisations of gender dysphoria.

2.4.5 Summary

The *SOC-7* and other clinical guidelines provide thorough guidance on the assessment of gender dysphoria for the purposes of documentation and referral for medical and surgical treatments, however, these guidelines do not provide evidence-

based recommendations for assessment tools that can be used by clinical psychologists and other mental health professionals to assess gender dysphoria. Multi-modal assessment uses multiple sources of information to fully understand the patient's concerns. There is an urgent need to develop assessment tools that can be used to inform a multi-modal assessment of gender dysphoria. PROMs are one of the most commonly used assessment tools and, as such, having reliable and valid PROMs of gender dysphoria will improve the assessment and case formulations for individuals presenting with gender dysphoria, and will also allow clinicians to monitor treatment outcomes.

2.5 Therapeutic Approaches for Gender Dysphoria

2.5.1 Early therapeutic approaches

Psychiatrists in the first half of the 20th century typically considered gender incongruence as a psychotic or delusion condition in need of reparative therapy (Beek, Cohen-Kettenis, & Kreukels, 2016; Benjamin, 1966). Such reparative therapy was typically psychodynamic in approach and involved encouraging patients to accept their assigned sex at birth (Benjamin, 1966). Research into the effectiveness of reparative therapy was minimal and the approach was largely seen as ineffective given the potential for a biological basis for *transsexualism* (Benjamin, 1966).

Gender affirming surgery was relatively rare during the 1940's and 50's, however, a number of surgeries were conducted in Europe (Germany and Britain) and Africa (Morocco; Fritz & Mulkey, 2021) with arguably the most notable being surgery conducted on American Christine Jorgensen in 1952 (Beek, Cohen-Kettenis, & Kreukels, 2016). In this case, Jorgensen's story was published on the front page of the *New York Daily News* with a later magazine biography and article by her surgeons in the *Journal of the American Medical Association* (Hamburger et al., 1953). The

worldwide publication of her story inspired others who felt the same way but were unaware of the availability of treatment to seek help for the first time whilst also drawing condemnation from conservative medical professionals (Benjamin, 1966). During the 1950's and 60's, Harry Benjamin pioneered the gender affirming approaches to care that were later adopted by the HBGDA and WPATH (Johnson, 2018). However, despite the interest in these surgeries, gender affirming surgery was not readily available in the United States until the late 1960s (Siotos et al., 2019). In Australia, gender affirmation surgery was not available until the mid 1970's when it was performed at the Queen Victoria Hospital, Melbourne, before later relocating to the Monash Medical Centre (Monash Health, 2022).

2.5.2 Current therapeutic approaches

Therapeutic interventions may include a combination of social transition (living in a role that is consistent with the person's gender identity) and medical (cross sex hormones to either masculinise or feminise the body) and surgical (changes to the primary or secondary sex characteristics) interventions. Having an understanding of the therapeutic approaches and the associated risks is important for psychologists as they have an important role, irrespective of distress, in helping trans and gender diverse individuals to prepare for social, medical, and surgical interventions (Coleman et al., 2012). Additionally, despite the availability of these treatment approaches, some individuals who undertake them will continue to experience chronic gender dysphoria (Dhejne et al., 2016) and may benefit from longer-term psychological therapy (Byne et al., 2018). Each of the current therapeutic approaches, as well as the available supporting empirical literature, is outlined below.

2.5.3 Social Transition

Social transition involves outwardly presenting oneself in a manner that is consistent with their gender identity. Social transitions range from partial transitions, at home or other safe environment, to living full time in a role that is aligned with a person's gender identity, and updating legal identification documents. Social transition typically involves adopting a new preferred name, pronouns, and adopting clothing that a person feels comfortable wearing (Coleman et al., 2011; Telfer, Tollit, Pace, & Pang, 2017). Outcome research regarding social transition is currently sparse. In one of the largest studies conducted to date, Russell et al. (2018) found that trans and gender diverse youth aged 15-21 experienced fewer depressive symptoms and suicidal ideation when they used their chosen name in more contexts (i.e., at home, at school, at work, and with friends). Additionally, qualitative research with 20 adult participants demonstrated that all of the participants in the study reported improved psychological wellbeing as a result of their transition (Verbeek et al., 2020). Both social (family and friends) and peer (trans and gender diverse community) support during the early stages of coming out and social transition were reported as a key indicator of mental health and resilience (Verbeek et al., 2020).

While social transition appears to result in improved mental health, there are, however, some risks associated with this treatment approach including experiences of minority stress, in the form of stigmatisation, discrimination, violence (Byrne et al., 2018; Verbeek et al., 2020), and social isolation (Grant et al., 2011). These risks have been associated with the social rejection and not the transition process in and of itself. For instance, Shipherd et al. (2011) found that the more time a trans and gender diverse person presents in society in accordance with their gender identity, the more likely they are to experience a traumatic event (i.e., being followed by a stranger and

physically or sexually assaulted). Similarly, a study of approximately 4000 adults found that experiences of trans and gender diverse discrimination were associated with health harming behaviours such drug and alcohol abuse (Miller & Grollman, 2015).

2.5.4 Medical Transition

Medical treatments typically consist of the administration of exogenous masculinising (testosterone) or feminising (estrogen & ant-androgen) hormones. Hormone therapy has the dual role of suppressing the bodies endogenous hormones and promoting the physical characteristics of the affirmed gender (Hembree et al., 2017). The administration of hormone therapy is considered to be partially irreversible (Hembree et al., 2017). While some of these changes will be permanent (i.e., breast growth and deepening of the voice), other changes (i.e., muscle mass, fertility, and body fat distribution) will have varying degrees of reversibility (Hembree et al., 2017).

Medical Transition in Adults. While evidence is limited, multiple studies have found that the administration of hormones in trans and gender diverse populations contributes to reduced anxiety, depression and suicidality, and improved mood and quality of life (Colizzi et al., 2014; Manieri et al., 2014; Rowniak et al., 2019; White Hughto & Reisner, 2016). For instance, in an outcome study of 147 transgender adults, Colizzi et al. (2014) found a 47% reduction in depression and a 66% reduction in anxiety after commencing gender affirming hormone treatment. Similarly, in an outcome study of 56 transgender females, Manieri et al. (2014) found significant improvement in quality of life 12 months after the administration of gender affirming hormones. Rowniak et al. (2019) suggest that the positive findings may be a result of the gender affirming impact that hormones can have on appearance which

may reduce both internal psychological and external social-based conflicts associated with gender nonconformity.

Notwithstanding the benefits of such medical interventions, the long-term health implications of hormone therapy are largely unknown and may include, but are not limited to; heart disease, osteoporosis, diabetes, and blood clots (Coleman et al., 2012; Hembree et al., 2017). There is also limited, low quality evidence (Rowniak et al., 2019) that indicates that the administration of estrogen in transgender females may significantly increase cholesterol levels, which may impact morbidity (Elamin et al., 2010). Thus, individuals engaging in such treatments should continue to undergo regular clinical assessments as part of their long-term health care plan (Hembree et al., 2017). While the physical changes associated with hormone therapy are partially reversible, the long-term use of hormones may result in infertility (Hembree et al., 2017). Consequently, patients should consider their options for fertility preservation prior to undergoing hormone therapy.

Medical Transition in Adolescents. Adolescents who are considered too young for hormone therapy may be prescribed puberty blockers (Telfer et al., 2017) to temporarily halt the permanent physical changes associated with puberty while the individual matures and develops the emotional and cognitive abilities necessary to consider and provide informed consent (Hembree et al., 2017; Telfer et al., 2017). As such, the initial goal of treatment in adolescence is not to adopt the physical characteristics of the person's gender identity but to reduce the immediate distress of undergoing puberty in the undesired gender (de Vries & Cohen-Kettenis, 2012; Edwards-Leeper & Spack, 2012). A longitudinal evaluation of psychological functioning in 70 adolescent patients, before and after the administration of puberty blockers, has found significantly improved general functioning and reduced

depression, including reductions in behavioural and emotional problems, but no change in anxiety or gender dysphoria (de Vries et al., 2011). Similarly, in an outcome assessment of psychosocial functioning in 35 adolescents, Costa et al. (2015), found significant improvements in functioning after 12 months of puberty blockers and that the level of functioning was comparable to a control group with no identified psychopathology.

There are some specific risks associated with medical interventions for adolescent patients. For instance, the use of puberty blockers can have a potential impact on bone density as a result of the absence of the effect of estrogen and testosterone on bone mineralisation (Telfer et al., 2017). While the impact on bone density is theoretically reversed by the administration of gender affirming hormones the long-term impact is not known (Hembree et al., 2017). Additionally, adolescents who commence puberty blockers at the onset of puberty and later progress to hormone therapy are also unlikely to be able to undertake fertility preservation procedures and should be counselled accordingly.

2.5.5 Surgical Transition

Surgical interventions are irreversible and may include chest and/or genital interventions. Surgical interventions vary greatly between individuals and there is no pre-requisite order for procedures (Coleman et al., 2012). In most cases chest surgery (mastectomy or breast augmentation) is permitted once a person has attained the age of majority for consenting to medical procedures (typically 16 or over; Coleman et al., 2012; Telfer et al., 2017). Genital surgery (surgical removal of the penis or vagina) in individuals under the age of 18 is uncommon and in some jurisdictions may be restricted by law (Telfer et al., 2017).

There have now been a number of studies demonstrating improvements in psychological functioning and improved quality of life post-surgical interventions (McNichols et al., 2020; van de Grift et al., 2018). For instance, outcome evaluations of psychological wellbeing in 145 transgender adults have found significant increases in self-acceptance, with medium to large effect size, after gender affirming surgery (Prunas et al., 2016). Furthermore, in a study of 55 young adults, de Vries et al. (2014) found significant increases in general functioning after gender affirmation surgery, and scores for quality of life, satisfaction with life and subjective happiness that were comparable with same-age peers.

Challenges with surgical interventions include risks associated with surgery and subsequent infection, sub-optimal results, and high costs (McNichols et al., 2020; van de Grift et al., 2018). Studies have reported that there is minimal regret (up to 1%) experienced by people who undergo gender affirmation surgery (McNichols et al., 2020) and that between 2-6% of participants experience some form of dissatisfaction with the outcome of the procedure (McNichols et al., 2020; van de Grift et al., 2018). In an attempt to minimise dissatisfaction, van de Grift et al. (2018) suggest that individuals undergoing complex surgeries (i.e., surgical reconstruction of the vagina or penis) may benefit from additional counselling on the risks and complication associated with these surgeries prior to the procedure.

Despite the potential risks, as a result of social stigma, or medical/surgical interventions, access to gender affirming care is medically and psychologically indicated for addressing the wellbeing and psychological functioning of trans and gender diverse people. Furthermore, it is important for clinicians working with this population to have an awareness and understanding of the procedures, processes, and

potential risks that may result from these interventions. These factors are important for understanding the lived experiences of trans and gender diverse individuals.

2.5.6 Psychological Therapy

Psychological therapy can form a valuable long-term component of an individual's mental health (Byne et al., 2018). The goal of psychological therapy in trans and gender diverse patients experiencing gender dysphoria is to improve psychological wellbeing, quality of life, and self-fulfilment in accordance with a person's gender identity (Coleman et al., 2012). Consequently, psychological therapy will often focus on exploring gender and individual identity, navigating transition, addressing internalised transphobia, coping with external stressors and stigma, and building resilience (Byne et al., 2018; Coleman et al., 2012). Despite the recognition of the needs of trans and gender diverse populations and a growing body of literature on trans affirmative care (see Budge et al., 2021) there are no established best practice models or treatment modalities for working with this patient group (Dèttore et al., 2015; Eisenberg et al., 2017; Sloan & Berke, 2018). Furthermore, a search of the Society of Clinical Psychology (2022) and Australian Psychological Society (2018a) evidence based psychological treatments did not contain any references to gender dysphoria, and the literature fails to adequately address the long-term psychotherapeutic needs of people who continue to experience gender dysphoria throughout their life (Dèttore et al., 2015; Eisenberg et al., 2017).

Treatment modalities that may be beneficial when working with trans and gender diverse patients include: dynamic systems theory for developing individual identity (Diamond et al., 2011); psychological mediation framework (Hatzenbuehler, 2009) for exploring internalised transphobia (Scandurra et al., 2018); cognitive behaviour therapy for working with comorbid mental health problems (Valentine &

Shipherd, 2018); and problem-solving therapy and acceptance and commitment therapy for improving resilience (Byne et al., 2018; Helmreich et al., 2017). Additionally, Sloan and Berke (2018) recommend the use of dialectical behaviour therapy for addressing complex cases of gender dysphoria that involve suicidality, substance abuse, and risky sexual behaviour. It is important to highlight, however, that while generalised psychological support has been found to be helpful in improving quality of life in trans and gender diverse individuals (Costa et al., 2015), at this stage none of these specific approaches have been examined empirically in trans and gender diverse populations, and thus further research is required.

Psychological therapy can also be used as an adjunctive treatment for those who are socially transitioning, or having medical or surgical interventions. For instance, reducing experiences of minority stress and building resilience and social networks for those who are socially transitioning, as well as treating body image and associated eating disorders (Jones et al., 2016; Testa et al., 2017) that may persist after medical or surgical interventions (van de Grift et al., 2017). Mental health professionals should also be aware of the potential for individuals to experience a sense of loss or grief (e.g., impact on career, relationships, fertility, and family) that may be associated with their decision to transition (Hakeem et al., 2016; Zucker et al., 2016). Additionally, therapeutic support for the parents of adolescents and young adults may be beneficial to assist in creating a shared understanding of the individual needs and experience of gender dysphoria (Telfer et al., 2017).

Finally, it is important to point out that any psychological intervention that attempts to change a person's gender identity and expression to be more congruent with their assigned birth gender (gender identity change efforts) is not considered ethical (American Psychological Association, 2021; Australian Psychological Society,

2018b). Studies have shown that exposure to reparative therapy has been associated with increased suicidal ideation and attempted suicide (Turban et al., 2020).

2.5.7 Limitations of empirical support for current treatment approaches

While there is a growing body of literature demonstrating the efficacy of the abovementioned treatment approaches, it is important to note that most of these studies are considered to represent low quality evidence (Rowniak et al., 2019; Valentine & Shipherd, 2018; White Hughto & Reisner, 2016). While randomised controlled trials are frequently considered the gold standard for medical interventions, the use of a non-active control group, who are not provided with access to gender affirming treatment, is considered unethical (Rowniak et al., 2019). Thus, a significant amount of research is needed with larger samples and diverse methodologies to more rigorously examine the efficacy of these treatment approaches.

One of the key issues in examining the efficacy of these interventions for reducing gender dysphoria is a lack of validated measurement tools for assessing gender dysphoria (Klassen et al., 2018). Where gender dysphoria has been assessed in previous studies (e.g., de Vries et al., 2014; de Vries et al., 2011; van de Grift et al., 2018), the Utrecht Gender Dysphoria Scale has been used, which has a number of limitations including the use of outdated definitions of gender identity disorder and stigmatising language (Shulman et al., 2017). As a result, most outcome studies (e.g., Colizzi et al., 2014; Manieri et al., 2014) have instead assessed similar, but distinct, constructs such as anxiety, depression, psychological functioning, and quality of life. Therefore it is essential that validated measures of gender dysphoria are developed in order to measure this construct before and after treatment.

2.5.8 Summary

Therapeutic approaches recommended for gender dysphoria have progressed substantially since the practice of reparative therapy in the 1940's and 50's. Processes for social, hormonal, and surgical transitions have been well documented with an established efficacy to justify the potential risks of minority stress and medical complications. However, more methodologically sound studies are needed. Despite the documented need and clear objective of psychological therapy to improve well-being and quality of life, the available treatment modalities have not undergone a rigorous examination of efficacy and are still in the early developmental stages. To aid this future research psychometrically sound assessment tools of gender dysphoria are urgently needed.

2.6 Overall Summary of the Introduction and Literature Review

Experiences of gender dysphoria have been shown to significantly impact on the mental health of trans and gender diverse individuals. While the various clinical and diagnostic guidelines have been largely successful in reducing stigma and improving access to healthcare for trans and gender diverse patients these guidelines are not sufficient for informing a multi-modal psychological assessment. Such an assessment is needed to inform a case formulation and treatment plan. While a number of PROMs are available to assess gender dysphoria, there are significant limitations to this literature. Thus, there is a need to develop and validate PROMs that are appropriate for use in both adult and adolescent populations experiencing gender dysphoria.

Chapter 3: Methodology

The aim of this program of research was to improve the psychological assessment of gender dysphoria. Specific objectives include the development and validation of a measure of gender dysphoria that can be used in both adolescents and adults. The Consensus-based Standards for the Selection of Health Measurement Instruments (COSMIN) procedures for evaluating and developing health-related patient-reported outcome measurements (PROMs) have been fundamental to the current research.

3.1 COSMIN

The COSMIN initiative was founded in 2005 to establish a taxonomy and standards for use in the assessment and selection of PROMs (COSMIN, 2021). Members of the COSMIN group include professionals from the fields of epidemiology, psychometrics, medicine, qualitative research, and healthcare.

The COSMIN methodology is unique in the field of health status measurement in that it endeavours to both define the measurement properties to be assessed as well as the relationship between measurement properties (Mokkink, Terwee, et al., 2010b). Advantages of the COSMIN methodology include the multidisciplinary consensus-based approach to increase generalisability across health disciplines and the focus on tracking and evaluating patient-health over time (Mokkink, Terwee, et al., 2010b). The initial standards published by the group were international Delphi studies conducted in 2006-07. The first study, *The COSMIN study reached international consensus on taxonomy, terminology, and definitions of measurement properties for health-related patient-reported outcomes* (Mokkink, Terwee, et al., 2010b), details the steps undertaken, over four rounds, to reach agreement on the taxonomy, terminology, and definitions that should be used when evaluating outcome measures. The second

study, *The COSMIN checklist for assessing the methodological quality of studies on measurement properties of health status measurement instruments: An international Delphi study* (Mokkink, Terwee, et al., 2010a), conducted in parallel, details the steps undertaken to reach agreement on a checklist for establishing the methodological quality of studies on measurement properties. A subsequent Delphi study was conducted in 2016 to assess the content validity and the quality of the measure development process (see Terwee et al., 2018). The COSMIN checklist and content validity literature has been further developed to form a library of customised guidelines for performing systematic reviews, evaluating measurement properties, and the selection of instruments for clinical trials.

3.1.1 COSMIN Guidelines for Systematic Reviews

The *COSMIN Guideline for Systematic Reviews of Patient-Reported Outcome Measures* (Prinsen et al., 2018) and *COSMIN Methodology for Assessing the Content Validity of PROM's* (Terwee et al., 2017) manuals represents a comprehensive approach to conducting systematic reviews of health-related PROMs. The manuals provide extensive guidelines on the literature search strategy, evaluation of content validity and measurement properties, and the final selection of PROMs. The search strategy incorporates aspects of the Cochrane methodology for conducting systematic reviews (see Higgins et al., 2021) and the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) statement (Moher et al., 2015)⁹. This includes an extensive search of existing medical (e.g., Embase) and content-specific (e.g., PsycINFO, Web of Science, and SCOPUS) databases to identify all available PROMs. The subsequent selection process flow is documented using a PRISMA flow diagram.

⁹ Note: The submission of Study 1 for publication predates the release of the updated PRISMA 2020 Statement and flow diagram.

When conducting a systematic review of PROMs, selected measures (including original measure development for adapted measures) are assessed for content validity using the accompanying *COSMIN Methodology for Assessing the Content Validity of PROM's* (Terwee et al., 2017) manual. PROMs that are deemed to have sufficient content validity are then evaluated further using the COSMIN Risk of Bias checklist (Mokkink, de Vet, et al., 2018), an updated version of the original COSMIN Checklist, for their methodological quality and measurement properties. The Risk of Bias checklist includes reference standards and measurement properties for both classic test theory and item response theory. Classic test theory was developed to allow the indirect assessment of non-observable constructs by measuring items that are manifestations of the construct (de Vet et al., 2011). Classic test theory measurement properties assessed by COSMIN include exploratory and confirmatory factor analysis. Item response theory was designed for the measurement of latent traits and their observable outcomes (de Vet et al., 2011). The COSMIN methodology includes assessment criteria for the item response theory Rasch mode. The final stage of the process includes an assessment of the interpretability of individual PROMs and the formulation of a recommendation. PROMs are classified as either: A) trusted and recommended for further use; B) considered to have potential for further use with the recommendation that they be developed further; or C) not recommended for further use (Mokkink, Prinsen, et al., 2018).

3.1.2 COSMIN Taxonomy, Definitions and Measurement Properties

The COSMIN taxonomy (Figure 3.1) consists of three core measurement properties for assessing PROMs: *reliability*, “the degree to which the measurement is free from measurement error”; *validity*, “the degree to which a [PROM] measures the construct(s) it purports to measure”; and *responsiveness*, “the ability of a [PROM] to

detect change over time in the construct to be measured” (p. 273). Despite not being considered a measurement property the interpretability domain, “the degree to which one can assign qualitative meaning ... to a [PROM’s] quantitative scores or change in scores”, was considered by the COSMIN panel to be sufficiently important to be added to the taxonomy (p. 273).

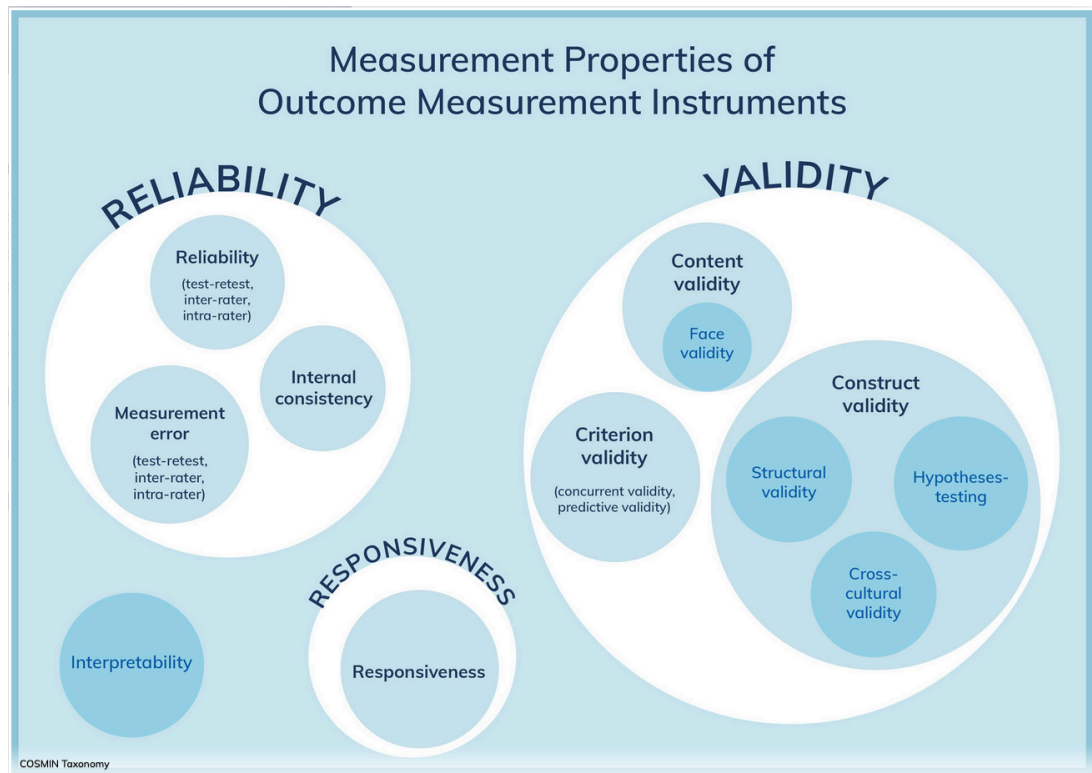
Reliability. The reliability domain includes three measurement properties: internal consistency, reliability, and measurement error. Internal consistency, “the degree of interrelatedness among the items” (Mokkink, Prinsen, et al., 2018; p. 11), should be assessed for each unidimensional scale or subscale. Methods for assessing internal consistency include Cronbach’s alpha, Kuder-Richardson 20 (KR20), or Omega. Acceptable measurement properties for Cronbach’s alpha are $\geq .70$ (values for KR20 and Omega have not been published; Mokkink, Prinsen, et al., 2018).

Reliability, “the proportion of the total variance in the measurements which is due to ‘true’ differences between patients” (Mokkink, Prinsen, et al., 2018; p. 11) is established by calculating the test-retest intraclass correlation coefficient (ICC). ICC values $\geq .70$ are recommended with a requirement that the ICC model is documented and that the patients are considered stable between appropriately timed administrations.

Measurement error is “the systematic and random error of a patients score that is not attributed to true changes in the construct to be measured” (Mokkink, Prinsen, et al., 2018; p.11). The preferred assessment of measurement error is based on the Standard Error of Measurement (SEM) obtained using a test-retest design (Mokkink, Prinsen, et al., 2018). Acceptable alternatives for measurement error include Smallest Detectable Change (SDC) or Limits of Agreement (LOA; Mokkink, Prinsen, et al., 2018).

Figure 3.1

The COSMIN Taxonomy is Divided into Three Main Domains of Measurement: Reliability, Validity and Responsiveness



Mokkink et al., 2010

Validity. The validity domain includes the assessment of content, criterion, and construct validity. Content validity represents “the degree to which the content of a PROM is an adequate reflection of the construct to be measured” (Mokkink, Prinsen, et al., 2018, p. 11). The content validity is assessed subjectively by evaluating the PROM development and pilot testing process to ensure that items are relevant, comprehensible, and comprehensive for the construct that is being evaluated. The development process should also include appropriate assessments of face validity using individuals from a variety of related fields (Terwee et al., 2017). If available, the results from additional validation studies can be used to provide additional evidence to support the quality of the original PROM development. A final subjective review of the quality of the PROM itself is conducted by the reviewers.

Criterion validity evaluates “the degree to which the scores of a PROM are an adequate reflection of a ‘gold standard’ (p. 743). The COSMIN manual recommends that the use of gold standards and the assessment of criterion validity be limited to studies that are developing shortened versions of existing PROMs (Mokkink, Terwee, Knol, et al., 2010). Criterion validity is assessed by either calculating the correlations between the variables or receiver operating characteristics (ROC) and the area under the curve (AUC). Measurement properties for criterion validity recommend correlations $\geq .70$ or AUC $\geq .70$ (Mokkink, Prinsen, et al., 2018).

Lastly, construct validity assesses “the degree to which the scores of a PROM are consistent with hypotheses ... based on the assumption that the PROM validly measures the construct to be measured” (Mokkink, Prinsen, et al., 2018, p. 12). Important components of construct validity include structural validity, hypothesis testing, and cross-cultural validity. Structural validity refers to the hypothesised internal relationships between the items and the unidimensionality of the scale or

presence of subscales. At a minimum, when using classic test theory (CTT), it is recommended that exploratory factor analysis be performed with confirmatory factor analysis the preferred methodology (Mokkink, Prinsen, et al., 2018). When performing confirmatory factor analysis, the assessment of model-fit requires that at least one of the following measurement properties be true: comparative fit index (CFI) or Tucker-Lewis index (TLI) $> .05$; root mean square error of approximation (RMSEA) $< .06$; or standardised root mean residuals (SRMR) $< .08$. Optimal sample sizes are more than seven times the number of items and greater than 100.

Hypothesis testing, which involves a comparison with a comparator instrument or known-group difference, is a specific form of construct validity. Hypothesis testing is used to assess the predicted correlations with other variables or differences between known-groups. Correlations with similar constructs should be $\geq .50$ whereas correlations with related, but dissimilar, constructs need only be $\geq .30$ (de Vet et al., 2011). The effect sizes for known-groups differences will be dependent on the relationship between the groups. The hypothesised effect size may be attributed to conceptual differences or data in the literature (de Vet et al., 2011).

The final element of construct validity, cross-cultural validity, refers to the degree to which the statistical properties of a translated or culturally adapted version of a PROM reflect the original version. Cross-cultural invariance is assessed by determining if there are any substantial differences in how respondents with similar latent trait variables respond to the measure items. Approaches to assessing measurement invariance using CTT include regression analysis and confirmatory factor analysis (Mokkink, Prinsen, et al., 2018).

Responsiveness. The responsiveness domain and measurement property share the same definition. Responsiveness is differentiated from construct validity in that it

refers to the validity of a change in scores, as opposed to the validity of a single score (Mokkink, Prinsen, et al., 2018). The change over time is assessed either in accordance the hypothesised result (comparison with a gold standard/comparator instrument or known-group differences) and the interpretation of change (i.e., expected magnitude of an intervention; Mokkink, Prinsen, et al., 2018).

Interpretability. To aid in the interpretability of a single score, or change in scores, COSMIN recommend that the distribution of scores be analysed to identify any clustering of scores or the presence of any floor or ceiling effects (Mokkink, Prinsen, et al., 2018). Additionally, it is recommended that this analysis also be performed on relevant subgroups to provide more information about the patient population. The provision of minimal important change (MIC; smallest change in scores that patients deem to be important) is also seen to aid in the interpretability of the measure (Mokkink, Terwee, Knol, et al., 2010).

3.2 Current Research

The aim of the current program of research is to advance the assessment of gender dysphoria by developing a psychometrically sound PROM that is suitable for use with adolescent and adult patients. The research is divided into four studies that are consonant with the COSMIN recommendations.

Study 1 (Chapter 4): *Assessing gender dysphoria: A systematic review of patient-reported outcome measures*. Chapter 4 is conducted in accordance with the COSMIN methodology for conducting systematic reviews. This includes the COSMIN methodology for assessing content validity and the risk of bias checklist to assess the reliability, validity, and responsiveness of the identified measures.

Study 2 (Chapter 6): *The development and validation of the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2)*. Chapter 6 focuses

on the content and face validity of the measure development and pilot testing to ensure that the developed measure, the GPSQ-2 is relevant, comprehensible, and comprehensive. The survey testing is conducted to ascertain the internal consistency, reliability (test-retest), measurement error (test-retest), structural validity, and convergent construct validity (hypothesis testing) of the GPSQ-2 (see Figure 3.1).

Study 3 (Chapter 8): *The development and validation of the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2): A replication and extension*. Chapter 8 describes a replication and further validation of the (GPSQ-2). This study assesses the internal consistency, convergent construct validity (hypothesis testing) and known-groups validity (hypothesis testing) in a clinical sample.

Study 4 (Chapter 10): *Interpretability of the Gender Preoccupation and Stability Questionnaire (GPSQ-2)*. The assessment of interpretability seeks to identify any floor and ceiling effects and to analyse the performance of the GPSQ-2 by gender identity (transfeminine, transmasculine, and non-binary). Qualitative descriptions of the GPSQ-2 total score were also developed and range from ‘not at all distressed’ to ‘highly distressed’.

Chapter 4: Study 1

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Assessing gender dysphoria: A systematic review of patient-reported outcome measures. *Psychology of Sexual Orientation and Gender Diversity*. Advance online publication. <https://doi.org/10.1037/sgd0000486>

Abstract

Over the last decade the manner in which gender dysphoria is defined has changed significantly, as have the presentations of transgender clients to specialist gender services. While the use of patient-reported outcome measures (PROMs) to assess gender dysphoria is widespread, there is a lack of literature that assesses the methodological quality of these measures. To address the limits of the existing literature, the aim of the current study was to conduct a systematic review of PROMs that assess gender dysphoria. The systematic review was performed in accordance with the PRISMA and COSMIN methodologies. Five measurement studies met inclusion criteria. Results suggested that none of the measures could be recommended for use without further development. Poor content validity was evident across all measures and internal validity and construct validity were mixed, ranging from ‘inadequate’ to ‘very good’. Measures that show promise for the future include the Gender Congruence and Life Satisfaction Scale, Gender Identity Reflection and Rumination Scale, Gender Pre-occupation and Stability Questionnaire, and Transgender Adaptation and Integration Measure. A need to develop reliable and valid measures that are appropriate for use with adolescent samples experiencing gender dysphoria was also identified.

Keywords: transgender; gender-diverse; assessment; PROM; COSMIN.

Public Significance Statement

For clinicians the study highlights the strengths and weaknesses of existing measures of gender dysphoria. For researchers the study identifies additional research necessary to improve the methodological quality and measurement properties of the identified measures.

4.1 Assessing Gender Dysphoria: A Systematic Review of Patient-Reported Outcome Measures

Transgender individuals typically adopt a gender role that does not match their assigned gender at birth (World Health Organisation [WHO], 2021a). ‘*Transgender*’ is often used as an umbrella term to include people who may also identify as transgender female, female, transgender male, male, transsexual, non-binary, gender-queer, gender-fluid, agender, or gender neutral (Hendricks & Testa, 2012). In the United States approximately 0.6% of adults identify as transgender (Flores et al., 2016) and 2.7% of adolescents identify as either transgender or gender non-conforming (Eisenberg et al., 2017).

Presentations of transgender clients at specialist gender services have changed substantially over the last decade. For instance, there has been a substantial increase in the number of referrals (Zucker, 2017), a decline in the age of initial presentation (de Vries & Cohen-Kettenis, 2012; Dèttore et al., 2015; Edwards-Leeper & Spack, 2012), and an increase in the presentation of non-binary individuals (Richards et al., 2016). There has also been a shift in how gender is conceptualised with updates published in both the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5; American Psychiatric Association [APA], 2013a) and *International Classification of Diseases* (11th rev.; ICD-11; WHO, 2021a).

In 2013, the APA introduced the adult and adolescent diagnosis of Gender Dysphoria in the *DSM-5* to account for the distress, and associated impairment in functioning, that may be the result of incongruence between an individual’s birth assigned sex and their experienced gender. The new definition represents a material shift from the behaviour-based definition of Gender Identity Disorder that was previously defined in the *DSM-IV* (APA, 1994). Similarly, the *ICD-II* has moved to

depathologise gender-related health by replacing the diagnosis of Transsexualism with Gender Incongruence and relocating it from the from the mental and behavioural disorders section to a new section on conditions relating to sexual health. The current paper operationalises gender dysphoria as the distress that is associated with the individual's subjective experience of gender incongruence. This incorporates aspects of both the DSM-5 and ICD-11 definitions of Gender Dysphoria and Gender Incongruence with following provisos. Firstly, an incongruence between a person's birth assigned sex and their experienced gender in and of itself is not considered an indication of mental ill-health as per the ICD-11 (WHO, 2021b). While gender identity and role are considered important and should be explored, they should not be conflated with the distress that such an incongruence may induce. Secondly, it is important to emphasise that the current conceptualisation of gender dysphoria is based on a deficit-model of wellbeing. Until the relationship between gender dysphoria and positive wellbeing is further operationalised (Bradford et al., 2019) variables associated with positive wellbeing should be treated as related, yet independent, constructs and should not be conflated with the distress that is associated with gender dysphoria.

Presentations of gender dysphoria, which may be underpinned by cognitions of uncertainty, stigma, guilt, and body dissatisfaction (Ristori et al., 2018), are variable and highly individualised. Consequently, indications of gender dysphoria may include increased levels of anxiety, depression (Heylens et al., 2014), substance use disorders (Grant et al., 2011), self-harm, and suicide (Eisenberg et al., 2017; Zucker et al., 2016). While interventions that involve medical gender-affirming treatment (e.g., surgery, hormones, or puberty blockers) and social transitions are often effective in alleviating incongruence and reducing distress (Dhejne et al., 2016;

van de Grift et al., 2017), some individuals may also benefit from additional mental health support prior to, during, and after transition (Coleman et al., 2012; Ristori et al., 2018). This is particularly relevant for adolescents who may benefit from periodic psychological support throughout puberty and before any commitments are made to undergo medical gender-affirming treatment (Coleman et al., 2012; Ristori et al., 2018; Telfer et al., 2017). Thus, it is essential that appropriate and psychometrically sound measures of gender dysphoria are available to assist in the assessment process. How these assessment measures are used however will depend on the clinical setting, as well as the patient presentation. In instances where the patient is seeking a formal assessment, for either legal or medical transitions, measures such as these will likely be used as part of a battery of tools to assist in the provision of a diagnosis of gender dysphoria. In therapeutic settings, these measures are likely to be used to either track the effectiveness of legal and/or medical transition(s), as well as psychological treatments.

Given the evolving definitions of gender dysphoria, the increase in diverse presentations, and demographic changes in the characteristics of presentations, it is uncertain if current measures continue to provide a relevant and comprehensive assessment of gender dysphoria. A systematic review of the of the current patient reported outcome measures (PROMs) for assessing gender dysphoria is therefore warranted. While there are a number of papers that provide a limited comparison of measures used in transgender populations (Dy et al., 2019; Schneider et al., 2016; Shulman et al., 2017), there is minimal information on the methodological quality of PROMs used to assess gender dysphoria. Systematic assessments of methodological quality provide a scientific basis for mental health professionals to make an informed

judgement as to the appropriateness of the measure and the degree to which the results can be trusted (Mokkink, de Vet, et al., 2018).

The objective of the current study was to provide a comprehensive, systematic, and transparent assessment of PROMs used to evaluate gender dysphoria in individuals over the age of 13 who experience an incongruence between their experienced gender and assigned sex at birth. This includes a review of both the methodological quality of the measure, as well as the measurement properties of the measure. With this information, mental health professionals may be better equipped to make informed decisions regarding the selection of measurement tools that best meet the needs of their patients presenting with gender dysphoria.

4.2 Method

4.2.1 Protocol and Registration

The review methodology and protocol were developed using the *Consensus-based Standards for the Selection of Health Measurement Instruments (COSMIN) Methodology for Systematic Reviews of Patient-Reported Outcome Measures* (Mokkink, de Vet, et al., 2018; Prinsen et al., 2018; Terwee et al., 2018) and the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)* guidelines (Moher et al., 2015; Shamseer et al., 2015). The protocol was registered with the *International Prospective Register of Systematic Reviews (PROSPERO; Protocol ID CRD42018081179)*.

4.2.2 Search Strategy

An electronic search of the literature to identify measures was conducted by the first author using PsycINFO, SCOPUS, Web of Science Core Collection and EMBASE databases. The search was conducted on July 22, 2020. Title search terms were based on population (transgender OR gender dysphoria OR

*gender identity OR *gender *congru* OR gender diverse OR gender queer) and measurement (measur* OR assess* OR question* OR scale OR instrument OR test OR evaluation OR survey OR psychometric OR validat*) keyword search fields that were combined using the Boolean ‘AND’ operator. Retrieved studies were screened to remove duplicates. Following this, title and abstract screening, followed by full text eligibility assessment was conducted, independently, by the first author and then by the second author. Additionally, the reference lists of all eligible studies were also searched to identify any additional measures. A final search using the title of eligible measures was used to identify any validation studies.

4.2.3 Eligibility Criteria

To be included in the study measures were required to: 1) be a self-reported measure of distress that is associated with the individual’s subjective experience of gender incongruence (gender dysphoria); 2) be evaluated in a sample over the age of 13 years old; 3) be published, or in press, in an English language peer-reviewed journal, or edited book, from 1994 onwards (the publication date of the *DSM-IV*); and 4) document, or reference, the measure items, development process, and psychometric properties. Measures, including subscales, were excluded if they: 1) conflated sexual orientation and gender identity; 2) have a majority of items that do not focus on issues related to gender dysphoria; or 3) focused solely on experiences of discrimination. Adapted measures would only be reviewed if the underlying measure met the eligibility criteria.

4.2.4 Data Extraction and Synthesis

In accordance with the COSMIN guidelines, data extraction was performed independently by the first and second author to objectively assess the content validity and risk of bias of each measure. These results were compared with

74 of the 94 assessable items receiving the same rating. The authors reviewed the remaining items and were able to reach a consensus on all items without needing to consult a third-party reviewer. The measure synthesis is a subjective assessment of the interpretability and feasibility of each individual measure.

Content Validity. The content validity of the PROM is assessed by determining the methodological quality of the measure development process, an assessment of the degree to which the measurement items meet the quality criteria for content validity, and an evaluation of the trustworthiness of the evidence that has been used during the assessment. The evaluation of measure development quality (“very good”, “adequate”, “doubtful”, or “inadequate”) is determined using a checklist of defined standards for assessing the initial measure design and concept elicitation processes and the subsequent engagement with representatives of the transgender community to conduct pilot testing to assess the comprehensibility and comprehensiveness of the measure (Terwee et al., 2018). The final score is based on the lowest score obtained for any one standard (Terwee et al., 2018). The quality criteria (Terwee et al., 2018) for content validity are established by averaging the number of measure items that meet the requirements for relevance, comprehensiveness, and comprehensibility, and are assessed as being either “sufficient” (> 85% of items fulfil the criteria), “insufficient” (< 85% of items fulfil the criteria), or “indeterminate” (not enough available information). If there is a variation in the quality criteria results, they are deemed to be “inconsistent” (Terwee et al., 2018). The evidence rating (“high”, “moderate”, “low”, or “very low”) is based on a modified Grading of Recommendations Assessment, Development and Evaluation (GRADE; Guyatt et al., 2008) approach that assesses the number of studies, quality of evidence, risk of bias, inconsistency, and indirectness of the results.

Risk of Bias. The *Risk of Bias Checklist* (Mokkink, de Vet, et al., 2018)

assesses the following measurement properties: 1) internal validity (structural validity, internal consistency, and cross-cultural validity); and 2) other measurement properties (reliability, measurement error, criterion validity, construct validity, and responsiveness). Given the absence of any appropriate gold standards to compare criterion validity against, this measure was not assessed. Consistent with the content validity analysis each measurement property was assessed according to its methodological quality (“very good”, “adequate”, “doubtful”, or “inadequate”). Results for the measurement quality criteria, which is assessed as being “sufficient”, “insufficient”, or “indeterminate”, are evaluated in accordance with the criteria for good measurement properties table (Mokkink, de Vet, et al., 2018). The quality of evidence for internal validity and other measurement properties represents the degree to which the pooled result, including validation studies, for each measurement property can be considered trustworthy using the modified GRADE approach (Guyatt et al., 2008).

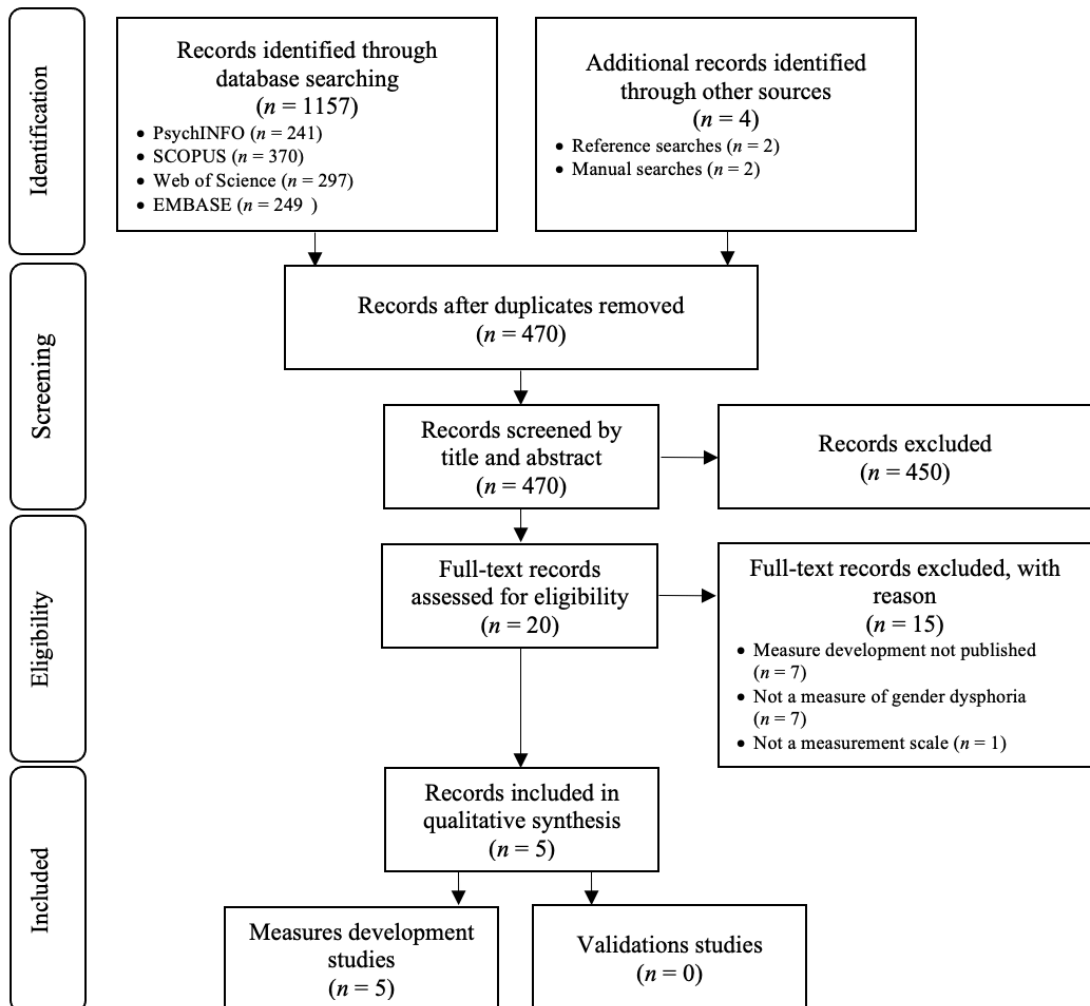
4.3 Results

The study selection process is outlined in Figure 4.1. The search yielded 470 unique records. The title and abstracts were screened and 450 were excluded, resulting in 20 records. These 20 records were reviewed in full against the inclusion and exclusion criteria and a further fifteen were excluded. Six studies and one validation study were removed because a majority of items focussed on issues other than gender dysphoria; the Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults development (Deogracias et al., 2007) and validation (Singh et al., 2010) studies focusses on gender identity and behaviour; the Trans and Gender Diverse Social Anxiety Scale (Ho & Mussap, 2020) focusses on fear and avoidance of social

situations; the Transgender Congruence Scale (Kozee et al., 2012) focusses on gender identity, acceptance and congruence; the Transgender Identity Stigma Scale (Chakrapani et al., 2017) focusses on social stigma and discrimination; the Transgender Identity Survey (Bockting et al., 2020) focusses on the internalised transphobia factors of pride, passing, alienation and shame; and the Transgender Positive Identity Measure (Riggle & Mohr, 2015) focusses on authenticity, intimacy and relationships, community belonging, commitment to social justice and compassion, and insights and self-awareness. One outcome study, Cohen-Kettenis and van Goozen (1997), and two validation studies, Schneider et al. (2016), and Steensma et al. (2013) were excluded, as the underlying measure, the Utrecht Gender Dysphoria Scale, is unpublished. Similarly, three studies and one validation study which were based on adapted measures, McGuire et al. (2019; Utrecht Gender Dysphoria Scale – Gender Spectrum), McGuire et al. (2020; Utrecht Gender Dysphoria Scale – Gender Spectrum; validation), Scandurra et al. (2017; Transgender Identity Survey), and Haghghat et al. (2019; Dimensional Measure of Gender Identity Questionnaire), were excluded as the underlying measures are unpublished. Finally, one study, Riley (2017; Gender Feeling Amplitude), was excluded as the assessment tool is not a measurement scale. A total of five measure development studies were retained.

Figure 4.1

PRISMA-P Study Selection Flow Chart



Note. This figure comprises a PRISMA-P flow chart outlining the measure screening and identification process.

An overview of the identified studies is presented in Table 4.1. Common elements include the use of rating scales, a cross-sectional research methodology, and the use of convenience sampling with participants all over the age of 17 years. The research was conducted in transgender populations from North America, Australia, and the United Kingdom. Bauerband and Galupo (2014) included the publication of two discrete studies. Jones et al. (2019b) and Hakeem et al. (2016) included the use of a control group. Lastly, Sjoberg et al. (2006) limited the study's inclusion criteria to transgender females. The included measures and the relevant psychometric properties of these measures are outlined in Table 4.2.

4.3.1 Overview of Included Measures

Gender Congruence and Life Satisfaction Scale (GCLS). The GCLS (Jones et al., 2019b) is a 38-item measure that aims to assess the mental wellbeing and life satisfaction that is associated with both gender incongruence and body dissatisfaction in transgender individuals over the age of 17 years. Six of the seven subscales of the GCLS were deemed to focus on attributes associated with gender dysphoria: psychological functioning; distress relating to the genitals; social gender role recognition; physical and emotional intimacy; distress relating to the chest; and distress associated with other secondary sex characteristics. The life satisfaction subscale was not assessed as it focussed on the construct of general life satisfaction. Respondents are asked to rate the frequency of their thoughts (e.g., "I have felt extremely distressed when looking at my genitals") over the past six months on a five-point rating scale (1 = *always*, 5 = *never*) with the mean score calculated for each subscale. Nine of the assessed items are reverse coded. Descriptive statistics have not been published for the GCLS.

Table 4.1*Description of Included Studies*

Study (Author, Year, Country)	Measure	Study population	Sample size	Age		Current gender identification					
				Mean (<i>SD</i>)	Range	Male	Female	Intersex	TM	TF	GD
Bauerband and Galupo (2014), USA	GRRS – Study 1	Self-identifying as transgender	222	27.2 (15.6)	8-83	58	120	—	—	—	44
	GRRS – Study 2	Self-identifying as transgender	312	35 (14.89)	18-72	102	86	—	—	—	124
Hakeem et al. (2016), Australia	GPSQ	Established gender dysphoria	48	38	18-71	6	8	2	9	19	4
		No gender dysphoria ¹	67	40	22-69	15	52	—	—	—	—
		General mental-ill-health ¹	40	37	20-62	25	15	—	—	—	—
Holt et al. (2019), USA	TC ³	Self-identifying as transgender	215	30	19-73	—	—	—	76	75	64
Jones et al. (2019), UK	GCLS	Self-identifying as transgender	451	36.94 (15.46)	17-77	—	—	—	147	171	133
		Cisgender ¹	338	36.52 (12.23)	19-70	84	254	—	—	—	—
Sjoberg et al. (2006), USA	TG AIM	Self-identifying as a transgender female	108	—	20-60+	—	—	—	—	108	—

Note. ¹ Control group. Countries: USA = United States of America; UK = United Kingdom.

Measures: GCLS = Gender Congruence and Life Satisfaction Scale; GPSQ = Gender Preoccupation and Stability Questionnaire; GRRS = Gender Identity Reflection and Rumination Scale; TC³ = Trans Collaborations Clinical Check-In; TG AIM = Transgender Adaptation and Integration Measure.

Gender identification: TM = Transgender male, female-to-male, transmasculine; TF = Transgender female, male-to-female, transfeminine; GD = Gender diverse, gender queer, other or not specified.

Table 4.2

Psychometric Results for Patient-Reported Outcome Measures

Measure	Studies	Factors	Sub scales	Items	Range of scores	Descriptive statistics <i>M (SD)</i>	Internal consistency (Cronbach's alpha)	Construct validity (Pearson's <i>r</i> unless otherwise noted)
GCLS	Jones et al. (2019)	7	Psychological functioning	10	1-5	—	.93	TCS=.46***4; HBDS=.58***4; QOL=.62***4; QOL-P=.66***4; QOL-R=.44***4; IGDS=-.27***5; Mann-Whitney Effect Size = .37***6
			Genitalia	6	1-5	—	.79	TCS=.43***4; HBDS=.42***4; QOL=.27***4; QOL-P=.41***4; QOL-R=.34***4; IGDS=-.10**5; Mann-Whitney Effect Size = .26***6
			Social gender role recognition	4	1-5	—	.77	TCS=.63***4; HBDS=.46***4; QOL=.42***4; QOL-P=.44***4; QOL-R=.23***4; IGDS=-.19***5; Mann-Whitney Effect Size = .58***6
			Physical and emotional intimacy	4	1-5	—	.85	TCS=.36***4; HBDS=.44***4; QOL=.46***4; QOL-P=.51***4; QOL-R=.73***4; IGDS=-.16***5; Mann-Whitney Effect Size = .16***6
			Chest	4	1-5	—	.92	TCS=.56***4; HBDS=.56***4; QOL=.41***4; QOL-P=.51***4; QOL-R=.27***4; IGDS=-.14***5; Mann-Whitney Effect Size = .61***6
			Other secondary sex characteristics	3	1-5	—	.81	TCS=.50***4; HBDS=.54***4; QOL=.35***4; QOL-P=.41***4; QOL-R=.34***4; IGDS=-.08 ⁵ ; Mann-Whitney Effect Size = .39***6
			Life satisfaction	7	1-5	—	.83	TCS=.51***4; HBDS=.56***4; QOL=.74***4; QOL-P=.74***4; QOL-R=.58***4; IGDS=-.28***5; Mann-Whitney Effect Size = .39***6
GPSQ	Hakeem et al. (2016)	1 (2) ¹	Total score	14	14-70	38 (3) ² 21 (1) ^{2,3}	.90	GIDYQ-AA=-.75***; Cohen's <i>d</i> = 2.2 (Gender dysphoria/No gender dysphoria)

						20 (3) ^{2,3}	Cohen's <i>d</i> = 2.06 (Gender dysphoria/General mental ill-health)	
GRRS	Bauerband and Galupo (2014) – Study 1	3	Reflections	5	5-20	—	.81	—
			Rumination	5	5-20	—	.79	—
			Preoccupation with others' perceptions	5	5-20	—	.76	—
	Bauerband and Galupo (2014) – Study 2	3	Reflections	5	5-20	13.75 (3.27)	.76	IS=.29**; PS=.15*; RRQ=.43**; RRS=.35**; TCS=-.17**
			Rumination	5	5-20	11.90 (4.09)	.83	IS=.12**; PS=.37**; RRQ=.37**; RRS=.41**; TCS=-.66**
			Preoccupation with others' perceptions	5	5-20	11.89 (3.81)	.83	IS=.18*; PS=.43**; RRQ=.44**; RRS=.50**; TCS=-.36**
TC ³	Holt et al. (2019)	1 (4) ¹	Total score	18	18-90	55.99 (9.17)	.74	PHQ=-.21**; GAD=-.15*; PANAS-N=-.16*; PANAS-P=.37**; SWLS=.45**; TCS=.57**; TCS-A=.53**; TCS-I=.32**; GPSQ=-.22**; GRRS-Re=.13; GRRS-Ru=-.32**; GRRS-P=-.17*; GMS-D=-.13; GMS-R=-.04; GMS-V=-.02; GMS-N=-.36**; GMS-I=-.37**; GMS-P=.34**; GMS-N=-.17*
TG AIM	Sjoberg et al. (2006)	3	Gender-related fears	5	0-15	7.0 (3.6)	.81	RSES=.29**; QLM=.50***
			Psychosocial impact of gender status	4	0-12	6.4 (2.9)	.72	RSES=.41***; QLM=.41***
			Coping and gender reorientation efforts	6	0-18	12.1 (4.3)	.73	RSES= ns; QLM=ns

Note. ¹ Authors recommend using a total score; ² Estimation based on bar chart figure, ³ Control group. ⁴ Spearman's Rho correlations for transgender participants, ⁵ one-tailed Spearman's Rho correlations for transgender participants, ⁶ Effect sizes between the control group and transgender sample who have not undergone gender affirming medical interventions.

* = $p < .05$, ** = $p < .01$, *** = $p < .001$, ns = non-significant.

Measures: GAD = Generalized Anxiety Disorder-7 (Spitzer et al., 2006); GCLS = Gender Congruence and Life Satisfaction Scale; GIDYQ-AA = Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults (Deogracias et al., 2007); GMS-D/R/V/N/I/P/N = Gender Minority Stress and Resiliency Scale-Discrimination/Rejection/Victimization/Non affirmation/Internalized Transphobia/Pride/Negative Expectations (Testa et al., 2015); GPSQ = Gender Preoccupation and Stability Questionnaire; GRRS-Re/Ru/P = Gender Identity Reflection and Rumination Scale-Reflection/Rumination/Preoccupation; HBDS = Hamburg Drawing Scale (Becker et al., 2016); IGDS = Internet Gaming Disorder Scale-Short Form (Pontes & Griffiths, 2015); IS = Identity Salience (Bauerband & Galupo, 2014); PANAS-N/P = Positive and Negative Affect Schedule-Negative/Positive (Watson et al., 1988); PHQ = Patient Health Questionnaire-9 (Kroenke et al., 2001); PS = Perceived Stigma (Meyer et al., 2008); QLM = Quality of Life Module 22 (Huba & Melchior, 1996); QOL-P/R = World Health Organisation Quality of Life BREF-Psychological/Relationships (Harper & Power, 1998); RRQ = Rumination-Reflection Questionnaire (Trapnell & Campbell, 1999); RRS = Rumination Response Scale (Treyner et al., 2003); RSES = Rosenberg Self-Esteem Scale (Rosenberg, 1965); SWLS = Satisfaction With Life Scale (Diener et al., 1985); TC³ = Trans Collaborations Clinical Check-In; TCS-A/I = Transgender Congruence Scale-Appearance/Identity (Kozee et al., 2012); TG AIM = Transgender Adaptation and Integration Measure.

Gender Preoccupation and Stability Questionnaire (GPSQ). The GPSQ (Hakeem et al., 2016) is a 14-item measure designed to assess an adult's experience of gender dysphoria. The measure has been designed to encompass the *DSM-5* definition of Gender Dysphoria and to be used by both transgender and non-binary populations. The underlying factors measured by the GPSQ include the individual's preoccupation with their gender and the stability of their sense of gender identity. Respondents are asked to rate their thoughts and feelings about gender (e.g., "In the past two weeks how often have you given consideration to gender in relation to aspects of your day-to-day life . . . ?") on four different five-point rating scales, with higher scores indicating a higher degree of gender dysphoria. As a result of concerns regarding cross-loading of two factors, on both the preoccupation and stability scales, the authors suggest using a total score instead of sub-scale scores. A cut-off score of 28, with a sensitivity of 88% and specificity of 94% identifies individuals with gender dysphoria. Additionally, a change in score of 11 points was found to be reliable indication of a change in gender dysphoria.

Gender Identity Reflection and Rumination Scale (GRRS). The GRRS (Bauerband & Galupo, 2014) is a 15-item questionnaire designed to measure the degree to which transgender adults engage in persistent thinking patterns about their gender identity. Subscales that relate to gender dysphoria include the rumination and preoccupation with others' perceptions scales. The reflection subscale was not assessed as it focuses on positive aspects of gender related thoughts. Respondents are asked how often they engage in similar thoughts (e.g., "Think that I will never be able to present my gender the way I want") using a four-point rating scale (1 = *almost never*, 4 = *almost always*). Item responses are summed with higher subscale scores indicative of more persistent thinking patterns.

Trans Collaborations Clinical Check-In (TC3). The TC³ (Holt et al., 2019) is an 18-item measure of an adult's adjustment and comfort with their gender. The underlying factors of the TC³ that assess constructs related to gender dysphoria include; acceptance/confidence, comfort with public perceptions, and social support/voice and body comfort (e.g., "Currently, how many people that you care about know about your gender identity?"). Responses are recorded using eight different five-point rating-scales. Subscale scores are added with higher scores indicative of better mental health and wellbeing. As a result of concerns regarding the face validity of the factor structure, the authors recommend using a total score in preference to subscale scores.

Transgender Adaptation and Integration Measure (TG AIM). The TG AIM (Sjoberg et al., 2006) is a 15-item measure of gender-related distress and the degree to which an adult has integrated and adapted to their gender identity. Two of the three factors are associated with gender dysphoria; gender-related fears and psychosocial impact of gender status. The coping and gender reorientation efforts factor was not assessed as it concerns intentions and actions to alter one's gender and not gender dysphoria. Responses to assessed items (e.g., "I fear abandonment if I told others") are recorded using a four-point Likert scale (0 = *strongly agree*, 3 = *strongly disagree*). Eight of the assessed items are reverse scored. Results are summed with higher scores suggestive of better quality of life and self-esteem.

4.3.2 Quality Analysis

The high-level results for the content validity and risk of bias (internal validity and other measurement properties) for the identified measures, excluding subscales that do not relate to gender dysphoria, are outlined in Table 4.3.

Table 4.3

COSMIN Quality Analysis – Gender Dysphoria Specific Subscales

Measure	Content validity		Internal validity			Other measurement properties				
	Measure development	Evidence	Structure validity	Evidence	Subscale	Internal consistency	Construct validity		Evidence	
							Convergent	Discriminate	Known-groups	
GCLS	Doubtful +/-	Low	Adequate ?	Moderate	Psychological functioning	Very good +	Very good +	Very good +	Very good +	High
					Genitalia	Very good +	Very good +	Very good +	Very good +	High
					Social gender role recognition	Very good +	Very good +	Very good +	Very good +	High
					Physical and emotional intimacy	Very good +	Very good +	Very good +	Very good +	High
					Chest	Very good +	Very good +	Very good +	Very good +	High
				Other secondary sex characteristics	Very good +	Very good +	Very good +	Very good +	High	
GPSQ	Doubtful +/-	Low	Doubtful ?	Low	Total score	Doubtful +	Very good +	Very good +	Very good +	High
GRRS	Doubtful +/-	Low	Very good +	High	Rumination	Very good +	Inadequate +	—	—	Low
					Preoccupation with others' perceptions	Very good +	Inadequate +	—	—	Low
TC ³	Inadequate +/-	Very low	Inadequate ?	Very low	Total score	Doubtful ?	Doubtful +	—	—	Moderate
TG AIM	Doubtful +/-	Low	Inadequate ?	Very low	Gender-related fears	Very good ?	Doubtful +	—	—	Moderate
					Psychosocial impact of gender status	Very good ?	Doubtful +	—	—	Moderate

Note. Quality criteria: - = insufficient; +/- = inconsistent; + = sufficient; ? = indeterminate.

Measures: GCLS = Gender Congruence and Life Satisfaction Scale; GPSQ = Gender Preoccupation and Stability Questionnaire; GRRS = Gender Identity Reflection and Rumination Scale;

TC³ = Trans Collaborations Clinical Check-In; TG AIM = Transgender Adaptation and Integration Measure.

Content Validity. With respect to the overall measure development quality, ratings ranged from inadequate to doubtful. These results are based on the lowest score obtained for either the measure design or pilot testing stages of measure development. The quality of the measure design was considered to be adequate for the GCLS, GPSQ, GRRS, and TG AIM. The measure design for the TC³ was rated as being inadequate as a clear description of the construct assessed by the measure was not provided. With regard to pilot testing all of the studies engaged with members of the transgender communality to obtain feedback during the measure development process. Despite this engagement, none of the measures achieved an adequate, or better, rating. Pilot testing for the GRRS was considered to be doubtful as it was not clear how the assessment of comprehensibility was conducted. Similarly, the pilot tests for the GCLS, GPSQ, and TG AIM were also considered to be of doubtful quality as they either did not assess, or provide sufficient documentation, on the assessment of comprehensiveness. The quality of the pilot testing for the TC³ was rated as being inadequate for not documenting the assessment of comprehensibility.

The assessment of content validity criteria found a high level of variability in the item level criteria for relevance, comprehensibility, and comprehensiveness. Consequently, the summarised content validity criteria ratings were all rated as being inconsistent. Specifically, the quality criteria for item relevance were sufficient for the GCLS, GPSQ and GRRS, and inconsistent for the TC³ and TG AIM. Quality criteria for item comprehensibility was sufficient for the GCLS, inconsistent for the GPSQ, GRRS, and TG AIM, and insufficient for the TC³ as it contains inconsistencies across the items and response format and did not provide a copy of the measure with instructions. Quality criteria for item comprehensiveness were inconsistent for the GCLS and GPSQ, indeterminate for the GRRS, and insufficient for the TC³, as the

construct was not adequately defined, and TG AIM, as the measure development was limited to transgender females.

Given that there were no validation studies of the measure development, the highest obtainable evidence rating was considered to be low. The evidence for the assessment of the TC³ was downgraded to very low to account for the inadequate measure development quality.

Risk of Bias. The risk of bias is divided into two measurement groups: internal validity (structure validity and internal consistency) and other measurement properties (construct validity and responsiveness). Cross-cultural validity, reliability, or measurement error were not reported in any of the studies.

The analysis found high-quality evidence to support the highest ratings for methodological quality and measurement properties of internal validity for the GRRS. Variability in internal validity results for the GCLS has meant that the analysis can only be interpreted with a moderate degree of confidence. Despite the internal consistency being rated as very good, the structural validity for the GCLS was downgraded to adequate, for not performing confirmatory analysis, and the measurement criteria assessed as being indeterminate due to the omission of comparative fit criteria.

A number of oversights have resulted in a low level of evidence to support the internal validity of the GPSQ. Concerns with the structural validity of the GPSQ include the use of an orthogonal rotation with correlated items and the omission of comparative fit criteria. Similarly, while the results for the internal consistency were considered sufficient, the quality was downgraded to doubtful for not providing adequate evidence to support the assumption that the scale was unidimensional.

Methodological concerns with structural validity and the omission of measurement property criteria suggest that caution should be exercised when interpreting the result for internal validity for the TC³ and TG AIM. The structural validity for the TG AIM was rated as being inadequate as a result of an insufficient ratio between measure items and participants. Furthermore, the TC³ was considered to have inadequate structural validity for not addressing issues with face validity. Additionally, while the TG AIM was rated as having very good internal consistency, the TC³ was downgraded to doubtful for not providing evidence to support the assumption of unidimensionality. Overall, the identified issues resulted in the measurement properties for internal consistency being rated as indeterminate for both the TC³ and TG AIM.

Of the other measurement properties (construct validity), the analysis found high-quality support for the GCLS and GPSQ. Additionally, the TC³ and TG AIM were both rated as having doubtful convergent validity for not publishing sufficient measurement properties of the comparator instruments. Convergent validity for the GRRS was rated as inadequate for not supplying any information on the psychometric properties of the comparator instruments. All of the quality criteria for the other measurement properties for the assessed measures were considered to be sufficient. Evidence for these assessments ranged from low to high depending on the methodological quality and number of instruments used in the analysis.

4.4 Discussion

The current study aimed to identify and systematically assess the quality of adolescent and adult PROMs of gender dysphoria. A total of five development studies and zero validation studies were identified. Unlike other studies that have evaluated measures of gender dysphoria, this is the first study to do so using

a structured, methodological evaluation of the measures according to the PRISMA guidelines (Moher et al., 2015; Shamseer et al., 2015) and the COSMIN *Methodology for Systematic Reviews of Patient-Reported Outcome Measures* (Mokkink, de Vet, et al., 2018; Prinsen et al., 2018; Terwee et al., 2018).

Based on the outcomes in this study and given the recency with which the majority of the assessed measures were developed, it is recommended that further work on pilot testing and survey testing of the identified measures is conducted as this field grows in order to improve the methodological quality of the measures (for a complete guide on best practices for the development of clinical instruments, see de Vet et al., 2011). From a COSMIN perspective all measures would benefit from additional validation studies in order to improve trustworthiness. Additionally, many measures would benefit from addressing the identified concerns with either the pilot testing or survey stages of the original research. These issues are particularly relevant for the following measures: 1) the Gender Congruence and Life Satisfaction Scale (GCLS; Jones et al., 2019b); 2) the Gender Identity Reflection and Rumination Scale (GRRS; Bauerband & Galupo, 2014); 3) the Gender Preoccupation and Stability Questionnaire (GPSQ; Hakeem et al., 2016); and 4) the Transgender Adaptation and Integration Measure (TG AIM; Sjoberg et al., 2006). Specifically, with regard to pilot testing, additional research is required to affirm the comprehensiveness of the GCLS, GPSQ, and TG AIM. In addition, validation studies with an increased sample size would help to improve the internal validity of the TG AIM. Finally, the GRRS would also benefit from the publication of data to justify the use of the comparator instruments that were selected in the original research.

Despite the current limitations of these measures, they also have a number of notable strengths. For instance, the measures are not limited by fixed notions of

transitioning and may be used throughout the adult lifespan and, with the exception of the TG AIM, are also suitable for non-binary populations. Thus, it is important to extend the literature on the psychometric properties of these measures to ensure the trustworthiness of the results for patients presenting with gender dysphoria. Similarly, the Trans Collaborations Clinical Check-In (TC3; Holt et al., 2019), would benefit from additional research at the measure development stage to further ratify the construct that is being assessed and address concerns with face validity before continuing with additional pilot and survey testing.

According to the COSMIN methodology, the most important aspect of any scale is its content validity and the relevance that it has to the construct that it claims to assess (Terwee et al., 2018). Specifically, in order for the content validity to be considered adequate, researchers must engage with the target population to assess the item relevance and the comprehensibility and comprehensiveness of the measure (Terwee et al., 2018). While the authors are to be applauded for their engagement with transgender populations during the pilot testing process there have been shortcomings in the documentation of these engagements that has impaired the content validity of these measures. This is further highlighted in the assessment of comprehensiveness, which was only conducted in one measure development study, the GRRS.

Comprehensiveness is important because it can identify areas of the construct that the researchers may have overlooked or not be aware of (Vogt et al., 2004).

With respect to the GCLS, GPSQ, and TG AIM, potential improvements in the structural validity and internal consistency could be achieved by performing confirmatory factor analysis and assessment of comparative fit indices. Furthermore, for measures that have multiple subscales (e.g., GCLS, GRRS, and TG AIM), an assessment of the unidimensionality of the overall measure will help to determine if

the total scale score is interpretable. If this has not been established total scores should not be used (Mokkink, de Vet, et al., 2018). An overall assessment of unidimensionality is also required for the GPSQ, which has recommended using a total score despite the presence of multiple subscales.

Concerns with the other measurement properties of the identified measures include the omission of the assessment of test-retest reliability and measurement error. Calculation of these statistics is valuable as it helps to confirm the degree to which the results are a representation of fluctuation in gender dysphoria and not measurement error (Mokkink, de Vet, et al., 2018). Additionally, in the assessment of construct validity, the GRRS and TG AIM failed to publish psychometric properties of comparator instruments that have been drawn from transgender populations. This is important to ensure that the comparator instruments adequately assess the specified construct in the study population.

Of the identified measures, none had been developed for use with both adolescent and adult populations. One advantage of having a single measure that can be used by both adolescents and adults is that it provides the ability to track progress across developmental stages. While the GCLS, GPSQ, GRRS and TG-AIM may appear to have appropriate face validity for use in an adolescent population, caution should be exhibited as these measures have not been developed using an adolescent sample and may not fully capture adolescent specific factors that are associated with the assessed construct.

4.4.1 Strengths and Limitations of the Present Study

A major strength of the current study is the use of a rigorous methodology. The PRISMA (Moher et al., 2015; Shamseer et al., 2015) and COSMIN (Mokkink, de Vet, et al., 2018; Prinsen et al., 2018; Terwee et al., 2018) tools are well-

established methods for conducting systematic reviews of PROMs. The study is however limited in two key areas. Firstly, the specific focus on gender dysphoria, as per COSMIN (Terwee et al., 2018) methodology, and not overall mental health or wellbeing, has resulted in a number of measures that may be beneficial for working with transgender populations not being assessed. Further modelling to help understand the relationship that constructs such as acceptance, positive identity, and life-satisfaction have with gender dysphoria is required before this aspect of research can be progressed further.

Secondly, the study does not address the circumstances within which the measures may be used. Whilst measures in the past may have been used to assist in the diagnosis of Gender Dysphoria, alternative approaches to treatment, such as the informed consent model that focus on the client's subjective experiences of gender (Schulz, 2018), may require that measures be developed for use in both diagnostic and therapeutic treatment settings. Variations of how this has been implemented can be seen in the current measures whereby only two measures, the GCLS and GPSQ, conducted known-groups' validation and only the GPSQ calculated both reliable change and cut scores. More research is therefore required to analyse how these measures are being used in a clinical setting to determine whether measures should focus on the objective assessment of gender dysphoria or instead to track the effectiveness of biopsychosocial interventions in those who experience gender dysphoria.

4.4.2 Conclusion and Future Research

While the underlying issues concerned with the assessment of gender dysphoria (i.e., the use of binary notions of gender and a focus on behaviour-based constructs of gender identity) appear to have been addressed, there remain concerns

regarding the methodological quality of the available measures: 1) issues with the quality of measure development require additional validation studies that include an assessment of relevance, comprehensiveness, comprehensibility, test re-test reliability and measurement error; 2) the use of these measures with adolescent samples cannot currently be justified, with further research required to develop the measure using an adolescent sample; and 3) more research is required to understand how other well-being factors interact with gender dysphoria. Research pursuing these avenues will aid in the identification of the most effective way to use gender dysphoria measures in an increasingly client-focussed environment that is driven by the informed consent model of treatment.

Chapter 5: Addressing the Limitations of the Literature

5.1 Limitations of the Literature

Study 1 (Chapter 4) provided a comprehensive, systematic, and transparent review of the existing PROMs used to assess gender dysphoria. The results suggest that five measures of gender dysphoria met the COSMIN (Consensus-based Standards for the Selection of Health Measurement Instruments; Prinsen et al., 2018) guidelines for further development. These included the: 1) Gender Congruence and Life Satisfaction Scale (GCLS; Jones et al., 2019b); 2) Gender Identity Reflection and Rumination Scale (GRRS; Bauerband & Galupo, 2014); 3) Gender Preoccupation and Stability Questionnaire (GPSQ; Hakeem et al., 2016); 4) Trans Collaborations Clinical Check-In (TC3; Holt et al., 2019); and 5) Transgender Adaptation and Integration Measures (TG AIM; Sjoberg et al., 2006).

There was a considerable degree of variation in the underlying constructs that these measures assessed. For instance, while the GPSQ focuses specifically on gender dysphoria – the distress associated with an incongruence between a person’s birth assigned sex and their gender identity (Fisk, 1974) – the remaining measures are, to varying degrees, correlated with related aspects of trans and gender diverse distress or wellbeing. Additional factors assessed by these measures include: secondary aspects of trans and gender diverse identity (GCLS); acceptance of one’s gender identity (TG AIM, TCS, and T-PIM), and positive aspects of one’s gender identity (GRRS and T-PIM). While these other factors are important for trans and gender diverse health, they fall outside of Fisk’s definition of gender dysphoria. Consequently, the GPSQ, with a focus on the distress associated with both preoccupation (i.e., time spent thinking or worrying about gender and gender identity) and stability (i.e., the degree to which a

person's sense of their own gender identity is stable and enduring) was deemed to be the most appropriate measure for further development.

Moreover, there is a lack of PROMs that are suitable for use with adolescents who experience gender dysphoria, representing a considerable gap in the literature. This is particularly relevant given the increased prevalence of adolescent presentations and the decrease in initial age of presentation that is seen in specialist clinics (de Vries & Cohen-Kettenis, 2012; Dèttore et al., 2015). However, the lowest age limit for the assessment of gender dysphoria, and whether this should include children, has been frequently debated (Beek et al., 2017).

Given the varying developmental needs of children, when compared to adolescents and adults (Telfer et al., 2017), and the potential risk of harm (Winter, 2017a), the assessment of gender dysphoria in children is considered unnecessary at this stage (Winter, 2017b). As a response, most contemporary measures of gender identity typically adopt a lower age limit of 13 years (i.e., the Gender Identity / Gender Dysphoria Questionnaire for Adults and Adolescents; GIDYQ-AA; Deogracias et al., 2007). The advantage of assessing gender dysphoria in adolescents is that it allows the use of a single assessment tool to track the individual through different developmental stages of both adolescent and adult life.

The conceptualisation of gender dysphoria in adolescents does not seek to feature the hypothesised diagnosis of rapid onset gender dysphoria (Littman, 2018). Rapid onset gender dysphoria posits that the increase in adolescent presentations of gender dysphoria is a result of social influences (contagion), maladaptive coping mechanisms and parental conflict (Littman, 2018). Rapid onset gender dysphoria is not considered to be a medical term (WPATH, 2018, September 18) or diagnostic sub-category of the DSM-5 or ICD-11 classifications. Ethical and methodological

concerns regarding this research include sampling bias and the use of indirect parental reports as opposed to adolescent trans and gender diverse voices (Ashley, 2020).

Further research is required with gender variant young people to clinically validate these theories (Costa, 2019). Furthermore, many of the concerns raised by Littman regarding the safety of adolescents are already covered in the *Standards of Care* (Coleman et al., 2012) recommendations for assessment and formulation of adolescents, including an “extensive exploration of psychological, family, and social issues” (p. 176) to identify ameliorating psychosocial difficulties that may be present.

5.2 Adolescent Experiences of Gender Dysphoria

Despite the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DMS-5; American Psychiatric Association [APA], 2013a) and *International Classification of Diseases* (11th Revision; ICD-11; World Health Organisation [WHO], 2019) both merging the adolescent and adult age groups into a single classification, the experiences of these populations vary substantially.

5.2.1 Legal Recognition

Until adolescents reach the age of majority, they will frequently need to obtain parent or guardian consent to proceed with either a legal or medical transition (Drescher & Byne, 2012). In most jurisdictions, this includes having to get a parent’s consent to change their name on their birth certificate and to access puberty blockers or hormone therapy. The loss of agency (Riley, 2018) for the individual and the potential for parents to not provide their approval can be highly distressing for the adolescent (MacNish, 2018). Furthermore, depending on the jurisdiction, legal barriers will likely prevent most adolescents from accessing irreversible surgical procedures until they reach the age of majority (de Vries & Cohen-Kettenis, 2012; Edwards-Leeper & Spack, 2012). In jurisdictions where surgery is a pre-requisite for

changing the sex marker on a birth certificate, individuals may be forced to live with documentation that does not match their gender identity for many years. This can be particularly distressing when applying for a driver's license, changing schools, or applying for a job or tertiary education (Telfer et al., 2017).

5.2.2 Puberty

The experience of puberty can be highly distressing for an adolescent who is trans or gender diverse (Holt et al., 2016; Steensma et al., 2011). Puberty is associated with the activation of the hypothalamic-pituitary-gonadal axis and subsequent hormonal and physical changes to the body (Busa et al., 2018). In addition to changes in secondary sex characteristics, menarche and spermarche can be particularly distressing (Hembree et al., 2017; Ristori et al., 2018). The onset of puberty also corresponds with significant changes to the social environment and the increased distress associated with heightened expectations that adolescents conform with gender-based roles and behaviours (Steensma et al., 2011).

The irreversible impact that puberty will have on trans and gender diverse adolescents will depend largely on the availability and timing of medical interventions [see Chapter 2]. Medical interventions for the majority of adolescents, up to the age of approximately 16 years (depending on individual maturity), are typically limited to interventions that are fully reversible (Coleman et al., 2012; Telfer et al., 2017). This typically includes the use of puberty blockers to delay the onset of puberty and associated development of secondary sex characteristics (Coleman et al., 2012; Telfer et al., 2017). By delaying puberty, the adolescent is able to mature and develop a strong, positive, sense of self before making any decisions to physically transition (Minter, 2012). For individuals aged 16 – 18 years, depending on jurisdiction,

partially reversible gender affirming hormones may be administered in accordance with adult guidelines (Coleman et al., 2012; Telfer et al., 2017).

While puberty suppression, followed by gender affirming hormone therapy, can resolve many of the psychosocial issues relating to puberty and the associated development of secondary sex characteristics (Costa et al., 2015), it does not obviate the distress entirely. Additionally, adolescents taking puberty blockers will not experience the growth spurt that their peers undergo. Individual differences are further exacerbated by having a pre-surgery body and having to navigate the attendant social and interpersonal complications that exist in adolescent settings (Steensma et al., 2011). This can highlight their difference and gender non-conformance, putting them at risk of discrimination and further distress (Coleman et al., 2012).

Additional sources of acute distress include the risk of compromised fertility (Hembree et al., 2017). While infertility is a documented side effect of gender affirming hormones in adult populations, young people who have also taken puberty blockers may not have experienced the gonadal development that is required to harvest ova or sperm for later use (Butler et al., 2018; Hembree et al., 2017). This can represent a substantial trigger for distress that is not necessarily present in adult populations.

5.3 Developing an Adolescent and Adult Measure of Gender Dysphoria

Based on the findings of the systematic review (Study 1) the Gender Preoccupation and Stability Questionnaire (GPSQ; Figure 5.1; Hakeem et al., 2016) was identified as a suitable measure for further development. It is important that any new measure of gender dysphoria is also suitable for use with adolescent populations. The GPSQ is a brief 14-item measure that focusses on the distress and impaired functioning that is associated with a preoccupation with gender and gender stability in

individuals who identify with a gender identity that is incongruent with their sex assigned at birth. Importantly, the GPSQ is gender agnostic making it suitable for use with both binary and non-binary populations. From a clinical perspective, the GPSQ is simple to administer and has the potential to be used as both an assessment tool and to monitor the ongoing effectiveness of therapeutic interventions.

Given the additional unique stressors (legal recognition and puberty) experienced by trans and gender diverse adolescents, we identified that content of the GPSQ would need to be modified so that it can be used effectively in both adolescent and adult populations. We anticipated that this would significantly advance the field given the increase in adolescent presentations of gender dysphoria and the lack of validated instruments to assess gender dysphoria in this age group. Additional benefits of a combined adolescent and adult measure of gender dysphoria include the ability to monitor the transition between adolescence and adulthood and the subsequent impact on experiences of gender dysphoria.

The aim of Study 2 (Chapter 6) was therefore to develop the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2). This included: 1) developing a modified version of the original GPSQ, expanding the underlying construct to be inclusive of adolescent experiences of gender dysphoria to ensure comprehensiveness (i.e., no key aspects of the construct should be missing) as well as identifying and modifying items that refer exclusively to adult experiences to ensure relevance (i.e., all items in a PROM should be relevant for the construct of interest); 2) modify the language and format to ensure the comprehensibility (i.e., all the items should be understood by patients as intended) of the GPSQ so that it can be completed by individuals who may be as young as 13 years of age; and 3) address issues

regarding the comprehensiveness, structural validity and unidimensionality of the GPSQ that were identified in the systematic review (Chapter 4).

Study 2 incorporates two data sets (see ethical approval in Appendix B.1.1 and B.1.2 Study 2 – Pilot Study and B.2.14 Study 2 – Validation Study). The first, utilised in the pilot study (stage 2), is a purposive sample of Australian trans and gender diverse adolescents and adults who participated in face-to-face interviews to assess the relevance, comprehensibility, and comprehensiveness of the GPSQ-2. The second, consists of a community sample of trans and gender diverse adolescents and adults from Australia and New Zealand, who completed an online survey to assess the psychometric properties of the GPSQ-2 in the validation study (stage 3).

Figure 5.1

The Gender Preoccupations and Stability Questionnaire (GPSQ)

- i) Today's date: _____ ii) Your name: _____
- iii) Your age (in years): _____
- iv) Biological sex assigned to you at birth (please circle one): male/female/intersex
- v) Current gender (please circle one): male/female/intersex/transgender male/transgender female/transgender (unspecified)/gender-queer/gender-neutral/other (specify): _____
- vi) Do you feel confident that you will be able to lead a satisfied life with whatever gender identity you feel that you currently have? (please circle one):
Extremely confident/confident/somewhat confident/not very confident/not at all confident.

The GPSQ consists of 14 questions relating to your thoughts and feelings about gender, including your own sense of gender identity. *Gender* refers to whatever gender you identify as yourself (e.g., masculine, feminine, transgender, gender-queer or other gender variants), which may or may not be the same as your biological sex. When answering these questions, please circle the answer that best reflects your thoughts and feelings over the past 2 weeks.

- | | |
|---|--|
| <p>1. How important do you feel gender is to you?
Unimportant
slightly important
moderately important
very important
extremely important</p> <p>2. In the past 2 weeks how often have you thought about gender?
never
seldom
sometimes
often
very often</p> <p>3. In the past 2 weeks how often have you given consideration to gender in relation to aspects of your day-to-day life, such as work, recreational activities, or products purchased?
never
seldom
sometimes
often
very often</p> <p>4. In the past 2 weeks how troubled have you been about issues relating to gender?
never
seldom
sometimes
often
very often</p> <p>5. In the past 2 weeks have you stopped yourself from participating in any activity, behaving in a certain way, or purchasing anything because of your gender?
never
seldom
sometimes
often
very often</p> <p>6. In the past 2 weeks has it upset you when you have had to answer questions about what sex or gender you are (e.g., when filling in forms)?
never
seldom
sometimes
often
very often</p> <p>7. In the past 2 weeks how comfortable have you felt with your sense of gender? (This does not have to correspond with your biological sex.)
extremely comfortable
very comfortable
somewhat comfortable
not very comfortable
not comfortable at all</p> | <p>8. In the past 2 weeks have you felt uncertain or confused about your sense of gender?
never
seldom
sometimes
often
very often</p> <p>9. In the past 2 weeks have you felt pressured to behave or act in certain ways because of gender?
not at all
hardly ever
sometimes
often
all the time</p> <p>10. In the past 2 weeks has your sense of what gender you identify with changed at all?
not at all
hardly ever
sometimes
often
all the time</p> <p>11. In the past 2 weeks have you avoided social situations because of uncertainties or anxieties you have about your sense of your own identity?
not at all
hardly ever
sometimes
often
all the time</p> <p>12. In the past 2 weeks have you had thoughts that you should change your sex (even if you have already changed your sex in the past)?
not at all
hardly ever
sometimes
often
all the time</p> <p>13. In the past 2 weeks has your sense of what gender you are changed from one day to the next?
not at all
hardly ever
sometimes
often
all the time</p> <p>14. In the past 2 weeks have you had any thoughts that you needed to seek professional help in order to change the physical sex of your body?
not at all
hardly ever
sometimes
often
all the time</p> |
|---|--|

Office use only.

Page 1 _____

Page 2 _____ +

Total _____

Reproductions of this scale must include the full scale title and reference and no alterations.

Office use only. All items scored 1,2,3,4,5: GPSQ page sub-total ; Page 1 _____ + Page 2 _____ = _____ (total)

Hakeem et al., 2016

Chapter 6: Study 2

Submitted to *Journal of Homosexuality* as Bowman, S. J., Hakeem, A., Demant, D., McAloon, J., & Wootton, B. M. (2021). Assessing gender dysphoria: Development and validation of the Gender Preoccupation and Stability Questionnaire -2nd Edition (GPSQ-2).

Abstract

The Gender Preoccupation and Stability Questionnaire (GPSQ) is a 14-item measure used to assess the effectiveness of medical, surgical, social, and psychological interventions in binary and non-binary adults who experience gender dysphoria. One major limitation of the GPSQ is that it was not developed for use with adolescents. This study aims to validate a revised version of the GPSQ, the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2) with the aim of adapting the measure to be applicable to individuals aged 13 and above. This research was conducted in three stages. Development of the GPSQ-2 to address previously identified issues with validity and comprehensibility of the GPSQ and to increase the applicability of the measure to adolescents. Pilot testing, using a purposive sample and semi-structured interviews, to assess the relevance, comprehensibility, and comprehensiveness of the GPSQ-2. Validation using a community sample to assess the psychometric properties of the GPSQ-2. The pilot study was conducted with seven participants ($M_{\text{age}} = 28.43$, $SD = 15.50$; age range: 13 - 59). The GPSQ-2 was found to be easy to understand, relevant to individuals who experienced gender dysphoria, and that it did not have any identifiable omissions. The validation study was conducted with 141 participants ($M_{\text{age}} = 36.44$; $SD = 14.76$; age range 14 – 73). The GPSQ-2 was found to be a reliable and valid 14-item scale with two factors: preoccupation and

stability. The GPSQ-2 is a structurally sound measure of gender dysphoria that can be used in populations aged 13 and above.

Keywords: transgender; gender diverse; measurement; PROM; COSMIN.

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Declarations

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6.1 Assessing Gender Dysphoria: Development and Validation of the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2)

Over the past decade, there have been significant developments in how the mental health profession assess and conceptualize gender dysphoria. This includes a revised definition of Gender Dysphoria in the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association [APA], American Psychiatric Association, 2013a) and a substantial shift in presentations, that includes an increase in adolescent (de Vries & Cohen-Kettenis, 2012; Dèttore et al., 2015; Edwards-Leeper & Spack, 2012; Telfer et al., 2017) and *gender queer* or *non-binary* individuals (Butler et al., 2018; Richards et al., 2016). These changes have resulted in the development of a number of patient-reported outcome measures (PROMs) that focus on psychological distress and functioning in individuals with gender dysphoria. A systematic review of existing PROMs (Bowman, Casey, et al., 2021) found that all of the existing PROMs were in need of either additional development or validation. The current paper focuses on the redevelopment of the Gender Preoccupation and Stability Questionnaire (GPSQ; Hakeem et al., 2016). While other identified measures were equally suitable for further development, the GPSQ was advantageous as it focusses specifically on distress and impaired functioning consistent with the DSM-5 definition of Gender Dysphoria. Identified improvements for the redevelopment of the GPSQ include addressing issues with structural validity and comprehensibility and the need to extend the scope of the GPSQ to include adolescent populations (Bowman, Casey, et al., 2021).

The GPSQ is a 14-item measure that was designed primarily to assess the effectiveness of medical, surgical, social, and psychological interventions in both binary and non-binary adult populations who experience gender dysphoria (Hakeem

et al., 2016). The questionnaire items have been designed to help identify an incongruence between a person's assigned sex at birth and their current gender, their desire to transition to a different gender, and specific sources of distress (Hakeem et al., 2016). To maximize the clinical utility of the measure, experiences of gender dysphoria are tracked over a two-week period to assess short-term fluctuations in dysphoric thoughts (Hakeem et al., 2016).

The GPSQ focusses on the constructs of preoccupation (time spent thinking, worrying, or being upset) with gender and the degree to which an individual's gender identity is stable and unwavering (Hakeem et al., 2016). Preoccupation with issues relating to gender can result in both distress and reduced functioning for people who experience gender dysphoria (APA, 2013a; Hakeem, 2012). Specifically, preoccupation with aspects of the body that may not be congruent with their gender can be particularly distressing, especially so for those who hold a fixed binary view of gender (Hakeem, 2012). This is highly relevant for adolescents who are at a critical stage of human development and may be exploring gender for the first time while simultaneously dealing with the rapid and irreversible changes in bodily appearance and function associated with puberty (Costa et al., 2015). Moreover, the multiple social, legal, financial, family, and medical barriers that may prevent a person from actualizing their gender (Riley, 2018) may also further compound their distress. From a behavioral perspective fixation on gender, at the cost of other interests or pursuits, may also contribute to reduced functioning and social development (Strang et al., 2018).

The construct of stability helps to assess the degree to which an individual has a concrete understanding of gender and their own gender identity. Issues regarding stability may be exhibited by frequent changes in gender presentation, or identity, as

individuals explore their gender identity (Hakeem, 2012). This is notable in adolescent populations that may benefit from exploring gender identity prior to initiating social, medical, or surgical interventions (Telfer et al., 2017). As such, the GPSQ may be appropriate in therapeutic environments where the focus is to reduce the overriding focus on gender, or the notion of gender being binary, and to help clients to adopt a more flexible view of gender that represents their own authentic sense of self.

Bowman, Casey, et al. (2021) conducted an assessment of the usability and quality of the GPSQ and other measures of gender dysphoria using the *Consensus-based Standards for the Selection of Health Measurement Instruments* (COSMIN; Mokkink, de Vet, et al., 2018; Prinsen et al., 2018; Terwee et al., 2018). In this review, the authors found that one of the major limitations of the GPSQ was that it was designed to only assess gender dysphoria in populations over the age of 18 years, which is problematic given the well-documented increase in adolescents presenting for treatment (de Vries & Cohen-Kettenis, 2012; Dèttore et al., 2015; Edwards-Leeper & Spack, 2012; Telfer et al., 2017). While this limitation does not impact the quality of the measurement, it does prevent it from being used reliably in populations under the age of 18 and to do so would likely result in numerous concerns regarding the content validity of the measure (de Vet et al., 2011).

To utilize a PROM that has been designed for adults, in an adolescent sample, requires that the measure be revised to account for both developmental differences in maturity, as well as the different contexts in which adolescents may experience gender dysphoria (Clark & Watson, 2019). In this instance, when using the GPSQ outside of the population that it was designed for, there is a risk that the measure will not be sufficiently comprehensive and may fail to capture the nuances (i.e., puberty, status as

a minor, and the family and school environment) that contribute to adolescent gender dysphoria. Conversely, there is a parallel risk that using an adult measure may introduce items that are not universally relevant for adolescents (i.e., work and surgery). The use of an adult measure in adolescent populations may also result in issues regarding the comprehensibility of the measure and the risk that it may not be interpreted as intended by those at the younger end of the age spectrum.

Furthermore, from a COSMIN quality perspective, Bowman, Casey, et al. (2021) identified issues with the content validity and internal validity of the GPSQ. Issues with content validity identified by Bowman, Casey, et al. (2021) included a failure to adequately document the assessment of comprehensiveness during pilot testing, which may have resulted in the omission of important conceptual elements of gender dysphoria during the measure development. Concerns relating to the internal validity of the GPSQ that were identified by Bowman, Casey, et al. (2021) are associated with the structural validity of the measure, the presence of two complex items that loaded on both the stability and preoccupation factors, and the resultant decision by the authors to use a total score without appropriate statistical justification of the unidimensionality of the measure. Additional areas for concern regarding the comprehensibility of the GPSQ include the use of an inconsistent response format and items that may be considered ambiguous and potentially confusing. This is important as the impact of language is likely to be compounded when using the measure with younger adolescent populations.

6.1.1 Current research

The purpose of the current research was to develop a revised version of the GPSQ, the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2), that can be used with both adolescents and adults while also addressing

the aforementioned concerns regarding validity and comprehensibility of the original measure. The research was conducted in three stages. Firstly, the original GPSQ was revised to resolve the above-mentioned issues with the original scale. Secondly, the revised measure (i.e., the GPSQ-2) was pilot tested to assess the relevance, comprehensibility, and comprehensiveness of the measure. Finally, a validation study was conducted to assess the psychometric properties of the GPSQ-2 in accordance with the principles of measure development and revision (de Vet et al., 2011). It was hypothesized that the GPSQ-2 would demonstrate adequate: 1) structural validity and internal consistency with two distinct constructs representing preoccupation and stability; 2) construct validity with large correlations between the GPSQ-2 and existing measures of gender dysphoria; 3) construct validity with large correlations between the GPSQ-2 and measures of anxiety, depression and distress; 4) incremental validity with the GPSQ-2 accounting for a higher proportion of distress than the GPSQ; and 5) test-retest reliability over a two-week period.

6.2 Stage 1 – Measure Revision

6.3 Materials and Method

The purpose of the measure revision was to resolve the identified concerns with the original GPSQ including: 1) modifying items to ensure that they were contextually relevant for adolescents experiencing gender dysphoria; 2) ensuring that the language was appropriate for individuals as young as 13 years old; and 3) addressing issues with the factor structure, response format and ambiguous language. As a result, the GPSQ-2 was developed by the first author (SJB). The revised measure was informed by the following: 1) a thorough search of the literature into existing measures of gender dysphoria and adolescent gender dysphoria; 2) an analysis of the previously published GPSQ factor structure; 3) informal consultation with colleagues

who utilize the existing GPSQ; and 4) feedback from the other authors (including the original developer of the GPSQ), whom all have expertise in measure development and/or child and adolescent mental health.

Four of the 14 items from the original GPSQ were removed. Item 1, “how important do you feel gender is to you” was removed as it may be conflated with aspects of gender identity other than gender dysphoria, such as feminism and patriarchy. Item 7, “how comfortable have you felt with your sense of gender” was removed as it may be conflated with sexism. Item 11, “have you avoided social situations because of uncertainties or anxieties you have about your sense of your own identity” was removed because it was a complex variable with loadings on both factors. Item 13, “has your sense of what gender you are changed from one day to the next” was removed due to considerable overlap with item 10 “has your sense of what gender you identify with changed at all”. Seven items were reworded to remove ambiguity, for instance, “have you had any thoughts that you needed to seek professional help in order to change the physical sex of your body?” was reworded to read “how often have you felt that you wanted to change the physical appearance of your body to match your gender identity”.

Finally, five additional items were added to help resolve issues with structural validity and incorporate experiences of gender dysphoria that may have increased relevance for adolescent populations. “How often have you felt annoyed because you have been prevented from living in your preferred gender identity?” was added to account for the recurring frustration of being prevented from living in accordance with one’s experienced gender. “How often has your understanding of your gender, or how you describe gender to others, changed?” was added to further explore an individual’s development of a concrete understanding of gender. “How often have you been

worried about telling others about your gender identity or past gender history?” was added to account for persistent fears about coming out or disclosing one’s past to others. “How often have you changed the way you behave around others in order to fit in with what they expect from your gender role?” was added to determine the degree to which an individual’s gender presentation was influenced by others. “How often have you felt sad or hurt as a result of any changes to your gender role (e.g., unintended negative impact on family, relationships, friends, fertility, finances, or career)?” was added to account for the internal grief or loss that may accompany an individual’s commitment to live in accordance with their experienced gender. The resulting draft GPSQ-2 contained 15 items. The demographics section of the GPSQ were also updated to use more affirming language and a new response format, consisting of a 5-point rating scale (0 = *never*; 4 = *all the time*), was adopted. A final review of the proposed measure was conducted by the research team to confirm the face validity of the measure and to ensure that the language was appropriate for use with participants as young as 13 years of age.

6.4 Stage 2 – Pilot Study

6.5 Materials and Method

6.5.1 Design

Interviews were conducted with a purposive sample to assess the relevance, comprehensibility, and comprehensiveness of the draft GPSQ-2 with both adolescents (aged 13 – 17 years) and adults (aged 18 and over) who consider themselves to be transgender, gender diverse or non-binary. Ethical approval for the pilot study was obtained from the Human Research Ethics Committee at the University of Technology Sydney (ETH19-3914).

6.5.2 Participants

Seven participants aged 13 to 59 years of age ($M = 28.43$, $SD = 15.50$) were selected for the pilot study. One of the seven participants (14%) identified as either male/trans-male/trans-masculine or brotherboy,¹⁰ three of the seven participants (43%) identified as either female/trans-female/trans-feminine or sistergirl,¹ and three of the seven participants (43%) identified as either agender/gender-fluid/gender-queer/gender-neutral or non-binary. Interviews were conducted between January 7 and July 16, 2020.

To be included in the study, participants were required to: 1) identify as transgender, gender diverse, or non-binary; and 2) have lived in Australia for the previous 12 months. To account for potential risks associated with the interview process participants experiencing severe depression, using a cut-off score of 20 on the Patient Health Questionnaire – 9-item (PHQ-9; Kroenke et al., 2001), or suicidal ideation, as indicated by an elevated response (*nearly every day*) to question nine (“thoughts that you would be better off dead or hurting yourself in some way”) of the PHQ-9, were excluded from the study.

6.5.3 Measures

Patient Health Questionnaire – 9 (PHQ-9). The 9-item PHQ-9 (Johnson et al., 2002; Kroenke et al., 2001) is a widely used measure of depressive symptoms and was used to screen participants for depression and suicidal ideation. Responses to items are recorded using a four-point rating scale (0 = *not at all*, 3 = *nearly every day*) and responses are summed, with higher scores indicative of increased depression. The PHQ-9 has been found to have good internal consistency ($\alpha = .86$ to $.89$) with both

¹⁰ Brotherboy and sistergirl are terms frequently used by Australian Aboriginal and Torres Strait Islander people who may identify as transgender or gender diverse.

adolescent and adult populations (Burdzovic & Brunborg, 2017; Kroenke et al., 2001). The PHQ-9 has also been found to have good ($\alpha = .81$) internal consistency when used in adult transgender populations (Holt et al., 2019).

Gender Preoccupation and Stability Questionnaire - 2 (GPSQ-2). The draft GPSQ-2 (see Appendix A for the final version of the measure) is a 15-item update to the GPSQ that has been designed to assess gender dysphoria in adolescent and adult populations. Respondents are asked to rate the frequency of dysphoric thoughts on a 5-point rating scale (0 = *never*, 4 = *all the time*). Scores are summed with higher scores indicative of more intense experiences of gender dysphoria.

6.5.4 Procedure

Adult participants were recruited via transgender and gender diverse social media sites. Adolescent participants were recruited through an adolescent transgender support group. Adolescent participants were provided with a hardcopy consent form to obtain parental consent. Respondents were selected, according to age and gender identity criterion, to maximize the diversity of responses (Clark & Watson, 2019). All participants were offered a \$25 gift voucher in recognition for their time.

Individual structured interviews (face-to-face or secure internet video) were conducted with each participant. Participants were asked to complete the GPSQ-2 and were encouraged to identify any instructions or questions that they thought were ambiguous or did not understand. After completing the GPSQ-2, participants were asked: 1) if they thought any of the instructions or items could be improved and to verbally walk through their understanding of each of the individual items in the questionnaire (comprehensibility); 2) if they thought the items were appropriate for an assessment of gender dysphoria (relevance); and 3) if any additional items could be added to improve the measure (comprehensiveness). Finally, participants were asked

to rate how easy they thought the questionnaire was to understand using a five-point rating scale (1 = *not very easy*, 5 = *very easy*), and how relevant they thought the items were for somebody who is experiencing gender dysphoria using a five-point rating scale (1 = *not very relevant*, 5 = *very relevant*).

Data Analysis. The interviews were conducted by the first author (SJB), who is trained in qualitative analysis, and audio recorded for later verbatim transcription and thematic analysis. A data-driven, inductive approach (Braun & Clarke, 2006) was used to code the data and explore the participant's experience of completing the GPSQ-2. The presence of recurring themes across both adult and adolescent groups, and absence of new themes indicated that by seven interviews data saturation had been reached. The COSMIN guidelines suggest that seven participants, under the proviso that data saturation has been achieved, meet the requirements for conducting a pilot study (Terwee et al., 2018). Descriptive statistics were also used to assess item relevance and comprehensibility of the GPSQ-2.

6.6 Results

6.6.1 Quantitative Findings

In response to the question “how relevant do you think the questions are to somebody who is experiencing gender dysphoria”, with the exception of one “3 to 4” rating, all of the remaining responses were 4 or above ($M = 4.57$; $SD = .61$) indicating that the participants felt that the items were relevant to their understanding of gender dysphoria. In response to the question “how easy do you think the questionnaire was to understand”, all participants provided a rating of 4 or above ($M = 4.43$; $SD = .53$), indicating that the participants did not identify any serious concerns with the format or language contained in the questionnaire.

6.6.2 Qualitative Findings

Recurring themes identified by both adolescent and adult participants included the use of inclusive gender identities and ongoing fluctuations in the experience of gender dysphoria: “it was good that it said within the past two weeks because it [gender dysphoria] can change and fluctuate” (30, non-binary). With regard to relevance participants reported that they felt the items were either relevant to their own experiences of gender dysphoria or that they were relevant to friends who had experienced gender dysphoria, “[the GPSQ-2 is] completely relevant, it’s pretty bang on from all the perspectives I have seen so far” (20, non-binary). While the participants did not identify any additional areas of gender dysphoria that they felt were missing, they did express confusion regarding the term “gender role”. Based on a review of these findings the authors reworded two items to remove ambiguity. Item 8, “expect from your gender role” was reworded to “expect from your gender” and item 12, “changes to your gender role” was reworded to “changes to your gender”. All other GPSQ-2 items remained unchanged after the pilot testing.

6.7 Stage 3 – Validation Study

6.8 Materials and Method

6.8.1 Design

A community sample was used to establish the initial validity and reliability of the GPSQ-2 with both adolescents (aged 14 – 17 years) and adults (aged 18 and over). Ethical approval for the validation study was obtained from the Human Research Ethics Committee at the University of Technology Sydney (ETH20-4989). To be included in the study, participants were required to: 1) identify as transgender, gender diverse, or non-binary; 2) have lived in either Australia or New Zealand for the

previous 12 months; and 3) complete the GPSQ-2 and demographics questionnaires at a minimum.

6.8.2 Participants

One hundred and forty-one participants completed the study ($M_{\text{age}} = 36.44$; $SD = 14.76$). Participant demographics are outlined in Table 6.1. The youngest participants in the survey were 14 years of age, with 10/141 (7%) participants being under the age of 18. The majority of participants (110/141; 78%) were born in either Australia or New Zealand. There was a broad representation of current gender identities with 91/141 (65%) of participants identifying with binary notions of gender (i.e., male/female/trans male/trans female) and 49/141 (35%) identifying as gender diverse (i.e., transgender, non-binary, agender or other) and 1/141 (less than 1%) indicating that they were born with an intersex variation. Responses were collected between July 20, and August 27, 2020.

Table 6.1*Participant Demographic Details for the Survey and Follow-up Survey*

	Survey (N = 141)	Follow-up Survey (N = 69)
Age range	14 - 73 (<i>M</i> = 36.44, <i>SD</i> = 14.76)	14 - 73 (<i>M</i> = 38.26, <i>SD</i> = 15.91)
Place of residence		
<i>Australia</i>	87 (62%)	33 (48%)
<i>New Zealand</i>	54 (38%)	36 (52%)
Region of Birth		
<i>Australia</i>	70 (50%)	23 (33%)
<i>New Zealand</i>	40 (28%)	25 (36%)
<i>United Kingdom & Ireland</i>	15 (11%)	8 (12%)
<i>Asia</i>	4 (3%)	2 (3%)
<i>Europe</i>	3 (2%)	3 (4%)
<i>North America</i>	2 (1%)	1 (1%)
<i>Pacific Islands</i>	1 (1%)	1 (1%)
<i>Middle East & Africa</i>	3 (2%)	3 (4%)
<i>Other</i>	3 (2%)	3 (4%)
Assigned sex at birth		
<i>Female</i>	60 (43%)	32 (46%)
<i>Male</i>	79 (56%)	37 (54%)
<i>Other</i>	2 (1%)	0 (0%)
Current gender identity		
<i>Male/boy/man</i>	13 (9%)	4 (6%)
<i>Female/girl/woman</i>	17 (12%)	6 (9%)
<i>Transgender male/ boy/man</i>	18 (13%)	10 (14%)
<i>Transgender female/girl/woman</i>	41 (29%)	19 (28%)
<i>Transgender (unspecified)</i>	4 (3%)	3 (4%)
<i>Intersex</i>	1 (1%)	0 (0%)
<i>Non-binary/gender-queer/gender-fluid</i>	37 (26%)	23 (33%)
<i>Agender/gender-neutral</i>	5 (4%)	1 (1%)
<i>Other</i>	5 (4%)	3 (4%)
Lead a satisfied life with current gender identity	<i>M</i> = 3.55 (<i>SD</i> = 1.03)	<i>M</i> = 3.57 (<i>SD</i> = .99)

6.8.3 Measures

Gender Preoccupation and Stability Questionnaire - 2 (GPSQ-2). A full description of the draft GPSQ-2 is contained above in the pilot study section. The internal consistency of the GPSQ-2 in the current sample is described below.

Gender Congruence and Life Satisfaction Scale (GCLS). The GCLS (Jones et al., 2019b) is a 38-item measure that assesses mental wellbeing and life satisfaction that is associated with gender incongruence and body dissatisfaction in transgender individuals. The current research utilized the 10-item psychological functioning subscale of the GCLS. Responses to items (e.g., “due to the distress about my gender . . . I have felt that life is meaningless”) are recorded on a five-point rating scale (1 = *always*, 5 = *never*) with higher mean scores indicative of a more positive outcome. Studies in an adult transgender population (Jones et al., 2019b) have found that internal consistency of the GCLS is fair ($\alpha = .75$) and that the GCLS has large significant correlations ($r = .66$) with the psychological subscale of the World Health Organization Quality of Life – BREF questionnaire (Harper & Power, 1998). The internal consistency of the GCLS in the current sample was .92.

Gender Identity Reflection and Rumination Scale (GRRS). The GRRS (Bauerband & Galupo, 2014) is a 15-item questionnaire designed to measure the degree to which transgender adults engage in persistent thinking patterns about their gender identity. The current research utilizes the rumination (five-items) and preoccupation with others’ perceptions (five-items) subscales. Respondents are asked how often they engage in persistent thinking styles (e.g., “think that I will never be able to present my gender the way I want”). Responses are summed using a four-point rating scale (1 = *almost never*, 4 = *almost always*) with higher scores indicative of more persistent thinking patterns. Studies in an adult transgender population

(Bauerband & Galupo, 2014) found that the internal consistency for the rumination and preoccupation with others' perception subscales of the GRRS range from fair to good ($\alpha = .76$ to $.83$) and that the respective subscales have medium to large significant correlations ($r = .41$ to $.50$) with the Rumination Response Scale (Treyner et al., 2003). The internal consistency of the GRRS rumination and preoccupations with others' perception subscales in the current sample was $.85$ and $.81$, respectively.

Patient Health Questionnaire – 9 (PHQ-9). A full description of the PHQ-9 is contained above in the pilot study section. The internal consistency of the PHQ-9 in the current sample was $.92$.

Generalized Anxiety Disorder – 7 (GAD-7). The GAD-7 (Spitzer et al., 2006) is a seven-item measure of generalized anxiety. Respondents are asked how many times they have experienced symptoms of anxiety over a two-week period. Responses to items (e.g., “feeling nervous, anxious or on edge”) are recorded using a four-point rating scale ($0 = \textit{not at all}$, $3 = \textit{nearly every day}$). Responses are summed with higher scores indicative of increased anxiety. The GAD-7 has been found to have excellent internal consistency ($\alpha = .91$) in adult and adolescent populations (Tiirikainen et al., 2019) and to have fair internal consistency ($\alpha = .79$) when used in adult transgender populations (Holt et al., 2019). The internal consistency of the GAD-7 in the current sample was $.93$.

Kessler Psychological Distress Scale (K-10). The K-10 (Kessler et al., 2002) is a 10-item measure of general psychological distress. Respondents are asked to rate experiences of distress (e.g., “in the past 30 days how often did you feel hopeless?”) using a five-point rating scale ($1 = \textit{none of the time}$, $5 = \textit{almost all of the time}$). Scores are added with higher scores indicative of increased distress. The K-10 has been found to have excellent internal consistency in adult ($\alpha = .92 - .93$; Kessler et al., 2002),

adolescent ($\omega = .97$; Smout, 2018) and adult transgender ($\alpha = .93$; Bariola et al., 2015) populations. The internal consistency of the K-10 in the current sample was .94.

Gender Preoccupation and Stability Questionnaire (GPSQ). The GPSQ (Hakeem et al., 2016) is a 14-item measure designed to assess adult experiences of gender dysphoria. Factors assessed by the GPSQ include preoccupation with their gender and the stability of their sense of gender identity. Respondents are asked to rate their thoughts and feelings about gender (“in the past two weeks how troubled have you been about issues relating to gender?”) on four different five-point rating scales with higher summed scores indicating a higher degree of gender dysphoria. Internal consistency of the GPSQ in a transgender population (Holt et al., 2019) has been found to be fair ($\alpha = .75$). The internal consistency of the GPSQ in the current sample was .89.

6.8.4 Procedures

Participants were recruited using advertisements on transgender and gender diverse social media sites and via snowball sampling. Recruitment was targeted to ensure that the responses captured a broad spectrum of experiences of gender dysphoria (Clark & Watson, 2019). Interested participants were directed to an online REDCap survey and were presented with a participant information sheet and consent form. Survey questions were presented in a fixed format to ensure that the GPSQ-2 was presented first and the GPSQ presented last. At the completion of the survey, participants were asked if they wished to participate in a follow-up survey, consisting of the GPSQ-2, in two weeks which required them to provide an email address. Participants who opted-in for the follow-up survey received an automated email after two weeks with a link to the online survey and a reminder email delayed by 24 hours. The two-week timeframe was chosen to minimize the recall bias and

remain within the two-week measurement period used by the GPSQ-2 (Strainer et al., 2015). During this timeframe, it is assumed that while there would be some variation in the degrees of gender dysphoria experienced, the impact of any interventions would be minimal. Sixty-nine of the 141 participants (49%) completed follow-up test-retest reliability questionnaires.

6.8.5 Data analysis

All data were analyzed using IBM SPSS Statistics Version 26 and Mplus Version 8.4 (Muthén & Muthén, 2017).

Structural Validity. Given that the development of the GPSQ-2 was theory-driven and there was already sufficient knowledge of the factor structure of the GPSQ-2, confirmatory factor analysis (CFA) was considered preferable to exploratory factor analysis (de Vet et al., 2011; Strainer et al., 2015). Initial modelling, utilizing Mplus, was performed using a correlated two-factor (oblique) model where the items load on either of the preoccupation or stability factors. Further investigations of dimensionality, unidimensional (all items load on a single factor) and bifactor (items load on both their respective factors as well as a general factor) models, was conducted in accordance with best practice recommendations (Mokkink, de Vet, et al., 2018; Reise et al., 2007). Model fit analysis was conducted using the means and variance adjusted weighted least squares (WLSMV) estimator as it is suitable for use with ordinal items and can tolerate variances in normality with reduced samples sizes when compared to other estimators (Brown, 2015). The selection of indices of exact fit, chi-square (χ^2) model, and indices of approximate fit, comparative fit index (CFI), root mean square error of approximation (RMSEA) and standardized root-mean-square residual (SRMR), were based on the recommendations of Weston and Gore (2006). Should the model of exact fit be rejected (a significant χ^2 result), approximate

fit statistics were deemed acceptable when the CFI \geq .90, RMSEA \leq .10, and SRMR \leq .08 (Weston & Gore, 2006). The reliability of the total and subscale scores of the bifactor model was assessed using standardized McDonald's omega (ω), omega hierarchical (ω_H) and percentage reliable variance ancillary measures (Rodriguez et al., 2016). A review of the factors to assess the proportion of the factor score that is attributed to the factor, after controlling for the general factor, is assessed using omega hierarchical subscale scores (ω_{HS}). A final assessment of dimensionality (Rodriguez et al., 2016), calculated using the explained common variance (ECV) and percentage uncontaminated correlations (PUC), was conducted to assess the degree of bias associated with fitting a multidimensional data into a unidimensional structure.

Descriptive and Reliability Statistics. For the purposes of reliability and construct analysis, the GPSQ-2 has been interpreted as a continuous scale (Carifio & Perla, 2007). Reliability (internal consistency) was assessed using Cronbach's alpha.

Construct Validity. Construct validity was assessed using Pearson's r (de Vet et al., 2011). Strengths of the relationship between variables is assessed according to Cohen (1988); small ($r = .1$), medium ($r = .3$) and large ($r = .5$). In the absence of a gold standard measure for gender dysphoria, the construct validity of the GPSQ-2 is assessed using the psychological functioning subscale of the GCLS and the rumination and preoccupation with others' subscales of the GRRS. Additional assessments of construct validity focus on the hypothesized relationship between the GPSQ-2 and the domains of depression (PHQ-9), anxiety (GAD-7) and general distress (K-10).

Incremental Validity. A hierarchical regression was conducted to determine if the GPSQ-2 was able to predict distress, as measured by the K-10, over and above the

original GPSQ. The original GPSQ was added in the first step and the GPSQ-2 added in the second step of the regression.

Test – Retest Reliability and Measurement Error. The intraclass correlations coefficient (ICC) was used to evaluate the test-retest reliability. In order to ensure that the retest time frame would be generalizable to other timeframes the two-way random effects with absolute agreement model and single measures was used (McGraw & Wong, 1996; Qin et al., 2019). The results for the ICC are reported in accordance with Koo and Li (2016); poor (<.50), moderate (.50 - .75), good (.75 - .90), and excellent (>.90).

The standard error of measurement (SEM) is a population-specific reliability index for assessing the degree to which test scores are spread around the true score (Portney, 2020). The SEM was calculated by taking the square root of the mean square error term from the ICC repeated measures analysis of variance (Portney, 2020). The SEM can also be used to derive the smallest detectable change (SDC = $1.96 \times \sqrt{2} \times \text{SEM}$) which represents the change in score necessary to be interpreted as true change.

Power. The draft GPSQ-2 was completed by 141 participants, with no missing data, which exceeded the COSMIN (Mokkink, Prinsen, et al., 2018) guidelines of 105 participants (seven times the number of items) for conducting confirmatory analysis of PROMs. The calculation of the intercorrelations between the measures was conducted using the results of 135 participants, which exceeds the 85 participants identified by Cohen (1992) to detect a medium strength (.30) correlation when alpha and power are held constant at .05 and 80%, respectively. Finally, 69 complete responses were received for the test-retest analysis, which exceeds the minimum

requirements, 66 participants, to detect an ICC value of .30 when alpha and power are held constant at .05 and 80%, respectively (Bujang & Baharum, 2017).

6.9 Results

6.9.1 Structural Validity

Results for the two-factor model (Table 6.2, Model 1A) show that it did not meet the exact fit criteria and that it exceeded the requirements for approximate fit, specifically $RMSEA > .10$. A review of the factor loadings identified one item, “over the past two weeks how often has it upset you that you have had to answer questions about what sex or gender you are (e.g., when filling in forms)?”, with reduced factor loading (.63). This item was removed, and the CFA was repeated using the remaining 14 items (Table 6.2, Model 1B). Conceptually removing this item was justified as it referenced a specific experience, filling out forms, which may not have occurred during the two-week window. The revised 14-item two factor model for the GPSQ-2 was a better fit ($\chi^2(76) = 189.59 p < .001$; CFI = .96; RMSEA = .10, and SRMR = .07). Standardized factor pattern loadings were found to be consistently high for the 14-item version, with significant ($p < .001$) loadings ranging from .70 to .87 on the preoccupation factor and from .72 to .84 on the stability factor. The between factor correlation was .82. Results for the alternate 14-item unidimensional and bifactor models of the GPSQ-2 (Table 6.2, Model 2 and 3 respectively) indicate that while the exact fit model was rejected by both models the approximate fit statistics for the 14-item bifactor model were acceptable ($\chi^2(63) = 89.12 p = .017$; CFI = .99; RMSEA = .05, and SRMR = .04). Chi-square difference testing ($\chi^2_{diff}(13) = 77.50 p < .001$) indicates that the difference between the 14-item bifactor and the 14-item two-factor models was significant with the bifactor model showing improved fit.

Table 6.2*Fit Indices for Confirmatory Factor Analysis Models for the GPSQ-2*

	Chi-square test of model fit	CFI	SRMR	RMSEA (90% CI)
Model 1A: 2-factor	$\chi^2(89) = 226.29 \rho < .001$	.95	.07	.11 (.09 - .12)
Model 1B: 2-factor (14-item)	$\chi^2(76) = 189.59 \rho < .001$	.96	.07	.10 (.09 - .12)
Model 2: Unidimensional (14-item)	$\chi^2(77) = 244.34 \rho < .001$	.93	.09	.12 (.11 - .14)
Model 3: Bifactor (14-item)	$\chi^2(63) = 89.12 \rho = .017$	.99	.04	.05 (.02 - .08)

Note. CFI = comparative fit index, CI = confidence interval, RMSEA = root mean square error of approximation, SRMR = standardised root-mean-square residual.

N = 141.

Utilizing McDonald's omega, the reliability for the of the multidimensional composite total score, $\omega = .96$, suggest that 96% of the total score variance is due to all sources of common and item-specific variance and that 4% is due to random error. The reliability of the multidimensional composite subscale scores for the preoccupation and stability subscales were both $\omega_s = .93$. Additionally, the extent to which the total score reflects the general factor, $\omega_H = .84$, suggests that 84% of the total score variance can be attributed to the general factor after accounting for the preoccupation and stability factors. Furthermore, the relationship between omega hierarchical and omega (ω_H / ω) indicates that 88% of the reliable variance in total scores is also attributed to the general factor. Omega hierarchical subscale values for the preoccupation, $\omega_{HS} = .19$, and stability subscales, $\omega_{HS} = .20$, indicate that the subscales only contribute 19 to 20%, respectively, of the unique variance in their respective scores. Furthermore, the relationship between omega hierarchical subscale and omega subscale scores (ω_{HS} / ω_s) indicates that only 21% and 22% of the reliable variance in the preoccupation and stability subscale scores, respectively, is attributed to the subscales (Rodriguez et al., 2016). The results for omega hierarchical ($> .75$; Reise et al., 2013), combined with the high degree of influence that the general factor has on the total score and relatively low contributions of the preoccupation and stability factors to the subscale scores, suggests that the GPSQ-2 should be interpreted using the general factor, total score, as opposed to the subscale scores. Moreover, an assessment of dimensionality was conducted to confirm if the GPSQ-2 can be interpreted as being unidimensional. The results for the error common variance (ECV = .75) and percent of uncontaminated correlations (PUC = 53), combined with omega hierarchical ($\omega_H = .84$), suggest that the degree of multidimensionality is not sufficient

enough to prevent the GPSQ-2 from being interpreted as a primarily unidimensional measure.

As a result of feedback received during the survey process two items were updated to use more affirming language. Item 4 “living in your preferred gender identity” was reworded to “living in accordance with your gender identity” and item 14 “preferred pronoun or name” was reworded to “pronoun or name”. As these were minor updates to language and did not change the intent or meaning of the item it was not considered necessary to re-run the survey process. A full copy of the final GPSQ-2 is contained in the Appendix A.

6.9.2 Descriptive and Reliability Statistics

Table 6.3 outlines the descriptive and reliability statistics. The GPSQ-2 was found to have excellent reliability ($\alpha = .92$) for the total score and good reliability for the preoccupation ($\alpha = .89$) and stability ($\alpha = .86$) subscale scores.

Table 6.3*Measure Descriptive and Reliability Statistics*

	N	Items	Range of Scores	Test Mean (<i>SD</i>)	Range of Test Scores	Cronbach's Alpha
GPSQ-2 (Total)	141	14	0 – 56	22.95 (12.25)	0 – 51	.92
GPSQ-2 (Preoccupation)	141	8	0 – 32	16.18 (7.76)	0 – 32	.89
GPSQ-2 (Stability)	141	6	0 – 24	6.77 (5.49)	0 – 19	.86
GCLS (Psychological functioning)	137	10	10 – 50	36.36 (9.33)	13 – 50	.92
GRRS (Rumination)	137	5	5 – 20	10.71 (3.98)	5 – 20	.85
GRRS (Preoccupation with others')	137	5	5 – 20	11.42 (3.66)	5 – 20	.81
PHQ-9	137	9	0 – 27	10.14 (7.23)	0 – 27	.92
GAD-7	137	7	0 – 21	8.14 (6.06)	0 – 21	.93
K-10	136	10	10 – 50	24.24 (10.07)	10 – 46	.94
GPSQ (Total)	135	14	14 – 70	36.96 (10.70)	15 – 62	.89

Note. GAD-7 = Generalized Anxiety Disorder-7; GCLS = Gender Congruence and Life

Satisfaction Scale; GPSQ = Gender Preoccupation and Stability Questionnaire; GPSQ-2 = Gender Preoccupation and Stability Questionnaire - 2; GRRS = Gender Identity Reflection and Rumination Scale; K-10 = Kessler Psychological Distress Scale; and PHQ-9 = Patient Health Questionnaire - 9.

6.9.3 Construct Validity

The intercorrelations between the measures are outlined in Table 6.4. There was a large significant correlation between the GPSQ-2 and GPSQ ($r = .91$). The correlations between the GPSQ-2 and the conceptually related constructs (GCLS psychological functioning and GRRS rumination and preoccupation with others' perceptions subscales) were all significant and similarly large accounting for between 56% and 61% of the relationship between these measures and the GPSQ-2. While not as substantial, the significant correlations between the GPSQ-2 and the constructs of depression (PHQ-9), anxiety (GAD-7) and distress (K-10) were also large accounting for between 31% and 35% of the relationship between the GPSQ-2 and these constructs. Finally, with a medium significant correlation the stability subscale of the GPSQ-2, only accounted for 18% - 20% of the relationship between it and the constructs of depression, anxiety, and distress.

A post-hoc regression analysis was run to determine if either the PHQ-9, GAD-7 or K-10 had an overwhelming influence on the total score of the GPSQ-2. While the three factors accounted for a combined 36% of the variance in the GPSQ-2 ($r = .60$, $F(3,132) = 25.06$, $p < .001$) the individual contribution of each of the measures was not significant when the other measures were held constant.

Table 6.4*Intercorrelations Between the Measures*

	Intercorrelations									
	1	2	3	4	5	6	7	8	9	10
1. GPSQ-2 (Total)	–									
2. GPSQ-2 (Preoccupation)	.95***	–								
3. GPSQ-2 (Stability)	.89***	.69***	–							
4. GCLS (Psychological functioning)	-.75***	-.80***	-.53***	–						
5. GRRS (Rumination)	.78***	.74***	.70***	-.62***	–					
6. GRRS (Preoccupation with others')	.75***	.73***	.63***	-.69***	.76***	–				
7. PHQ-9	.58***	.60***	.43***	-.73***	.51***	.57***	–			
8. GAD-7	.56***	.57***	.44***	-.61***	.47***	.51***	.81***	–		
9. K-10	.59***	.61***	.45***	-.70***	.50***	.55***	.91***	.88***	–	
10. GPSQ (Total)	.91***	.86***	.80***	-.70***	.77***	.71***	.53***	.54***	.55***	–

Note. GAD-7 = Generalized Anxiety Disorder-7; GCLS = Gender Congruence and Life Satisfaction Scale; GPSQ = Gender Preoccupation and

Stability Questionnaire; GPSQ-2 = Gender Preoccupation and Stability Questionnaire - 2; GRRS = Gender Identity Reflection and Rumination Scale;

K-10 = Kessler Psychological Distress Scale; and PHQ-9 = Patient Health Questionnaire – 9.

N = 135.

*** $\rho < .001$.

6.9.4 Incremental validity

The results for the hierarchical analysis are outlined in Table 6.5. The GPSQ was found to contribute significantly to the K-10, explaining 31% of the variation in distress. With the addition of the GPSQ-2 an additional 4% of the variation in distress was accounted for with the contribution of the GPSQ no longer significant.

6.9.5 Test – Retest Reliability and Measurement Error

The average time between completing the survey and follow-up survey was 16 days. Table 6.6 outlines the test-retest reliability statistics. The test-retest reliability 95% confidence interval was good to excellent for the GPSQ-2 total score (ICC = .81 - .92) and preoccupation subscale (ICC = .80 - .92) and moderate to good for the stability (ICC = .73 - .89) subscale. The smallest detectable change score for the GPSQ-2 that can be predicted with 95% confidence was 11.86, indicating that changes in score need to be greater than 11 to reflect a true change in gender dysphoria.

Table 6.5*Results for the Hierarchical Regression Analysis Predicting Psychological Distress (K-10)*

	R^2	ΔR^2	$F(df)$	$\Delta F(df)$	β	t
Stage 1	.31		58.84(1,133)***			
GPSQ					.55	7.67***
Stage 2	.35	.04	35.35(2,132)***	8.54(1,132)**		
GPSQ					.12	.70
GPSQ-2					.48	2.92**

Note. GPSQ = Gender Preoccupation and Stability Questionnaire; GPSQ-2 = Gender

Preoccupation and Stability Questionnaire - 2.

N=135.

** $\rho < .01$; *** $\rho < .001$.

Table 6.6*Test-Retest Reliability and Standard Error of Measurement*

	Test Mean (SD)	Retest Mean (SD)	Standard Error of Measurement	Smallest Detectable Change	Test – Retest Reliability ICC (95% CI)
GPSQ-2 (Total)	23.39 (11.97)	22.81 (12.19)	4.28	11.86	.88 (.81 - .92)
GPSQ-2 (Preoccupation)	15.91 (7.62)	15.52 (7.70)	2.79	7.73	.87 (.80 - .92)
GPSQ-2 (Stability)	7.48 (5.41)	7.29 (5.29)	2.25	6.24	.83 (.73 - .89)

Note. GPSQ-2 = Gender Preoccupation and Stability Questionnaire - 2.

Average retest period = 16 days.

N = 69.

6.10 Discussion

The aim of the current study was to utilize best-practice methodology to develop and validate a revised version of the GPSQ (Hakeem et al., 2016) – the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2). The GPSQ-2, is a 14-item self-report measure of gender dysphoria for use in both adolescents, aged 13 and above, and adults. The results supported each of the following hypotheses: 1) the GPSQ-2 consists of two factors that assess the constructs of preoccupation and stability; 2) the GPSQ-2 has large correlations with existing measures of gender dysphoria; 3) the GPSQ-2 has large correlations with the constructs of anxiety, depression and distress; 4) the GPSQ-2 accounts for a higher degree of distress than the original GPSQ; and 5) the GPSQ-2 is stable over a two-week period. The GPSQ-2 is notable as it is one of the first validated measures of gender dysphoria that has been developed for use with both adolescents and adults who identify as transgender or gender diverse.

Confirmatory factor analysis was undertaken to confirm the structural validity of the two-factor model of the GPSQ-2. While the initial 15-item GPSQ-2 did not provide an adequate fit to the data, an alternative 14-item version of the GPSQ-2 was found to have acceptable values for the indices of best fit (Weston & Gore, 2006). Supplementary assessments of alternative models, however, suggest that a bifactor model provides a superior fit to the data than the two-factor model. Furthermore, analysis of the bifactor model using omega, omega hierarchical and assessments of dimensionality (Reise et al., 2013; Rodriguez et al., 2016) suggest that despite the presence of multidimensionality a unidimensional model is more appropriate. Consequently, despite the legitimacy of the preoccupation and stability subscales and the information that they convey, it is recommended that the total score for the GPSQ-

2 be used in preference to the subscale scores. From a theoretical perspective, these observations mirror the results of the original GPSQ, which was designed to assess gender dysphoria as a unidimensional construct (Hakeem et al., 2016).

The total score for the GPSQ-2 is calculated by summing the individual item responses (0 = *never*; 4 = *all the time*). Scores range from 0 to 56, with higher scores indicative of more intense experiences of gender dysphoria. The results for Cronbach's alpha and McDonald's omega, suggest that the unidimensional GPSQ-2 has excellent reliability. Experiences of distress assessed by the GPSQ-2 include the dissatisfaction that somebody experiences with their own body, worries about how they may be perceived in society, and an incongruence between a person's gender expression (how an individual's gender is presented and interpreted by society), and their gender identity (how an individual cognitively experiences and defines their gender). Additionally, the GPSQ-2 assesses the degree to which a person's gender identity, which may be binary, non-binary or fluid, is established and incorporated into their sense of self.

While it was not possible to assess criterion validity by comparing the GPSQ-2 to a "gold standard" measure of gender dysphoria, there were large correlations between the GPSQ-2 and the related psychological functioning subscale of the GCLS (Jones et al., 2019b) and the rumination and preoccupation with other's perceptions subscales of the GRRS (Bauerband & Galupo, 2014). These results indicate that the GPSQ-2 taps into similar constructs present within these measures. Furthermore, in an assessment of construct validity and hypothesis testing the GPSQ-2 was found to have large correlations with the constructs of anxiety (GAD-7; Spitzer et al., 2006), depression (PHQ-9; Johnson et al., 2002; Kroenke et al., 2001), and psychological distress (K-10; Kessler et al., 2002). In accordance with the

methodology outlined by de Vet et al. (2011), these results indicate that the GPSQ-2 can be interpreted as a measure of distress associated with the experience of gender dysphoria.

Comparisons between the GPSQ-2 and GPSQ found that the GPSQ-2 accounted for a higher proportion of distress than its predecessor. Given the high degree of similarity between the two measures, the differences between them, whilst statistically significant, may not be relevant. This result is, however, important as it indicates that the increase in scope, inclusion of adolescents, item modifications, and simplified format, has not materially impacted the ability of the GPSQ-2 to account for individual experiences of distress.

The GPSQ-2 was found to have good to excellent test-retest reliability over a two-week period. The corresponding results for the measurement error indicate that we can be 95% confident that any changes in scores greater than 11 represent a real change in the underlying construct above and beyond measurement error. While there are no specific rules for assessing the acceptability of measurement error (Portney, 2020), clinicians should be aware of this limitation when conducting repeat assessments of the GPSQ-2. Additional research into minimal important change is required to further interpret any changes in repeat administrations of the GPSQ-2 (Terwee et al., 2009).

6.10.1 Strengths and Limitations

A strength of the GPSQ-2 is that it was developed in accordance with a methodologically sound approach developed specifically for measures used in clinical settings (see de Vet et al., 2011; Prinsen et al., 2018). This includes the use of a community sample to ensure that a broad range of responses is obtained from participants (Clark & Watson, 2019). Further testing is, however, required to assess

how the GPSQ-2 performs in a clinical sample, and to assess between-group differences. Between-group differences include comparisons between: adults and adolescents; binary and non-binary identities; and assigned sex at birth.

Despite the benefits of having a single measure that can be used with both adolescents and adults there are limitations imposed when a “one-size fits all” approach is used. In this instance there is a likely loss of focus on specific issues that may be experienced in adolescent populations. Further research is required to assess the degree to which the distress associated with gender dysphoria in adolescents can be attributed to factors such as body dysphoria, peer rejection, bullying and abuse, discrimination, financial and legal constraints, and the family and school environment (Strauss et al., 2017). Such studies are critical given the increased focus on “body image” exhibited by younger adults who experience gender dysphoria (Becker et al., 2016; Jones et al., 2016; van de Grift et al., 2016) and the corresponding risks associated with low self-esteem (Hendricks & Testa, 2012) and disordered eating (Ålgars et al., 2012; Vocks et al., 2009; Witcomb et al., 2015).

A second limitation of the study is that it can be argued that the definition of distress, as it pertains to the construct of gender dysphoria, has been poorly defined in the *DSM-5* (for a critical review of the *DSM-5* definition of gender dysphoria see Davy & Toze, 2018). The current study was based on the assumption that distress (as per the *DSM-5*) would be adequately represented by the constructs of anxiety, depression and non-specific distress, as measured using the GAD-7, PHQ-9 and K-10, respectively. However, when combined, the strength of the correlation between these factors and the GPSQ-2 was only medium in size. This suggests that, in addition to there being significant overlap between the stated variables, there are other psychological/psychosocial variables that fall within the realm of distress that present

in people who experience gender dysphoria. Additional constructs that may also be representative of distress include anger, sadness, shame, fear, worry, and hypervigilance (Rood et al., 2017).

6.10.2 Conclusion

The GPSQ-2 is a 14-item structurally sound measure of gender dysphoria that can be used in populations aged 13 and above. In addition to a downward extension to include adolescent participants, enhancements included in the GPSQ-2 include the resolution of identified issues relating to content validity, justified use of a single total score, and improvements in language and usability. Areas for further development include validation of the GPSQ-2 in a clinical sample to assess known-groups validity and to identify potential between-group differences and issues with floor or ceiling effects.

Chapter 7: Developing Trust and Understanding

7.1 The GPSQ-2

In Study 2 (Chapter 6) we: 1) developed a revised version of the Gender Preoccupation and Stability Questionnaire (GPSQ; Hakeem et al., 2016) that could be used in both adolescent and adult populations; and 2) addressed the identified concerns with the validity and comprehensiveness of the measure identified in the systematic review (Study 1; Chapter 4). When used in a community sample, the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2) was found to be a structurally sound 14-item measure of gender related preoccupation and gender stability that could be used with both adolescent and adult populations who experience an incongruence between their gender identity and assigned sex at birth. In addition to the downward extension to include adolescents, improvements to the measure included a focus on gender affirming language and removing language that may be ambiguous or confusing. Pilot testing of the measure found that the items were relevant, easy to understand, and comprehensive of experiences of gender dysphoria.

This initial assessment of the psychometric properties of the GPSQ-2 was conducted utilising a community sample. With respect to measure development, community samples are beneficial as they maximise the participant pool allowing the research to fully capture a broad range of participant responses and experiences (Clark & Watson, 2019). The clinical utility of this approach is, however, limited given that experiences of gender dysphoria may only be present in a subset of the community sample (Coleman et al., 2012), thus, a further validation study with a clinical sample was needed before firm conclusions on the utility of the GPSQ-2 could be made.

To address this limitation and in accordance with the COSMIN methodology (Mokkink, Terwee, et al., 2010b), important objectives for the further development of the GPSQ-2 included: 1) establishing an evidence-base by conducting additional validation (i.e., replication) studies and 2) an assessment of the interpretability of the measure. This first objective is addressed in Study 3 (Chapter 8) and the second in Study 4 (Chapter 10). Conducting additional validation studies for the GPSQ-2 is important as it increases the trustworthiness of the results (Terwee et al., 2018). Measures that repeatedly show consistent results across studies are considered to have a stronger evidence-base than measures that are not validated, or report inconsistent or unexplainable results (Terwee et al., 2018). When using studies that have high-quality supporting evidence, clinicians can be confident that the results of the measure are close to a true estimate of the measurement property (Mokkink, Prinsen, et al., 2018).

Therefore, the aim of Study 3 (Chapter 8) was to investigate the statistical properties of the GPSQ-2 in an adult sample experiencing, or diagnosed with, gender dysphoria. This study was designed as a partial replication and extension of Study 2 (Chapter 6) examining the reliability (internal consistency) and construct (known-groups and convergent) validity of the GPSQ-2. To reduce administration fatigue, the assessment of distress in Study 3 (Chapter 8) took priority over the constructs of depression and anxiety. This approach is supported by Study 2 (Chapter 6) findings that identified a significant overlap between distress, anxiety, and depression. Study 3 (Chapter 8) also used all of the subscales of the Gender Congruence and Life Satisfaction Scale (GCLS; Jones et al., 2019b), rather than only the psychological functioning subscale that was used in Study 2 (Chapter 6). Precedence for using all subscales of the GCLS was established by Lindley and Galupo (2020) in their modelling of gender dysphoria. The additional subscales promote further

understanding of the relationship between gender dysphoria and the constructs of life satisfaction, gender congruence, and social gender role recognition.

Study 3 incorporates two data sets of Adults from Australia and New Zealand (see ethical approval in Appendix B.3 Ethical Approval Study 3) to further replicate and extend the validity the GPSQ-2. The first, consists of a clinical sample who experience, or have been diagnosed with, gender dysphoria. The second, is a passive cisgender control group.

Chapter 8: Study 3

To be submitted as Bowman, S. J., Demant, D., McAloon, J., & Wootton, B. M. (2022). The development and validation of the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2): A replication and extension.

Abstract

Background. The Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2) is a reliable and valid measure of gender dysphoria for both adults and adolescents. However, the psychometric properties of the GPSQ-2 have not been examined in a clinical sample yet. The primary aim of the current study was to evaluate the statistical properties of the GPSQ-2 when used with a clinical sample.

Method. Thirty-two trans and gender diverse adults experiencing, or diagnosed with, gender dysphoria ($M_{\text{age}} = 31.28$; $SD = 8.97$) and 122 cisgender controls ($M_{\text{age}} = 35.67$; $SD = 11.79$) participated in the study.

Results. The GPSQ-2 was found to have good internal consistency ($\alpha = .84$) and could differentiate between the clinical and control groups, with a large effect size ($d = 2.96$). Medium to large significant correlations were found for the total ($r = .44$ to $-.66$), preoccupation ($r = .42$ to $-.73$) and stability ($r = -.38$) subscales with other measures of gender-related or generalised distress.

Conclusion. The results support the reliability and known-groups validity for the GPSQ-2 when used with a clinical sample. Convergent validity was supported for the total and preoccupation subscale. A high level of variability in the stability subscale and non-significant correlations with other measures of gender-related and generalised distress is indicative of the presence of confounding or moderator variables, such as non-binary gender identities, that require further investigation. The results highlight

the need for clinicians to adopt a patient-focused approach to assessment and formulation when using the GPSQ-2.

Keywords: transgender; gender diverse; measurement; PROM; COSMIN.

8.1 The Development and Validation of the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2): A Replication and Extension

The Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2; Bowman, Hakeem, et al., 2021) is a 14-item measure designed for use in clinical settings to assess the effectiveness of medical, surgical, social, and psychological interventions in both adolescent and adult trans and gender diverse populations. The GPSQ-2 has been found to have good to excellent internal consistency and two-week test-retest reliability in a previous community sample identifying as trans or gender diverse (Bowman, Hakeem, et al., 2021). Furthermore, large correlations have also been found between the GPSQ-2 and existing measures of gender-related distress as well as psychological constructs of anxiety, depression, and generalised distress (Bowman, Hakeem, et al., 2021). While previous research has found the GPSQ-2 to be a reliable and valid measure of gender dysphoria, the statistical properties of the GPSQ-2 are yet to be evaluated using a clinical sample. The assessment of gender-related distress using a clinical sample is critical in understanding the reliability, validity, and utility of a measure for use with specific populations (de Vet et al., 2011).

The construct of gender dysphoria, and what represents a clinical population, has been widely debated and refined since its original introduction by Fisk (1974). A narrative review by Davy and Toze (2018) found that “gender dysphoria” may be used to either describe an individual’s feelings of gender-related distress, following Fisk’s original definition, or as a diagnosis as per the *Diagnostic and Statistical Manual* (5th ed.; DSM-5; American Psychiatric Association [APA], 2013a). Consequently, somebody can experience gender dysphoria without meeting the *DSM-5* clinical threshold for distress and impairment required for that diagnosis (Schulz, 2018). In the current context, clinical presentations of gender dysphoria therefore refers to all

persons, irrespective of whether they have sought a diagnosis or not, who are seeking assistance from a mental health professional for issues relating to an incongruence between their assigned gender and their current gender identity and/or expression. This is inclusive of people who may seek assistance to explore their gender identity, navigate the process of transitioning, or for family therapy (Byne et al., 2018).

When working with trans and gender diverse patients who experience, or are diagnosed with, gender dysphoria, clinicians need to be aware of the high degree of diversity and variability between presentations. This includes an awareness of different trajectories and also the different impacts and challenges that patients may experience as they realise their gender identity (Diamond et al., 2011). While there may be some key milestones, such as coming out to friends for the first time or legally changing a person's name, many steps to transition are likely to be highly individualised, non-linear, and recursive in nature (Diamond et al., 2011). While it is important for clinicians to be aware of the benefits of social, legal, medical, and surgical transition (Heylens et al., 2014), they also need to be aware that many individuals will continue to experience fluctuating levels of gender dysphoria throughout their lifetime. Irrespective of gender identity or stage of transition, clinicians need to maintain an individualised approach (Byne et al., 2018) and work with each trans and gender diverse patient to define their objectives for therapy to assist them achieving an authentic sense of self (Diamond et al., 2011). Interviews with trans and gender diverse samples have found that the items contained within the GPSQ-2 are inclusive of different gender identities, relevant, and sensitive to fluctuations of gender dysphoria (Bowman, Hakeem, et al., 2021).

The GPSQ-2 consists of two subscales: preoccupation, and stability. The preoccupation subscale focusses on the time spent thinking, worrying, or being upset

about issues relating to a person's gender identity (Bowman, Hakeem, et al., 2021). In addition to distress, participants preoccupied with issues relating to gender-identity, at the cost of other interests or pursuits, may also exhibit reduced functioning and social development (Strang et al., 2018). The stability subscale assesses the degree to which a person has a concrete understanding of gender and their own gender identity (Bowman, Hakeem, et al., 2021). An assessment of stability is important for helping patients develop an authentic sense of self (Diamond et al., 2011) and for resolving distress that may arise due to internalised binary and/or rigid views regarding gender. Higher scores on the GPSQ-2 have been found to be indicative of increased distress associated with gender dysphoria (Bowman, Hakeem, et al., 2021).

The aim of the current study is to extend the existing literature on the GPSQ-2 by examining the reliability and construct (known-groups and convergent) validity in a clinical sample (experiencing, or diagnosed with, gender dysphoria). In accordance with previous results obtained by Bowman, Hakeem, et al. (2021) and Hakeem et al. (2016) it was hypothesised that: 1) the GPSQ-2 would be found to have acceptable internal consistency; 2) the GPSQ-2 would be able to differentiate between a clinical sample and control sample with a large effect size; and 3) that there would be large correlations between the GPSQ-2 and related constructs of gender-related mental wellbeing, life satisfaction and social gender role recognition, and medium correlations with the related, but distinct, construct of generalised distress. It is also expected that mean scores on the GPSQ-2 would be higher when compared to the results obtained from the community sample by Bowman, Hakeem, et al. (2021). This research may help to guide clinicians in the formulation, assessment and delivery of therapeutic interventions that are attuned to the evolving needs of the patient.

8.2 Materials and Method

8.2.1 Design

The study used a cross-sectional design and included a sample of trans and gender diverse individuals experiencing, or diagnosed with, gender dysphoria (clinical group) as well as a cisgender sample (control group). To be included in the study, participants were required to have lived in either Australia or New Zealand for the previous 12 months. The clinical sample was required to (a) identify as trans or gender diverse and (b) currently experiencing, or diagnosed with, gender dysphoria. The research team represents a cross-section of researchers from the fields of psychology and health, including individuals who identify as gender diverse and same-sex attracted. Data were collected between December 15, 2020 and July 2, 2021.

8.2.2 Participants

One hundred and fifty-four participants completed the study, participant demographics are outlined in Table 8.1. The clinical group consisted of 32 participants ($M_{\text{age}} = 31.28$; $SD = 8.97$). All participants in the clinical group were currently residing in Australia with most participants (27/32; 84%) also born in Australia. Most participants were assigned female at birth (22/32; 69%). Gender identities were spread between transfeminine (female/girl/woman and transgender female/girl/woman; 10/32; 31%), transmasculine (male/boy/man and transgender male/boy/man; 12/32; 38%), and non-binary (transgender (unspecified), non-binary/gender-queer/gender-fluid and agender/gender-neutral; 10/32; 31%). The control group consisted of 122 participants ($M_{\text{age}} = 35.67$; $SD = 11.79$). Nearly all participants in the control group were residing in Australia (121/122; 99%) and most participants were born in Australia (99/121; 81%). Most participants were assigned female at birth (89/122; 73%).

Table 8.1*Participant Demographic Details*

	Clinical (N = 32)	Control (N = 122)
Age range	18 – 53 (<i>M</i> = 31.28, <i>SD</i> = 8.97)	20 – 88 (<i>M</i> = 35.67, <i>SD</i> = 11.79)
Place of residence		
<i>Australia</i>	32 (100%)	121 (99%)
<i>New Zealand</i>	0 (0%)	1 (1%)
Region of Birth		
<i>Australia</i>	27 (84%)	99 (81%)
<i>New Zealand</i>	2 (6%)	5 (4%)
<i>United Kingdom & Ireland</i>	1 (3%)	6 (5%)
<i>Asia</i>	1 (3%)	1 (1%)
<i>Europe</i>	-	5 (4%)
<i>North America</i>	1 (3%)	2 (2%)
<i>Pacific Islands</i>	-	2 (2%)
<i>Middle East & Africa</i>	-	2 (2%)
<i>Other</i>	-	-
Assigned sex at birth		
<i>Female</i>	22 (69%)	89 (73%)
<i>Male</i>	9 (28%)	33 (27%)
<i>Other</i>	1 (3%)	-
Current gender identity		
<i>Female/girl/woman</i>	3 (9%)	89 (73%)
<i>Male/boy/man</i>	1 (3%)	33 (27%)
<i>Transgender female/girl/woman</i>	7 (22%)	-
<i>Transgender male/ boy/man</i>	11 (34%)	-
<i>Transgender (unspecified)</i>	1 (3%)	-
<i>Intersex</i>	-	-
<i>Non-binary/gender-queer/gender-fluid</i>	8 (25%)	-
<i>Agender/gender-neutral</i>	1 (3%)	-
<i>Other</i>	-	-
Confidence to live a satisfied life	1 – 5 (<i>M</i> = 3.16, <i>SD</i> = 1.11)	-

8.2.3 Measures

Demographics Questions. Participant age (in years), assigned sex at birth, current gender identity, place of residence and region of birth were collected.

Confirmation of Gender Dysphoria. Participants were asked to confirm (yes/no) that they currently experience or have a diagnosis of gender dysphoria (distress or significant impact on daily activities that is a result of a difference between their gender and assigned sex at birth).

Steps to Transition. The Steps to Transition (Kozee et al., 2012) is a 16-item self-report inventory used to determine the steps an individual has taken to transition to their gender identity. Respondents were asked if they had taken any of the identified steps (yes/no) to transition to their gender identity. It has been found to have excellent reliability ($\alpha = .91$). Reliability in the current sample was adequate (KR20 = .78).

Gender Preoccupation and Stability Questionnaire - 2nd Edition (GPSQ-2). The GPSQ-2 (Bowman, Hakeem, et al., 2021) is a 14-item measure of gender dysphoria in adolescent and adult populations. Respondents are asked to rate the frequency of thoughts and feelings about gender (“Over the past two weeks how often have you thought about your gender”) using a five-point rating scale (0 = *never*, 4 = *all the time*). Item responses are summed with higher scores indicative of increased levels of gender dysphoria. Additionally, the GPSQ-2 includes a single-item assessment of the individual’s confidence that they will be able to live a satisfied life with their current gender identity (0 = *not at all confident*, 4 = *extremely confident*). The reliability of the GPSQ-2 has been found to be excellent ($\alpha = .92$) for the full scale, the preferred outcome measure, and good for the optional preoccupation (α

= .89) and stability ($\alpha = .86$) subscales (Bowman, Hakeem, et al., 2021). The reliability in the current sample is outlined below.

Gender Congruence and Life Satisfaction Scale (GCLS). The GCLS (Jones et al., 2019b) is a 38-item outcome measure to evaluate the effectiveness of medical and surgical interventions to reduce gender-related distress and improve gender congruence and mental wellbeing in trans and gender diverse populations. The measure has seven-factors organised into two clusters: gender-related mental wellbeing and life satisfaction (physical and emotional intimacy, psychological functioning, and life satisfaction) and gender congruence (genitalia, chest, other secondary sex characteristics, and social gender role recognition). Respondents are asked to rate the frequency of their thoughts (e.g., “Due to the distress about my gender I have avoided social situations and/or social interactions”) over the past six months on a five-point rating scale (1 = *always*, 5 = *never*). The mean score is calculated with higher scores indicative of a more positive outcome. It has been found to have excellent reliability for the full scale ($\alpha = .95$) and adequate ($\alpha = .77$) to excellent ($\alpha = .93$) reliability for the subscales (Jones et al., 2019b). Reliability in the current sample was excellent for the full scale ($\alpha = .92$) and questionable (social gender role recognition; $\alpha = .64$) to excellent (psychological functioning; $\alpha = .93$) for the subscales. The GCLS was used as a measure of convergent validity.

Kessler Psychological Distress (K-10). The K-10 (Kessler et al., 2002) is a 10-item self-report measure of generalised distress that is frequently used as a screening tool in clinical settings (Kessler et al., 2002). Respondents are asked to rate experiences of distress (e.g., “In the past 30 days how often did you feel hopeless?”) using a 5-point interval scale (1 = *none of the time*, 5 = *almost all of the time*). Scores are added with higher scores indicative of increased distress. The K-10 has been

found to have excellent ($\alpha = .93$) reliability in trans and gender diverse populations (Bariola et al., 2015). Reliability in the current sample was good ($\alpha = .87$). The K-10 was used as a measure of convergent validity.

8.2.4 Procedure

Clinical participants were recruited using advertisements distributed by psychologists working with trans and gender diverse patients and on trans and gender diverse support social media sites. Control participants were recruited on social media sites and via snowball sampling. Participants were directed to an online survey using the REDCap platform (Harris et al., 2019; Harris et al., 2009) and were presented with a participant information sheet and consent form. Participants who consented to the study proceeded to the survey and were presented with the questionnaires in fixed order (the control group only completed the demographics and GPSQ-2 questionnaires). Ethical approval for the study was obtained from the Research Ethics Committee at the University of Technology Sydney (ETH20-6123).

8.2.5 Data Analysis

Data were analysed using IBM SPSS Statistics Version 28. Reliability (internal consistency) was assessed using Cronbach's alpha for continuous data and the Kuder-Richardson Formula 20 (KR20) for dichotomous data. Scales with an internal consistency greater than .7 were considered to have acceptable reliability (Kline, 2000; Mokkink, Prinsen, et al., 2018). In the absence of any established conventions (Taber, 2018), internal consistency was assessed as questionable ($<.7$), acceptable ($\geq .7$ and $<.8$), good ($\geq .8$ and $<.9$), and excellent ($\geq .9$).

The GPSQ-2 known-groups validity was calculated using independent groups *t* tests. Due to differences in groups sizes the unequal variance results (Welch's *t*-test) was utilised. The effect size was calculated using Cohen's *d*, using a pooled standard

deviation of the groups, and assessed according to Cohen (1988); small ($\geq .20$ and $<.50$), medium ($\geq .50$ and $<.80$), and large ($\geq .80$).

Receiver operator characteristics (ROC) were analysed as part of the known-groups validation to assess the discriminative ability of the GPSQ-2 across a range of cut-scores. The accuracy of the ROC curve, the ability to discriminate between cases and non-cases, was assessed by calculating the area under the curve (AUC; Fischer et al., 2003); low ($\geq .50$ and $<.70$), moderate ($\geq .70$ and $<.90$), and high ($\geq .90$). Cut-scores were selected using the index of union methodology (Unal, 2017) to maximise sensitivity and specificity.

Construct validity was assessed by calculating the intercorrelations between the variables using Pearson's r . The strength of the relationship was assessed according to Cohen (1988): small ($\geq .10$ and $<.30$), medium ($\geq .30$ and $<.50$) and large ($\geq .50$). The strength of the relationship between instruments measuring related constructs (i.e., the GPSQ-2 total and subscales and the GCLS total and gender-related mental wellbeing and life satisfaction cluster of subscales and social gender role recognition subscale) should be large, for instruments measuring related, but dissimilar, constructs (i.e., the GPSQ-2 total and subscales and the K-10) the strength should be medium (de Vet et al., 2011).

Missing Data. Complete datasets on the GPSQ-2 were received for the clinical ($N = 32$) and control group GPSQ ($N = 122$). Incomplete datasets were received for the clinical group on the GCLS ($N = 28$) and K-10 ($N = 30$). The intercorrelations between the variables ($N = 32$) was calculated using multiple imputations to account for missing data from the GCLS (3%; 41/1216 variables) and K-10 (6%; 20/320 variables). Missing data were managed using multiple imputation,

as the methodology does not compromise the variability of the data, is robust to violations of normality, and appropriate for use with small sample sizes (Kang, 2013).

Power. The independent groups analysis of the GPSQ-2 ($N = 32:122$) exceeded the requirement for 26 participants per group to identify a large ($d = .80$) effect size when alpha and power are held constant at .05 and 80, respectively (Cohen, 1988). A large effect size was expected given the earlier analysis of the GPSQ, which identified an “exceptionally large” effect size ($d = 2.2$) between the clinical and control groups (Hakeem et al., 2016).

The calculation of intercorrelations between the measures ($N = 32$) exceeded the requirement for 28 participants to detect a large ($r = .50$) correlation when alpha and power are held constant at .05 and 80, respectively (Cohen, 1988). Given the previous large correlations found between the GPSQ-2 and the GCLS psychological functioning ($r = -.75, p < .001$) subscale and K-10 ($r = .59, p < .001$) in a community sample (Bowman, Hakeem, et al., 2021), the specified power is sufficient for the current analysis.

8.3 Results

8.3.1 Participant Characteristics

The participants represented a range of different stages of transition (Table 8.2). Nearly all the participants (30/32; 94%) had socially transitioned (i.e., either adopted a name or wear clothing that matches their gender identity); over a half (18/32; 56%) had legally transitioned (i.e., legally had name changed to adopted name); and approximately three quarters (24/32; 75%) engaged in some form of medical transition (i.e., undergoing hormone replacement therapy). None of the participants had undergone genital surgery.

Table 8.2*Participant Steps to Transition*

Come out as transgender to family?	30 (94%)
Come out as transgender to friends?	31 (97%)
Come out as transgender to coworkers or fellow students?	27 (84%)
Adopted a name not given at birth that better represents gender identity?	29 (91%)
Currently called adopted name by family?	19 (59%)
Currently called adopted name by friends?	27 (84%)
Currently called adopted name by coworkers/fellow students?	25 (78%)
Wear clothing that matches gender identity in social situations?	30 (94%)
Wear clothing that matches gender identity at work/school?	27 (84%)
Legally had name changed to adopted name?	18 (56%)
Legally changed sex on birth certificate?	6 (19%)
Driver's license changed to reflect gender identity?	13 (41%)
Undergoing hormone replacement therapy?	24 (75%)
Used or had a nonsurgical cosmetic procedure (e.g., electrolysis) to alter physical appearance in order to make it more congruent with gender identity?	9 (28%)
Had non-genital surgery (e.g., breast removal, breast implants, facial feminisation surgery, vocal cord surgery)?	6 (19%)
Had surgery to alter genitalia?	0 (0%)

Note.

N = 32

8.3.2 Descriptive Statistics and Reliability

Scores for the GPSQ-2 in both groups is outlined in Table 8.3. In the clinical group, the total ranged from 13 to 45 with a mean of 27.06 ($SD = 8.97$), which places nearly all the responses in the top three quartiles. Responses for the preoccupation subscale ranged from 11 to a full-scale score of 32 and a mean of 19.78 ($SD = 5.27$). Responses for the stability subscale ranged from a minimum value of 0 to 19 with a mean of 7.28 ($SD = 5.31$). While both the scales were equally correlated with the total ($r = .85, p < .001$) correlations between the subscales were medium ($r = .44, p = .012$). Reliability of the GPSQ-2 was good for the total ($\alpha = .84$) and stability subscale ($\alpha = .84$) and adequate for the preoccupation subscale ($\alpha = .77$).

In the control group, the GPSQ-2 total ranged from a minimum value of 0 to 26 with a mean of 6.78 ($SD = 6.21$), which places all the responses in the bottom two quartiles. Responses for the preoccupation subscale ranged from a minimum value of 0 to 17 with a mean of 4.35 ($SD = 3.72$). Responses for the stability subscale ranged from a minimum of 0 to 12 with a mean of 2.43 ($SD = 3.03$). Reliability for the control group was adequate to good ($\alpha = .74$ to $.85$).

8.3.3 Known-groups Validity

Boxplots for the GPSQ-2 clinical and control groups are presented in Figure 8.1. The test of equal variances between the clinical and control groups found that the GPSQ-2 total ($F = 10.47, p < .001$), the preoccupation ($F = 9.83, p = .002$) and the stability ($F = 23.25, p < .001$) subscales violated the assumption of equal variances. The resultant analysis (equal variances not assumed) found a significant difference between the clinical and control group means with a large effect size for the GPSQ-2 total ($t(39.14) = 12.06, p < .001, d = 2.96$), the preoccupation ($t(39.44) = 15.57, p < .001, d = 3.78$) and the stability ($t(36.45) = 4.97, p < .001, d = 1.35$) subscales.

Table 8.3*Measure Descriptive and Reliability Statistics*

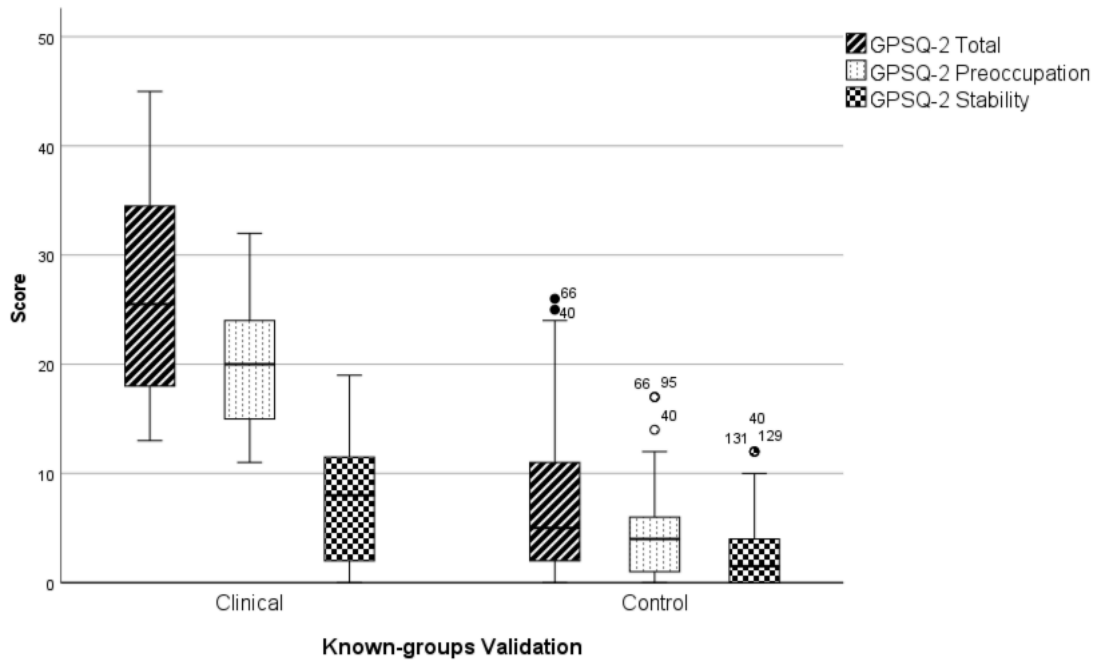
	N	Items	Range	Test Mean (SD)	Range of Test Scores	Internal Consistency
Clinical group						
<i>GPSQ-2 (Total)</i>	32	14	0 – 56	27.06 (8.97)	13 – 45	.84
<i>GPSQ-2 (Preoccupation)</i>	32	8	0 – 32	19.78 (5.27)	11 – 32	.77
<i>GPSQ-2 (Stability)</i>	32	6	0 – 24	7.28 (5.31)	0 – 19	.84
<i>GCLS (Total)</i>	28	38	1 – 5	2.93 (0.60)	1.29 – 3.79	.92
<i>GCLS (Genitalia)</i>	28	6	1 – 5	3.29 (1.11)	1.00 – 5.00	.85
<i>GCLS (Chest)</i>	28	4	1 – 5	2.54 (1.15)	1.00 – 4.75	.91
<i>GCLS (Other secondary sex characteristics)</i>	28	3	1 – 5	2.70 (1.27)	1.00 – 5.00	.87
<i>GCLS (Social gender role recognition)</i>	28	4	1 – 5	2.60 (0.67)	1.25 – 4.25	.64
<i>GCLS (Physical and emotional intimacy)</i>	28	4	1 – 5	2.86 (0.98)	1.25 – 4.75	.82
<i>GCLS (Psychological functioning)</i>	28	10	1 – 5	3.08 (0.92)	1.00 – 4.60	.93
<i>GCLS (Life satisfaction)</i>	28	7	1 – 5	2.94 (0.60)	1.57 – 4.00	.74
<i>K-10</i>	30	10	10 – 50	29.77 (7.26)	18 – 42	.87
Control group						
<i>GPSQ-2 (Total)</i>	122	14	0 – 56	6.78 (6.21)	0 – 26	.85
<i>GPSQ-2 (Preoccupation)</i>	122	8	0 – 32	4.35 (3.72)	0 – 17	.74
<i>GPSQ-2 (Stability)</i>	122	6	0 – 24	2.43 (3.03)	0 – 12	.76

Note.

GPSQ-2 = Gender Preoccupation and Stability Questionnaire - 2; GCLS = Gender Congruence and Life Satisfaction Scale; and K-10 = Kessler Psychological Distress Scale.

Figure 8.1

Boxplot Comparisons for the Clinical and Control Group Known-groups Validation



Note. This figure compares the scores for the clinical and control groups used in the known-groups validation.

Clinical N = 32; Control N = 122.

8.3.4 ROC Analyses.

Using a cut-score of 15 (and above), the GPSQ total score was able to differentiate between the clinical and control groups with a high degree of confidence (AUC = .97), sensitivity (true positives, 97%), and specificity (true negatives, 87%). Using a cut-score of 13, the preoccupation subscale was able to differentiate between clinical and control groups with a high degree of confidence (AUC = .99), sensitivity (97%), and specificity (87%). Using a cut-score of 3, the stability subscale was able to differentiate between the clinical and control groups with a moderate degree of confidence (AUC = .79), sensitivity (69%), and specificity (73%).

8.3.5 Convergent Validity

Intercorrelations between the measures is outlined in Table 8.4. A large negative correlation was found between the GPSQ-2 total and the GCLS total ($r = -.66, p < .001$) and psychological functioning subscale ($r = -.58, p < .001$). A medium negative correlation between the GPSQ-2 total and GCLS life satisfaction ($r = -.48, p = .006$) and social gender role recognition ($r = -.49, p = .004$) subscales was also found. There was no correlation between the GPSQ-2 total and GCLS physical and emotional intimacy subscale.

Table 8.4*Intercorrelations Between the Measures*

	Intercorrelations										
	1	2	3	4	5	6	7	8	9	10	11
1. GPSQ-2 (Total)	–										
2. GPSQ-2 (Preoccupation)	.85**	–									
3. GPSQ-2 (Stability)	.85**	.44*	–								
4. GCLS (Total)	-.66**	-.73**	-.38*	–							
5. GCLS (Genitalia)	-.44*	-.43*	-.32	.71**	–						
6. GCLS (Chest)	-.31	-.33	-.20	.52**	.14	–					
7. GCLS (Other secondary sex characteristics)	-.26	-.21	-.22	.37*	.24	.08	–				
8. GCLS (Social gender role recognition)	-.49**	-.55**	-.28	.59**	.11	.42*	.51**	–			
9. GCLS (Physical and emotional intimacy)	-.29	-.19	-.30	.50**	.44*	.10	-.02	.13	–		
10. GCLS (Psychological functioning)	-.58**	-.76**	-.23	.85**	.47**	.33	.06	.43*	.36*	–	
11. GCLS (Life satisfaction)	-.48**	-.61**	-.20	.79**	.53**	.30	.10	.30	.29	.79**	–
12. K-10	.18	.42*	-.11	-.54**	-.20	-.28	.00	-.34	-.05	-.67**	-.66**

Note. GPSQ-2 = Gender Preoccupation and Stability Questionnaire - 2; GCLS = Gender Congruence and Life Satisfaction Scale; and K-10 = Kessler

Psychological Distress Scale.

N = 32 (pooled result).

* $\rho < .05$, ** $\rho < .01$.

A large negative correlation was found between the GPSQ-2 preoccupation subscale and the GCLS total ($r = -.73, p < .001$), and psychological functioning ($r = -.76, p < .001$), life satisfaction ($r = -.61, p < .001$), and social gender role recognition ($r = -.55, p = .001$) subscales. There was no correlation between the GPSQ-2 preoccupation subscale and the GCLS physical and emotional intimacy subscale. A medium negative correlation was found between the GPSQ-2 stability subscale and the GCLS total ($r = -.38, p = .031$). There were no correlations between the GPSQ-2 stability subscale and the GCLS subscales.

A medium correlation was found between the GPSQ-2 preoccupation scale and the K-10 ($r = .42, p = .017$). There were no correlations between the GPSQ-2 total and stability subscale and the K-10.

8.4 Discussion

The aim of the current study was to establish the reliability and construct (known-groups and convergent) validity of the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2; Bowman, Hakeem, et al., 2021) when used with a clinical sample. It was hypothesised that: 1) the GPSQ-2 would be found to be reliable and have good to excellent internal consistency in a clinical sample; 2) the GPSQ-2 would be able to differentiate between a clinical sample and control sample with a large effect size; and 3) that there would be large correlations between the GPSQ-2 and gender-related mental wellbeing, life satisfaction, and social gender role recognition, and medium correlations with generalised distress. Our hypotheses were partially supported.

The descriptive results for the GPSQ-2 total and preoccupation subscale were in line with the expectations of a clinical sample. An increased minimum and mean score and truncated range of scores were found compared to earlier research using a

community sample (Bowman, Hakeem, et al., 2021). The descriptive statistics for the stability subscale did not follow this trend with a similar range of scores and a high degree of variability to that found in the community sample. Moreover, an investigation of the relationship between the subscales found only a medium strength correlation, which suggests that this variability is not wholly explained by the relationship between stability and preoccupation. These results challenge earlier recommendations by Bowman, Hakeem, et al. (2021) to treat the GPSQ-2 as a unidimensional measure that focuses on the total score in preference to the subscale scores. Further factor analyses are recommended using a larger clinical sample (Mokkink, Prinsen, et al., 2018) to confirm the dimensionality of the GPSQ-2 and a preference for either the total or subscale scores.

The results demonstrate that preoccupation with gender and gender-related stability are constructs that are experienced in the general population. This is consistent with earlier findings using the GPSQ that found a mean score for the cisgender control group in the second quartile (Hakeem et al., 2016). This information can be useful for helping to normalise these experiences in trans and gender diverse patients and to manage expectations for the future.

The hypotheses for reliability were supported. The GPSQ-2 total and stability subscale were found to have good internal consistency and the reliability for the preoccupation subscale was acceptable. This finding is consistent with previous studies that have found good to excellent reliability in a community sample (Bowman, Hakeem, et al., 2021). These scores indicate a good balance between the brevity and reliability of the GPSQ-2 when used with a clinical sample (Kline, 2000). It should also be noted that, given the brief nature of the GPSQ-2, it is possible that the internal

consistency of the subscales have been underestimated (Clark & Watson, 1995; Kline, 2000).

Consistent with our hypothesis, the GPSQ-2 total and subscales were able to differentiate between the gender dysphoria (clinical) group and cisgender (control) group with a large effect size. This is the first study to assess the known-groups validity for the GPSQ-2. Known-groups validity is important as it provides further evidence to support the use of the GPSQ-2 to assess gender dysphoria. This is particularly relevant given that there are no *gold standard* measures of gender dysphoria (Bowman, Casey, et al., 2021) that can be used for assessing the criterion validity of the GPSQ-2.

Convergent validity for the GPSQ-2 total was only partially supported. While the GPSQ-2 total was found to have large correlations with the GCLS total and psychological functioning subscales the correlations with the life satisfaction and social gender role recognition were only medium, and it was not correlated with the GCLS physical and emotional intimacy subscale. While this finding is consistent with previous research that assessed the relationship between the GPSQ-2 total and the GCLS psychological functioning subscale (Bowman, Hakeem, et al., 2021), it is the first time the relationship between the GPSQ-2 total and the GCLS total, life satisfaction, physical and emotional intimacy, and social gender role recognition subscales has been assessed. The GPSQ-2 total was also not significantly correlated with the K-10. This result is inconsistent with earlier research that found large correlations between the GPSQ-2 total and the K-10 (Bowman, Hakeem, et al., 2021).

In line with previous research, the convergent validity for the GPSQ-2 preoccupation subscale was largely supported. The one exception being the GCLS physical and emotion intimacy subscale. However, contrary to expectations, the

results did not support the convergent validity of the stability subscale. While a medium-strength correlation was found with the GCLS total score, there were no correlations with the GCLS subscales or the K-10. The results for the stability subscale are inconsistent with previous large negative correlation with the GCLS psychological functioning subscale and medium correlation with the K-10 (Bowman, Hakeem, et al., 2021).

The current results for known-groups and convergent validity provide further evidence to support the construct validity of the GPSQ-2 total score and preoccupation subscale. Further research is required using a larger sample to further our understanding of the gender stability subscale and to rule out the presence of confounding or moderator variables that may be present in the data. A likely source of interaction is gender identity and the degree of gender fluidity that a non-binary person may experience. Individuals who are gender fluid may not experience the same degree of gender-related distress associated with gender stability in people with a binary gender identity. While there is insufficient data to explain the absence of any correlations between the GPSQ-2 and the GCLS physical and emotional intimacy subscale, it is possible that this may be attributed to the absence of any genital surgery in the clinical sample. Additionally, the results for convergent validity suggest that screening measures such as the K-10 are not sufficiently sensitive to issues such as gender-related distress and that these measures should be complemented with, or replaced by, specific gender-related measures when working with trans and gender diverse patients. This is important given the recommendations that screening measures, such as the K-10, be adopted for generic use in medical settings (U.S. Preventative Services Task Force, 2016).

8.4.1 Strengths and Limitations

The current study has a number of strengths. Firstly, the study used a flexible approach to define eligibility for the clinical sample and the recruitment population. Benefits regarding eligibility include recognising that some people who experience gender dysphoria may not reach the diagnostic criteria for diagnosis or do not seek diagnosis. Additionally, the eligibility criteria recognise an individuals' right to self-determination and that treatment/referrals can exist outside of the diagnostic paradigm. The recruitment strategy has also been beneficial as it does not limit the sample to populations seeking medical or surgical interventions as is the case in many clinic-based trials (Kuyper & Wijzen, 2014). This is evidenced by the absence of any participants who have received genital surgery. Finally, the large proportion of participants receiving hormone therapy (75%) indicate that the participant pool is reflective of a broader clinical sample who have sought some form of clinical engagement.

A limitation of the study is that it has not assessed the performance of the GPSQ-2 in an adolescent clinical population. Furthermore, the study may not have been powerful enough to identify medium-strength correlations with the GPSQ-2. Finally, the generalisability of the study is limited in countries and cultures that have different conceptualisations of gender. To overcome these limitations, further research using multiple points of recruitment (i.e., support groups, psychologists, general practitioners, psychiatrists, and specialist gender clinics) with both adolescents and adults from different cultural backgrounds is recommended.

8.4.2 Conclusion

In addition to establishing known-groups validity the current study has provided additional evidence to support the reliability and convergent validity of the

GPSQ-2 when used with a clinical population. For clinicians working with trans and gender diverse populations, the research encourages the use of tools sensitive to gender-related distress as generic screening tools may fail to provide an adequate assessment of mental health and wellbeing. Moreover, clinicians are encouraged to be aware of the high level of variability on the stability subscale and that elevated responses may warrant further investigation to determine the role that gender stability plays in the patient formulation. While this is the first study to use the GPSQ-2 in a clinical sample, it is recommended that future research be co-ordinated across multidisciplinary groups to provide further evidence to support the trustworthiness of the GPSQ-2. This includes further assessment of the factor structure of the GPSQ-2 in a clinical sample and the potential for different experiences of gender stability by gender identity.

The aim of this study was to investigate the statistical properties of the GPSQ-2 in a trans and gender diverse sample experiencing, or diagnosed with, gender dysphoria. The GPSQ-2 is a brief and freely available tool for assessing gender dysphoria in adolescent and adult populations. It has been found to be a reliable measure that assesses the construct of gender dysphoria. Further research has, however, been recommended to assess the dimensionality of the GPSQ-2 and the impact of gender-identity in both adolescent and adult populations experiencing gender dysphoria. Additional testing utilising an LGB control group would also be beneficial for further establishing the known-groups validity, as would be a larger sample of transgender and non-binary individuals.

Chapter 9: From Trust to Interpretation

9.1 Improving the Trustworthiness of the GPSQ-2

Chapter 7 identified two potential objectives to improve the trustworthiness of the GPSQ-2: 1) establishing an evidence-base by conducting additional validation (i.e., replication) studies and 2) an assessment of the interpretability of the measure. The aim of Study 3 (Chapter 8) was to address this first objective by conducting an additional validation study. Specifically, we examined the reliability (internal consistency) and construct (known-groups and convergent) validity of the GPSQ-2 in an adult sample experiencing, or diagnosed with, gender dysphoria.

9.2 Reliability and Construct Validity of the GPSQ-2

9.2.1 Reliability

Within the COSMIN taxonomy, reliability, the degree to which the GPSQ-2 is free from measurement error, is assessed using the internal consistency measurement properties. Study 3 (Chapter 8) found that when used with a clinical sample the GPSQ-2 is reliable with good internal consistency. These findings are consistent with the initial validation study reported in Chapter 6. Combined, these studies demonstrate that the GPSQ-2 demonstrates good internal consistency and is a reliable measure to be used in patients with gender dysphoria.

9.2.2 Construct Validity

Construct validity is the measurement property used to assess the degree to which the content of the GPSQ-2 reflects the construct of gender dysphoria (Mokkink, Terwee, et al., 2010b). Assessments of construct validity utilised in Study 3 (Chapter 8) were based on the hypothesised ability to differentiate between known-groups and convergent validity.

Known-groups validity. The study found support for the known-groups validity of the GPSQ-2 and that the measure can differ between known-groups (trans and gender diverse individuals experiencing, or diagnosed with, gender dysphoria and a cisgender control group) with large effect size. While the results are consistent with the known-groups validity of the original GPSQ (Hakeem et al., 2016), this is the first time the known-groups validity of the GPSQ-2 has been assessed. Future research may wish to replicate this finding in other samples.

Convergent Validity. Additional assessments of construct validity included convergent validity and the hypothesised relationship between the GPSQ-2 and comparator measures of gender dysphoria and related, but distinct, constructs of psychological distress. Study 3 (Chapter 8) found partial support for the convergent validity with other measures of gender dysphoria, such as the Gender Congruence and Life Satisfaction Scale (GCLS; Jones et al., 2019b) but not psychological distress, assessed using the Kessler-10 Psychological Distress Scale (K-10; Kessler et al., 2002). The findings for the relationship between the GPSQ-2 and the GCLS psychological functioning subscale are consistent with the initial validation study reported in Chapter 6. However, the finding for the relationship between the GPSQ-2 and the K-10 are not consistent with the initial validation study, which found large correlations between the GPSQ-2 and K-10.

Study 3 (Chapter 8) also found that, as hypothesised, the preoccupation subscale of the GPSQ-2 showed convergent validity with comparator measures of gender dysphoria (excluding the physical and emotional intimacy subscale of the GCLS) and psychological distress. These findings are consistent with the initial validation study (Study 2) reported in Chapter 6. Contrary to expectations, the stability subscale did not correlate with a majority of the hypothesised constructs of

gender dysphoria or psychological distress. These findings are not consistent with the initial validation study reported in Chapter 6, which found the GPSQ-2 stability subscale had a large correlation with the GCLS psychological functioning subscale and a medium correlation with the K-10.

As expected, Study 3 (Chapter 8) demonstrated that the total and preoccupation subscale scores on the GPSQ-2 showed an increased minimum and mean score with a truncated range of scores when compared to the community sample in Study 2 (Chapter 6). However, while the descriptive results for the stability subscale were also expected to be elevated for Study 3 (Chapter 8), the findings showed similar distributions of scores between Study 2 (Chapter 6) and Study 3 (Chapter 8), which suggests the presence of confounding or moderator variables such as gender identity. Combined, these studies demonstrate that the GPSQ-2 preoccupation subscale exhibits good convergent validity. However, further research is required to understand the inconsistencies observed for the stability subscale and the subsequent impact that this has on the total score.

9.3 Interpretability

The second objective identified in Chapter 7 to enhance the trustworthiness of the GPSQ-2 was to investigate the interpretability of the measure. Interpretability refers to the ability to assign qualitative meaning to quantitative scores that are otherwise difficult to interpret (de Vet et al., 2011). While not considered to be a measurement property per se, the “interpretability of a score is a prerequisite for the well-considered use of an instrument in clinical practice and research” (de Vet et al., 2011, p. 228). Key assessments of interpretability include an examination of the distribution of scores, presence of floor and ceiling effects, and differences in scores between sub-groups by gender identity and by subjective experiences of gender

related distress. Being able to assign meaning to results and understanding sub-population differences and limitations are instrumental to the clinical and research utility of an instrument.

While Study 2 (Chapter 6) indicates a preference for the GPSQ-2 total score, the anomalies identified in Study 3 (Chapter 8) regarding the stability subscale suggest that continued evaluation of both the total score and subscale scores is warranted. Therefore, the aim of Study 4 (Chapter 10) is to provide a qualitative interpretation of the GPSQ-2 total score, and preoccupation and stability subscales by investigating the presence of floor and ceiling effects, differences by gender, interpretation of scores by subjective experiences of distress, and an investigation of confidence to live a satisfied life.

In this study, the assessment of interpretability will focus on binary (transmasculine and transfeminine) and non-binary (agender, gender-fluid, gender-neutral, and gender-queer) subgroups to identify clustering of scores and floor and ceiling effects. Comparisons of these subgroups are important given the existing gaps in the literature regarding the different needs of these groups (Valentine & Shipherd, 2018). Understanding how the GPSQ-2 performs in non-binary populations, who may not adopt fixed notions of gender (Richards et al., 2018), might be particularly important given the unexplained variances in the relationship between the stability subscale of the GPSQ-2 and the constructs of gender dysphoria and psychological distress that were identified in Study 3 (Chapter 8). The evaluation of interpretability is further enhanced by the analysis of the GPSQ-2 single-item ‘confidence to live a satisfied life’ by gender identity. In this item participants are asked to rate the degree of confidence that they will be able to live a satisfied life with their current gender identity on a scale from 0 (*not at all confident*) to 4 (*extremely confident*).

Study 4 utilises an unpublished subset of the original community sample data collected for the validation of the GPSQ-2 (Study 2; Chapter 6). The data set consists of a community sample of adolescents and adults, from Australia and New Zealand, who completed an online survey to assess the psychometric properties of the GPSQ-2.

Chapter 10: Study 4

To be submitted as Bowman, S. J., Demant, D., McAloon, J., & Wootton, B. M. (2022). Interpretability of the Gender Preoccupation and Stability Questionnaire - 2nd Edition (GPSQ-2).

Abstract

Background. One of the few measures for assessing gender dysphoria in both binary and non-binary adolescents and adults is the GPSQ-2. While the psychometric properties of the GPSQ-2 have been established there is minimal information available to aid in the interpretation of results. The current study explores the interpretability of the GPSQ-2 by investigating the presence of floor and ceiling effects, differences by gender, interpretation of total and subscale scores, and an investigation of the single-item of confidence to live a satisfied life.

Method. The research utilised a cross-sectional community sample of 141 transgender and gender diverse participants over 14-years of age ($M_{\text{age}} = 36.44$; $SD = 14.76$). The investigation of floor and ceiling effects and between-group differences were assessed using descriptive statistics and one-way ANOVAs. Receiver operating characteristics were used to calculate cut-points for total and subscale scores. Confidence to live a satisfied life was assessed to determine the relationship with the GPSQ-2 and to identify differences by gender.

Results. There were no substantial floor or ceiling effects identified in the total or preoccupation subscale scores. Minor floor effects were found for the stability subscale that were pronounced for binary participants. An assessment by gender found significant differences for the total and stability subscale scores, with medium main effect size ($\eta^2 = .06$ and $\eta^2 = .09$, respectively); non-binary participants scored higher than binary participants. Cut-points were calculated using a continuum of

distress from *not very distressed* to *highly distressed*. A large negative correlation ($r = -0.60, p < .001$) was found between confidence to live a satisfied life and the GPSQ-2 with no differences by gender.

Conclusion. When interpreting results from the GPSQ-2, clinicians should give preference to the total score whilst being cognisant of the potential for a high degree of variability in results for the stability subscale. There is a potential for the GPSQ-2 to score an elevated response when used with non-binary populations.

Keywords: transgender, gender diverse; measurement; PROM; COSMIN.

10.1 Interpretability of the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2)

A core tenant of psychological practice is the use of psychological measures to develop a clinical formulation and generate hypotheses to help improve psychological functioning and to monitor the effectiveness of any subsequent treatments (Groth-Marnat & Wright, 2016). One of the few measures available for assessing gender dysphoria, that is, distress resulting from a difference between a person's assigned sex at birth and their gender identity (American Psychiatric Association [APA]; 2013a), in both adolescent and adult populations (Bowman, Casey, et al., 2021) is the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2; Bowman, Hakeem, et al., 2021). The GPSQ-2 may be used to aid both the initial assessment of gender dysphoria and to help establish the effectiveness of social, medical, surgical, and psychological interventions (Hakeem et al., 2016). While the GPSQ-2 has been found to be a statistically valid and reliable measure (Bowman et al., 2022; Bowman, Hakeem, et al., 2021), there is minimal data to aid in the interpretability of results obtained using the measure and how these may vary across binary and non-binary gender identities.

The COSMIN initiative define interpretability as “the degree to which one can assign qualitative meaning – that is, clinical or commonly understood connotations – to an instruments quantitative score” (Mokkink, Terwee, et al., 2010b, p. 743). While interpretability may not be considered one of the core quality measurement properties of a measure, it is never-the-less considered to be a pre-requisite for the clinical application of a measure (de Vet et al., 2011; Mokkink, Terwee, et al., 2010b). An examination of interpretability of a measure includes an assessment of the distribution of scores, presence of floor and ceiling effects, between-group differences, and

qualitative interpretation of single scores (de Vet et al., 2011). Floor and ceiling effects occur when a high proportion of the population has a score at the lower or upper end of the measure (de Vet et al., 2011). In this instance, between-group differences are conducted to determine the impact of gender identity (i.e., trans masculine, trans feminine, and non-binary) on results obtained using the GPSQ-2.

Research suggests that between 1.9% and 4.6% of adults report an ambivalent gender identity (equal identification with a gender other than the sex assigned at birth) and that between 0.6% and 1.1% of adults report an incongruent gender identity (stronger identification with a gender other than the sex assigned at birth; Kuyper & Wijzen, 2014; Van Caenegem et al., 2015). This may include individuals who identify according to binary notions of gender, i.e., transfeminine (those who identify as either female or transgender female) or transmasculine (those who identify as either male or transgender male), as well as individuals who identify as non-binary (gender diverse identities including, but not limited to, agender, gender-fluid, gender-neutral, and gender-queer). Despite limitations associated with the collection of population data (Richards et al., 2018), recent studies in transgender and gender diverse community samples have found that between a fifth and a third of respondents identify as non-binary (Bowman, Hakeem, et al., 2021; Galupo et al., 2020; Ho & Mussap, 2020; Lindley & Galupo, 2020). Furthermore, given the evolving understanding of what it means to live between, outside of, or without gender (Murjan & Bouman, 2018), and the increased availability of non-binary-specific medical treatment, it is likely that this proportion is going to continue to grow (Clark et al., 2018; Richards et al., 2016).

To accurately interpret measures such as the GPSQ-2, it is important to understand the impact that gender identity may have on the results and the degree to which these are accounted for by biases within the instrument (Galupo & Pulice-

Farrow, 2020). For example, in a clinic-based study that compared transgender male and female responses to the Utrecht Gender Dysphoria Scale (Cohen-Kettenis & van Goozen, 1997), transgender male individuals reported stronger gender dysphoria than transgender female individuals (Schneider et al., 2016). Interpretation of these differences was, however, limited by substantial variations in ceiling effects between genders. An analysis of responses by gender identity is therefore a first step in understanding the interpretability of the GPSQ-2. Alternatively, different experiences, or degrees, of gender dysphoria between-groups may be responsible for variations in results. For instance, it has been suggested that there are substantial differences in how binary and non-binary populations experience distress associated with body dissatisfaction and gender role recognition that may impact test results (Jones et al., 2019a, 2019c).

In addition to understanding the role of gender in interpreting results, it is also important to be able to quantify and translate the responses from the GPSQ-2 into a format that is readily understandable. One method used to achieve this is to calculate cut-scores between a control group and a clinical group to obtain a diagnostic threshold (de Vet et al., 2011). While a cut-score has been calculated for the GPSQ-2 to differentiate between controls and clinical presentations for the purposes of establishing known groups validity (Bowman et al., 2022), the use of such a score to assist with interpretability may be perceived as overly pathologising. Moreover, the use of, and language associated with, a diagnostic threshold may create an impression of *gatekeeping* which may reduce the degree of authenticity within the therapeutic relationship (Collazo et al., 2013).

An alternative approach to interpreting gender dysphoria is to view it as a continuum (Schneider et al., 2016), with multiple cut-points, that represent various

degrees of distress relative to the population. Such an approach has been implemented in the development of other psychological assessment tools, such as the Depression, Anxiety, and Stress Scales (Lovibond & Lovibond, 1995) to portray normal to extremely severe experiences of depression, anxiety, and stress. This is perceived as being more affirming for the patient as it acknowledges the variable nature of gender dysphoria over time (Coleman et al., 2012) and respects their lived experience from moment to moment (Galupo & Pulice-Farrow, 2020), while avoiding the stigma of diagnosis. Such an approach may also be warranted given the depathologisation of gender incongruence in the *International Classification of Diseases* (11th ed.; ICD-11; World Health Organisation, 2021a).

The GPSQ-2 also contains a single-item to assess ‘confidence to lead a satisfied life with whatever gender identity you feel you currently have’. While this item is outside the paradigms associated with preoccupation and stability assessed by the GPSQ-2, it is nevertheless an important aspect of the patient formulation to help explore individual strengths and weaknesses associated with their feelings about their gender identity. Thus, it is important to consider the interpretability of this item. Aspects to be considered include the relationship between hope and distress and whether these differ by gender identity.

The current study aims to explore the interpretability of the GPSQ-2 in a transgender and gender diverse sample and to identify between-group variations in responses for transfeminine, transmasculine and non-binary participants. Specifically, we seek to: 1) investigate the performance of the GPSQ-2 to identify any floor or ceiling effects or 2) between-group differences by gender identity that may indicate the presence of systematic biases within the instrument; 3) identify a continuum of cut-scores to aid in the interpretation of total and subscale scores; and 4) provide

descriptive statistics and correlations with the GPSQ-2 to aid in the interpretation of the single-item assessment of an individual's confidence that they will be able to lead a satisfied life with their current gender identity.

10.2 Materials and Method

10.2.1 Design

A cross-sectional community sample was used to explore the performance of the GPSQ-2 in transgender and gender diverse adults (aged 14 and over). Ethical approval for the study was obtained from the Medical Research Ethics Committee at the University of Technology Sydney (ETH20-4989). To be included in the study, participants were required to: 1) identify as transgender, gender diverse, or non-binary; and 2) have lived in either Australia or New Zealand for the previous 12 months. The research team represents a cross section of researchers from the fields of psychology and health including individuals who identify as gender diverse and same-sex attracted.

10.2.2 Participants

One hundred and forty-one participants completed the study ($M_{\text{age}} = 36.44$; $SD = 14.76$). Participant demographics are outlined in Table 10.1. The majority of participants (110/141; 78%) were born in either Australia or New Zealand. For the purposes of current gender identity analysis: the female/girl/woman, transgender female/girl/woman and one of the 'other' responses were merged into the transfeminine (59/141; 42%) descriptor; the male/boy/man, transgender male/boy/man and one of the 'other' responses were merged into the transmasculine (32/141; 23%) descriptor; and the transgender, intersex, non-binary/gender-queer/gender-fluid, agender/gender-neutral and three of the 'other' responses were merged into the non-binary (50/141; 35%) descriptor. The data set comprises an

unpublished subset of the original data collected for the validation of the GPSQ-2 between July 20, and August 27, 2020 (see Bowman, Hakeem, et al., 2021).

Table 10.1*Participant Demographic Details*

	Survey (N = 141)
Age range	14 - 73 ($M = 36.44$, $SD = 14.76$)
Place of residence	
Australia	87 (62%)
New Zealand	54 (38%)
Region of Birth	
Australia	70 (50%)
New Zealand	40 (28%)
United Kingdom & Ireland	15 (11%)
Asia	4 (3%)
Europe	3 (2%)
North America	2 (1%)
Pacific Islands	1 (1%)
Middle East & Africa	5 (4%)
Other	1 (1%)
Assigned sex at birth	
Female	60 (43%)
Male	79 (56%)
Other	2 (1%)
Current gender identity	
Female/girl/woman	17 (12%)
Male/boy/man	13 (9%)
Transgender female/girl/woman	41 (29%)
Transgender male/boy/man	18 (13%)
Transgender (unspecified)	4 (3%)
Intersex	1 (1%)
Non-binary/gender-queer/gender-fluid	37 (26%)
Agender/gender-neutral	5 (4%)
Other	5 (4%)

10.2.3 Measures

Demographics Questions. Participant age (in years), assigned sex at birth, current gender identity, place of residence, and region of birth were collected.

Subjective Experiences of Gender Related Distress. Respondents were asked to rate the degree of distress they have experienced over the previous two weeks because of issues relating to gender dysphoria on a single-item 5-point rating scale (0 = *not at all distressed*, 4 = *extremely distressed*). Higher scores are indicative of increased gender related distress.

Gender Preoccupation and Stability Questionnaire - 2nd Edition (GPSQ-2). The GPSQ-2 (Bowman, Hakeem, et al., 2021) is a 14-item measure of gender dysphoria in adolescent and adult populations. The measure assesses the degree to which a person's preoccupation with issues relating to gender or variations in gender identity may be contributing to experiences of distress. Respondents are asked to rate the frequency of thoughts and feelings about gender ("Over the past two weeks how often have you thought about your gender") over a two-week period using a five-point rating scale (0 = *never*, 4 = *all the time*). Item responses are summed (range of scores: total 0 – 56, preoccupation subscale 0 – 32, and stability subscale 0 – 24) with higher scores indicative of increased levels of gender dysphoria. Additionally, the GPSQ-2 includes a single-item assessment of the individual's confidence that they will be all to live a satisfied life with their current gender identity (0 = *not at all confident*, 4 = *extremely confident*). The internal reliability of the GPSQ-2 has been found to be excellent ($\alpha = .92$) for the total score, the preferred outcome measure, and good for the optional preoccupation ($\alpha = .89$) and stability ($\alpha = .86$) subscales in this sample (Bowman, Hakeem, et al., 2021).

10.2.4 Procedure

Participants were recruited using advertisements on social media sites and via snowball sampling. Participants were directed to an online survey in the REDCap survey system (Harris et al., 2019; Harris et al., 2009), and were presented with a participant information sheet. Participants who agreed to proceed with the survey were then presented with the GPSQ-2.

10.2.5 Data Analysis

Data were analysed using IBM SPSS Statistics Version 28. The presence of floor and ceiling effects were investigated by using descriptive statistics, including percentiles and box-plots, for the GPSQ-2 total and preoccupation and stability subscale scores. Additional analyses were conducted to determine if floor or ceiling effects were present when the results were viewed by gender (transfeminine, transmasculine, and non-binary).

Gender based differences in experience of gender related distress, as assessed by the GPSQ-2 total score, subscale scores, and the single-item confidence to live a satisfied life score, were assessed using descriptive statistics and a one-way Analysis of Variance (ANOVA). Tests to confirm equal variances were performed using Levene's test. The main effect size was calculated using Eta Squared and interpreted according to Cohen (1988); small ($\eta^2 \geq .01$ and $< .06$), medium ($\eta^2 \geq .06$ and $< .14$), and large ($\eta^2 \geq .14$). Exploratory post-hoc tests were conducted using the Newman-Keuls test, which is frequently used in the fields of psychology (Abdi & Williams, 2010), for its ability to identify significant differences with acceptable risk of making Type I errors when only three comparison groups are used (Coolican, 2017).

The cut-points for the interpretation of total and subscale scores for the GPSQ-2 were calculated by investigating the receiver operating characteristics (ROC) of the

subjective experiences of gender related distress. Initial analysis of the results for the subjective experiences of gender related distress was conducted to confirm the strength of the correlation with the GPSQ-2 total score and to confirm that the adjacent categories of distress (i.e., not at all distressed and not very distressed) were distinct. This was interpreted using descriptive statistics and one-way ANOVA with planned contrasts using Bonferroni corrections ($p = 0.1$; five planned contrasts) to account for experiment-wise error (Field, 2018). Contrast effect size was calculated using Cohen's d , using a pooled standard deviation of the groups used in the contrast, and interpreted according to Cohen (1988); small ($d \geq .20$ and $< .5$), medium ($d \geq .50$ and $< .80$), and large ($d \geq .80$).

Total and subscale receiver operator characteristics (ROC) were analysed to determine the cut-scores and accompanying sensitivity and specificity for each distress category. The accuracy of the ROC curve, the ability to discriminate between cases and non-cases, was assessed by calculating the area under the curve (AUC); low ($\geq .50$ and $< .70$), moderate ($\geq .70$ and $< .90$), and high ($\geq .9$; Fischer et al., 2003). Cut-points were selected using the index of union methodology (Unal, 2017) to provide the maximum sensitivity and specificity values at the same time.

Correlations between variables were assessed using Pearson's r . The strength of the relationship was interpreted according to Cohen (1988); small ($r \geq .1$ and $< .3$), medium ($r \geq .3$ and $< .5$) and large ($r \geq .5$).

10.2.6 Power Analysis

All power analysis tests were conducted post-hoc in accordance with the recommendations of Cohen (1988, 1992) with alpha held constant at 0.5. The power analysis of the one-way ANOVA by subjective experiences of gender related distress (not at all distressed, not very distressed, somewhat distressed, and highly distressed),

found that there was a 98% chance of detecting a large effect size ($\eta^2 = .14$). A large effect was anticipated given the use of distinct categories intended to span the full breadth of responses. The power analysis of the one-way ANOVA by gender (transfeminine, transmasculine, and non-binary) found that there was a 76% chance of detecting a medium effect size ($\eta^2 = .06$). The power analysis for the intercorrelations between the variables found that there was a 95% chance of detecting a medium effect size ($r = .30$).

10.3 Results

10.3.1 Participant Characteristics

The participants were representative of a full range of subjective experiences of gender related distress (Table 10.2 and 10.3) ranging from individuals who report being *not at all distressed* to individuals who report being *extremely distressed* ($M = 1.77$; $SD = 1.12$). An analysis of variance (ANOVA) found that there were no significant differences in subjective experiences of gender related distress by gender identity ($F(2,138) = 1.47, p = .234$).

10.3.2 Floor and Ceiling Effects

The descriptive statistics for the GPSQ-2 total and subscale scores, by gender identity, are reported in Table 10.2. Visual inspection of the total score (Figure 10.1) for all participants showed a symmetrical distribution of scores around the mean ($M = 22.95, SD = 12.25$). While the mean is lower than the midpoint score (28) the vast majority of responses (90%) fell between 3 and 44. Further analysis, by gender identity, showed a similar distribution of scores around the mean for transfeminine, transmasculine and non-binary participants. In sum there were no apparent concerns for floor or ceiling effects for the total score.

Table 10.2*Descriptive Statistics for the GPSQ-2 Total and Subscale Scores, Satisfaction with Life, and Subjective Distress by Gender Identity*

	Total			Preoccupation subscale			Stability subscale			Satisfied life			Subjective distress		
	Mean (SD)	Range	Percentiles (5%-95%)	Mean (SD)	Range	Percentiles (5%-95%)	Mean (SD)	Range	Percentiles (5%-95%)	Mean (SD)	Range	Percentiles (5%-95%)	Mean (SD)	Range	Percentiles (5%-95%)
All participants	2.95 (12.25)	0 – 51	2.1 – 44.0	6.18 (7.76)	0 – 32	2.1 – 28.0	6.77 (5.49)	0 – 19	0.0 – 17.0	2.55 (1.03)	0 – 4	1.0 – 4.0	1.77 (1.12)	0 – 4	0.0 – 4.0
Transfeminine	0.85 (12.43)	0 – 46	2.0 – 42.0	5.15 (7.97)	0 – 32	2.0 – 28.0	5.69 (5.09)	0 – 18	0.0 – 16.0	2.63 (.87)	1 – 4	1.0 – 4.0	1.58 (1.10)	0 – 4	0.0 – 4.0
Transmasculine	0.75 (11.25)	1 – 43	1.0 – 39.1	5.50 (7.43)	1 – 25	1.0 – 25.0	5.25 (5.06)	0 – 19	0.0 – 17.1	2.81 (1.18)	0 – 4	0.0 – 4.0	1.91 (1.23)	0 – 4	0.0 – 4.0
Non-binary	26.84 (11.92)	3 – 51	9.6 – 45.9	7.84 (7.58)	3 – 32	6.55 – 30.5	9.00 (5.59)	0 – 19	0.6 – 19.0	2.28 (1.05)	0 – 4	0.0 – 4.0	1.90 (1.06)	0 – 4	0.0 – 4.0

Note.

Range: Total (0 – 56); Preoccupation subscale (0 – 32); Stability subscale (0 – 24); Satisfied life (0 – 4); and Subjective distress (0 – 4).

N = 141; Transfeminine *n*=59; Transmasculine *n*=32; and Non-binary *n*=50.

Table 10.3

Frequency for Participant Subjective Experiences of Gender Related Distress

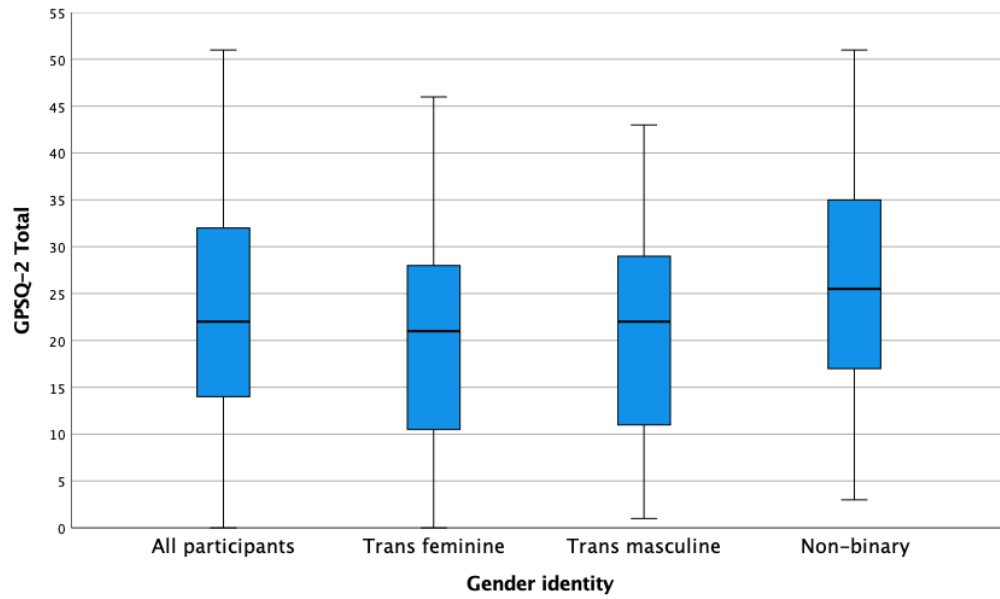
	Not at all distressed	Not very distressed	Somewhat distressed	Very distressed	Extremely distressed
All participants	22	31	57	20	11
Transfeminine	12	14	23	7	3
Transmasculine	6	4	12	7	3
Non-binary	4	13	22	6	5

Note.

N = 141; Transfeminine $n=59$; Transmasculine $n=32$; and Non-binary $n=50$.

Figure 10.1

GPSQ-2 Total Score Boxplots by Gender Identity



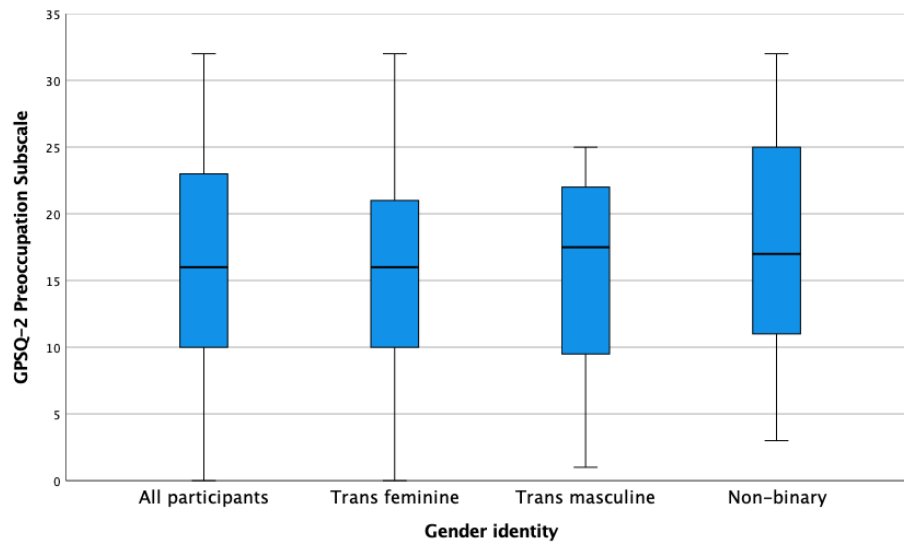
Note.

N = 141; Transfeminine $n=59$; Transmasculine $n=32$; and Non-binary $n=50$.

Similarly, visual inspection of the preoccupation subscale score (Figure 10.2) for all participants showed a symmetrical distribution of scores around the mean ($M = 16.18$, $SD = 7.76$) which corresponds with the midpoint (16) of the scale. Furthermore, the majority (90%) of responses fell between a score of 3 and 28 further alleviating any concerns for floor or ceiling effects for the preoccupation subscales score. An analysis by gender identity showed a similar distribution of scores around the mean for transfeminine, transmasculine and non-binary participants. Finally, visual inspection of the stability subscale score (Figure 10.3) for all participants shows a positively skewed result around the mean ($M = 6.77$, $SD = 5.49$), which is considerably lower than the mid-point score of 12. With 90% of responses falling between 0 and 17 it is apparent that the stability subscale had some floor effects present and that this was pronounced for the binary transfeminine and transmasculine participants.

Figure 10.2

GPSQ-2 Preoccupation Subscale Score Boxplots by Gender Identity

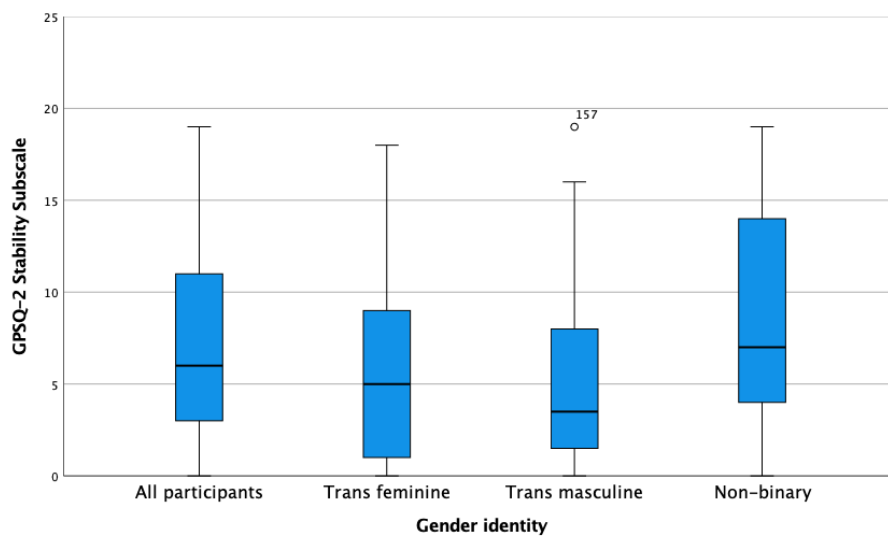


Note.

N = 141; Transfeminine $n=59$; Transmasculine $n=32$; and Non-binary $n=50$.

Figure 10.3

GPSQ-2 Stability Subscale Score Boxplots by Gender Identity



Note.

N = 141; Transfeminine $n=59$; Transmasculine $n=32$; and Non-binary $n=50$.

10.3.3 Gender Related Differences

Descriptive statistics for the GPSQ-2 total, preoccupation and stability subscale scores are shown in Table 10.2. A one-way ANOVA found a significant difference with medium effect size in mean GPSQ-2 total scores by gender ($F(2,138) = 4.08, p = .019, \eta^2 = .06$). A Newman-Keuls post-hoc analysis ($\alpha = .05$) indicated that non-binary participants experienced significantly higher distress associated with gender dysphoria than both transfeminine and transmasculine participants and that there were no significant differences between transfeminine and transmasculine participants. A one-way ANOVA found that there were no significant differences in the preoccupation subscale scores by gender ($F(2,138) = 1.80, p = .168$). A one-way ANOVA found a significant difference with medium effect size in stability subscale scores by gender ($F(2,138) = 7.04, p < .001, \eta^2 = .09$). A Newman-Keuls post-hoc analysis indicated that non-binary participants experienced significantly higher distress associated with gender related stability than both transfeminine and transmasculine participants and that there were no significant differences between transfeminine and transmasculine participants.

10.3.4 Interpretation of Total and Subscale Scores

The descriptive statistics breakdown by total score and subjective experiences of gender related distress, *not at all distressed* to *extremely distressed*, are reported in Table 10.4 and represented visually in Figure 10.4. Correlations between variables demonstrated a strong relationship between subjective experiences of gender related distress and the GPSQ-2 total score ($r = .65, p < .001$) with a large effect. A one-way ANOVA to confirm the presence of adjacent between-group differences by subjective experiences of gender related distress (not at all distressed, not very distressed, somewhat distressed, very distressed, and extremely distressed) revealed a significant

difference in mean scores with large effect size for the GPSQ-2 total score ($F(4,136) = 25.39, p < .001, \eta^2 = .43$). Four planned contrasts found significant differences in the mean GPSQ-2 total score for the following groups with medium to large effect size; not at all distressed and not very distressed ($t(136) = 3.66, p < .001, d = 1.14$); not very distressed and somewhat distressed ($t(136) = 3.14, p = .002, d = .69$); somewhat distressed and very distressed ($t(136) = 2.96, p = .004, d = .73$). There was, however, no significant difference in mean score between the very distressed and extremely distressed groups ($t(136) = 1.17, p = .246$). Given the final non-significant result, these two groups were combined into a single group labelled highly distressed.

The one-way ANOVA was repeated with the modified group structure (not at all distressed, not very distressed, somewhat distressed, and highly distressed) finding a significant difference in the mean scores with a large effect size ($F(3,137) = 33.32, p < .001, \eta^2 = .42$). A single planned contrast between the somewhat distressed and modified highly distressed group found a significant difference in the mean GPSQ-2 total score for these groups ($t(137) = 4.14, p < .001, d = .87$). The modified group structure met the requirement for significant between-group differences.

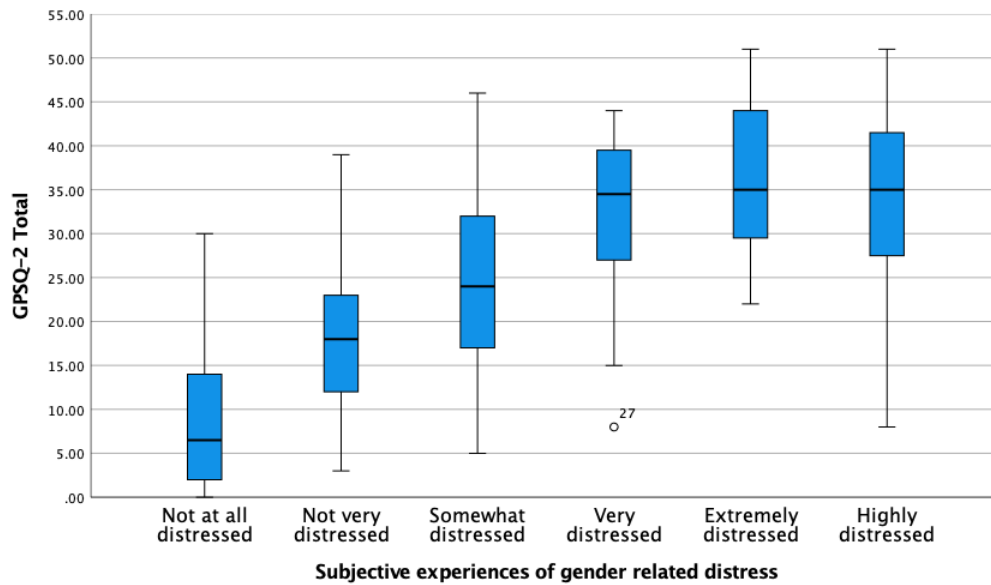
Table 10.4*Descriptive Statistics for the GPSQ-2 by Subjective Experiences of Gender Related Distress*

	Total		Preoccupation subscale		Stability subscale	
	Mean (<i>SD</i>)	Range (0 - 56)	Mean (<i>SD</i>)	Range (0 – 32)	Mean (<i>SD</i>)	Range (0 – 24)
Not at all distressed	8.82 (8.24)	0 – 30	6.27 (4.79)	0 – 17	2.55 (4.53)	0 – 17
Not very distressed	18.42 (8.60)	3 – 39	13.03 (5.04)	3 – 23	5.39 (4.31)	0 – 16
Somewhat distressed	25.02 (10.13)	5 – 46	17.86 (6.15)	5 – 30	7.16 (4.98)	0 – 19
Very distressed	32.25 (9.46)	8 – 44	21.55 (5.31)	5 – 28	10.70 (4.95)	0 – 19
Extremely distressed	36.36 (9.68)	22 – 51	26.45 (4.16)	19 – 32	9.91 (7.05)	0 – 19
<i>Highly distressed</i> [#]	33.71 (9.59)	8 – 51	23.29 (5.41)	5 – 32	10.42 (5.68)	0 – 19

Note.[#] Combined very and extremely distressed groups.N=141. Not at all distressed *n* = 22; Not very distressed *n* = 31; Somewhat distressed *n* = 57; Very distressed *n* = 20; Extremely distressed *n* = 11; andHighly distressed *n* = 31.

Figure 10.4

GPSQ-2 Total Score by Subjective Experiences of Gender Related Distress



Note.

The highly distressed group is a combination of the very and extremely distressed groups.

N=141.

Not at all distressed $n = 22$; Not very distressed $n = 31$; Somewhat distressed $n = 57$; Very distressed $n = 20$; Extremely distressed $n = 11$; and Highly distressed $n = 31$.

Cut-points were calculated using the modified subgroup structure (Table 10.5). The results suggest that the following GPSQ-2 total score cut-points can be used with low to moderate degrees of confidence; not at all distressed 0 – 10, not very distressed 11 – 20, somewhat distressed 21 – 28, and highly distressed 29 – 56. The following preoccupation subscale scores can be used with a moderate degree of confidence; not at all distressed 0 – 8, not very distressed 9 – 14, somewhat distressed 15 – 20, and highly distressed 21 – 32. The following stability subscale scores can be used with a low to moderate degree of confidence; not at all distressed 0 – 2, not very distressed 3 – 5, somewhat distressed 6 – 7, and highly distressed 8 – 16.

Table 10.5*Cut-points for the GPSQ-2 by Subjective Experiences of Gender Dysphoria Related Distress*

	Total (range 0 – 56)				Preoccupation subscale (range 0 – 32)			Stability subscale (range 0 – 24)				
	AUC	Cut-point score			AUC	Cut-point score		AUC	Cut-point score			
		Score	Sensitivity	Specificity		Score	Sensitivity	Specificity	Score	Sensitivity	Specificity	
Not at all distressed – Not very distressed	.81	10.5	.81	.73	.83	8.5	.84	.77	.75	2.5	.74	.73
Not very distressed – Somewhat distressed	.69	20.5	.65	.61	.72	14.5	.74	.61	.61	5.5	.58	.55
Somewhat distressed – Highly distressed	.74	28.5	.71	.68	.76	20.5	.77	.67	.67	7.5	.65	.65

Note.

AUC = Area under curve.

N=141. Not at all distressed $n = 22$; Not very distressed $n = 31$; Somewhat distressed $n = 57$; and Highly distressed $n = 31$.

10.3.5 Confidence to Live a Satisfied Life

The single-item assessment of a participant's confidence that they will be able to lead a satisfied life with their current gender identity was assessed to further understand how this item relates to the GPSQ-2 total score and subscale scores and to identify variations by gender. Approximately 88% of participants (124/141; Table 10.6) felt that they were somewhat to extremely confident that they would lead a satisfied life with their current gender identity ($M = 2.55$; $SD = 1.03$; Table 10.2). The results found a negative correlation (with large effect) between individual's confidence to live a satisfied life with the GPSQ-2 total score ($r = -.60$, $p < .001$). Similarly, large negative correlations were found with both the preoccupation and stability subscale scores ($r = -.55$, $p < .001$; $r = -.56$, $p < .001$), respectively. A one-way ANOVA found that there was no significant gender-based differences in the participants confidence to live a satisfied life with their current gender identity ($F(2,138) = 3.04$, $p = .051$).

Table 10.6

Frequency for Participants Confidence That They Will Lead a Satisfied Life with Their Current Gender Identity

	Not at all confident	Not very confident	Somewhat confident	Very confident	Extremely confident
All participants	5	12	54	41	29
Transfeminine	0	3	28	16	12
Transmasculine	2	2	7	10	11
Non-binary	3	7	19	15	6

Note.

N = 141; Transfeminine *n*=59; Transmasculine *n*=32; and Non-binary *n*=50.

10.4 Discussion

The aim of the current study was to examine the interpretability of the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2; Bowman, Hakeem, et al., 2021). The GPSQ-2 is a reliable and valid 14-item self-report measure for assessing gender dysphoria in adolescent and adult populations (Bowman et al., 2022; Bowman, Hakeem, et al., 2021). The results of the current study have: 1) determined that minor floor effects were present in the stability subscale and these were pronounced for transfeminine and transmasculine participants; 2) that gender differences were found with non-binary participants recording significantly higher distress on the GPSQ-2 total and stability subscale scores than transfeminine and transmasculine participants; 3) identified four discrete categories that can be used to interpret the GPSQ-2 total score (0 – 10: not at all distressed, 11 – 20: not very distressed, 21 – 28: somewhat distressed, and 29 – 54: highly distressed); and 4) found that participant's degree of confidence to live a satisfied life with their current gender identity was not impacted by gender identity, and that higher levels of confidence to live a satisfied life were associated with reduced gender dysphoria as assessed by the GPSQ-2.

Floor and ceiling effects were assessed using descriptive statistics (means, range, percentiles, and box plots). While there were no floor or ceiling effects identified in the GPSQ-2 total and preoccupation subscale scores, the stability subscale did appear to have some floor effects present. Responses for the first and third quartiles (which was lower than the scale mid-point) indicate that for a majority of transfeminine and transmasculine participants gender related stability was not a major stressor. The inter-quartile range between the third and fourth quartiles suggests that for some participants gender related stability was a significant stressor. Given

these results clinicians should be aware of significant variations in gender related stability and that while some patients who experience gender dysphoria may not experience any stressors relating to stability others may experience heightened distress that may represent a key component of the individual's formulation. Addressing stressors regarding gender stability may be a priority for patients who wish to commence irreversible medical procedures (Murjan & Bouman, 2018).

The observed differences in floor and ceiling effects according to gender identity were assessed further using one-way analysis of variance. The results found that scores for non-binary participants were significantly higher for the GPSQ-2 total than for transfeminine and transmasculine participants, and that there were no significant differences between transfeminine and transmasculine. A similar pattern of between-group differences by gender was found for the stability subscale. Given that there were no identified differences in responses to the preoccupation subscale, it is likely that the differences in total score can be attributed to the stability subscale. Variations in experiences of gender related distress that may contribute to differences in scores between binary and non-binary groups may include dissimilar experiences of body dissatisfaction and gender role recognition (Jones et al., 2019a, 2019c). Alternative explanations may include an inherent bias within the GPSQ-2 that is more responsive to non-binary experiences of gender dysphoria. An analysis of the subjective experiences of distress variable by gender found that there were no differences in responses according to gender identity. This initial investigation suggests that the GPSQ-2 is more sensitive to non-binary experiences of gender stability and that clinicians should take this into account when interpreting the GPSQ-2 total and stability subscale scores. As a corollary, these results support the notion that transfeminine and transmasculine individuals share common experiences of

gender related coping and distress (Budge et al., 2013). Further investigation is recommended to understand the interaction between binary and non-binary identities and gender dysphoria and how this may impact the use of the GPSQ-2.

The study found that scores for the GPSQ-2 total, the preferred outcome measure, could be translated into a continuum ranging from not at all distressed to highly distressed (not at all distressed 0 – 10, not very distressed 11 – 20, somewhat distressed 21 – 28, and highly distressed 29 – 54). Cut-points were also calculated for the optional subscale scores. While these cut-points may aid in providing an easy-to-understand alternative to the total score, their use is cautioned given the low-moderate degree of confidence in the results. Moreover, the continuum scores may also be considered more clinically relevant than using a single cut-score that risks overly simplifying experiences of gender dysphoria as either meeting or not meeting a clinical threshold (Austin et al., 2021). For example, in an assessment of known-groups validity Bowman et al. (2022) found that a cut-score of 14.5 for the GPSQ-2 total was able to differentiate between a control sample and clinical sample with high levels of sensitivity (.97) and specificity (.87). While this result is statistically important for the validation of the GPSQ-2, it does not necessarily aid in the interpretation of the measure.

The final analysis of the confidence to live a satisfied life with their current gender identity, despite being a single item measure, yielded several important results. Firstly, the assessment of confidence to live a satisfied life was strongly correlated to the GPSQ-2 total and subscale scores. Lower scores on the GPSQ-2 indicated higher degrees of confidence to live a satisfied life. Secondly, there were no significant differences in confidence to live a satisfied life by gender identity (transfeminine, transmasculine or non-binary). Finally, approximately 88% of all respondents were

somewhat to extremely confident that they could live a satisfied life with their current gender identity. This final result is important as it indicates the high degree of confidence of living a satisfied life that was exhibited in this population despite the range of gender related stress that was reported. Such information can be used in the clinical setting to not only validate individual experiences of despair regarding the future but also to promote hope that a majority of transgender and gender diverse individuals are confident that they will lead a satisfied life.

10.4.1 Strengths and Limitations

A strength of the current study is the use of a community sample and the assessment of subjective experiences of distress. The community sample, as opposed to a clinical sample, is considered a strength as it acknowledges that experiences of gender dysphoria are frequently triggered by external events (Lindley & Galupo, 2020) and that this can have a significant impact on a person's wellbeing irrespective of their diagnosis of gender dysphoria. In this instance the community sample is well represented with a range of results on the GPSQ-2 from zero to almost full scale. Similarly, the use of subjective experiences of distress, as opposed to clinician ratings, for establishing the cut-points was seen as a strength as it recognises the lived experience of transgender and gender diverse individuals (Galupo, 2017) and validates their contribution to the research. Using cisgender clinician ratings to determine these cut-points risks the introduction of a cisgender, non-normative bias (Austin et al., 2021; Galupo, 2017) as well as additional concerns that differences exist between how gender dysphoria is conceptualised by the clinical community and how it may be experienced by transgender individuals (Galupo & Pulice-Farrow, 2020).

A limiting factor for the research is the low number of transmasculine participants and the associated variation in groups sizes for the assessment of the one-way analysis of variance by gender identity and subjective experiences of distress. Consequently, the limited power of the study increases the likelihood of making a Type II error and not identifying a relationship where a relationship does indeed exist. This could be overcome by recruiting more participants and targeting the recruitment to focus on attracting transmasculine participants.

10.4.2 Conclusion

The current study provides an initial set of guidelines for interpreting the GPSQ-2 in a clinical setting. While the study has found some minor floor effects for the stability subscale it has also found a high degree of variability in responses. For most, issues relating to gender related stability are unlikely to be of concern, for some however they will likely be a significant source of distress that warrants further assessment as part of the formulation. The study has also found a potential bias for the GPSQ-2 to score an elevated response for non-binary individuals and this appears to focus on the stability subscale. Further investigation is required to determine if this is an internal bias within the GPSQ-2 or a reflection of different experiences of gender related distress. The study also recommends the use of a continuum ranging from not at all distressed to highly distressed to describe scores on the GPSQ-2. The use of easy-to-understand language and avoidance of diagnostic categorisation reduces the potential for further pathologisation. Finally, the study has found that despite a strong relationship between confidence to live a satisfied life and gender dysphoria, a majority of participants were confident that they would live a satisfied life with their current gender identity. This is clinically important as it helps to normalise current distress and foster hope in the future. Further development of the GPSQ-2 includes

the use of a longitudinal design to determine minimal important change and an assessment of cross-cultural validity. In summary, the GPSQ-2 has been found to be a clinically relevant tool for the use in clinical settings to assist in the process of patient formulation and assessment for both binary and non-binary transgender and gender diverse populations.

Chapter 11: Overall Discussion and Concluding Comments

Gender dysphoria is a descriptive term used to describe the distress that may be experienced when an individual's gender identity is incongruent with their sex assigned at birth (Coleman et al., 2012). Estimates suggest that 1 – 3% of individuals exhibit gender variant expression and/or identity (Eisenberg et al., 2017; Kuyper & Wijzen, 2014) with a recent increase in the number of trans and gender diverse presentations (Zucker, 2017) and a decrease in the age of initial presentation (Dèttore et al., 2015). Experiences of gender dysphoria have been shown to have a significant impact on the mental health of trans and gender diverse individuals (Heylens et al., 2014). While the various clinical and diagnostic guidelines have been largely successful in reducing stigma and improving access to healthcare for trans and gender diverse patients, these guidelines are not sufficient for informing a multi-modal psychological assessment. Such an assessment is needed to inform a case formulation and treatment plan. While a number of PROMs are available to assess gender dysphoria, there are significant limitations to this literature.

The aim of this program of research was to enhance the psychological assessment of gender dysphoria in both adolescents and adults. This was achieved by, firstly, conducting a systematic review of available patient report outcome measures (PROMs) for this patient group, and secondly, by developing and evaluating a new PROM to assess experiences of gender dysphoria, the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2). The program of research represents a key component of the multi-modal assessment of symptoms, which could inform case formulation, treatment planning, and an evaluation of response to treatment. Given the increasing impact of gender dysphoria on mental health, ensuring that mental health

professionals are appropriately equipped with evidence-based tools to support this population is a key priority.

11.1 Contributions of the Dissertation

11.1.1 Study 1

The aim of Study 1 (Chapter 4) was to conduct a systematic review of existing measures of gender dysphoria. The systematic review was conducted in accordance with the *Consensus-based Standards for the Selection of Health Measurement Instruments (COSMIN) Methodology for Systematic Reviews of Patient-Reported Outcome Measures* (Mokkink, de Vet, et al., 2018; Prinsen et al., 2018; Terwee et al., 2018) and the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)* guidelines (Moher et al., 2015; Shamseer et al., 2015). The objective of the systematic review was to provide a comprehensive, systematic, and transparent assessment of PROMs available for the assessment of gender dysphoria in individuals over the age of 13. The evaluation process included assessments of: 1) content validity; 2) internal validity (structural validity, internal consistency, and cross-cultural validity); and 3) other measurement properties (reliability, measurement error, criterion validity, construct validity and responsiveness).

The systematic review identified five measures of gender dysphoria for use with people aged 17-years and over. These include the Gender Congruence and Life Satisfaction Scale (GCLS; Bauerband & Galupo, 2014), Gender Identity Reflection and Rumination Scale (GRRS; Bauerband & Galupo, 2014), Gender Preoccupation and Stability Questionnaire (Hakeem et al., 2016), Trans Collaborations Clinical Check-In (TC3; Holt et al., 2019), and Transgender Adaptation and Integration Measure (TG AIM; Sjoberg et al., 2006). There were no additional validation studies identified for any of the PROMs (i.e., each PROM was only evaluated in a single

study). Issues regarding methodological quality of the measure development (content validity) were found in all measures. The methodological quality of internal validity and construct validity ranged from ‘inadequate’ to ‘very good’. Additionally, from a methodological perspective, none of the studies conducted an assessment of test-retest reliability and only one study (Gender Preoccupation and Stability Questionnaire; GPSQ; Hakeem et al., 2016) provided qualitative data on the interpretability of the measure.

The systematic review demonstrated the significant limitations of the existing literature and highlighted that none of the identified measures would be deemed trustworthy according to the COSMIN standards. The systematic review is the first publication to objectively identify these shortcomings in the assessment of gender dysphoria. Specific concerns raised by the review include a lack of attention paid to the involvement of trans and gender diverse populations in the assessment of relevance, comprehensibility, and comprehensiveness during the measure development. This is critical given the importance of content validity and the need for increased visibility of trans and gender diverse perspectives in the research process. Additional development recommendations included the need for assessments of test-retest reliability, assessments of interpretability, and additional validation studies. The findings of the systematic review informed the development of Studies 2, 3 and 4 which aimed to address some of the limitations of the existing literature.

11.1.2 Study 2

Study 2 (Chapter 6) was a three-stage study that documented the measure revision (stage 1), pilot study (stage 2), and initial validation (stage 3) of the Gender Preoccupation and Stability Questionnaire – 2nd Edition (GPSQ-2). The objective of

Study 2 was to develop a methodological sound PROM for use in the psychological assessment and treatment of gender dysphoria in adolescents and adults.

Measure Revision. The measure revision process was informed by the limitations of the GPSQ identified in the systematic review (Study 1; Chapter 4). Updates incorporated in the GPSQ-2 included: 1) downward extension of the construct of gender dysphoria for use in adolescent populations; 2) updates to the text and questionnaire format to improve readability, reduce ambiguity, and improve the use of gender affirming language; and 3) updates to items to improve the psychometric properties of the PROM.

Pilot Study. A core focus in the development of the GPSQ-2 was to ensure the inclusion of trans and gender diverse participants to assess the relevance, comprehensibility, and comprehensiveness of the measure. These are important components of the COSMIN methodology for establishing content validity (Terwee et al., 2018) and were identified in the systematic review (Study 1; Chapter 4) as being in need of further development for the original GPSQ. Qualitative findings from the study demonstrated that participants found the GPSQ-2 to be inclusive of different gender identities and the variations in experiences of gender dysphoria over time. Quantitative findings from the study demonstrated that the GPSQ-2 was both relevant and comprehensive. Minor updates to the language were made after feedback to improve the comprehensibility of the measure.

Validation Study. The GPSQ-2 was found to be a valid and reliable, 14-item assessment of the construct of gender dysphoria in adolescents and adults. The factor analysis found that the GPSQ-2 is best represented by a bifactor model that consists of a total score and two subscale scores representing the constructs of preoccupation and stability. Further assessments of dimensionality recommended that the total score be

used in preference to the subscale scores. Cronbach's alpha and McDonald's omega indicate that the GPSQ-2 total score has excellent reliability. The GPSQ-2 total score was also found to exhibit very good convergent construct validity with large correlations between the measure and other constructs of gender dysphoria and psychological distress.

The initial validation study demonstrated that the GPSQ-2 had good to excellent test-retest reliability over a two-week period. In addition to the assessment of test-retest reliability, the study included calculations of standard error of measurement and smallest detectable change and found that a difference in score of more than 11 between repeat administrations, represents a real change in the underlying construct above and beyond measurement error. These properties are important given the variability of experiences of gender dysphoria and have been absent from the majority of gender dysphoria PROM development studies to date. The GPSQ-2 extends the current literature by resolving identified concerns regarding the methodological quality of the original GPSQ and ensuring the measure is suitable for both adolescents and adults.

11.1.3 Study 3

The aim of Study 3 (Chapter 8) was to replicate and extend the findings from Study 2 (Chapter 6) to further validate the GPSQ-2, this time utilising a clinical sample. In this study, the GPSQ-2 was found to have good reliability, was able to differentiate between known-groups (i.e., those with and without gender dysphoria), and exhibit convergent validity with large correlations between the GPSQ-2 and related measures of gender dysphoria. Contrary to expectations, the GPSQ-2 did not exhibit convergent validity with the construct of psychological distress.

The validation of the GPSQ-2 extends the literature by providing additional data on the measurement properties that are used to establish the trustworthiness of a measure. In accordance with the COSMIN methodology (Mokkink, Prinsen, et al., 2018) measurement properties for pooled validation studies (Study 2 and Study 3) may be assessed for risk of bias (quality of the studies), inconsistency (unexplained variation in results between studies), imprecision (inadequate sample size), and indirectness (evidence from populations other than the population of interest). The COSMIN definitions of quality levels are shown in Table 11.1. The assessment of reliability and known-groups validity across Study 2 (Chapter 6) and Study 3 (Chapter 8) are considered to be representative of high-quality, trustworthy, evidence¹¹. This is based on there being: 1) no risk of bias, the completion of two or more studies of at least adequate quality or one study of very good quality; 2) no unexplained inconsistency between results; 3) no concerns with imprecision (pooled total sample is greater than 100); and 4) no issues with indirectness (the clinical population in Study 3 is considered to be a subset of the community population in Study 2). The quality of the evidence for the convergent validity has however been downgraded to moderate as there is no explanation for non-significant correlation between the GPSQ-2 and psychological distress (as measured by the Kessler Psychological Distress Scale; K-10; Kessler et al., 2002).

¹¹ The author acknowledges that such an assessment should be verified by an independent third-party as per the COSMIN methodology.

Table 11.1*COSMIN Definitions of Quality Levels for the Assessment of Measurement**Properties*

Quality level	Definition
High	We are very confident that the true measurement property lies close to that of the estimate* of the measurement property
Moderate	We are moderately confident in the measurement property estimate: the true measurement property is likely to be close to the estimate of the measurement property, but there is a possibility that it is substantially different
Low	Our confidence in the measurement property estimate is limited: the true measurement property may be substantially different from the estimate of the measurement property
Very low	We have very little confidence in the measurement property estimate: the true measurement property is likely to be substantially different from the estimate of the measurement property.

Note.

* Estimate of the measurement property refers to the pooled or summarised result of the measurement property of a PROM.

(Mokkink, Prinsen, et al., 2018)

11.1.4 Study 4

The aim of Study 4 (Chapter 10) was to examine the interpretability of the GPSQ-2 in a community sample. The findings of the study reveal higher overall GPSQ-2 total and stability subscale scores for non-binary participants and minor floor effects on the stability subscale for transmasculine and transfeminine participants. The study also identified four descriptive categories (not at all distressed, not very distressed, somewhat distressed, and highly distressed) to qualitatively interpret the GPSQ-2 scores. Lastly, the study found that across all gender identities a majority of participants were confident that they would live a satisfied life with their current gender identity and that high levels of confidence were associated with lower levels of gender dysphoria.

Study 4 extends the literature by providing quantitative data on different experiences of gender dysphoria by gender identity. With respect to transmasculine and transfeminine participants the findings show that there were no significant differences in the responses for the GPSQ total, preoccupation, and stability subscales. Differences in experiences of gender dysphoria were however found between binary and non-binary gender identities. On average non-binary participants recorded higher on the GPSQ-2 total and stability subscale scores than binary participants. These differences, however, were not reflected in subjective experiences of distress which were similar across the two the two groups.

11.2 Strengths of this Dissertation

A consistent strength represented throughout the research studies is a grounding in established research methodology for the development of PROMs. The use of such methodologies, COSMIN or otherwise, results in evidence-based measures that can be used with a high degree of trust. Furthermore, the research

demonstrates that it is possible to further develop and adapt existing measures that predate the COSMIN standards, so that they are a relevant, comprehensive, and provide a comprehensible evaluation of the measurement construct. A key component of the COSMIN methodology is to understand the performance of measures in different patient populations (Mokkink, de Vet, et al., 2018). This has been achieved by performing an initial validation study using a community sample and a further validation study in a sample experiencing, or diagnosed with, gender dysphoria. In doing so the research design has recognised the need for both breadth in the measure development (Clark & Watson, 2019) as well as clinical relevance (de Vet et al., 2011).

The research has been further strengthened by the researcher's identification as a member of the trans and gender diverse community. This is important as it allows the research to be inclusive of lived experience of gender dysphoria and minority stress. Consequently, throughout the research, there has been an internal tension between the role of researcher, psychologist, and ally. Being aware of these influences has allowed for improved insight into the research process (Finlay, 2002) and a focus on delivering research that is both relevant and sensitive to the needs of the trans and gender diverse community and clinically relevant.

11.3 Weaknesses of this Dissertation

A consistent weakness in the dissertation is the lack of a theoretical model of gender dysphoria to work with (Valentine & Shipherd, 2018). The use of theoretical models is beneficial for interpreting findings and conceptualising pathways that may contribute to mental health outcomes (Valentine & Shipherd, 2018). It is hoped that the current research, and future research utilising the GPSQ-2, can help lead to

elaborate the construct of gender dysphoria and to further inform the development of a theoretical framework.

Additionally, the recruitment of participants has been a consistent challenge. While the power analysis has demonstrated adequate participant numbers for the reported research it has prevented the further exploration of between-group differences that would aid in the interpretability of the GPSQ-2. Additional analysis that would be beneficial includes the assessment of reliability and validity by gender identity. To assess the structural validity by gender identity would require a minimum of 100 participants per subgroup. To achieve this with a clinical sample would require partnering with multiple organisations, gender clinics and other community groups, which are able to recruit a range of participants who may, or may not, be seeking medical/surgical interventions.

Important aspects of the COSMIN taxonomy that have not been assessed are the assessment of responsiveness and minimal important change (MIC). Responsiveness refers to the validity of a change in score between two measurements. That is, the ability to detect a hypothesised change in score that is a result of a treatment or other intervention (de Vet et al., 2011). Whereas, MIC, a component of the interpretability analysis, refers to the smallest change in scores that patients perceive as important (de Vet et al., 2011). Assessments of responsiveness and MIC are based on the longitudinal analysis of patient treatment outcomes that is beyond the scope of the current dissertation. As such, it is recommended that future research utilising the GPSQ-2 in a clinical setting (psychological or medical) perform longitudinal outcomes assessments to investigate these variables.

11.4 Clinical Implications

Having a brief, easy to implement PROM of gender dysphoria is a critical component of multi-modal evidence-based psychological assessment. While the *WPATH Standards of Care* (Coleman et al., 2012), *Endocrine Society Clinical Practice Guideline* (Hembree et al., 2017), and *Australian Standards of Care* (Telfer et al., 2017) provide detailed guidelines on the assessment of readiness for medical and surgical interventions, they do not meet the prerequisites for evidence-based psychological assessment. Prerequisites for evidence-based psychological assessment include structured and clinical interviews and validated patient-reported scales of symptom severity (Joiner et al., 2005).

Studies 2 (Chapter 6) and 3 (Chapter 8) have validated the GPSQ-2 as a measure of gender dysphoria for use in trans and gender diverse populations. Thus, this PROM can be used as part of a multi-modal assessment in both adolescents and adults. While the GPSQ-2 may not capture specific adolescent experiences of gender dysphoria (see Study 2), it allows for the longitudinal assessment of the transition from adolescence to adulthood using a single PROM. This is particularly important period of change in both cognitive development and eligibility for medical and surgical interventions.

Study 4 (Chapter 10) also demonstrated that the scores on the GPSQ-2 can be used as a continuous conceptualisation of gender dysphoria ranging from ‘not very distressed’ to ‘highly distressed’, rather than a dichotomous conceptualisation of ‘present’ or ‘absent’, which may be more acceptable to patients. From a clinical perspective the development of the GPSQ-2 mirrors the approach of Fisk (1974) in that the assessment of gender dysphoria is conducted in the “here and now” (p. 389) to determine how well a patient is coping. As such, the focus of the GPSQ-2 has been

to develop a tool to aid in the psychological assessment, to inform the case formulation, and to monitor the effectiveness of treatment, as opposed to establishing a formal diagnosis.

Study 4 (Chapter 10) has shown that while most individuals experiencing gender dysphoria report distress associated with preoccupation (Figure 10.2) only some experience issues regarding gender stability (Figure 10.3). Similarly, the results of Study 4 (Chapter 10) vary by gender identity with non-binary individuals experiencing higher GPSQ total and stability subscale scores than binary individuals. Thus, while the GPSQ-2 total score may be the most effective assessment of overall experiences of gender dysphoria (Study 2; Chapter 6), treatment interventions will need to be customised to account for individual variations in preoccupation and stability. It is important for clinicians working with this patient group to be aware of these differences.

A final contribution of the research is the recognition that a majority of participants indicated that they were confident that they would live a satisfied life with their current gender identity. This represents considerable advancement in individual health outcomes compared to 60 years ago when “[transsexuals] probably languished in mental institutions, some in prisons, and the majority as miserable, unhappy members of the community, unless they committed suicide” (Benjamin, 1966, p. 11). The data also provides clinicians the opportunity to normalise and reframe gender dysphoria with a focus on the positive aspects of transitioning and hope for the future.

11.5 Theoretical Implications

11.5.1 Theoretical Model

A shortcoming in the gender dysphoria literature is a lack of an established theoretical model to aid in the conceptualisation of gender dysphoria and subsequent

treatment planning (Valentine & Shipherd, 2018). Two current frameworks of gender dysphoria have been proposed, the clinical model and the social model.

The prevailing clinical view (Pulice-Farrow et al., 2020) is that gender dysphoria is a result of an incongruence between a person's gender identity and their assigned sex at birth (APA, 2013a). A key component of this model is a focus on the body and the role of body dissatisfaction (Galupo et al., 2020). Mitigating factors in this model include social, medical, and surgical transition (Coleman et al., 2012). Clinical aspects of the model identified in the current research include the relationship between gender dysphoria and genital incongruence (GCLS), and rumination regarding one's gender identity (GRRS), which were demonstrated in Studies 2 (Chapter 6) and 3 (Chapter 8).

More recently a second model, grounded in cisgenderism (Riggs et al., 2015) and Meyer's (2003) minority stress theory has emerged. This social model of gender dysphoria predicates that gender dysphoria is a result of social stigma and internalising societies expectations (internalised transphobia) of gender (Bockting et al., 2020; Galupo et al., 2020; Riggs et al., 2015), which can result in feelings of shame and hatred (Bockting et al., 2020). Mitigating factors in this model include social support and community connectedness and may also include medical and surgical affirmation where indicated (Riggs et al., 2015). Social aspects of the model identified in the current research include the relationship between gender dysphoria and preoccupation with other's perceptions (GRRS), and social gender role recognition (GCLS), which were demonstrated in Studies 2 (Chapter 6) and 3 (Chapter 8).

Taken together, a model of gender dysphoria emerges that supports both the clinical model, as adopted by the DSM-5 (APA, 2013a), and a social model that is

aligned with the minority stress theory (Lindley & Galupo, 2020). Finally, from a mental health perspective, the research has recognised both mental ill-health, in the form of distress, anxiety, depression, and reduced functioning, as well as positive health aspects such as life satisfaction. Further research is required to integrate these constructs into a single model that promotes positive health as well as the prevention and treatment of ill health.

11.5.2 Gender Identity

From a theoretical perspective the current research indicates that experiences of gender dysphoria vary for binary and non-binary individuals. Existing research has suggested that aspects of gender instability, that may be distressing in binary gender identities, may not be experienced by non-binary individuals who may hold a less rigid view of gender (Jones et al., 2019c). Similarly, it is also possible that societies expectations of a binary presentation and attendant social stigma (Jones et al., 2019c), may be the cause of additional psychological distress and not gender incongruence or body dissatisfaction (Jones et al., 2019a). Different experiences of gender dysphoria for binary and non-binary individuals are supported by the findings of Study 4. Specifically, Study 4 found increased scores for gender dysphoria and gender related stability, but not subjective experiences of distress, for non-binary participants.

While the constructs of gender dysphoria, such as preoccupation with gender and gender stability, may be similar for binary and non-binary patients it is likely that the trajectories experienced by each group differ. While preoccupation with gender is likely to be experienced by both groups, issues relating to gender related stability are likely to differ depending on the stage of transition. For binary individuals, issues with gender stability are likely to be experienced prior to transition, whereas non-binary individuals may experience increased social stress, which has an impact on gender

stability, post transition. Further longitudinal research is required to elucidate these differences.

11.6 Future Directions

11.6.1. Further Research on the GPSQ-2

The results from this program of research demonstrate that there is moderate to high evidence to support the trustworthiness of the GPSQ-2 as a measure of gender dysphoria. However, further research and validation is required using a larger clinical sample to investigate and compare the validity of the GPSQ-2 in binary and non-binary clinical populations. This is inclusive of independent third-party analysis of the quality of the measure development and replication of the measurement properties. Specific aspects of the validity that require investigation include the structure of the GPSQ-2, to confirm the presence of both the stability and preoccupation subscales, and the subsequent unidimensionality of the GPSQ-2. Moreover, resolution of the issues regarding convergent construct validity (Study 3; Chapter 8), will help to improve the quality of the evidence to support the trustworthiness of the GPSQ in accordance with the COSMIN methodology. Additionally, longitudinal outcome research is also required to assess the: 1) responsiveness of the GPSQ-2, the ability to detect changes that are a result of treatment; and 2) to aid in the interpretability of the GPSQ-2 by determining the minimal important change (the smallest change in scores that patients perceive as important. Finally, it is important to evaluate the cross-cultural validity of the GPSQ-2 in future research. This is especially important in Aboriginal and Torres Strait Islander populations who may have differing perceptions of gender roles (Kerry, 2014).

11.6.2 Adolescent Specific Measures of Gender Dysphoria

Despite the benefits of the being able use the GPSQ-2 to assess gender dysphoria in both adolescents and adults, the research has identified the potential for developing a version of the GPSQ-2 that has been customised exclusively for use with adolescents. Specific issues that have been highlighted in adolescent presentations include: a preoccupation with body image (Becker et al., 2016) and subsequent disordered eating (Witcomb et al., 2015); the impact of bullying (Holt et al., 2016) on self-esteem (Hendricks & Testa, 2012) and depression (Holt et al., 2016); and high levels of self-harm and suicidality (Holt et al., 2016). The importance of gender related stability is highlighted in this population given the cognitive development and increased ability for advanced reasoning, abstract thinking and metacognition that occurs during adolescence (Sanders, 2013), and the impact that this may have on an individual's evolving gender identity (Warwick & Shumer, 2021). Therefore, further research is required to assess aspects of gender dysphoria that may be experienced disproportionately in adolescent populations. The development of an adolescent specific measure of gender dysphoria would further inform the multimodal assessment of gender dysphoria in this population.

11.6.3 Multimodal Assessment of Gender Dysphoria

While the GPSQ-2 has been shown to be a reliable PROM for assessing gender dysphoria, it is important to develop additional tools to fully inform the multimodal assessment. Additional tools may include structured diagnostic interviews, questionnaires, and additional PROMs. Further research is therefore required to fully develop the multimodal assessment toolset for assessing gender dysphoria.

11.6.4 Treatment of Gender Dysphoria

With the development of the GPSQ-2 it is possible to assess the effectiveness of social, medical, surgical, and psychological treatments for reducing gender dysphoria. Future directions for the assessing the effectiveness of psychological treatment to reduce gender dysphoria includes an evaluation of the efficacy of different modalities of psychological therapy, such as problem solving, cognitive behaviour therapy, and acceptance and commitment therapy. This data will contribute to enhanced outcomes for the psychological treatment of gender dysphoria.

11.6.5 Theoretical Conceptualisation of Gender Dysphoria

The GPSQ-2 can also be used to further develop the conceptual models of gender dysphoria. This includes the potential to further investigate the relationship between gender dysphoria and the clinical construct of gender incongruence and the social construct of minority stress. Such research may contribute to a single wholistic model of gender dysphoria. This includes the modelling of factors such as social stigma, body dissatisfaction, and gender incongruence and measures of mental health that include shame and both psychological distress and wellbeing.

11.7 Concluding Comments

There is currently a lack of validated measures to assess gender dysphoria. The evidence-based and structured approach to the development of the GPSQ-2 has resulted in a brief, and reliable measure that is appropriate for use in both adolescent and adult samples. As a clinical tool the GPSQ-2 is easy to use in practice and can be used as part of a multi-modal assessment to inform case formulation and treatment. From a theoretical perspective the program of research has found support for both a clinical model of gender dysphoria, that is ground in gender incongruence, as well as a social model that highlights cisgenderism and the impact of social stigma. The

program of research also indicates that while transmasculine and transfeminine individuals may have similar experiences of gender dysphoria it is likely to be different for those with a non-binary gender identity. Additional research is required to: 1a) further validate the dimensionality and construct validity of the GPSQ-2 in a clinical sample to improve the trustworthiness of the GPSQ-2; 1b) assess the responsiveness and minimal important change for the GPSQ-2 to aid in interpretability; 2) develop of an adolescent specific version of the GPSQ-2; 3) development of additional multimodal tools to inform the assessment of gender dysphoria; 4) utilise the GPSQ-2 to assess the effectiveness of treatment methods for resolving gender dysphoria; and 5) utilise the GPSQ-2 as a basis for further development of a wholistic framework for gender dysphoria.

References

- Abdi, H., & Williams, L. J. (2010). Newman-Keuls test and Tukey test. In N. J. Salkind (Ed.), *Encyclopedia of research design*.
<https://doi.org/10.4135/9781412961288>
- Ålgars, M., Alanko, K., Santtila, P., & Sandnabba, N. K. (2012). Disordered eating and gender identity disorder: A qualitative study. *Eating Disorders, 20*(4), 300-311. <https://doi.org/10.1080/10640266.2012.668482>
- Allée, K. M. (2009). Harry Benjamin International Gender Dysphoria Association. In J. O'Brien (Ed.), *Encyclopedia of gender and society*. SAGE Publications, Inc.
<https://doi.org/10.4135/9781412964517>
- Alonso, J., & Lépine, J.-P. (2007). Overview of key data from the European Study of the Epidemiology of Mental Disorders (ESEMED). *The Journal of Clinical Psychiatry, 68*(Suppl 2), 3-9.
- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.).
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.).
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.).
- American Psychiatric Association. (2013a). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- American Psychiatric Association. (2013b). *Fact sheet: Gender dysphoria*. APA.
Retrieved December 29, 2021 from
<https://www.psychiatry.org/psychiatrists/practice/dsm/educational-resources/dsm-5-fact-sheets>

- American Psychiatric Association. (2013c). *Highlights of changes from DSM-IV-TR to DSM-5*. APA. Retrieved December 29, 2021 from <https://www.psychiatry.org/psychiatrists/practice/dsm/history-of-the-dsm>
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev). Retrieved March 25, 2022 from <https://www.psychiatry.org/psychiatrists/practice/dsm>
- American Psychological Association. (2005). *Policy statement on evidence-based practice in psychology*. Retrieved December 28, 2021 from <https://www.apa.org/practice/guidelines/evidence-based-statement>
- American Psychological Association. (2015). Guidelines for psychological practice with transgender and gender nonconforming people. *The American Psychologist*, 70(9), 832-864. <https://doi.org/10.1037/a0039906>
- American Psychological Association. (2020a). *APA dictionary of psychology*. Retrieved December 1, 2021 from <https://dictionary.apa.org/>
- American Psychological Association. (2020b). *Publication manual of the American Psychological Association* (7th ed.). American Psychological Association.
- American Psychological Association. (2021). *APA resolution on gender identity change efforts*. Retrieved November 27, 2021 from <https://www.apa.org/about/policy/resolution-gender-identity-change-efforts.pdf>
- Ashley, F. (2020). A critical commentary on ‘rapid-onset gender dysphoria’. *The Sociological Review*, 68(4), 779-799. <https://doi.org/10.1177/0038026120934693>

- Ashley, F. (2021). The misuse of gender dysphoria: Toward greater conceptual clarity in transgender health. *Perspectives on Psychological Science, 16*(6), 1159-1164. <https://doi.org/10.1177/1745691619872987>
- Austin, A., Holzworth, J., & Papciak, R. (2021). Beyond diagnosis: 'Gender dysphoria feels like a living hell, a nightmare one cannot ever wake up from'. *Psychology of Sexual Orientation and Gender Diversity*.
<https://doi.org/10.1037/sgd0000460>
- Australian Professional Association of Transgender Health. (2018). *Australian standards of care and treatment guidelines for trans and gender diverse children and adolescents*. Retrieved December 2, 2021 from <https://auspath.org.au/2018/02/01/australian-standards-of-care-and-treatment-guidelines-for-trans-and-gender-diverse-children-and-adolescents/>
- Australian Psychological Society. (2018a). *Evidence-based psychological interventions in the treatment of mental disorders: A review of the literature* (4th ed.). Australian Psychological Society.
- Australian Psychological Society. (2018b). *Information sheet: Australian Psychological Society recommends mental health practices that affirm transgender people's experiences*. Retrieved November 27, 2021 from <https://psychology.org.au/about-us/what-we-do/advocacy/position-statements/mental-health-practices-affirm-transgender>
- Bariola, E., Lyons, A., Leonard, W., Pitts, M., Badcock, P., & Couch, M. (2015). Demographic and psychosocial factors associated with psychological distress and resilience among transgender individuals. *American Journal of Public Health, 105*(10), 2108-2116. <https://doi.org/10.2105/AJPH.2015.302763>

- Barr, S. M., Budge, S. L., & Adelson, J. L. (2016). Transgender community belongingness as a mediator between strength of transgender identity and well-being. *Journal of Counseling Psychology, 63*(1), 87-97. <https://doi.org/10.1037/cou0000127>
- Bauerband, L. A., & Galupo, M. P. (2014). The Gender Identity Reflection and Rumination Scale: Development and psychometric evaluation. *Journal of Counseling & Development, 92*(2), 219-231. <https://doi.org/10.1002/j.1556-6676.2014.00151.x>
- Becker, I., Nieder, T. O., Cerwenka, S., Briken, P., Kreukels, B. P. C., Cohen-Kettenis, P. T., De Cuypere, G., Haraldsen, I. R. H., & Richter-Appelt, H. (2016). Body image in young gender dysphoric adults: A European multi-center study. *Archives of Sexual Behavior, 45*(3), 559-574. <https://doi.org/10.1007/s10508-015-0527-z>
- Beek, T. F., Cohen-Kettenis, P. T., Bouman, W. P., Annelou, L. C. d. V., Steensma, T. D., Witcomb, G. L., Arcelus, J., Richards, C., Elaut, E., & Baudewijntje, P. C. K. (2016). Gender incongruence of adolescence and adulthood: Acceptability and clinical utility of the World Health Organization's proposed ICD-11 criteria. *PLoS ONE, 11*(10). <https://doi.org/10.1371/journal.pone.0160066>
- Beek, T. F., Cohen-Kettenis, P. T., Bouman, W. P., de Vries, A. L., Steensma, T. D., Witcomb, G. L., Arcelus, J., Richards, C., De Cuypere, G., & Kreukels, B. P. (2017). Gender incongruence of childhood: Clinical utility and stakeholder agreement with the World Health Organization's proposed ICD-11 criteria. *PLoS ONE, 12*(1). <https://doi.org/10.1371/journal.pone.0168522>
- Beek, T. F., Cohen-Kettenis, P. T., & Kreukels, B. P. (2016). Gender incongruence/gender dysphoria and its classification history. *International*

Review of Psychiatry, 28(1), 5-12.

<https://doi.org/10.3109/09540261.2015.1091293>

Benjamin, H. (1966). *The transsexual phenomenon*. The Julian Press.

Bockting, W., Robinson, B., Benner, A., & Scheltema, K. (2004). Patient satisfaction with transgender health services. *Journal of Sex & Marital Therapy*, 30(4), 277-294. <https://doi.org/10.1080/00926230490422467>

Bockting, W. O., & Ehrbar, R. D. (2005). Commentary: Gender variance, dissonance, or identity disorder? *Journal of Psychology & Human Sexuality*, 17(3/4), 125-134. https://doi.org/10.1300/J056v17n03_08

Bockting, W. O., Miner, M. H., Swinburne Romine, R. E., Dolezal, C., Robinson, B. E., Rosser, B. R. S., & Coleman, E. (2020). The Transgender Identity Survey: A measure of internalized transphobia. *LGBT Health*, 7(1), 15-27. <https://doi.org/10.1089/lgbt.2018.0265>

Bouman, W. P., Schwend, A. S., Motmans, J., Smiley, A., Safer, J. D., Deutsch, M. B., Adams, N. J., & Winter, S. (2017). Language and trans health. *International Journal of Transgenderism*, 18(1), 1-6. <https://doi.org/10.1080/15532739.2016.1262127>

Bowman, S. J., Casey, L. J., McAloon, J., & Wootton, B. M. (2021). Assessing gender dysphoria: A systematic review of patient reported outcome measures. *Psychology of Sexual Orientation and Gender Diversity*. <https://doi.org/10.1037/sgd0000486>

Bowman, S. J., Demant, D., McAloon, J., & Wootton, B. M. (2022). *Further validation of the Gender Preoccupation and Stability Questionnaire - 2nd Edition (GPSQ-2)*. Graduate School of Health, Univeristy of Technology Sydney.

- Bowman, S. J., Hakeem, A., Demant, D., McAloon, J., & Wootton, B. M. (2021). *Assessing gender dysphoria: Development and validation of the Gender Preoccupation and Stability Questionnaire - 2nd Edition (GPSQ-2)* [Manuscript submitted for publication]. Graduate School of Health, Univeristy of Technology Sydney.
- Bradford, N. J., Rider, G. N., & Spencer, K. G. (2019). Hair removal and psychological well-being in transfeminine adults: Associations with gender dysphoria and gender euphoria. *Journal of Dermatological Treatment*, 1-8. <https://doi.org/10.1080/09546634.2019.1687823>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Brown, T. A. (2015). *Confirmatory factor analysis for applied research*. Guilford Press.
- Budge, S. L., Adelson, J. L., & Howard, K. A. (2013). Anxiety and depression in transgender individuals: The roles of transition status, loss, social support, and coping. *Journal of Consulting and Clinical Psychology*, 81(3), 545-557. <https://doi.org/10.1037/a0031774>
- Budge, S. L., Sinnard, M. T., & Hoyt, W. T. (2021). Longitudinal effects of psychotherapy with transgender and nonbinary clients: A randomized controlled pilot trial. *Psychotherapy*, 58(1), 1-11. <https://doi.org/10.1037/pst0000310>
- Bujang, M. A., & Baharum, N. (2017). A simplified guide to determination of sample size requirements for estimating the value of intraclass correlation coefficient: A review. *Archives or Orofacial Sciences*, 12(1), 1-11.

- Burdzovic, A. J., & Brunborg, G. S. (2017). Depressive symptomatology among Norwegian adolescent boys and girls: The Patient Health Questionnaire-9 (PHQ-9) psychometric properties and correlates. *Frontiers in Psychology*, 8. <https://doi.org/10.3389/fpsyg.2017.00887>
- Busa, S. M., Leibowitz, S., & Janssen, A. (2018). Transgender adolescents and the gender-affirming interventions: Pubertal suppression, hormones, surgery, and other pharmacological interventions. In A. Janssen & S. Leibowitz (Eds.), *Affirmative mental health Care for transgender and gender diverse youth: A clinical guide*. Springer.
- Butler, G., De Graaf, N., Wren, B., & Carmichael, P. (2018). Assessment and support of children and adolescents with gender dysphoria. *Archives of Disease in Childhood*, 103(7), 631-636. <https://doi.org/10.1136/archdischild-2018-314992>
- Byne, W., Karasic, D. H., Coleman, E., Eyler, A. E., Kidd, J. D., Meyer-Bahlburg, H. F. L., Pleak, R. R., & Pula, J. (2018). Gender dysphoria in adults: An overview and primer for psychiatrists. *Transgender Health*, 3(1), 57-70. <https://doi.org/10.1089/trgh.2017.0053>
- Carifio, J., & Perla, R. J. (2007). Ten common misunderstandings, misconceptions, persistent myths and urban legends about Likert scales and Likert response formats and their antidotes. *Journal of Social Sciences*, 3(3). <https://doi.org/10.3844/jssp.2007.106.116>
- Chakrapani, V., Vijin, P. P., Logie, C. H., Newman, P. A., Shunmugam, M., Sivasubramanian, M., & Samuel, M. (2017). Assessment of a 'Transgender Identity Stigma' scale among trans women in India: Findings from exploratory

- and confirmatory factor analyses. *International Journal of Transgenderism*, 18(3), 271-281. <https://doi.org/10.1080/15532739.2017.1303417>
- Clark, B. A., Veale, J. F., Townsend, M., Frohard-Dourlent, H., & Saewyc, E. (2018). Non-binary youth: Access to gender-affirming primary health care. *International Journal of Transgenderism*, 19(2), 158-169. <https://doi.org/10.1080/15532739.2017.1394954>
- Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, 7(3), 309-319.
- Clark, L. A., & Watson, D. (2019). Constructing validity: New developments in creating objective measuring instruments. *Psychological Assessment*, 31(12), 1412-1427. <https://doi.org/10.1037/pas0000626>
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155-159. <https://doi.org/10.1037/0033-2909.112.1.155>
- Cohen-Kettenis, P., & van Goozen, S. H. (1997). Sex reassignment of adolescent transsexuals: A follow up study. *Journal of the American Academy of Child & Adolescent Psychiatry*, 36(2), 263-271.
- Coleman, E., Bockting, W., Botzer, M., Cohen-Kettenis, P., De Cuypere, G., Feldman, J., & Zucker, K. (2012). Standards of care for the health of transsexual, transgender, and gender nonconforming people, version 7. *International Journal of Transgenderism*, 13(4), 165-232. <https://doi.org/10.1080/15532739.2011.700873>
- Colizzi, M., Costa, R., & Todarello, O. (2014). Transsexual patients' psychiatric comorbidity and positive effect of cross-sex hormonal treatment on mental

- health: Results from a longitudinal study. *Psychoneuroendocrinology*, 39, 65-73. <https://doi.org/10.1016/j.psyneuen.2013.09.029>
- Collazo, A., Austin, A., & Craig, S. L. (2013). Facilitating transition among transgender clients: Components of effective clinical practice. *Clinical Social Work Journal*, 41(3), 228-237. <https://doi.org/10.1007/s10615-013-0436-3>
- Coolican, H. (2017). *Research methods and statistics in psychology* (6 ed.). Taylor & Francis Group.
- COSMIN. (2021). *COSMIN*. Retrieved November 18, 2021 from <https://www.cosmin.nl/>
- Costa, A. B. (2019). Formal comment on: Parent reports of adolescents and young adults perceived to show signs of a rapid onset of gender dysphoria. *PLoS ONE*, 14(3). <https://doi.org/10.1371/journal.pone.0212578>
- Costa, R., Dunsford, M., Skagerberg, E., Holt, V., Carmichael, P., & Colizzi, M. (2015). Psychological support, puberty suppression, and psychosocial functioning in adolescents with gender dysphoria. *Journal of Sexual Medicine*, 12(11), 2206-2214. <https://doi.org/10.1111/jsm.13034>
- Dacakis, G., Davies, S., Oates, J. M., Douglas, J. M., & Johnston, J. R. (2013). Development and preliminary evaluation of the Transsexual Voice Questionnaire for male-to-female transsexuals. *Journal of Voice*, 27(3), 312-320. <https://doi.org/10.1016/j.jvoice.2012.11.005>
- Davy, Z., & Toze, M. (2018). What is gender dysphoria? A critical systematic narrative review. *Transgender Health*, 3(1), 159-169. <https://doi.org/10.1089/trgh.2018.0014>
- de Vet, H. C., Terwee, C. B., Mokkink, L. B., & Knol, D. L. (2011). *Measurement in medicine*. Cambridge University Press.

- de Vries, A. L., & Cohen-Kettenis, P. T. (2012). Clinical management of gender dysphoria in children and adolescents: The Dutch approach. *Journal of Homosexuality, 59*(3), 301-320.
<https://doi.org/10.1080/00918369.2012.653300>
- de Vries, A. L. C., McGuire, J. K., Steensma, T. D., Wagenaar, E. C. F., Doreleijers, T. A. H., & Cohen-Kettenis, P. T. (2014). Young adult psychological outcome after puberty suppression and gender reassignment. *Pediatrics, 134*(4), 696-704. <https://doi.org/10.1542/peds.2013-2958>
- de Vries, A. L. C., Steensma, T. D., Doreleijers, T. A. H., & Cohen - Kettenis, P. T. (2011). Puberty suppression in adolescents with gender identity disorder: A prospective follow-up study. *Journal of Sexual Medicine, 8*(8), 2276-2283.
<https://doi.org/10.1111/j.1743-6109.2010.01943.x>
- Deogracias, J. J., Johnson, L. L., Meyer-Bahlburg, H. F., Kessler, S. J., Schober, J. M., & Zucker, K. J. (2007). The Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults. *The Journal of Sex Research, 44*(4), 370-379.
<https://doi.org/10.1080/00224490701586730>
- Dèttore, D., Ristori, J., Antonelli, P., Bandini, E., Fisher, A. D., Villani, S., de Vries, A. L., Steensma, T. D., & Cohen-Kettenis, P. T. (2015). Gender dysphoria in adolescents: The need for a shared assessment protocol and proposal for the AGIR protocol. *Journal of Psychopathology, 21*(2), 152-158.
- Dhejne, C., Vlerken, R. V., Heylens, G., & Arcelus, J. (2016). Mental health and gender dysphoria: A review of the literature. *International Review of Psychiatry, 28*(1), 44-57. <https://doi.org/10.3109/09540261.2015.1115753>

- Diamond, L. M., Pardo, S. T., & Butterworth, M. R. (2011). Transgender experience and identity. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of identity theory and research* (pp. 629-647). Springer.
- Diener, E., Emmons, R. A., Larson, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, *49*, 71-75.
https://doi.org/10.1207/s15327752jpa4901_13
- Drescher, J., & Byne, W. (2012). Gender dysphoric/gender variant (GD/GV) children and adolescents: Summarizing what we know and what we have yet to learn. *Journal of Homosexuality*, *59*(3), 501-510.
<https://doi.org/10.1080/00918369.2012.653317>
- Dy, G. W., Nolan, I. T., Hotaling, J., & Myers, J. B. (2019). Patient reported outcome measures and quality of life assessment in genital gender confirming surgery. *Translational Andrology and Urology*, *8*(3), 228-240.
<https://doi.org/10.21037/tau.2019.05.04>
- Edwards-Leeper, L., & Spack, N. P. (2012). Psychological evaluation and medical treatment of transgender youth in an interdisciplinary “Gender Management Service” (GeMS) in a major pediatric center. *Journal of Homosexuality*, *59*(3), 321-336. <https://doi.org/10.1080/00918369.2012.653302>
- Eisenberg, M. E., Gower, A. L., McMorris, B. J., Rider, G. N., Shea, G., & Coleman, E. (2017). Risk and protective factors in the lives of transgender/gender nonconforming adolescents. *Journal of Adolescent Health*, *61*(4), 521-526.
<https://doi.org/10.1016/j.jadohealth.2017.04.014>
- Elamin, M. B., Garcia, M. Z., Murad, M. H., Erwin, P. J., & Montori, V. M. (2010). Effect of sex steroid use on cardiovascular risk in transsexual individuals: a

systematic review and meta-analyses. *Clinical Endocrinology*, 72(1), 1-10.

<https://doi.org/10.1111/j.1365-2265.2009.03632.x>

Field, A. (2018). *Discovering statistics using IBM SPSS Statistics*. Sage

Finlay, L. (2002). Negotiating the swamp: The opportunity and challenge of reflexivity in research practice. *Qualitative Research*, 2(2), 209-230.

<https://doi.org/10.1177/146879410200200205>

First, M. B., Williams, J. B. W., Karg, R. S., & Spitzer, R. L. (2016). *Structured clinical interview for DSM-5 disorders, clinical version (SCID-5-CV)*. American Psychiatric Association.

Fischer, J. E., Bachmann, L. M., & Jaeschke, R. (2003). A readers' guide to the interpretation of diagnostic test properties: Clinical example of sepsis.

Intensive Care Medicine, 29(7), 1043-1051. <https://doi.org/10.1007/s00134-003-1761-8>

Fisk, N. M. (1974). Gender dysphoria syndrome - the conceptualization that liberalizes indications for total gender reorientation and implies a broadly based multi-dimensional rehabilitative regimen. *The Western Journal of Medicine*, 120(5), 386-391.

Flores, A. R., Herman, J. L., Gates, G. J., & Brown, T. N. (2016). *How many adults identify as transgender in the United States*. The Williams Institute.

Fritz, M., & Mulkey, N. (2021). The rise and fall of gender identity clinics in the 1960s and 1970s. *Bulletin of the American College of Surgeons*.

<https://bulletin.facs.org/2021/04/the-rise-and-fall-of-gender-identity-clinics-in-the-1960s-and-1970s/#>

- Galupo, M. P. (2017). Researching while cisgender: Identity considerations for transgender research. *International Journal of Transgenderism*, 18(3), 241-242. <https://doi.org/10.1080/15532739.2017.1342503>
- Galupo, M. P., & Pulice-Farrow, L. (2020). Subjective ratings of gender dysphoria scales by transgender individuals. *Archives of Sexual Behavior*, 49(2), 479-488. <https://doi.org/10.1007/s10508-019-01556-2>
- Galupo, M. P., Pulice-Farrow, L., & Lindley, L. (2020). 'Every time I get gendered male, I feel a pain in my chest': Understanding the social context for gender dysphoria. *Stigma and Health*, 5(2), 199-208. <https://doi.org/10.1037/sah0000189>
- Grant, J. M., Mottet, L. A., Tanis, J., Harrison, J., Herman, J. L., & M., K. (2011). *Injustice at every turn: A report of the National Transgender Discrimination Survey*. National Center for Transgender Equality and National Gay and Lesbian Task Force.
- Groth-Marnat, G., & Wright, A. J. (2016). *Handbook of psychological assessment* (6th ed.). John Wiley and Sons.
- Guyatt, G. H., Oxman, A. D., Vist, G. E., Kunz, R., Falck-Ytter, Y., Alonso-Coello, P., & Schünemann, H. J. (2008). GRADE: An emerging consensus on rating quality of evidence and strength of recommendations. *British Medical Journal*, 336(7650), 924-926. <https://doi.org/10.1136/bmj.39489.470347.AD>
- Haghighat, F., Shirazi, E., Ardebili, M. E., & Alavi, K. (2019). Psychometric assessment of the Persian version of a dimensional instrument to measure gender identity disorder. *Revista Latinoamericana De Hipertension*, 14(3), 346.

- Hakeem, A. (2012). Psychotherapy for gender identity disorders. *Advances in Psychiatric Treatment*, 18, 17-24. <https://doi.org/10.1192/apt.bp.111.009431>
- Hakeem, A., Črnčec, R., Asghari-Fard, M., Harte, F., & Eapen, V. (2016). Development and validation of a measure for assessing gender dysphoria in adults: The Gender Preoccupation and Stability Questionnaire. *International Journal of Transgenderism*, 17(3-4), 131-140. <https://doi.org/10.1080/15532739.2016.1217812>
- Hamburger, C., Stürup, G. K., & Dahl-iversen, E. (1953). Transvestism; hormonal, psychiatric, and surgical treatment. *Journal of the American Medical Association*, 152, 391-396. <https://doi.org/10.1001/JAMA.1953.03690050015006>
- Harper, A., & Power, M. (1998). Development of the World Health Organization WHOQOL-BREF quality of life assessment. *Psychological Medicine*, 28(3), 551-558.
- Harris, P. A., Taylor, R., Minor, B. L., Elliott, V., Fernandez, M., O'Neal, L., McLeod, L., Delacqua, G., Delacqua, F., Kirby, J., & Duda, S. N. (2019). The REDCap consortium: Building an international community of software platform partners. *Journal of Biomedical Informatics*, 95. <https://doi.org/10.1016/j.jbi.2019.103208>
- Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J. G. (2009). Research electronic data capture (REDCap)--a metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of Biomedical Informatics* 42(2), 377-381. <https://doi.org/10.1016/j.jbi.2008.08.010>

- Hatzenbuehler, M. L. (2009). How does sexual minority stigma "get under the skin"? A psychological mediation framework. *Psychological Bulletin*, *135*(5), 707-730. <https://doi.org/10.1037/a0016441>
- Helmreich, I., Kunzler, A., Chmitorz, A., König, J., Binder, H., Wessa, M., & Lieb, K. (2017). Psychological interventions for resilience enhancement in adults. *The Cochrane Database of Systematic Reviews*, *2017*(2), CD012527. <https://doi.org/10.1002/14651858.CD012527>
- Hembree, W. C., Cohen-Kettenis, P. T., Gooren, L. J., Hannema, S. E., Meyer, W. J., Murad, M. H., Rosenthal, S. M., Safer, J. D., Tangpricha, V., & T'Sjoen, G. G. (2017). Endocrine treatment of gender-dysphoric/gender-incongruent persons: An Endocrine Society Clinical Practice Guideline. *The Journal of Clinical Endocrinology & Metabolism*, *102*(11), 3869-3903. <https://doi.org/10.1210/jc.2017-01658>
- Hendricks, M. L., & Testa, R. J. (2012). A conceptual framework for clinical work with transgender and gender nonconforming clients: An adaptation of the minority stress model. *Professional Psychology: Research and Practice*, *43*(5), 460-467. <https://doi.org/10.1037/a0029597>
- Heylens, G., Elaut, E., Kreukels, B. P., Paap, M. C., Cerwenka, S., Richter-Appelt, H., Cohen-Kettenis, P. T., Haraldsen, I. R., & De Cuypere, G. (2014). Psychiatric characteristics in transsexual individuals: Multicentre study in four European countries. *The British Journal of Psychiatry*, *204*(2), 151-156. <https://doi.org/10.1192/bjp.bp.112.121954>
- Higgins, J. P., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J., & Welch, V. A. (2021). *Cochrane handbook for systematic reviews of interventions version 6.2*. Cochrane. <https://www.training.cochrane.org/handbook>

- Ho, F., & Mussap, A. J. (2020). Development of the Trans and Gender Diverse Social Anxiety Scale. *Anxiety, Stress and Coping*, 33(6), 675-697.
<https://doi.org/10.1080/10615806.2020.1768533>
- Holt, N. R., Huit, T. Z., Shulman, G. P., Meza, J. L., Smyth, J. D., Woodruff, N., Mocarski, R., Puckett, J. A., & Hope, D. A. (2019). Trans Collaborations Clinical Check-In (TC3): Initial validation of a clinical measure for transgender and gender diverse adults receiving psychological services. *Behavior Therapy*, 50(6), 1136-1149.
<https://doi.org/10.1016/j.beth.2019.04.001>
- Holt, V., Skagerberg, E., & Dunsford, M. (2016). Young people with features of gender dysphoria: Demographics and associated difficulties. *Clinical Child Psychology and Psychiatry*, 21(1), 108-118.
<https://doi.org/10.1177/1359104514558431>
- Huba, G., & Melchior, L. (1996). *Module 22: Quality of Life Form*. Retrieved 25 July 2001 from <https://www.themeasurementgroup.com>
- Hunsley, J., & Mash, E. J. (2007). Evidence-based assessment. *Annual Review of Clinical Psychology*, 3(1), 29-51.
<https://doi.org/10.1146/annurev.clinpsy.3.022806.091419>
- Informed Consent for Access to Trans Healthcare. (n.d.). Retrieved February 16 2022 from <https://icath.info>
- Jackson, D. (2013). Completing a PhD by publication: A review of Australian policy and implications for practice. *Higher Education Research and Development*, 32(3), 355-368. <https://doi.org/10.1080/07294360.2012.692666>
- Johnson, J. G., Harris, E. S., Spitzer, R. L., & Williams, J. B. (2002). The Patient Health Questionnaire for Adolescents: Validation of an instrument for the

assessment of mental disorder among adolescent primary care patients.

Journal of Adolescent Health, 30, 196-204.

Johnson, L. (2018). Scientific and cultural perspectives on the gender binary. In M. R.

Kauth & J. C. Shipherd (Eds.), *Adult transgender care: An interdisciplinary approach for training mental health professionals*. Routledge.

<https://doi.org/10.4324/9781315390505>

Joiner, T. E., Jr., Walker, R. L., Pettit, J. W., Perez, M., & Cukrowicz, K. C. (2005).

Evidence-based assessment of depression in adults. *Psychological Assessment*, 17(3), 267-277. <https://doi.org/10.1037/1040-3590.17.3.267>

Jones, B. A., Bouman, W. P., Haycraft, E., & Arcelus, J. (2019a). Gender congruence and body satisfaction in nonbinary transgender people: A case control study.

International Journal of Transgenderism, 20(2-3), 263-274.

<https://doi.org/10.1080/15532739.2018.1538840>

Jones, B. A., Bouman, W. P., Haycraft, E., & Arcelus, J. (2019b). The Gender

Congruence and Life Satisfaction Scale (GCLS): Development and validation of a scale to measure outcomes from transgender health services. *International Journal of Transgenderism*, 20(1), 63-80.

<https://doi.org/10.1080/15532739.2018.1453425>

Jones, B. A., Bouman, W. P., Haycraft, E., & Arcelus, J. (2019c). Mental health and quality of life in non-binary transgender adults: A case control study.

International Journal of Transgenderism, 20(2-3), 251-262.

<https://doi.org/10.1080/15532739.2019.1630346>

Jones, B. A., Haycraft, E., Murjan, S., & Arcelus, J. (2016). Body dissatisfaction and disordered eating in trans people: A systematic review of the literature.

International Review of Psychiatry, 28(1), 81-94.

<https://doi.org/10.3109/09540261.2015.1089217>

- Kang, H. (2013). The prevention and handling of the missing data. *Korean Journal of Anesthesiology*, 64(5), 402-406. <https://doi.org/10.4097/kjae.2013.64.5.402>
- Karasic, D. H. (2020). Mental health care for the adult transgender patient. In C. A. Ferrando (Ed.), *Comprehensive care of the transgender patient*. Elsevier.
- Kerns, C. M., Maddox, B. B., Kendall, P. C., Rump, K., Berry, L., Schultz, R. T., Souders, M. C., Bennett, A., Herrington, J., & Miller, J. (2015). Brief measures of anxiety in non-treatment-seeking youth with autism spectrum disorder. *Autism*, 19(8), 969-979. <https://doi.org/10.1177/1362361314558465>
- Kerry, S. C. (2014). Sistergirls/Brotherboys: The status of Indigenous transgender Australians. *International Journal of Transgenderism*, 15(3-4), 173-186. <https://doi.org/10.1080/15532739.2014.995262>
- Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S. L. T., Walters, E. E., & Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*, 32(6), 959-976. <https://doi.org/10.1017/S0033291702006074>
- Kinsey, A. C., Pomeroy, W. B., & Martin, C. E. (1948). *Sexual behavior in the human male*. Saunders.
- Klassen, A. F., Kaur, M., Johnson, N., Kreukels, B. P. C., McEvenue, G., Morrison, S. D., Mullender, M. G., Poulsen, L., Ozer, M., Rowe, W., Satterwhite, T., Savard, K., Semple, J., Sørensen, J. A., van de Grift, T. C., van der Meij-Ross, M., Young-Afat, D., & Pusic, A. L. (2018). International phase I study protocol to develop a patient-reported outcome measure for adolescents and

- adults receiving gender-affirming treatments (the GENDER-Q). *BMJ Open*, 8(10), e025435. <https://doi.org/10.1136/bmjopen-2018-025435>
- Kline, P. (2000). *The handbook of psychological testing* (2nd ed.). Routledge.
- Knudson, G., Winter, S., Baral, S., Reisner, S. L., & Wylie, K. (2020). An introduction to gender diversity. In C. A. Ferrando (Ed.), *Comprehensive care of the transgender patient*. Elsevier.
- Koo, T. K., & Li, M. Y. (2016). A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of Chiropractic Medicine*, 15(2), 155-163. <https://doi.org/10.1016/j.jcm.2016.02.012>
- Kozee, H. B., Tylka, T. L., & Bauerband, L. A. (2012). Measuring transgender individuals' comfort with gender identity and appearance: Development and validation of the Transgender Congruence Scale. *Psychology of Women Quarterly*, 36(2), 179-196. <https://doi.org/10.1177/0361684312442161>
- Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606-613. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
- Kuyper, L., & Wijzen, C. (2014). Gender identities and gender dysphoria in the Netherlands. *Archives of Sexual Behavior*, 43(2), 377-385. <https://doi.org/10.1007/s10508-013-0140-y>
- Laub, D. R., & Fisk, N. (1974). A rehabilitation program for gender dysphoria syndrome by surgical sex change. *Plastic and Reconstructive Surgery*, 53(4), 388-403. https://journals.lww.com/plasreconsurg/Fulltext/1974/04000/A_REHABILITATION_PROGRAM_FOR_GENDER_DYSPHORIA.3.aspx

- Leonard, W., Pitts, M., Mitchell, A., Lyons, A., Smith, A., Patel, S., Couch, M., & Barrett, A. (2012). *Private lives 2: The second national survey of the health and wellbeing of GLBT Australians*. The Australian Research Centre in Sex, Health & Society, La Trobe University.
- Lindgren, T. W., & Pauly, I. B. (1975). A body image scale for evaluating transsexuals. *Archive of Sexual Behaviour, 4*, 639-656.
- Lindley, L., & Galupo, M. P. (2020). Gender dysphoria and minority stress: Support for inclusion of gender dysphoria as a proximal stressor. *Psychology of Sexual Orientation and Gender Diversity, 7*(3), 265-275.
<https://doi.org/10.1037/sgd0000439>
- Littman, L. (2018). Parent reports of adolescents and young adults perceived to show signs of a rapid onset of gender dysphoria. *PLoS ONE, 13*(8), e0202330.
<https://doi.org/10.1371/journal.pone.0202330>
- Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety & Stress Scales* (2nd ed.). Psychology Foundation.
- MacNish, M. (2018). Gender dysphoria and family dynamics and culture: A case composite. In A. Janssen & S. Leibowitz (Eds.), *Affirmative mental health Care for transgender and gender diverse youth: A clinical guide*. Springer.
- Manieri, C., Castellano, E., Crespi, C., Di Bisceglie, C., Dell'Aquila, C., Gualerzi, A., & Molo, M. (2014). Medical treatment of subjects with gender identity disorder: The experience in an Italian public health center. *International Journal of Transgenderism, 15*(2), 53-65.
<https://doi.org/10.1080/15532739.2014.899174>
- Matte, N., Devor, A. H., & Vladicka, T. (2009). Nomenclature in the World Professional Association for Transgender Health's Standards of Care:

- Background and recommendations. *International Journal of Transgenderism*, 11(1), 42-52. <https://doi.org/10.1080/15532730902799979>
- McGraw, K. O., & Wong, S. P. (1996). Forming inferences about some intraclass correlations coefficients. *Psychological Methods*, 1(1), 30-46. <https://doi.org/10.1037/1082-989X.1.4.390>
- McGuire, J. K., Berg, D., Catalpa, J. M., Morrow, Q. J., Fish, J. N., Nic Rider, G., Steensma, T., Cohen-Kettenis, P. T., & Spencer, K. (2020). Utrecht Gender Dysphoria Scale - Gender Spectrum (UGDS-GS): Construct validity among transgender, nonbinary, and LGBTQ samples. *International Journal of Transgender Health*, 21(2), 194-208. <https://doi.org/10.1080/26895269.2020.1723460>
- McGuire, J. K., Rider, G. N., Catalpa, J. M., Steensma, T. D., Cohen-Kettenis, P., & Berg, D. R. (2019). Utrecht Gender Dysphoria Scale - Gender Spectrum. In R. R. Milhausen, J. K. Sakaluk, T. D. Fisher, C. M. Davis, & W. L. Yarber (Eds.), *Handbook of sexuality-related measures* (4th ed., pp. 359-362). Routledge.
- McNichols, C. H. L., O'Brien-Coon, D., & Fischer, B. (2020). Patient-reported satisfaction and quality of life after trans male gender affirming surgery. *International Journal of Transgender Health*, 21(4), 410-417. <https://doi.org/10.1080/26895269.2020.1775159>
- Meerwijk, E. L., & Sevelius, J. M. (2017). Transgender population size in the United States: A meta-regression of population-based probability samples. *American Journal of Public Health*, 107(2), e1-e8. <https://doi.org/10.2105/ajph.2016.303578>

- Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, *129*(5), 674-697. <https://doi.org/10.1037/0033-2909.129.5.674>
- Meyer, I. H., Schwartz, S., & Frost, D. M. (2008). Social patterning of stress and coping: Does disadvantaged social statuses confer more stress and fewer coping resources? *Social Science & Medicine*, *67*(3), 368-379. <https://doi.org/10.1016/j.socscimed.2008.03.012>
- Miller, L. R., & Grollman, E. A. (2015). The social costs of gender nonconformity for transgender adults: Implications for discrimination and health. *Sociological Forum*, *30*(3), 809-831. <https://doi.org/10.1111/socf.12193>
- Minter, S. P. (2012). Supporting transgender children: New legal, social, and medical approaches. *Journal of Homosexuality*, *59*(3), 422-433. <https://doi.org/10.1080/00918369.2012.653311>
- Mocarski, R., King, R., Butler, S., Holt, N. R., Huit, T. Z., Hope, D. A., Meyer, H. M., & Woodruff, N. (2019, Sep). The rise of transgender and gender diverse representation in the media: Impacts on the population. *Commun Cult Crit*, *12*(3), 416-433. <https://doi.org/10.1093/ccc/tcz031>
- Moher, D., Shamseer, L., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Shekelle, P., & Stewart, L. A. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews*, *4*(1), 1-9. <https://doi.org/10.1186/2046-4053-4-1>
- Mokkink, L. B., de Vet, H. C., Prinsen, C. A., Patrick, D. L., Alonso, J., Bouter, L. M., & Terwee, C. B. (2018). COSMIN risk of bias checklist for systematic reviews of patient-reported outcome measures. *Quality of Life Research*, *27*(5), 1171-1179. <https://doi.org/10.1007/s11136-017-1765-4>

- Mokkink, L. B., Prinsen, C. A., Patrick, D. L., Alonso, J., Bouter, L. M., de Vet, H. C., & Terwee, C. B. (2018). *COSMIN methodology for systematic reviews of Patient-Reported Outcome Measures (PROMs): User manual*. COSMIN.
- Mokkink, L. B., Terwee, C. B., Knol, D. L., Stratford, P. W., Alonso, J., Patrick, D. L., Bouter, L. M., & de Vet, H. C. W. (2010). The COSMIN checklist for evaluating the methodological quality of studies on measurement properties: A clarification of its content. *BMC Medical Research Methodology*, *10*, 22.
<https://doi.org/10.1186/1471-2288-10-22>
- Mokkink, L. B., Terwee, C. B., Patrick, D. L., Alonso, J., Stratford, P. W., Knol, D. L., Bouter, L. M., & de Vet, H. C. W. (2010a). The COSMIN checklist for assessing the methodological quality of studies on measurement properties of health status measurement instruments: An international Delphi study. *Quality of Life Research*, *19*(4), 539-549. <https://doi.org/10.1007/s11136-010-9606-8>
- Mokkink, L. B., Terwee, C. B., Patrick, D. L., Alonso, J., Stratford, P. W., Knol, D. L., Bouter, L. M., & de Vet, H. C. W. (2010b). The COSMIN study reached international consensus on taxonomy, terminology, and definitions of measurement properties for health-related patient-reported outcomes. *Journal of Clinical Epidemiology*, *63*(7), 737-745.
<https://doi.org/10.1016/j.jclinepi.2010.02.006>
- Monash Health. (2022). *About the Monash Helath Gender Clinic*.
<https://monashhealth.org/services/gender-clinic/gender-clinic-about-us/>
- Morenz, A. M., Goldhammer, H., Lambert, C. A., Hopwood, R., & Keuroghlian, A. S. (2020). A blueprint for planning and implementing a transgender health program. *Annals of Family Medicine*, *18*, 73+.
<https://doi.org/10.1370/afm.2473>

- Moses, K., Gayed, M., Chuah, S., & Wootton, B. M. (2020). The use of evidence-based assessment for anxiety disorders in an Australian sample. *Journal of Anxiety Disorders, 75*, 102279. <https://doi.org/10.1016/j.janxdis.2020.102279>
- Murjan, S., & Bouman, W. P. (2018). Psychiatry. In C. Richards, W. P. Bouman, & M.-J. Barker (Eds.), *Genderqueer and non-binary genders*. Palgrave Macmillan.
- Muthén, L. K., & Muthén, B. O. (2017). *Mplus users guide* (8th ed.). Muthén & Muthén.
- Ong, J. J., Russell, D. B., & Wylie, K. (2017). Caring for transgender people: Looking beyond the hype. *Sexual Health, 14*(5), 401-403.
<https://doi.org/10.1071/SH17165>
- Pontes, H. M., & Griffiths, M. D. (2015). Measuring DSM-5 Internet Gaming Disorder: Development and validation of a short psychometric scale. *Computers in Human Behavior, 45*, 137-143.
<https://doi.org/10.1016/j.chb.2014.12.006>
- Portney, L. G. (2020). *Foundations of clinical research: Applications to evidence-based practice* (4th ed.). McGraw-Hill.
- Poteat, T., Rachlin, K., Lare, S., Janssen, A., & Devor, A. (2019). History and prevalence of gender dysphoria. In L. Poretsky & W. C. Hembree (Eds.), *Transgender medicine. Contemporary endocrinology* (pp. 1-24).
https://doi.org/10.1007/978-3-030-05683-4_1
- Prinsen, C. A. C., Mokkink, L. B., Bouter, L. M., Alonso, J., Patrick, D. L., de Vet, H. C. W., & Terwee, C. B. (2018). COSMIN guideline for systematic reviews of patient-reported outcome measures. *Quality of Life Research, 27*(5), 1147-1157. <https://doi.org/10.1007/s11136-018-1798-3>

- Prunas, A., Fisher, A. D., Bandini, E., Maggi, M., Pace, V., Todarello, O., De Bella, C., & Bini, M. (2016). Eudaimonic well-being in transsexual people, before and after gender confirming surgery. *Journal of Happiness Studies*.
<https://doi.org/10.1007/s10902-016-9780-7>
- Pulice-Farrow, L., Cusack, C. E., & Galupo, M. P. (2020). “Certain parts of my body don’t belong to me”: Trans individuals’ descriptions of body-specific gender dysphoria. *Sexuality Research and Social Policy*, *17*(4), 654-667.
<https://doi.org/10.1007/s13178-019-00423-y>
- Qin, S., Nelson, L., McLeod, L., Eremenco, S., & Coons, S. J. (2019). Assessing test–retest reliability of patient-reported outcome measures using intraclass correlation coefficients: Recommendations for selecting and documenting the analytical formula. *Quality of Life Research*, *28*(4), 1029-1033.
<https://doi.org/10.1007/s11136-018-2076-0>
- Reed, G. M., Drescher, J., Krueger, R. B., Atalla, E., Cochran, S. D., First, M. B., Cohen-Kettenis, P. T., Arango-de Montis, I., Parish, S. J., Cottler, S., Briken, P., & Saxena, S. (2016). Disorders related to sexuality and gender identity in the ICD-11: Revising the ICD-10 classification based on current scientific evidence, best clinical practices, and human rights considerations. *World Psychiatry*, *15*(3), 205-221. <https://doi.org/10.1002/wps.20354>
- Reise, S. P., Bonifay, W. E., & Haviland, M. G. (2013). Scoring and modeling psychological measures in the presence of multidimensionality. *Journal of Personality Assessment*, *95*(2), 129-140.
<https://doi.org/10.1080/00223891.2012.725437>

- Reise, S. P., Morizot, J., & Hays, R. D. (2007). The role of the bifactor model in resolving dimensionality issues in health outcomes measures. *Quality of Life Research, 16*, 19-31. <https://doi.org/10.1007/s11136-007-9183-7>
- Richards, C., Bouman, W. P., & Barker, M.-J. (2018). *Genderqueer and non-binary genders*. Palgrave Macmillan.
- Richards, C., Bouman, W. P., Seal, L., Barker, M. J., Nieder, T. O., & T'Sjoen, G. (2016). Non-binary or genderqueer genders. *International Review of Psychiatry, 28*(1), 95-102. <https://doi.org/10.3109/09540261.2015.1106446>
- Riggle, E. D., & Mohr, J. J. (2015). A proposed multi factor measure of positive identity for transgender identified individuals. *Psychology of Sexual Orientation and Gender Diversity, 2*(1), 78-85. <https://doi.org/10.1037/sgd0000082>
- Riggs, D. W., Ansara, G. Y., & Treharne, G. J. (2015). An evidence-based model for understanding the mental health experiences of transgender Australians. *Australian Psychologist, 50*(1), 32-39. <https://doi.org/10.1111/ap.12088>
- Riley, E. (2017). The Gender Feeling Amplitude: An instrument to assist clinicians with the assessment of gender diverse adolescents. *Sexual Health, 14*(5), 436-441. <https://doi.org/10.1071/SH17009>
- Riley, E. (2018). Bullies, blades, and barricades: Practical considerations for working with adolescents expressing concerns regarding gender and identity. *International Journal of Transgenderism, 19*(2), 203-211. <https://doi.org/10.1080/15532739.2017.1386150>
- Ristori, J., Fisher, A., Castellini, G., & Maggi, M. (2018). Psychiatric aspects of gender dysphoria. In E. A. Jannini & A. Siracusano (Eds.), *Sexual dysfunctions in mentally ill patients* (pp. 127-139). Springer.

- Rodriguez, A., Reise, S. P., & Haviland, M. G. (2016). Evaluating bifactor models: Calculating and interpreting statistical indices. *Psychological Methods, 21*(2), 137-150. <https://doi.org/10.1037/met0000045>
- Rood, B. A., Maroney, M. R., Puckett, J. A., Berman, A. K., Reisner, S. L., & Pantalone, D. W. (2017). Identity concealment in transgender adults: A qualitative assessment of minority stress and gender affirmation. *American Journal of Orthopsychiatry, 87*(6), 704-713. <https://doi.org/10.1037/ort0000303>
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press.
- Rowniak, S., Bolt, L., & Sharifi, C. (2019). Effect of cross-sex hormones on the quality of life, depression and anxiety of transgender individuals: A quantitative systematic review. *JBIR Database of Systematic Reviews and Implementation Reports, 17*(9), 1826-1854. <https://doi.org/10.11124/JBISIRIR-2017-003869>
- Russell, S. T., Pollitt, A. M., Li, G., & Grossman, A. H. (2018). Chosen name use is linked to reduced depressive symptoms, suicidal ideation, and suicidal behavior among transgender youth. *Journal of Adolescent Health, 63*(4), 503-505. <https://doi.org/10.1016/j.jadohealth.2018.02.003>
- Sanders, R. A. (2013). Adolescent psychosocial, social, and cognitive development. *Pediatrics in Review, 34*(8), 354-358. <https://doi.org/10.1542/pir.34-8-354>
- Scandurra, C., Amodeo, A. L., Bochicchio, V., Valerio, P., & Frost, D. M. (2017). Psychometric characteristics of the Transgender Identity Survey in an Italian sample: A measure to assess positive and negative feelings towards

transgender identity. *International Journal of Transgenderism*, 18(1), 53-65.

<https://doi.org/10.1080/15532739.2016.1241975>

- Scandurra, C., Bochicchio, V., Amodeo, A. L., Esposito, C., Valerio, P., Maldonato, N. M., Bacchini, D., & Vitelli, R. (2018). Internalized transphobia, resilience, and mental health: Applying the psychological mediation framework to Italian transgender individuals. *International Journal of Environmental Research and Public Health*, 15(3), 508. <https://doi.org/10.3390/ijerph15030508>
- Schilt, K. (2009). Transsexual. In J. O'Brien (Ed.), *Encyclopedia of gender and society*. SAGE Publications, Inc. <https://doi.org/10.4135/9781412964517>
- Schneider, C., Cerwenka, S., Nieder, T. O., Briken, P., Cohen-Kettenis, P. T., De Cuypere, G., Haraldsen, I. R., Kreukels, B. P., & Richter-Appelt, H. (2016). Measuring gender dysphoria: A multicenter examination and comparison of the Utrecht Gender Dysphoria Scale and the Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults. *Archives of Sexual Behavior*, 45(3), 551-558. <https://doi.org/10.1007/s10508-016-0702-x>
- Schulz, S. L. (2018). The informed consent model of transgender care: An alternative to the diagnosis of gender dysphoria. *Journal of Humanistic Psychology*, 58(1), 72-92. <https://doi.org/10.1177/0022167817745217>
- Shamseer, L., Moher, D., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Shekelle, P., & Stewart, L. A. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: Elaboration and explanation. *British Medical Journal*, 349, 1-25. <https://doi.org/10.1136/bmj.g7647>
- Shipherd, J., Maguen, S., Skidmore, W. C., & Abramovitz, S. (2011). Potentially traumatic events in a transgender sample: Frequency and associated

symptoms. *Traumatology*, 17(2), 56-67.

<https://doi.org/10.1177/1534765610395614>

Shulman, G. P., Holt, N. R., Hope, D. A., Mocarski, R., Eyer, J., & Woodruff, N.

(2017). A review of contemporary assessment tools for use with transgender and gender nonconforming adults. *Psychology of Sexual Orientation and Gender Diversity*, 4(3), 304-313. <https://doi.org/10.1037/sgd0000233>

Shuster, S. M. (2019). Performing informed consent in transgender medicine. *Social Science & Medicine*, 226, 190-197.

<https://doi.org/10.1016/j.socscimed.2019.02.053>

Silverman, W. K., & Ollendick, T. H. (2005). Evidence-based assessment of anxiety and its disorders in children and adolescents. *Journal of Clinical Child & Adolescent Psychology*, 34(3), 380-411.

https://doi.org/10.1207/s15374424jccp3403_2

Singh, D., Deogracias, J. J., Johnson, L. L., Bradley, S. J., Kibblewhite, S. J., Owen-Anderson, A., Peterson-Badali, M., Meyer-Bahlburg, H. F., & Zucker, K. J.

(2010). The Gender Identity/Gender Dysphoria Questionnaire for Adolescents and Adults: Further validity evidence. *The Journal of Sex Research*, 47(1), 49-58. <https://doi.org/10.1080/00224490902898728>

Siotos, C., Neira, P. M., Lau, B. D., Stone, J. P., Page, J., Rosson, G. D., & Coon, D.

(2019). Origins of gender affirmation surgery: The history of the first gender identity clinic in the United States at Johns Hopkins. *Annals of Plastic Surgery*, 83(2), 132-136. <https://doi.org/10.1097/sap.0000000000001684>

Sjoberg, M. D., Walch, S. E., & Stanny, C. J. (2006). Development and initial psychometric evaluation of the Transgender Adaptation and Integration

- Measure (TG AIM). *International Journal of Transgenderism*, 9(2), 35-45.
https://doi.org/10.1300/J485v09n02_05
- Sloan, C. A., & Berke, D. S. (2018). Dialectical behavior therapy for complex cases of gender dysphoria. In M. R. Kauth & J. C. Shipherd (Eds.), *Adult transgender care: An interdisciplinary approach for training mental health professionals*. Routledge. <https://doi.org/10.4324/9781315390505>
- Smith, E., Jones, T., Ward, R., Dixon, J., Mitchell, A., & Hillier, L. (2015). *From blues to rainbows*. The Australian Research Centre in Sex, Health, and Society.
- Smout, M. F. (2018). The factor structure and predictive validity of the Kessler Psychological Distress Scale (K-10) in children and adolescents. *Australian Psychologist*. <https://doi.org/10.1111/ap.12376>
- Society of Clinical Psychology. (2022). *Psychological treatments*
<https://www.div12.org/psychological-treatments/>
- Sommers-Flanagan, J., & Sommers-Flanagan, R. (2015). *Clinical interviewing* (5th ed.). Wiley.
- Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *JAMA Internal Medicine*, 166(10), 1092-1097. <https://doi.org/10.1001/archinte.166.10.1092>
- Steensma, T. D., Biemond, R., de Boer, F., & Cohen-Kettenis, P. T. (2011). Desisting and persisting gender dysphoria after childhood: A qualitative follow-up study. *Clinical Child Psychology and Psychiatry*, 16(4), 499-516.
<https://doi.org/10.1177/1359104510378303>
- Steensma, T. D., McGuire, J. K., Kreukels, B. P. C., Beekman, A. J., & Cohen-Kettenis, P. T. (2013). Factors associated with desistence and persistence of childhood gender dysphoria: A quantitative follow-up study. *Journal of the*

American Academy of Child & Adolescent Psychiatry, 52(6), 582-590.

<https://doi.org/10.1016/j.jaac.2013.03.016>

- Strainer, D. L., Norman, G. R., & Cairney, J. (2015). *Health measurement scales: A practical guide to their development and use* (5th ed.). Oxford University Press.
- Strang, J. F., Meagher, H., Kenworthy, L., de Vries, A. L. C., Menvielle, E., Leibowitz, S., Janssen, A., Cohen-Kettenis, P., Shumer, D. E., Edwards-Leeper, L., Pleak, R. R., Spack, N., Karasic, D. H., Schreier, H., Balleur, A., Tishelman, A., Ehrensaft, D., Rodnan, L., Kushner, E. S., Mandel, F., Caretto, A., Lewis, H. C., & Anthony, L. G. (2018). Initial clinical guidelines for co-occurring autism spectrum disorder and gender dysphoria or incongruence in adolescents. *Journal of Clinical Child & Adolescent Psychology*, 47(1), 105-115. <https://doi.org/10.1080/15374416.2016.1228462>
- Strauss, P., Cook, A., Winter, S., Watson, V., Wright Toussaint, D., & Lin, A. (2017). *Trans pathways: The mental health experiences and care pathways of trans young people. Summary of results*. Telethon Kids Institute.
- Telfer, M. M., Tollit, M. A., Pace, C. C., & Pang, K. C. (2017). *Australian standards of care and treatment guidelines for trans and gender diverse children and adolescents*. The Royal Children's Hospital.
- Terwee, C. B., Prinsen, C. A., Chiarotto, A., de Vet, H. C., Bouter, L. M., Alonso, J., Westerman, M. J., Patrick, D. L., & Mokkink, L. B. (2017). *COSMIN methodology for assessing the content validity of PROMs*. COSMIN.
- Terwee, C. B., Prinsen, C. A., Chiarotto, A., Westerman, M. J., Patrick, D. L., Alonso, J., Bouter, L. M., de Vet, H. C., & Mokkink, L. B. (2018). COSMIN methodology for evaluating the content validity of patient-reported outcome

measures: A Delphi study. *Quality of Life Research*, 27(5), 1159-1170.

<https://doi.org/10.1007/s11136-018-1829-0>

Terwee, C. B., Roorda, L. D., Knol, D. L., De Boer, M. R., & De Vet, H. C. W. (2009).

Linking measurement error to minimal important change of patient-reported outcomes. *Journal of Clinical Epidemiology*, 62(10), 1062-1067.

<https://doi.org/10.1016/j.jclinepi.2008.10.011>

Testa, R. J., Habarth, J., Peta, J., Balsam, K., & Bockting, W. (2015). Development of

the Gender Minority Stress and Resilience Measure. *Psychology of Sexual Orientation and Gender Diversity*, 2(1), 65-77.

<https://doi.org/10.1037/sgd0000081>

Testa, R. J., Rider, G. N., Haug, N. A., & Balsam, K. F. (2017). Gender confirming

medical interventions and eating disorder symptoms among transgender individuals. *Health Psychology*, 36(10), 927-936.

<https://doi.org/10.1037/hea0000497>

Tiirikainen, K., Haravuori, H., Ranta, K., Kaltiala-Heino, R., & Marttunen, M. (2019).

Psychometric properties of the 7-item Generalized Anxiety Disorder Scale (GAD-7) in a large representative sample of Finnish adolescents. *Psychiatry Research*, 272, 30-35. <https://doi.org/10.1016/j.psychres.2018.12.004>

Trapnell, P. D., & Campbell, J. D. (1999). Private self-consciousness and the five-

factor model of personality: Distinguishing rumination from reflection.

Journal of Personality and Social Psychology, 76, 284-304.

Treynor, W., Gonzalez, R., & Nolen-Hoekseman, S. (2003). Rumination reconsidered:

A psychometric analysis. *Cognitive Therapy and Research*, 27, 247-259.

<https://doi.org/10.1023/A:1023910315561>

- Turban, J. L., Beckwith, N., Reisner, S. L., & Keuroghlian, A. S. (2020). Association between recalled exposure to gender identity conversion efforts and psychological distress and suicide attempts among transgender adults. *Journal of the American Medical Association Psychiatry*, 77(1), 68-76.
<https://doi.org/10.1001/jamapsychiatry.2019.2285>
- U.S. Preventative Services Task Force. (2016). *Depression in adults*. Retrieved 21 October from
<https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/depression-in-adults-screening>
- Unal, I. (2017). Defining an optimal cut-point value in ROC analysis: An alternative approach. *Computational and Mathematical Methods in Medicine*, 2017.
<https://doi.org/10.1155/2017/3762651>
- Valentine, S. E., & Shipherd, J. C. (2018). A systematic review of social stress and mental health among transgender and gender non-conforming people in the United States. *Clinical Psychology Review*(66), 24-38.
<https://doi.org/10.1016/j.cpr.2018.03.003>
- Van Caenegem, E., Wierckx, K., Elaut, E., Buysse, A., Dewaele, A., Van Nieuwerburgh, F., De Cuypere, G., & T'Sjoen, G. (2015). Prevalence of gender nonconformity in Flanders, Belgium. *Archives of Sexual Behavior*, 44(5), 1281-1287. <https://doi.org/10.1007/s10508-014-0452-6>
- van de Grift, T. C., Cohen-Kettenis, P. T., Steensma, T. D., De Cuypere, G., Richter-Appelt, H., Haraldsen, I. R., Dikmans, R. E., Cerwenka, S. C., & Kreukels, B. P. (2016). Body satisfaction and physical appearance in gender dysphoria. *Archives of Sexual Behavior*, 45(3), 575-585. <https://doi.org/10.1007/s10508-015-0614-1>

- van de Grift, T. C., Elaut, E., Cerwenka, S. C., Cohen-Kettenis, P. T., De Cuypere, G., Richter-Appelt, H., & Kreukels, B. P. C. (2017). Effects of medical interventions on gender dysphoria and body image: A follow-up study. *Psychosomatic Medicine, 79*(7), 815-823.
<https://doi.org/10.1097/PSY.0000000000000465>
- van de Grift, T. C., Elaut, E., Cerwenka, S. C., Cohen-Kettenis, P. T., & Kreukels, B. P. C. (2018). Surgical satisfaction, quality of life, and their association after gender-affirming surgery: A follow-up study. *Journal of Sex & Marital Therapy, 44*(2), 138-148. <https://doi.org/10.1080/0092623X.2017.1326190>
- Verbeek, M. J. A., Hommes, M. A., Stutterheim, S. E., van Lankveld, J. J. D. M., & Bos, A. E. R. (2020). Experiences with stigmatization among transgender individuals after transition: A qualitative study in the Netherlands. *International Journal of Transgender Health, 21*(2), 220-233.
<https://doi.org/10.1080/26895269.2020.1750529>
- Vocks, S., Stahn, C., Loenser, K., & Legenbauer, T. (2009). Eating and body image disturbances in male-to-female and female-to-male transsexuals. *Archives of Sexual Behavior, 38*(3), 364-377. <https://doi.org/10.1007/s10508-008-9424-z>
- Vogt, D. S., King, D. W., & King, L. A. (2004). Focus groups in psychological assessment: enhancing content validity by consulting members of the target population. *Psychological Assessment, 16*(3), 231-243.
<https://doi.org/10.1037/1040-3590.16.3.231>
- Warwick, R., & Shumer, D. (2021). Gender-affirming multidisciplinary care for transgender and non-binary children and adolescents. *Children's Health Care, 1-25*. <https://doi.org/10.1080/02739615.2021.2004146>

- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063-1070.
<https://doi.org/10.1037/0022-3514.54.6.1063>
- Weston, R., & Gore, P. A. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist*, *34*(5), 719-751.
<https://doi.org/10.1177/0011000006286345>
- White Hughto, J. M., & Reisner, S. L. (2016). A systematic review of the effects of hormone therapy on psychological functioning and quality of life in transgender individuals. *Transgender Health*, *1*(1), 21-31.
<https://doi.org/10.1089/trgh.2015.0008>
- Winter, S. (2017a). Gender trouble: The World Health Organization, the International Statistical Classification of Diseases and Related Health Problems (ICD)-11 and the trans kids. *Sexual Health*, *14*(5), 423-430.
<https://doi.org/10.1071/SH17086>
- Winter, S. (2017b). ICD-11: Blowing the whistle on WHO. ANZPATH 2017 Biennial Conference, Sydney, Australia.
- Winters, K. (2005). Gender dissonance: Diagnostic reform of gender identity disorder for adults. *Journal of Psychology & Human Sexuality*, *17*(3/4), 71-89.
https://doi.org/10.1300/J056v17n03_04
- Witcomb, G. L., Bouman, W. P., Brewin, N., Richards, C., Fernandez-Aranda, F., & Arcelus, J. (2015). Body image dissatisfaction and eating-related psychopathology in trans individuals: A matched control study. *European Eating Disorders Review*, *23*(4), 287-293. <https://doi.org/10.1002/erv.2362>

- World Health Organisation. (1977). *Manual of the international statistical classification of diseases, injuries and causes of death (9th ed.)*.
<https://www.cdc.gov/nchs/icd/icd9.htm>
- World Health Organisation. (1993). *International statistical classification of diseases and related health problems (10th ed.)*. <https://icd.who.int/browse10/2010/en>
- World Health Organisation. (2019). *International classification of diseases and related health problems (11th ed.)*. <https://icd.who.int/en/>
- World Health Organisation. (2021a). *International statistical classification of diseases and related health problems (11th ed.)*. Retrieved December 15, 2021 from <https://icd.who.int/>
- World Health Organisation. (2021b). *WHO/Europe brief – transgender health in the context of ICD-11*. Retrieved December 18, 2021 from <https://www.euro.who.int/en/health-topics/health-determinants/gender/gender-definitions/whoeurope-brief-transgender-health-in-the-context-of-icd-11>
- World Professional Association for Transgender Health. (2010). *WPATH de-psycho-pathologisation statement*. Retrieved December 29, 2021 from <https://www.wpath.org/policies>
- World Professional Association for Transgender Health. (2018, September 18). *WPATH position on “Rapid-Onset Gender Dysphoria (ROGD)”*
<https://www.wpath.org/policies>
- World Professional Association for Transgender Health. (2021a). *History*. Retrieved December 10, 2021 from <https://www.wpath.org/about/history>
- World Professional Association for Transgender Health. (2021b). *Standards of care version 8*. Retrieved December 11, 2021 from <https://www.wpath.org/soc8>

Zucker, K. J. (2017). Epidemiology of gender dysphoria and transgender identity.

Sexual Health, 14(5), 404-411. <https://doi.org/10.1071/SH17067>

Zucker, K. J., Lawrence, A. A., & Kreukels, B. P. (2016). Gender dysphoria in adults.

Annual Review of Clinical Psychology, 12, 217-247.

<https://doi.org/10.1146/annurev-clinpsy-021815-093034>

Zucker, K. J., Mitchell, J., Bradely, S., Tkachuk, J., Cantor, J. M., & Allin, S. M.

(2006). The recalled childhood gender identity/gender role questionnaire:

Psychometric properties. *Sex Roles, 54*(469-483).

Appendices

Appendix A: The GPSQ-2

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Gender Preoccupation and Stability Questionnaire – 2

i) Your name: _____ ii) Your age (years): _____ iii) Today's date: _____

iv) What sex were you assigned at birth?

Sex or sex assigned to you at birth refers to the sex recorded on your original birth certificate.

- Female Male
 Other: _____

v) Which of the following best describes your current gender?

Gender refers to whatever gender you identify as yourself (e.g. male, female, transgender, gender-queer, or other gender variants), which may or may not be the same as your sex.

- Female / girl / woman
 Male / boy / man
 Intersex
 Transgender female / girl / woman
 Transgender male / boy / man
 Transgender (unspecified)
 Non-binary / gender-queer / gender-fluid
 Agender / gender-neutral
 Other: _____

vi) Do you feel confident that you will be able to lead a satisfied life with whatever gender identity you feel that you currently have?

- Not at all confident
 Not very confident
 Somewhat confident
 Very confident
 Extremely confident

The GPSQ-2 consists of 14 questions relating to your thoughts and feelings about gender, including your own sense of gender identity. When answering these questions, please select the answer that best reflects your thoughts and feelings over the past two weeks.

	Never	Rarely	Sometimes	Often	All the time
1) Over the past two weeks how often have you thought about your gender?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2) Over the past two weeks how often has your gender identity affected everyday things such as school, work, recreation, or purchases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3) Over the past two weeks how often has your sense of what gender you identify with changed at all?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4) Over the past two weeks how often have you felt annoyed because you have been prevented from living in accordance with your gender identity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5) Over the past two weeks how often have you been upset by issues relating to gender?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6) Over the past two weeks how often has your understanding of your gender, or how you describe gender to others, changed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7) Over the past two weeks how often have you been worried about telling others about your gender identity or past gender history?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8) Over the past two weeks how often have you changed the way you behave around others in order to fit in with what they expect from your gender?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9) Over the past two weeks how often have you felt that you wanted to change the physical appearance of your body to match your gender identity (e.g., surgery, hormones or puberty blockers)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10) Over the past two weeks how often have you felt uncertain, anxious or confused about your gender identity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11) Over the past two weeks how often have you felt annoyed because you have been expected to behave differently or act in certain ways because of the sex assigned to you at birth?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12) Over the past two weeks how often have you felt sad or hurt as a result of any changes to your gender (e.g., unintended impact on family, relationships, friends, fertility, finances or career)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13) Over the past two weeks how often have you stopped yourself from participating in any activity, behaving in a certain way, or purchasing anything because of your gender?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14) Over the past two weeks how often have you felt you should change how you express your gender (e.g., pronoun or name, how you dress, wear your hair or behave)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Total score Sum of the items (0 = never, 4 = all the time)		Optional subscale scores	Preoccupation: Sum items 1, 2, 4, 5, 7, 9, 12, 13	Stability: Sum items 3, 6, 8, 10, 11, 14
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Appendix B: Ethical Approvals

B.1.1 Study 2 - Pilot Study: Ethical Approval

From: research.ethics@uts.edu.au
Subject: HREC Approval Granted - ETH19-3914
Date: 21 October 2019 at 10:18 am
To: Bethany.Wootton@uts.edu.au, Sarah.J.Bowman@student.uts.edu.au, Research.Ethics@uts.edu.au

R

Dear Applicant

Thank you for your response to the Committee's comments for your project titled, "Assessing Gender Dysphoria - Pilot Study". The Committee agreed that this application now meets the requirements of the National Statement on Ethical Conduct in Human Research (2007) and has been approved on that basis. You are therefore authorised to commence activities as outlined in your application.

You are reminded that this letter constitutes ethics approval only. This research project must also be undertaken in accordance with all UTS policies and guidelines including the Research Management Policy (<http://www.gsu.uts.edu.au/policies/research-management-policy.html>).

Your approval number is UTS HREC REF NO. ETH19-3914.

Approval will be for a period of five (5) years from the date of this correspondence subject to the submission of annual progress reports.

The following special conditions apply to your approval:

- When moderator approval becomes available on Social Media sites where recruitment posters are circulated, the researcher is requested to forward these approvals to the Ethics Secretariat.

The following standard conditions apply to your approval:

- Your approval number must be included in all participant material and advertisements. Any advertisements on Staff Connect without an approval number will be removed.
- The Principal Investigator will immediately report anything that might warrant review of ethical approval of the project to the Ethics Secretariat (Research.Ethics@uts.edu.au).
- The Principal Investigator will notify the UTS HREC of any event that requires a modification to the protocol or other project documents, and submit any required amendments prior to implementation. Instructions can be found at <https://staff.uts.edu.au/topic/sub/Pages/Researching/Research%20Ethics%20and%20Integrity/Human%20research%20ethics/Post-approval/post-approval.aspx#tab2>.
- The Principal Investigator will promptly report adverse events to the Ethics Secretariat (Research.Ethics@uts.edu.au). An adverse event is any event (anticipated or otherwise) that has a negative impact on participants, researchers or the reputation of the University. Adverse events can also include privacy breaches, loss of data and damage to property.
- The Principal Investigator will report to the UTS HREC annually and notify the HREC when the project is completed at all sites. The Principal Investigator will notify the UTS HREC of any plan to extend the duration of the project past the approval period listed above through the progress report.
- The Principal Investigator will obtain any additional approvals or authorisations as required (e.g. from other ethics committees, collaborating institutions, supporting organisations).
- The Principal Investigator will notify the UTS HREC of his or her inability to continue as Principal Investigator including the name of and contact information for a replacement.

I also refer you to the AVCC guidelines relating to the storage of data, which require that data be kept for a minimum of 5 years after publication of research. However, in NSW, longer retention requirements are required for research on human subjects with potential long-term effects, research with long-term environmental effects, or research considered of national or international significance, importance, or controversy. If the data from this research project falls into one of these categories, contact University Records for advice on long-term retention.


You should consider this your official letter of approval. If you require a hardcopy please contact Research.Ethics@uts.edu.au.

If you have any queries about your ethics approval, or require any amendments to your research in the future, please do not hesitate to contact Research.Ethics@uts.edu.au.

Yours sincerely,

A/Prof Beata Bajorek
Chairperson
UTS Human Research Ethics Committee
C/- Research Office
University of Technology Sydney
E: Research.Ethics@uts.edu.au

B.1.2 Study 2 - Pilot Study: Ethical Approval Revision

From: Research Ethics research.ethics@uts.edu.au 
Subject: Re: Request to modify existing UTS Human Research Ethics approval in response to the impact of COVID-19 - UTS HREC ETH19-3914
Date: 20 April 2020 at 9:59 am
To: Bethany Wootton Bethany.Wootton@uts.edu.au, Sarah Bowman Sarah.J.Bowman@student.uts.edu.au, John McAloon John.McAloon@uts.edu.au
Cc: Research Ethics research.ethics@uts.edu.au



Dear Bethany,

Thank you very much, I can confirm that this request for modification has been approved as outlined in your email below and attachments provided on Fri 17/04/20.

I would like to request one minor change please, Appendix 1.2.5 Pilot Study Email Post (Adolescent) states '...in reward for your time.' Could you please change this to '...in appreciation for your time.' to match the advertisements.

We would like to wish you all the best with your research. Please don't hesitate to contact Research.Ethics@uts.edu.au if you need any further assistance.

Kind regards
Brie

Brie Turner, PhD

Research Ethics Manager
 Research Office
 University of Technology Sydney
 Building 1, Level 14
 Broadway NSW 2007 Australia (PO Box 123)
uts.edu.au



Technology to
change the world

From: Bethany Wootton <Bethany.Wootton@uts.edu.au>
Sent: Friday, April 17, 2020 4:58 PM
To: Research Ethics <research.ethics@uts.edu.au>; Sarah Bowman <Sarah.J.Bowman@student.uts.edu.au>; John McAloon <John.McAloon@uts.edu.au>
Cc: Research Ethics <research.ethics@uts.edu.au>
Subject: RE: Request to modify existing UTS Human Research Ethics approval in response to the impact of COVID-19 - UTS HREC ETH19-3914

Dear Research Ethics,

Please find the requested information below.

We've also attached marked up copies of the following documents:

- * Study Protocol (V2)
- * Adolescent Participant Information Sheet (V2)
- * Adolescent Consent Form (V2)

Original application number i.e. ETHXX-XXXX	ETH19-3914
Project title	Assessing Gender Dysphoria - Pilot Study
Chief Investigator	Dr Bethany Wootton
Primary Committee	Human Ethics Committee
Original application type	Research (student project)
Briefly explain the change/s that have occurred or are intended (may include changes in procedure, manner of recruitment, consent (phone or virtual (e.g. Skype, Zoom, etc.)), data collection methods (telephone, online, skype, zoom etc.)	Recruitment of the adult participants has now been completed. The following changes will be necessary to complete the adolescent interviews, none of which have yet been conducted. <ul style="list-style-type: none"> · Recruitment: Replace printed/hardcopy recruitment posters with online/email social media posts. · Consent: Updated consent process to include electronic copies of participant packs. · Interview format: Interviews will be conducted over Zoom instead of face-to-face. · Participant rewards: Participants will be sent Myer e-gift cards in preference to receiving gift cards.
Briefly outline the reason for the change/s (note: any changes not required in relation to the impact of COVID-19 must be submitted as an amendment via ResearchMaster)	The Gender Centre and Twenty10 are no longer offering drop-in services for adolescents due to COVID-19 restrictions. This impacts both the adolescent recruitment and interview procedures.
Do any of these changes raise ethical issues and/or increase the risks associated with this project? If Yes, please outline these and how they will be managed	No – We believe the risk of shifting from face-to-face interviews at either Twenty10 or The Gender Centre to video interviews where the participant is located in their home to be commensurate. Furthermore, given recent social isolation measures, and rapid adoption of video conferencing we do not believe that it adds an incremental risk to the project.
Please outline how participant privacy and confidentiality will be protected?	Zoom sessions will be password protected and utilise 'waiting room' functionality to prevent 'zoom-bombing'. Only the audio of the zoom interview will be recorded. Researchers will be required to conduct interviews from a suitably private location.
List all amended documents to be reviewed (note: please update your protocol and all amendment documents in track-changes and attach them to this email.	<ul style="list-style-type: none"> · Protocol (V2) · Participant Information Sheet (Adolescent) (V2) · Consent Form (Adolescent) (V2)

Best wishes,

Bethany.

Bethany Wootton
 Senior Lecturer in Clinical Psychology
 Graduate School of Health

B.2.1 Study 2 – Validation Study and Study 4: Ethical Approval

From: research.ethics@uts.edu.au
Subject: HREC Approval Granted - ETH20-4989
Date: 8 July 2020 at 12:36 pm
To: Research.Ethics@uts.edu.au, Bethany.Wootton@uts.edu.au, Sarah.J.Bowman@student.uts.edu.au



Dear Applicant

Re: ETH20-4989 - "Assessing Gender Dysphoria"

Thank you for your response to the Committee's comments for your project. The Committee agreed that this application now meets the requirements of the National Statement on Ethical Conduct in Human Research (2007) and has been approved on that basis. You are therefore authorised to commence activities as outlined in your application.

You are reminded that this letter constitutes ethics approval only. This research project must also be undertaken in accordance with all [UTS policies and guidelines](#) including the Research Management Policy.

Your approval number is UTS HREC REF NO. ETH20-4989.

Approval will be for a period of five (5) years from the date of this correspondence subject to the submission of annual progress reports.

The following standard conditions apply to your approval:

- Your approval number must be included in all participant material and advertisements. Any advertisements on Staff Connect without an approval number will be removed.
- The Principal Investigator will immediately report anything that might warrant review of ethical approval of the project to the Ethics Secretariat (Research.Ethics@uts.edu.au).
- The Principal Investigator will notify the UTS HREC of any event that requires a modification to the protocol or other project documents, and submit any required amendments prior to implementation. Instructions on how to submit an amendment application can be found [here](#).
- The Principal Investigator will promptly report adverse events to the Ethics Secretariat. An adverse event is any event (anticipated or otherwise) that has a negative impact on participants, researchers or the reputation of the University. Adverse events can also include privacy breaches, loss of data and damage to property.
- The Principal Investigator will report to the UTS HREC annually and notify the HREC when the project is completed at all sites. The Principal Investigator will notify the UTS HREC of any plan to extend the duration of the project past the approval period listed above through the progress report.
- The Principal Investigator will obtain any additional approvals or authorisations as required (e.g. from other ethics committees, collaborating institutions, supporting organisations).
- The Principal Investigator will notify the UTS HREC of his or her inability to continue as Principal Investigator including the name of and contact information for a replacement.

This research must be undertaken in compliance with the Australian Code for the Responsible Conduct of Research and National Statement on Ethical Conduct in Human Research.

You should consider this your official letter of approval. If you require a hardcopy please contact the Ethics Secretariat.

If you have any queries about your ethics approval, or require any amendments to your research in the future, please don't hesitate to contact the Ethics Secretariat and quote the ethics application number (e.g. ETH20-xxxx) in all correspondence.

Yours sincerely,

Prof Beata Bajorek

Chairperson

UTS Human Research Ethics Committee

C/- Research Office University of Technology Sydney

E: Research.Ethics@uts.edu.au

B.3.1 Study 3: Ethical Approval

From: research.ethics@uts.edu.au
Subject: HREC Approval Granted - ETH20-5429
Date: 10 December 2020 at 12:43 pm
To: Research.Ethics@uts.edu.au, Bethany.Wootton@uts.edu.au, Sarah.J.Bowman@student.uts.edu.au



Dear Applicant

Re: ETH20-5429 - "Validating Measures of Gender Dysphoria"

Thank you for your response to the Committee's comments for your project. The Committee agreed that this application now meets the requirements of the National Statement on Ethical Conduct in Human Research (2007) and has been approved on that basis. You are therefore authorised to commence activities as outlined in your application.

You are reminded that this letter constitutes ethics approval only. This research project must also be undertaken in accordance with all [UTS policies and guidelines](#) including the Research Management Policy.

Your approval number is UTS HREC REF NO. ETH20-5429.

Approval will be for a period of five (5) years from the date of this correspondence subject to the submission of annual progress reports.

The following standard conditions apply to your approval:

- Your approval number must be included in all participant material and advertisements. Any advertisements on Staff Connect without an approval number will be removed.
- The Principal Investigator will immediately report anything that might warrant review of ethical approval of the project to the Ethics Secretariat (Research.Ethics@uts.edu.au).
- The Principal Investigator will notify the UTS HREC of any event that requires a modification to the protocol or other project documents, and submit any required amendments prior to implementation. Instructions on how to submit an amendment application can be found [here](#).
- The Principal Investigator will promptly report adverse events to the Ethics Secretariat. An adverse event is any event (anticipated or otherwise) that has a negative impact on participants, researchers or the reputation of the University. Adverse events can also include privacy breaches, loss of data and damage to property.
- The Principal Investigator will report to the UTS HREC annually and notify the HREC when the project is completed at all sites. The Principal Investigator will notify the UTS HREC of any plan to extend the duration of the project past the approval period listed above through the progress report.
- The Principal Investigator will obtain any additional approvals or authorisations as required (e.g. from other ethics committees, collaborating institutions, supporting organisations).
- The Principal Investigator will notify the UTS HREC of his or her inability to continue as Principal Investigator including the name of and contact information for a replacement.

This research must be undertaken in compliance with the Australian Code for the Responsible Conduct of Research and National Statement on Ethical Conduct in Human Research.


You should consider this your official letter of approval. If you require a hardcopy please contact the Ethics Secretariat.

If you have any queries about your ethics approval, or require any amendments to your research in the future, please don't hesitate to contact the Ethics Secretariat and quote the ethics application number (e.g. ETH20-xxxx) in all correspondence.

Yours sincerely,
The Research Ethics Secretariat

On behalf of the UTS Human Research Ethics Committees
C/- Research Office
University of Technology Sydney
E: Research.Ethics@uts.edu.au

B.3.2 Study 3: Ethical Approval Revision 1

From: research.ethics@uts.edu.au 
Subject: HREC Approval Granted - ETH21-5832
Date: 23 March 2021 at 10:51 am
To: Research.Ethics@uts.edu.au, Sarah.J.Bowman@student.uts.edu.au, Bethany.Wootton@uts.edu.au

R

Dear Applicant

Re: ETH21-5832 - "Validation Measures of Gender Dysphoria"

The UTS Human Research Ethics Executive Review Committee reviewed your amendment application for your project and agreed that the amendments meet the requirements of the NHMRC National Statement on Ethical Conduct In Human Research (2007). I am pleased to inform you that the Committee has approved your request to amend the protocol as follows:

"The recruitment methodology has been updated to include an email that can be sent by clinicians to potential participants. This is in addition to, and based on, a previously approved poster that clinicians would have handed to participants or have displayed in their waiting rooms."

This amendment is subject to the standard conditions outlined in your original letter of approval.

You are reminded that this letter constitutes ethics approval only. This research project must also be undertaken in accordance with all [UTS policies and guidelines](#) including the Research Management Policy.

You should consider this your official letter of approval. If you require a hardcopy please contact the Ethics Secretariat.

To access this application, please [click here](#), a copy of your application has also been attached to this email.

If you wish to make any further changes to your research, please contact the Research Ethics Secretariat on 02 9514 2478.


In the meantime I take this opportunity to wish you well with the remainder of your research.

Yours sincerely,

The Research Ethics Secretariat

on behalf of the Human Research Ethics Executive Review Committees
C/- Research Office
University of Technology Sydney
Research.Ethics@uts.edu.au | [Website](#)
PO Box 123 Broadway NSW 2007

B.3.3 Study 3: Ethical Approval Revision 2

From: research.ethics@uts.edu.au 
Subject: UTS HREC Approval - ETH21-6123
Date: 4 June 2021 at 5:01 pm
To: Research.Ethics@uts.edu.au, Bethany.Wootton@uts.edu.au, Sarah.J.Bowman@student.uts.edu.au,
Daniel.Demant@uts.edu.au, John.McAloon@uts.edu.au



Dear Applicant

Re: ETH21-6123 - "Validation Measures of Gender Dysphoria"

The Human Research Ethics Executive Review Committee reviewed your amendment application for your project and agreed that the amendments meet the requirements of the NHMRC National Statement on Ethical Conduct In Human Research (2007). I am pleased to inform you that the Committee has approved your request to amend the protocol as follows:

"The recruitment methodology for the clinical sample has been updated to include a social media post that can be posted on transgender and gender diverse social media sites (i.e., Facebook). Permission will be sought before posting to mediated social media sites. This is in addition to, and based on, a previously approved emails, and posters that clinicians may display or distribute to clients."

The Committee provided the following recommendation:

- **The researcher is recommended to remove the term 'board' from the updated social media post, noting that the formal name of the Committee is the 'Health and Medical Research Ethics Committee'.**

This amendment is subject to the standard conditions outlined in your original letter of approval.

You are reminded that this letter constitutes ethics approval only. This research project must also be undertaken in accordance with all [UTS policies and guidelines](#) including the Research Management Policy.

You should consider this your official letter of approval. If you require a hardcopy please contact the Research Ethics Secretariat.

To access this application, please [click here](#), a copy of your application has also been attached to this application

If you wish to make any further changes to your research, please contact the Research Ethics Secretariat in the Research Office.

In the meantime I take this opportunity to wish you well with the remainder of your research.

Yours sincerely,
The Research Ethics Secretariat

on behalf of the Human Research Ethics Executive Review Committees

C/- Research Office

University of Technology Sydney

T: (02) 9514 2478

Research.Ethics@uts.edu.au | [Website](#)

PO Box 123 Broadway NSW 2007

Appendix C: Recruitment Materials

C.1.1 Study 2 - Pilot Study: Adolescent Recruitment



Are you trans, gender queer, non-binary or gender-fluid?

Are you between the age of 13 and 18 years old?

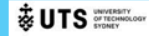
Would you like to help develop a measure of gender dysphoria?

If so, please ask a staff member for a project pack to take home (you will need a parent or guardian to agree to your participation). As a study participant you will be required to complete a short survey and participate in a 30 – 45 minute interview, held here at The Gender Centre, about your thoughts on a new measure of gender dysphoria that will be audio recorded. All details will be kept confidential. In appreciation for your time you will receive a \$25 Coles/Myer gift voucher.

Sarah Bowman is a PhD candidate at the University of Technology Sydney, supervised by Dr Bethany Wootton who is a Senior Lecturer in Clinical Psychology. This study has been approved by the University of Technology Sydney Human Resources Ethics Committee Board ETH19-3914.

C.1.2 Study 2 - Pilot Study: Adolescent Social Media Recruitment

**Are you trans, gender queer,
non-binary or gender-fluid?**



Are you between 13 and 18 years old?

**Would you like to help develop a
measure of gender dysphoria?**

If you would like to participate in our research project please email sarah.j.bowman@uts.edu.au to register your interest. We will send you an information pack via email (you will need a parent or guardian to agree to your participation). As a study participant you will be required to complete a short survey and participate in a 30 – 45 minute Zoom video interview about your thoughts on a new measure of gender dysphoria that will be audio recorded. All details will be kept confidential. In appreciation for your time you will receive a \$25 Myer e-gift voucher. Sarah Bowman is a PhD candidate at the University of Technology Sydney, supervised by Dr Bethany Wootton who is a Senior Lecturer in Clinical Psychology. This study has been approved by the University of Technology Sydney Human Resources Ethics Committee Board ETH19-3914.

C.1.3 Study 2 - Pilot Study: Adult Recruitment



Are you trans, gender queer, non-binary or gender-fluid?

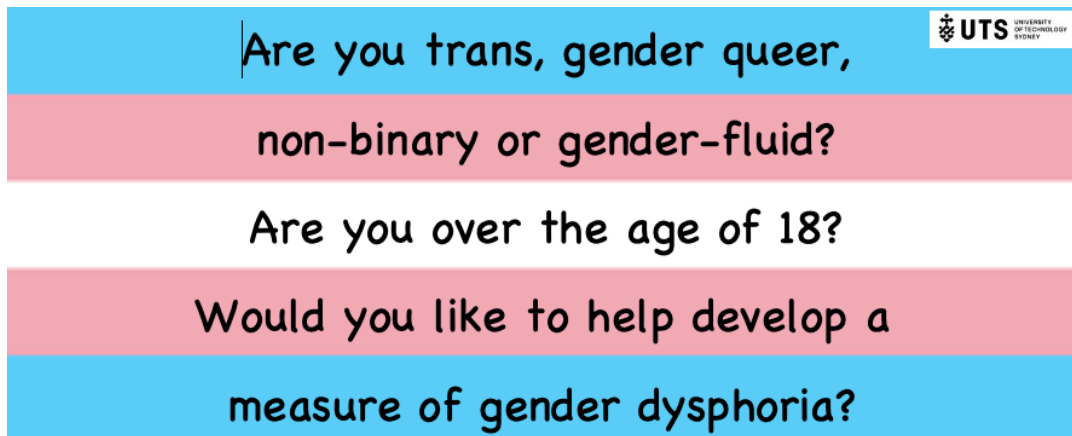
Are you over the age of 18?

Would you like to help develop a measure of gender dysphoria?

If you live in Sydney and would like to participate in our research, please visit our website <http://j.mp/34ls72z> to register your interest. As a study participant you will be required to complete a short survey and participate in a 30 – 45 minute interview at the University of Technology Sydney (Broadway campus) about your thoughts on a new measure of gender dysphoria that will be audio recorded. All details will be kept confidential. In appreciation for your time you will receive a \$25 Coles/Myer gift voucher.

Sarah Bowman is a PhD candidate at the University of Technology Sydney, supervised by Dr Bethany Wootton who is a Senior Lecturer in Clinical Psychology. This study has been approved by the University of Technology Sydney Human Resources Ethics Committee Board ETH19-3914.


C.1.4 Study 2 - Pilot Study: Adult Social Media Recruitment



**Are you trans, gender queer,
non-binary or gender-fluid?**

Are you over the age of 18?

**Would you like to help develop a
measure of gender dysphoria?**



If you live in Sydney, Australia, and would like to participate in our research project please visit <http://j.mp/34ls72z> to register your interest. As a study participant you will be required to complete a short survey and participate in a 30 – 45 minute interview at University of Technology Sydney (Broadway campus) about your thoughts on a new measure of gender dysphoria that will be audio recorded. All details will be kept confidential. In appreciation for your time you will receive a \$25 Coles/Myer gift voucher. Sarah Bowman is a PhD candidate at the University of Technology Sydney, supervised by Dr Bethany Wootton who is a Senior Lecturer in Clinical Psychology. This study has been approved by the University of Technology Sydney Human Resources Ethics Committee Board ETH19-3914.

C.2.1 Study 2 – Validation Study and Study 4: Social Media Recruitment

**Are you trans, gender-queer,
non-binary or gender-fluid?**



Are you over the age of 14?

**Would you like to help develop a
measure of gender dysphoria?**

If you live in Australia or New Zealand and would like to participate in our research project, please visit [website address](#) to complete a 30 – 45 minute survey. All details will be kept confidential. Sarah Bowman is a PhD candidate at the University of Technology Sydney, Australia, supervised by Dr Bethany Wootton who is a Senior Lecturer in Clinical Psychology. This study has been approved by the University of Technology Sydney Human Resources Ethics Committee Board ETH20-4989.

C.3.1 Study 3: Clinical Group Social Media Recruitment

**Are you trans, gender-queer, or
non-binary, and over the age of 14?**



Do you experience gender dysphoria?

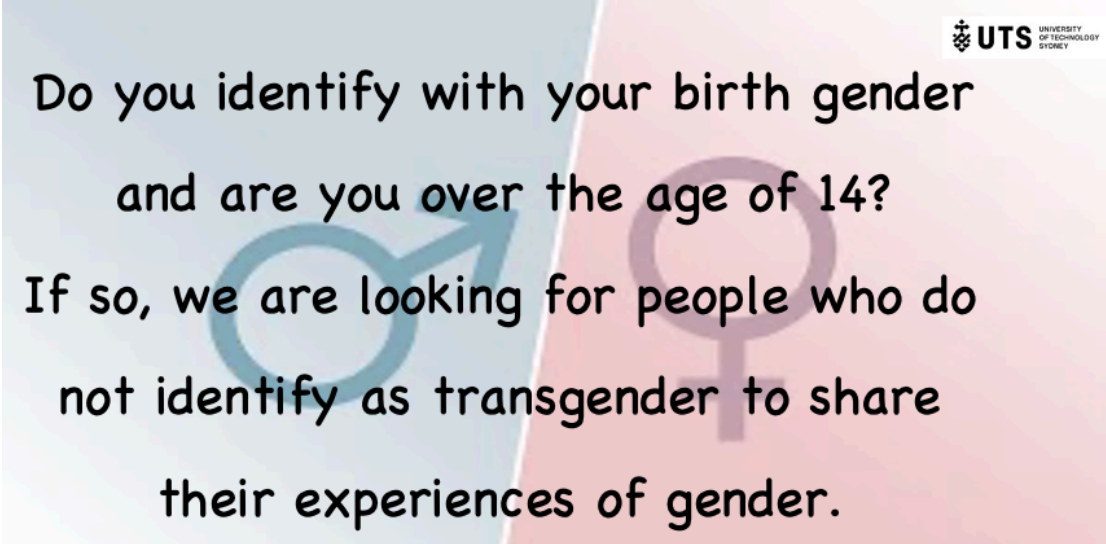
**If so, we are looking for participants to share
their experiences of gender related distress.**

Hi, my name is Sarah Bowman, I am a member of the transgender and gender diverse community, a psychologist, and a PhD candidate at the University of Technology Sydney. I am currently researching gender related distress in people who experience gender dysphoria. I hope to publish the research to better inform psychological approaches to improving mental health in transgender and gender diverse populations.

If you experience gender dysphoria, are over the age of 14, live in Australia or New Zealand, and would like to participate in our research project, please visit <https://redcap.link/izilo0hf> to complete a 10 (under 18-years) to 40 (over 18-years) minute survey. Questionnaires, depending on age, include assessments of gender dysphoria, minority stress, quality of life and experiences of psychological distress.

All details will be kept confidential. The research is supervised by Dr Bethany Wootton who is an Associate Professor in Clinical Psychology. This current study has been approved by the University of Technology Sydney Health and Medical Research Ethics Committee ETH20-6123. Thank-you for your interest in my research.

C.3.2 Study 3: Control Group Social Media Recruitment



Do you identify with your birth gender
and are you over the age of 14?
If so, we are looking for people who do
not identify as transgender to share
their experiences of gender.

If you live in Australia or New Zealand and would like to participate in our research project, please visit <https://redcap.link/eoqxn2rw> to complete a 10-minute survey.

All details will be kept confidential. Sarah Bowman is a PhD candidate at the University of Technology Sydney, Australia, supervised by Dr Bethany Wootton who is a Senior Lecturer in Clinical Psychology. This study has been approved by the University of Technology Sydney Human Resources Ethics Committee Board
ETH20-6123.

Appendix D: Participant Information Sheets and Consent Forms

D.1.1 Study 2 - Pilot Study: Adolescent Participant Information Sheet



ADOLESCENT PARTICIPANT INFORMATION SHEET Assessing Gender Dysphoria – Pilot Study UTS HREC APPROVAL NUMBER – ETH19-3914

WHO IS DOING THE RESEARCH?

My name is Sarah Bowman I am a registered psychologist and PhD candidate at UTS. I have a current Working with Children Check. My supervisor is Dr Bethany Wootton, Senior Lecturer in Clinical Psychology (bethany.wootton@uts.edu.au; 02 9514 3942).

WHAT IS THIS RESEARCH ABOUT?

This research aims to improve the measures used to assess gender dysphoria in individuals aged 13-years and older.

FUNDING

Funding for this project has been received from UTS.

WHY HAVE I BEEN ASKED?

You have been invited to participate in this study because you are over the age of 13 years and identify with a gender that is different to the sex that was originally listed on your birth certificate.

IF I SAY YES, WHAT WILL IT INVOLVE?

As somebody who is under the age of 18 you will be required to obtain parent/guardian consent before you can participate in this research. Eligible participants will be invited to take part in a brief Zoom video interview, that will take approximately 30 – 45 minutes to complete. During the interview you will be asked to complete a short questionnaire and asked a number of questions regarding your thoughts about the questionnaire. The Zoom audio recording will be used to record the conversation. The answers you provide will be de-identified and you will be reimbursed with a \$25 Coles/Myer gift card for your time.

ARE THERE ANY RISKS/INCONVENIENCE?

The questionnaire you will be asked to complete includes some questions about gender dysphoria that might be upsetting. If you feel distressed at any time during the interview, we will stop the interview, and contact a parent/guardian.

DO I HAVE TO SAY YES?

Participation in this study is voluntary. If you wish to withdraw from the study once it has started, you can do so at any time and request your recording be deleted (if it has been de-identified this will not be possible).

WHAT WILL HAPPEN IF I SAY NO?

There will be no impact on you if you decide not to participate in the research.

CONFIDENTIALITY

By signing the consent form you consent to the research team collecting and using de-identified personal information about you for the research project. The information will be kept confidential and securely stored at UTS with access limited to the research team. We plan to publish the results from this study in academic journals and present our findings at conferences.

WHAT IF I HAVE CONCERNS OR A COMPLAINT?

If you have concerns about the research please feel free to contact either myself, sarah.j.bowman@student.uts.edu.au, or my supervisor, bethany.wootton@uts.edu.au; 02 9514 3942.

NOTE:

This study has been approved by the University of Technology Sydney Human Research Ethics Committee [UTS HREC]. If you have any concerns or complaints about any aspect of the conduct of this research, please contact the Ethics Secretariat on ph.: +61 2 9514 2478 or email: Research.Ethics@uts.edu.au, and quote the UTS HREC reference number. Any matter raised will be treated confidentially, investigated and you will be informed of the outcome.

D.1.2 Study 2 - Pilot Study: Adolescent Consent Form



ADOLESCENT CONSENT FORM Assessing Gender Dysphoria – Pilot Study UTS HREC APPROVAL NUMBER – ETH19-3914

I _____ agree to participate in the research project “Assessing Gender Dysphoria – Pilot Study” UTS HREC approval number – ETH19-3914 being conducted by Sarah Bowman (sarah.j.bowman@student.uts.edu.au); supervised by Dr Bethany Wootton (bethany.wootton@uts.edu.au; 02 9514 3942). I understand that funding for this research has been provided by the University of Technology Sydney.

I have read the Participant Information Sheet or someone has read it to me in a language that I understand. I understand the purposes, procedures and risks of the research as described in the Participant Information Sheet. I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to participate in this research project as described and understand that I am free to withdraw at any time without affecting my relationship with the researchers or the University of Technology Sydney.

I understand that I will be given a signed copy of this document to keep.

I agree to be:
Audio recorded
Interviewed using Zoom without a parent/guardian present

I agree that the research data gathered from this project may be published in a form that:
Does not identify me in any way
May be used for future research purposes

I am aware that I can contact Sarah Bowman (or her supervisor) if I have any concerns about the research.

Parent/Guardian contact eMail address or phone number.

Name and Signature [participant]

____/____/____
Date

Name and Signature [parent or guardian]

____/____/____
Date

Name and Signature [researcher]

____/____/____
Date

D.1.3 Study 2 - Pilot Study: Adult Participant Information Sheet



Assessing Gender Dysphoria

Participant Information Sheet

UTS HREC Approval Number ETH19-3914

Who is doing the research?

My name is Sarah Bowman I am a psychologist and PhD candidate at UTS. My supervisor is Dr Bethany Wootton, Senior Lecturer in Clinical Psychology (bethany.wootton@uts.edu.au; 02 9514 3942).

What is the research about?

This research aims to improve the measures used to assess gender dysphoria in individuals aged 13-years and older.

Funding

Funding for this project has been received from UTS.

Why have I been asked?

You have been invited to participate in this study because you are over the age of 18 years and identify with a gender that is different to the sex that was originally listed on your birth certificate.

If I say yes, what will it involve?

Eligible participants will be invited to take part in a brief face-to-face confidential interview, that will take approximately 30 - 45 minutes to complete at the University of Technology Sydney. During the interview you will be asked to complete a short questionnaire and asked a number of questions regarding your thoughts about the questionnaire. A handheld voice recorder will be used to record the conversation. The answers you provide will be de-identified and you will be reimbursed with a \$25 Coles/Myer gift card for your time. A waiting room is available should you wish to have a support person accompany you to the interview.

Are there any risks/inconvenience?

The questionnaire includes some questions about gender dysphoria that might be upsetting. If you feel distressed at any time during the interview, we will stop the interview.

Do I have to say yes?

Participation in this study is voluntary. If you wish to withdraw from the study once it has started, you can do so at any time and request your recording be deleted (if it has been de-identified this will not be possible).

What will happen if I say No?

There will be no impact on you, or your relationship with UTS, if you decide not to participate in the research.

Confidentiality

By consenting to participate in the study you agree to the research team collecting and using de-identified personal information about you for the research project. The information will be kept confidential and securely stored at UTS with access limited to the research team. We plan to publish the results from this study in academic journals and present our findings at conferences.

What if I have concerns or a complaint?

If you have concerns about the research please feel free to contact either myself, sarah.j.bowman@student.uts.edu.au or my supervisor, bethany.wootton@uts.edu.au; 02 9514 3942.

By clicking the "Submit" button you agree to participate in the research, that you will be audio recorded and that the research data gathered from this project may be published in a form that does not identify you in any way and may be used for future research purposes.

Note: This study has been approved by the University of Technology Sydney Human Research Ethics Committee [UTS HREC]. If you have any concerns or complaints about any aspect of the conduct of this research, please contact the Ethics Secretariat on ph.: +61 2 9514 2478 or email: Research.Ethics@uts.edu.au, and quote the UTS HREC reference number. Any matter raised will be treated confidentially, investigated and you will be informed of the outcome.

Submit

D.2.1 Study 2 – Validation Study and Study 4: Participant Information Sheet



Assessing Gender Dysphoria

INFORMATION SHEET AND CONSENT FORM FOR ONLINE SURVEYS

UTS APPROVAL NUMBER ETH20-4989 – Assessing Gender Dysphoria

What is the research study about?

The purpose of this online survey is to improve the measures used to assess gender dysphoria, the distress that may occur if an individual's experienced gender is different to their assigned sex at birth, in individuals aged 13- years and older. You have been invited to participate because you are over the age of 14 years and identify with a gender that is different to the sex that was originally listed on your birth certificate. Because this is a measure development study we are looking for a wide range of participants who have had different experiences of gender dysphoria.

Who is conducting this research?

My name is Sarah Bowman and I am a psychologist and PhD candidate at UTS. My supervisor is Dr Bethany Wootton, Senior Lecturer in Clinical Psychology (bethany.wootton@uts.edu.au; +61 2 9514 3942).

Inclusion/Exclusion Criteria

Before you decide to participate in this research study, we need to ensure that it is ok for you to take part. We are looking for individuals over the age of 14 years who identify as being transgender or gender diverse and have been resident in either Australia or New Zealand for the last 12 months.

Do I have to take part in this research study?

Participation in this study is voluntary. It is completely up to you whether or not you decide to take part and you may discontinue at any time without consequences.

If you decide to participate, I will invite you to complete a brief anonymous online survey that will take approximately 15-20 minutes to complete. At the end of the survey you will have the option to consent to a second follow-up survey in two weeks' time that will take approximately 5-10 minutes to complete. Participants who agree to participate in the follow-up survey will be required to provide an email address so that we can send you a link to the survey, your email address will remain confidential and not accessible to the research team.

Are there any risks/inconvenience?

Yes, there are some risks/inconvenience. Due to the nature of the study, and the inclusion of pre-existing measures for comparative purposes, the questionnaires include some questions about gender dysphoria that might be upsetting or include concepts of sex and gender that you do not agree with. These questions refer to an assessment of mood, anxiety, gender dysphoria and may also include questions relating to self-harm. At the end of the survey there is a list of resources that you can contact if you are feeling upset.

The following link will take you to a list of [Self-Help Resources](#) should you become distressed during the survey.

What will happen to information about me?

Access to the online questionnaire is via the 'submit' button at the bottom of the page. By clicking the 'submit' button you agree to participate in the research in accordance with the terms of the information sheet and consent to the research team collecting and using de-identified personal information about you for the research project. All this information will be treated confidentially and securely stored at UTS with access limited to the research team.

We would like to store your information for future use in research projects that are an extension of this research project. In all instances your information will be treated confidentially. We plan to publish the results from this study in academic journals and present our findings at conferences. In any publication, information will be provided in such a way that you cannot be identified.

What if I have concerns or a complaint?

If you have concerns about the research that you think I or my supervisor can help you with, please feel free to contact either myself, sarah.j.bowman@student.uts.edu.au or my supervisor, bethany.wootton@uts.edu.au; +61 2 9514 3942.

If you would like to talk to someone who is not connected with the research, you may contact the Research Ethics Officer on +61 2 9514 9772 or Research.ethics@uts.edu.au and quote this number [ETH20-4989]

Submit

D.3.1 Study 3: Clinical Group Participant Information Sheet



Survey Queue

AAA



Validating Measures of Gender Dysphoria

INFORMATION SHEET AND CONSENT FORM FOR ONLINE SURVEYS

UTS APPROVAL NUMBER ETH20-5429

What is the research study about?

The purpose of this online survey is to improve the measures used to assess gender dysphoria, the distress that may occur if an individual's experienced gender is different to their assigned sex at birth, in individuals aged 14-years and older. You have been invited to participate because you are aged 18 years or older and identify with a gender that is different to the sex that was originally listed on your birth certificate. Because this is a validation study, we are looking for participants who are currently experiencing gender dysphoria.

Who is conducting this research?

My name is Sarah Bowman, I am a psychologist and PhD candidate at UTS. My supervisor is Dr Bethany Wootton, Clinical Psychologist and Senior Lecturer in Clinical Psychology (bethany.wootton@uts.edu.au; +61 2 9514 3942).

Inclusion/Exclusion Criteria

Before you decide to participate in this research study, we need to ensure that it is ok for you to take part. We are looking for individuals aged 14 years or older who identify as being transgender or gender diverse, have been resident in either Australia or New Zealand for the last 12 months and are currently seeing either a psychologist or psychiatrist for help with gender dysphoria.

Do I have to take part in this research study?

Participation in this study is voluntary. It is completely up to you whether or not you decide to take part and you may discontinue at any time without consequences. If you decide to participate, you will be asked to complete an anonymous online survey that will take up to 40 minutes to complete. Should you discontinue the study, responses for completed questionnaires will be retained.

Are there any risks/inconvenience?

Yes, there are some risks/inconvenience. Due to the nature of the study the questionnaires include some questions about gender dysphoria that might be upsetting or include ideas about sex and gender that you do not agree with. In addition to questions about gender dysphoria, questions may refer to an assessment of mood and anxiety and include questions that relate to self-harm, including genital cutting, or questions that you consider to be of a personal nature. At the end of the survey there is a list of resources that you can contact if you are feeling upset.

The following link will take you to a list of [Self-Help Resources](#) should you become distressed during the survey.

What will happen to information about me?

Access to the online questionnaire is via the 'submit' button at the bottom of the page. By clicking the 'submit' button you agree to participate in the research in accordance with the terms of the information sheet and consent to the research team collecting and using de-identified personal information about you for the research project. All this information will be treated confidentially and securely stored at UTS with access limited to the research team.

We would like to store your information for future use in research projects that are an extension of this research project. In all instances your information will be treated confidentially. We plan to publish the results from this study in academic journals and present our findings at conferences. In any publication, information will be provided in such a way that you cannot be identified.

What if I have concerns or a complaint?

If you have concerns about the research that you think I or my supervisor can help you with, please feel free to contact either myself, sarah.j.bowman@student.uts.edu.au or my supervisor, bethany.wootton@uts.edu.au; +61 2 9514 3942.

If you would like to talk to someone who is not connected with the research, you may contact the Research Ethics Officer on +61 2 9514 9772 or Research.ethics@uts.edu.au and quote this number [ETH20-5429]

Submit

D.3.2 Study 3: Control Group Participant Information Sheet



Survey Queue

AAA



Validating Measures of Gender Dysphoria

INFORMATION SHEET AND CONSENT FORM FOR ONLINE SURVEYS

UTS APPROVAL NUMBER ETH20-5429

What is the research study about?

The purpose of this online survey is to improve the measures used to assess gender dysphoria, the distress that may occur if an individual's experienced gender is different to their assigned sex at birth, in individuals aged 14-years and older. You have been invited to participate because you are aged 18 years or older and do not identify as either transgender or gender diverse. Because this is a validation study, we are looking for participants who do not experience gender dysphoria.

Who is conducting this research?

My name is Sarah Bowman, I am a psychologist and PhD candidate at UTS. My supervisor is Dr Bethany Wootton, Clinical Psychologist and Senior Lecturer in Clinical Psychology (bethany.wootton@uts.edu.au; +61 2 9514 3942).

Inclusion/Exclusion Criteria

Before you decide to participate in this research study, we need to ensure that it is ok for you to take part. We are looking for individuals aged 14 years or older, whose gender identity is the same as the sex identified on their birth certificate and have been resident in either Australia or New Zealand for the last 12 months.

Do I have to take part in this research study?

Participation in this study is voluntary. It is completely up to you whether or not you decide to take part and you may discontinue at any time without consequences. If you decide to participate, you will be asked to complete a brief anonymous online survey that will take up to 10 minutes to complete. Should you discontinue the study, responses for completed questionnaires will be retained.

Are there any risks/inconvenience?

Yes, there are some risks/inconvenience. Due to the nature of the study the questionnaires include some questions about gender dysphoria that might be upsetting or include ideas about sex and gender that you do not agree with. In addition to questions about gender dysphoria, questions may refer to an assessment of mood and anxiety and include questions that relate to self-harm, including genital cutting, or questions that you consider to be of a personal nature. At the end of the survey there is a list of resources that you can contact if you are feeling upset.

The following link will take you to a list of [Self-Help Resources](#) should you become distressed during the survey.

What will happen to information about me?

Access to the online questionnaire is via the 'submit' button at the bottom of the page. By clicking the 'submit' button you agree to participate in the research in accordance with the terms of the information sheet and consent to the research team collecting and using de-identified personal information about you for the research project. All this information will be treated confidentially and securely stored at UTS with access limited to the research team.

We would like to store your information for future use in research projects that are an extension of this research project. In all instances your information will be treated confidentially. We plan to publish the results from this study in academic journals and present our findings at conferences. In any publication, information will be provided in such a way that you cannot be identified.

What if I have concerns or a complaint?

If you have concerns about the research that you think I or my supervisor can help you with, please feel free to contact either myself, sarah.j.bowman@student.uts.edu.au or my supervisor, bethany.wootton@uts.edu.au; +61 2 9514 3942.

If you would like to talk to someone who is not connected with the research, you may contact the Research Ethics Officer on +61 2 9514 9772 or Research.ethics@uts.edu.au and quote this number [ETH20-5429]

Submit

Appendix E: Eligibility Questionnaires

E.1.1 Study 2 - Pilot Study: Adolescent Eligibility



Eligibility Questions

So that we can ensure that you qualify for the interview and that we have a good cross-section of the community could you please answer the following questions.

1. What is your age (years)?

2. Has Australia been your primary place of residence for the past 12 months?

Yes

No

3. Do you consider yourself to be transgender, gender-diverse, or non-binary?

Yes

No

Please answer 'yes' if you identify with any of the following (or similar) terms: agender, brotherboy, gender-fluid, gender-queer, gender-neutral, sistergirl, trans, or transsexual.

5. Which of the following best describes your current gender identity?

Female / Trans-Female / Trans-Feminine / Sistergirl

Male / Trans-Male / Trans-Masculine / Brotherboy

Agender / Gender-Fluid / Gender-Queer / Gender-Neutral / Non-Binary

Other

If current gender identity is 'Other' please specify:

6. Over the last 2 weeks, how often have you been bothered by any of the following problems?

	Not at all	Several days	More than half the days	Nearly every day
Little interest or pleasure in doing things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling down, depressed, or hopeless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trouble falling or staying asleep, or sleeping too much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling tired or having little energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor appetite or over eating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling bad about yourself - or that you are a failure or have let yourself or your family down	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trouble concentrating on things, such as reading the newspaper or watching television	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thoughts that you would rather be better off dead or of hurting yourself in some way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

E.1.2 Study 2 - Pilot Study: Adult Eligibility



Resize font:
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Eligibility Questions

So that we can ensure that you qualify for the survey and that we have a good cross-section of the community could you please answer the following questions. When you have finished click the 'Submit' button to complete your response and proceed to the self-help pages.

1) What is your age (years)?	<input type="text"/>					
2) Has Australia been your primary place of residence for the past 12 months?	<input type="radio"/> Yes <input type="radio"/> No reset					
3) Do you consider yourself to be transgender, gender diverse, or non-binary?	<input type="radio"/> Yes <input type="radio"/> No reset <small>Please answer 'yes' if you identify with any of the following (or similar) terms: agender, brotherboy, gender fluid, gender queer, gender neutral, non-binary, sistergirl, trans, transgender or transsexual.</small>					
4) Which of the following best describes your current gender identity?	<input type="radio"/> Female / Trans-Female / Trans-Feminine / Sistergirl <input type="radio"/> Male / Trans-Male / Trans-Masculine / Brotherboy <input type="radio"/> Agender / Gender-Fluid / Gender-Queer / Gender-Neutral / Non-binary <input type="radio"/> Other reset					
5) Over the last 2 weeks, how often have you been bothered by any of the following problems?						
	<table border="0"> <tr> <td></td> <td style="text-align: center;">Not at all</td> <td style="text-align: center;">Several days</td> <td style="text-align: center;">More than half the days</td> <td style="text-align: center;">Nearly every day</td> </tr> </table>		Not at all	Several days	More than half the days	Nearly every day
	Not at all	Several days	More than half the days	Nearly every day		
Little interest or pleasure in doing things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	reset					
Feeling down, depressed, or hopeless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	reset					
Trouble falling or staying asleep, or sleeping too much	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	reset					
Feeling tired or having little energy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	reset					
Poor appetite or over eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	reset					
Feeling bad about yourself - or that you are a failure or have let yourself or your family down	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	reset					
Trouble concentrating on things, such as reading the newspaper or watching television	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	reset					
Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	reset					
Thoughts that you would rather be better off dead or of hurting yourself in some way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
	reset					
<input type="button" value="Submit"/>						

E.2.1 Study 2 - Validation Study and Study 4: Eligibility

Eligibility Questions

Please answer all of the eligibility questions. When you have answered all of the questions please click on the 'Submit' button to continue.

1) What is your age (years)?	<input type="text"/>	Participant's age will be collected for the purposes of demographics reporting.
2) Has either Australia or New Zealand been your primary place of residence for the past 12 months?	<input type="radio"/> Australia <input type="radio"/> New Zealand <input type="radio"/> Neither	reset
3) Do you consider yourself to be transgender, gender diverse, or non-binary?	<input type="radio"/> Yes <input type="radio"/> No	reset Please answer 'yes' if you identify with any of the following (or similar) terms: agender, brotherboy, gender fluid, gender queer, gender neutral, non-binary, sistergirl, trans, transgender or transsexual.
To continue please click 'Submit'.		
<input type="button" value="Submit"/>		

E.3.1 Study 3: Clinical Group Eligibility

Eligibility Questions

Thank-you for responding to the survey request. Before we begin we need to know if you meet the eligibility requirements. When you have answered all of the questions please click on the 'Submit' button to continue.

1) What is your age (years)?	<input type="text"/>	Participant's age will be collected for the purposes of demographics reporting.
2) Has either Australia or New Zealand been your primary place of residence for the past 12 months?	<input type="radio"/> Australia <input type="radio"/> New Zealand <input type="radio"/> Neither	reset
3) Do you consider yourself to be transgender, gender diverse, or non-binary?	<input checked="" type="radio"/> Yes <input type="radio"/> No	reset Please answer 'Yes' if you identify with any of the following (or similar) terms: agender, brotherboy, gender fluid, gender queer, gender neutral, non-binary, sistergirl, trans, transgender or transsexual.
4) Do you currently experience or have a diagnosis of gender dysphoria (distress or significant impact on daily activities that is a result of a difference between your gender and assigned sex at birth)?	<input type="radio"/> Yes <input type="radio"/> No	reset If you are seeking help from either a psychiatrist or psychologist for help with gender dysphoria please answer 'Yes'.
To continue please click 'Submit'.		
<input type="button" value="Submit"/>		

E.3.2 Study 3: Control Group Eligibility

Eligibility Questions

Thank-you for responding to the survey request. Before we begin we need to know if you meet the eligibility requirements. When you have answered all of the questions please click on the 'Submit' button to continue.

1) 1) What is your age (years)?	<input type="text"/>	Participant's age will be collected for the purposes of demographics reporting.
2) 2) Has either Australia or New Zealand been your primary place of residence for the past 12 months?	<input type="radio"/> Australia <input type="radio"/> New Zealand <input type="radio"/> Neither	reset
3) 3) Do you consider yourself to be transgender, gender diverse, or non-binary?	<input type="radio"/> No <input type="radio"/> Yes	reset Please answer 'yes' if you identify with any of the following (or similar) terms: agender, brotherboy, gender fluid, gender queer, gender neutral, non-binary, sistergirl, trans, transgender or transsexual.
To continue please click 'Submit'.		
<input type="button" value="Submit"/>		

Appendix F: Individual Structured Interviews

F.1.1 Study 2 - Pilot Study: Interview Script

Thank-you for agreeing to participate in the current study. My name is Sarah Bowman, I am a psychologist and PHD candidate at the University of Technology Sydney. We are currently in the process of creating a new measure of gender dysphoria that can be used for both adolescents and adults. Gender dysphoria is often described as an intense feeling of distress that sometimes occurs when somebody's gender identity is different from their gender assigned at birth. We are asking for your help today to ensure that our new measure accurately captures the type of things that people who experience gender dysphoria might worry about or find distressing. I will be recording the interview [show digital recorder] so that I have a record of our conversation – is this okay? [start interview recording]. The interview will take up to 45 minutes to complete. Everything you say will be confidential and you can stop and end the interview at any time you like without having to explain why. If I observe that you are feeling distressed, I will stop the interview to make sure you are okay. Before we begin, I would like to give you this gift voucher for \$25 as a means of thanking you for taking part in the research. No matter what happens during the interview the gift voucher is yours to keep. Shall we get started? [pause for response]. Firstly, I would like you to review the Participant Information Sheet and let me know if you have any questions [pause for response]. Next, I will ask you to complete a questionnaire that focusses on individual experiences of gender dysphoria, after that I will ask you some questions about the questionnaire that focus on the clarity of the instructions and individual questions, whether you think the questions are appropriate, and if you think there are any other important questions that we should add to the questionnaire. If there are any words that you do not understand or if you are unsure

of the meaning of the meaning of a question, please ask. [Provide the participant with the GPSQ-2].




I have a series of questions that will take about 30 minutes. If you have any other thoughts or comments that come to mind, please feel free to jump in. You can refer to the questionnaire that you have just completed at any time. Remember there are no right or wrong answers, you won't be judged at any time about what you say, and nobody outside of the research team will know what you said.

1. How would you personally define or describe gender dysphoria?
2. What were your initial thoughts about the questionnaire?
3. On a scale of 1 to 5, where 1 is not very easy and 5 is very easy, how easy do think the questionnaire was to understand? Do you think that the instructions or any particular questions could have been clearer?
4. Walking through each question could you please explain what you thought the question was asking?
5. When thinking about the questionnaire on a scale of 1 to 5, where 1 is not relevant and 5 is very relevant, how relevant do you think the questions are to somebody who experiences gender dysphoria? What questions do you think best captured the feeling of distress that somebody might feel if their gender identity is different to their birth assigned gender?
6. When thinking about the questionnaire do you think there were any questions that failed to capture the feeling of distress that somebody might feel because of their gender identity? If so, how might they be improved?
7. Imagine that you were going to ask somebody about gender dysphoria what additional questions would you like to ask?

Thank-you for participating in our research. Here is a list of self-help resources that you can keep. If at any time, you are feeling distressed I recommend that you reach-out to one of the listed organisations.

Appendix G: Online Demographics and Surveys

G.1.1 Study 2 - Validation Study and Study 4: Online Demographics

Resize font:  Survey Queue

Demographics

Please answer all of the demographics questions. When you have answered all of the questions please click on the 'Submit' button to continue.

1) In which region were you born?

- Australia
- New Zealand
- United Kingdom and Ireland
- Asia
- Europe (excl United Kingdom and Ireland)
- North America
- Pacific Islands
- Middle East and Africa
- Other

[reset](#)

If region of birth is 'Other' please specify:

2) What is the postcode where you live?

3) What is the highest level of education that you have successfully completed?

- Below year 10
- Year 10
- Year 11
- Year 12 (or equivalent)
- Certificate
- Diploma / Advanced Diploma
- Bachelor Degree or above
- Other

[reset](#)

If education is 'Other' please specify:

4) What sex were you assigned at birth?

- Female
- Male
- Other

[reset](#)

Sex or sex assigned to you at birth refers to the sex recorded on your original birth certificate.

If sex assigned at birth is 'Other' please specify:

For example Indeterminate, Intersex, Non-specific, Unspecified.

5) Which of the following best describes your current gender?

- Male / boy / man
- Female / girl / woman
- Intersex
- Transgender male / boy / man
- Transgender female / girl / woman
- Transgender (unspecified)
- Non-binary / gender-queer / gender-fluid
- Agender / gender-neutral
- Other

[reset](#)

Gender refers to whatever gender you identify as yourself (e.g. male, female, transgender, gender-queer, or other gender variants), which may or may not be the same as your sex.

If current gender is 'Other' please specify:

6) Do you feel confident that you will be able to lead a satisfied life with whatever gender identity you feel that you currently have?

- Not at all confident
- Not very confident
- Somewhat confident
- Very confident
- Extremely confident

[reset](#)

7) Over the last two weeks how distressed have you felt because of issues relating to gender dysphoria?

- Not at all distressed
- Not very distressed
- Somewhat distressed
- Very distressed
- Extremely distressed

[reset](#)

To continue please click 'Submit'.

Submit

G.1.2 Study 2 - Validation Study and Study 4: Online Survey

Survey Page 1 of 5

Please answer the survey questions as honestly as possible, there are no right, or wrong answers and you will not be judged as a result of your answers. If the answers to any of the questions does not match your answer exactly, please choose the answer that is closest to your response. When you have answered all of the questions please click on the 'Submit' button to continue.

The following link will take you to a list of [Self-Help Resources](#) should you become distressed by any of the questions in the survey.

Survey Instructions

The GPSQ-2 consists of 15 questions relating to your thoughts and feelings about gender, including your own sense of gender identity.

Gender refers to whatever gender you identify as yourself (e.g. masculine, feminine, transgender, gender-queer, or other gender variants), which may or may not be the same as your sex.

Sex or sex assigned to you at birth refers to the sex recorded on your original birth certificate.

When answering these questions, please select the answer that best reflects your thoughts and feelings over the past two weeks.

	Never	Rarely	Sometimes	Often	All the time	
1 Over the past two weeks how often have you thought about your gender?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
						reset
2 Over the past two weeks how often has your gender identity affected everyday things such as school, work, recreation, or purchases?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
						reset
3 Over the past two weeks how often have you been upset by issues relating to gender?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
						reset
4 Over the past two weeks how often have you stopped yourself from participating in any activity, behaving in a certain way, or purchasing anything because of your gender?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
						reset
5 Over the past two weeks how often has it upset you that you have had to answer questions about what sex or gender you are (e.g., when filling in forms)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
						reset
6 Over the past two weeks how often have you felt uncertain, anxious or confused about your gender identity?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
						reset
7 Over the past two weeks how often have you felt annoyed because you have been expected to behave differently or act in certain ways because of the sex assigned to you at birth?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
						reset
8	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Over the past two weeks how often has your sense of what gender you identify with changed at all?							reset
9	Over the past two weeks how often have you felt you should change how you express your gender (e.g., preferred pronoun or name, how you dress, wear your hair or behave)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
10	Over the past two weeks how often have you felt that you wanted to change the physical appearance of your body to match your gender identity (e.g., surgery, hormones or puberty blockers)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
11	Over the past two weeks how often have you been worried about telling others about your gender identity or past gender history?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
12	Over the past two weeks how often have you felt annoyed because you have been prevented from living in your preferred gender identity?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
13	Over the past two weeks how often have you felt sad or hurt as a result of any changes to your gender (e.g., unintended impact on family, relationships, friends, fertility, finances or career)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
14	Over the past two weeks how often has your understanding of your gender, or how you describe gender to others, changed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
15	Over the past two weeks how often have you changed the way you behave around others in order to fit in with what they expect from your gender?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
To continue please click 'Submit'.							
<input type="button" value="Submit"/>							

Survey Page 2 of 5

Please answer the survey questions as honestly as possible, there are no right, or wrong answers and you will not be judged as a result of your answers. If the answers to any of the questions does not match your answer exactly, please choose the answer that is closest to your response. When you have answered all of the questions please click on the 'Submit' button to continue.

The following link will take you to a list of [Self-Help Resources](#) should you become distressed by any of the questions in the survey.

GCLS (Jones, Bouman, Haycraft, & Arcelus, 2019)

In the past 6 months, due to the distress about my gender (i.e., the distress caused as the gender I was assigned at birth does not match with my gender identity):

	Never	Rarely	Sometimes	Often	Always
1 I have avoided social situations and/or social interactions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
2 I have not gone to school/college/work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
3 I have suffered from anxiety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
4 I have been unable to leave the house	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
5 I have found it difficult to make friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
6 I have thought about cutting or hurting my chest, genitals, and/or surrounding areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
7 I have felt that life is meaningless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
8 I have not engaged in leisure activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
9 I have suffered from low mood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
10 I have thought about hurting myself or taking my own life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset

GRRS (Bauerband & Galupo, 2014)

People think about their gender identity in various ways. Consider the ways you have recently thought about your gender identity. Please read the statements below and rate how often you have thought similar things.

	Almost never	Sometimes	Often	Almost always
1 Think that I will never be comfortable with my gender expression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
				reset
2 Think about things I cannot do because of my gender identity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
				reset
3 Think that I will never be able to present my gender the way I want	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
				reset
4 Think that my gender identity will keep me from getting a job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5	Analyze what people may be thinking about my gender identity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
6	Play back in my mind how my gender may have been interpreted in a past situation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
7	Try to figure out what others think about my gender identity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
8	Wish I could stop thinking about my gender identity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
9	Waste time thinking about my gender identity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
10	Think that I can't stop thinking about ways I was treated because of my gender identity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
To continue please click 'Submit'.						
<input type="button" value="Submit"/>						

Survey Page 3 of 5

Please answer the survey questions as honestly as possible, there are no right, or wrong answers and you will not be judged as a result of your answers. If the answers to any of the questions does not match your answer exactly, please choose the answer that is closest to your response. When you have answered all of the questions please click on the 'Submit' button to continue.

The following link will take you to a list of [Self-Help Resources](#) should you become distressed by any of the questions in the survey.

PHQ-9 (Kroenke, Spitzer, & Williams, 2001)

Over the last 2 weeks, how often have you been bothered by any of the following problems?

	Not at all	Several days	More than half the days	Nearly every day	
1 Little interest or pleasure in doing things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
2 Feeling down, depressed, or hopeless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
3 Trouble falling or staying asleep, or sleeping too much	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
4 Feeling tired or having little energy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
5 Poor appetite or overeating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
6 Feeling bad about yourself - or that you are a failure or have let yourself or your family down	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
7 Trouble concentrating on things, such as reading the newspaper or watching television	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
8 Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
9 Thoughts that you would be better off dead or of hurting yourself in some way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset

GAD-7 (Spitzer, Kroenke, Williams, & Lowe, 2006)

Over the last 2 weeks, how often have you been bothered by the following problems?

	Not at all	Several days	More than half the days	nearly every day	
1 Feeling nervous, anxious or on edge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
2 Not being able to stop or control worrying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
3 Worrying too much about different things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
4 Trouble relaxing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

5	Being so restless that it is hard to sit still	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
6	Becoming easily annoyed or irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
7	Feeling afraid as if something awful might happen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
To continue please click 'Submit'.						
<input type="button" value="Submit"/>						

Survey Page 4 of 5

Please answer the survey questions as honestly as possible, there are no right, or wrong answers and you will not be judged as a result of your answers. If the answers to any of the questions does not match your answer exactly, please choose the answer that is closest to your response. When you have answered all of the questions please click on the 'Submit' button to continue.

The following link will take you to a list of [Self-Help Resources](#) should you become distressed by any of the questions in the survey.

K-10 (Kessler et al., 2002)

In the past 30 days, about how often:

	None of the time	A little of the time	Some of the time	Most of the time	All of the time	
1 Did you feel tired for no good reason?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
2 Did you feel nervous?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
3 Did you feel so nervous that nothing could calm you down?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
4 Did you feel hopeless?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
5 Did you feel restless or fidgety?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
6 Did you feel so restless that you could not sit still?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
7 Did you feel depressed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
8 Did you feel that everything was an effort?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
9 Did you feel so sad that nothing could cheer you up?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
10 Did you feel worthless?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset

To continue please click 'Submit'.

Submit

Survey Page 5 of 5

You will have already answered a questionnaire that is similar to the one below. It is important that you read each question and answer it as honestly as possible, there are no right, or wrong answers and you will not be judged as a result of your answers. If the answers to any of the questions does not match your answer exactly, please choose the answer that is closest to your response. When you have answered all of the questions please click on the 'Submit' button to continue.

The following link will take you to a list of [Self-Help Resources](#) should you become distressed by any of the questions in the survey.

GPSQ (Hakeem, Crncec, Asghari-Fard, Harte, & Eapen, 2016)

The questionnaire consists of 14 questions relating to your thoughts and feelings about gender, including your own sense of gender identity. Gender refers to whatever gender you identify as yourself (e.g., masculine, feminine, transgender, gender-queer, or other gender variants), which may not be the same as your biological sex. When answering these questions please select the answer that best reflects your thoughts and feelings over the past 2 weeks.

- 1) How important do you feel gender is to you?
- Unimportant
 - Slightly important
 - Moderately important
 - Very important
 - Extremely important

reset

- 2) In the past 2 weeks how often have you thought about gender?
- Never
 - Seldom
 - Sometimes
 - Often
 - Very often

reset

- 3) In the past 2 weeks how often have you given consideration to gender in relation to aspects of your day to day life, such as work, recreational activities, or products purchased?
- Never
 - Seldom
 - Sometimes
 - Often
 - Very often

reset

- 4) In the past 2 weeks how troubled have you been about issues relating to gender?
- Never
 - Seldom
 - Sometimes
 - Often
 - Very often



reset

- 5) In the past 2 weeks have you stopped yourself from participating in any activity, behaving in a certain way, or purchasing anything because of your gender?
- Never
 - Seldom
 - Sometimes
 - Often
 - Very often

reset

<p>6) In the past two weeks has it upset you that you have had to answer questions about what sex or gender you are (e.g., when filling in forms)?</p>	<p> <input type="radio"/> Never <input type="radio"/> Seldom <input type="radio"/> Sometimes <input type="radio"/> Often <input type="radio"/> Very often </p> <p style="text-align: right;">reset</p>
<p>7) In the past 2 weeks how comfortable have you felt with your sense of gender? (This does not have to correspond with your biological sex.)</p>	<p> <input type="radio"/> Extremely comfortable <input type="radio"/> Very comfortable <input type="radio"/> Somewhat comfortable <input type="radio"/> Not very comfortable <input type="radio"/> Not comfortable at all </p> <p style="text-align: right;">reset</p>
<p>8) In the past 2 weeks have you felt uncertain or confused about your sense of gender?</p>	<p> <input type="radio"/> Never <input type="radio"/> Seldom <input type="radio"/> Sometimes <input type="radio"/> Often <input type="radio"/> Very often </p> <p style="text-align: right;">reset</p>
<p>9) In the past 2 weeks have you felt pressured to behave or act in certain ways because of gender?</p>	<p> <input type="radio"/> Not at all <input type="radio"/> Hardly ever <input type="radio"/> Sometimes <input type="radio"/> Often <input type="radio"/> All the time </p> <p style="text-align: right;">reset</p>
<p>10) In the past 2 weeks has the sense of what gender you identify with changed at all?</p>	<p> <input type="radio"/> Not at all <input type="radio"/> Hardly ever <input type="radio"/> Sometimes <input type="radio"/> Often <input type="radio"/> All the time </p> <p style="text-align: right;">reset</p>
<p>11) In the past 2 weeks have you avoided social situations because of uncertainties or anxieties you have about your sense of gender identity?</p>	<p> <input type="radio"/> Not at all <input type="radio"/> Hardly ever <input type="radio"/> Sometimes <input type="radio"/> Often <input type="radio"/> All the time </p> <p style="text-align: right;">reset</p>
<p>12) In the past 2 weeks have you had thoughts that you should change your sex (even if you have already changed your sex in the past)?</p>	<p> <input type="radio"/> Not at all <input type="radio"/> Hardly ever <input type="radio"/> Sometimes <input type="radio"/> Often <input type="radio"/> All the time </p> <p style="text-align: right;">reset</p>
<p>13) In the past 2 weeks has your sense of what gender you are changed from one day to the next?</p>	<p> <input type="radio"/> Not at all <input type="radio"/> Hardly ever </p>

	<input type="radio"/> Sometimes <input type="radio"/> Often <input type="radio"/> All the time	reset
14) In the past 2 weeks have you had any thoughts that you needed to seek professional help in order to change the physical sex of your body?	<input type="radio"/> Not at all <input type="radio"/> Hardly ever <input type="radio"/> Sometimes <input type="radio"/> Often <input type="radio"/> All the time	reset
To continue please click 'Submit'.		
<input type="button" value="Submit"/>		

	Resize font: <input type="button" value="+"/> <input type="button" value="−"/>	 Survey Queue
Survey Conclusion		
Would you like to participate in a brief (5-10 minutes) follow-up survey in two weeks?	<input checked="" type="radio"/> Yes <input type="radio"/> No	reset
To participate in the follow-up research please enter your email address.	<input type="text"/> <small>Your email address is required so that we can send you a follow-up email it will not be downloaded and will remain confidential..</small>	
To complete the survey and proceed to the Self-Help Resources please click 'Submit'.		
<input type="button" value="Submit"/>		

G.2.1 Study 3: Clinical Group Online Demographics

Demographics

Please answer all of the demographics questions. When you have answered all of the questions please click on the 'Submit' button to continue.

1) In which region were you born?

- Australia
- New Zealand
- United Kingdom and Ireland
- Asia
- Europe (excl United Kingdom and Ireland)
- North America
- Pacific Islands
- Middle East , Africa and South Africa
- Other

[reset](#)

2) What sex were you assigned at birth?

- Female
- Male
- Other

[reset](#)

Sex or sex assigned to you at birth refers to the sex recorded on your original birth certificate.

3) Which of the following best describes your current gender?

- Male / boy / man
- Female / girl / woman
- Intersex
- Transgender male / boy / man
- Transgender female / girl / woman
- Transgender (unspecified)
- Non-binary / gender-queer / gender-fluid
- Agender / gender-neutral
- Other

[reset](#)

Gender refers to whatever gender you identify as yourself (e.g. male, female, transgender, gender-queer, or other gender variants), which may or may not be the same as your sex.

4) Do you feel confident that you will be able to lead a satisfied life with whatever gender identity you feel that you currently have?

- Not at all confident
- Slightly confident
- Somewhat confident
- Fairly confident
- Completely confident

[reset](#)

Steps to Transition

Please indicate whether you have taken any of the following actions in order to transition to your gender identity.

	No	Yes	
1) Come out as transgender to family?	<input type="radio"/>	<input type="radio"/>	reset
2) Come out as transgender to friends?	<input type="radio"/>	<input type="radio"/>	reset
3) Come out as transgender to coworkers or fellow students?	<input type="radio"/>	<input type="radio"/>	reset
4) Adopted a name not given at birth that better represents gender identity?	<input type="radio"/>	<input type="radio"/>	reset
5) Currently called adopted name by family?	<input type="radio"/>	<input type="radio"/>	reset
6) Currently called adopted name by friends?	<input type="radio"/>	<input type="radio"/>	reset
7) Currently called adopted name by coworkers/fellow students?	<input type="radio"/>	<input type="radio"/>	reset
8) Legally had name changed to adopted name?	<input type="radio"/>	<input type="radio"/>	reset
9) Wear clothing that matches gender identity in social situations?	<input type="radio"/>	<input type="radio"/>	reset
10) Wear clothing that matches gender identity at work/school?	<input type="radio"/>	<input type="radio"/>	reset
11) Legally changed sex on birth certificate?	<input type="radio"/>	<input type="radio"/>	reset
12) Driver's license changed to reflect gender identity?	<input type="radio"/>	<input type="radio"/>	reset
13) Undergoing hormone replacement therapy?	<input type="radio"/>	<input type="radio"/>	reset
14) Used or had a nonsurgical cosmetic procedure (e.g., electrolysis) to alter physical appearance in order to make it more congruent with gender identity?	<input type="radio"/>	<input type="radio"/>	reset
15) Had non-genital surgery (e.g., breast removal, breast implants, facial feminisation surgery, vocal cord surgery)?	<input type="radio"/>	<input type="radio"/>	reset
16) Had surgery to alter genitalia?	<input type="radio"/>	<input type="radio"/>	reset
To continue please click 'Submit'.			
<input type="button" value="Submit"/>			

G.2.2 Study 3: Clinical Group Online Survey

Survey Page 1 of 5

Please answer the survey questions as honestly as possible, there are no right, or wrong answers and you will not be judged as a result of your answers. If the answers to any of the questions does not match your answer exactly, please choose the answer that is closest to your response. When you have answered all of the questions please click on the 'Submit' button to continue.

The following link will take you to a list of [Self-Help Resources](#) should you become distressed by any of the questions in the survey.

Survey Instructions

The GPSQ-2 consists of 14 questions relating to your thoughts and feelings about gender, including your own sense of gender identity.

Gender refers to whatever gender you identify as yourself (e.g. masculine, feminine, transgender, gender-queer, or other gender variants), which may or may not be the same as your sex.

Sex or sex assigned to you at birth refers to the sex recorded on your original birth certificate.

When answering these questions, please select the answer that best reflects your thoughts and feelings over the past two weeks.

	Never	Rarely	Sometimes	Often	All the time	
1 Over the past two weeks how often have you thought about your gender?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
2 Over the past two weeks how often has your gender identity affected everyday things such as school, work, recreation, or purchases?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
3 Over the past two weeks how often has your sense of what gender you identify with changed at all?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
4 Over the past two weeks how often have you felt annoyed because you have been prevented from living in accordance with your gender identity?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
5 Over the past two weeks how often have you been upset by issues relating to gender?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
6 Over the past two weeks how often has your understanding of your gender, or how you describe gender to others, changed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
7 Over the past two weeks how often have you been worried about telling others about your gender identity or past gender history?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset

8	Over the past two weeks how often have you changed the way you behave around others in order to fit in with what they expect from your gender?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
9	Over the past two weeks how often have you felt that you wanted to change the physical appearance of your body to match your gender identity (e.g., surgery, hormones or puberty blockers)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
10	Over the past two weeks how often have you felt uncertain, anxious or confused about your gender identity?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
11	Over the past two weeks how often have you felt annoyed because you have been expected to behave differently or act in certain ways because of the sex assigned to you at birth?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
12	Over the past two weeks how often have you felt sad or hurt as a result of any changes to your gender (e.g., unintended impact on family, relationships, friends, fertility, finances or career)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
13	Over the past two weeks how often have you stopped yourself from participating in any activity, behaving in a certain way, or purchasing anything because of your gender?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
14	Over the past two weeks how often have you felt you should change how you express your gender (e.g., pronoun or name, how you dress, wear your hair or behave)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
To continue please click 'Submit'.							
<input type="button" value="Submit"/>							

Survey Page 2 of 5

Please be aware that the following questionnaire contains questions that relate to self-harm and genital cutting. The questionnaire is optional - to proceed to the next questionnaire click on the 'Submit' button at the bottom of the page.

If you choose to complete the survey please answer the survey questions as honestly as possible, there are no right, or wrong answers and you will not be judged as a result of your answers. If the answers to any of the questions does not match your answer exactly, please choose the answer that is closest to your response. When you have answered all of the questions please click on the 'Submit' button to continue.

The following link will take you to a list of [Self-Help Resources](#) should you become distressed by any of the questions in the survey.

GCLS (Jones, Bouman, Haycraft, & Arcelus, 2019)
In the past 6 months, due to the distress about my gender (i.e., the distress caused as the gender I was assigned at birth does not match with my gender identity):

	Never	Rarely	Sometimes	Often	Always	
1 I have avoided social situations and/or social interactions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
2 I have not gone to school/college/work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
3 I have not been able to have emotional relationships with other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
4 I have suffered from anxiety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
5 I have not been able to be physically intimate with other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
6 I have been unable to leave the house	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
7 I have found it difficult to make friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
8 I have thought about cutting or hurting my chest, genitals, and/or surrounding areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
9 I have felt that life is meaningless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
10 I have not enjoyed life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
11 I have not engaged in leisure activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
12 I have suffered from low mood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
13 I have thought about hurting myself or taking my own life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
In the past 6 months:						
	Never	Rarely	Sometimes	Often	Always	

14	I have felt distressed when touching my genitals as they do <u>not</u> match my gender identity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
15	I have felt so distressed about my chest that I have <u>not</u> been able to have a fulfilling life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
16	I have felt comfortable with how others have perceived my gender	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
17	I have felt that my body hair conflicts with my gender identity, either because I have it and do <u>not</u> like it or because I would like to have it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
18	I have felt like my chest does <u>not</u> match my gender identity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
19	I have found it distressing that others do <u>not</u> address me according to my gender identity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
20	I have felt satisfied with the pronouns that others use when talking about me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
21	I have felt unhappy about my genitalia since they do <u>not</u> match my gender identity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
22	I have felt comfortable with how other people perceive my gender based on my physical appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
23	I have felt that my voice has affected the way other people have perceived my gender identity which has been distressing for me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
24	I have felt that my facial hair conflicts with my gender identity, either because I have it and do <u>not</u> like it or because I would like to have it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
25	I have felt that my genitals do match with my gender identity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
26	I have felt that genital surgery will address the unhappiness I experience in relation to my gender	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
27	I have been unable to have a fulfilling life because of the distress relating to my genitalia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
28	I have felt extremely distressed when looking at my chest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
29	I have felt extremely distressed when looking at my genitals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
30	I have felt satisfied with my chest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
Next, we would like to know how satisfied you have been with your life for the last 6 months:								

	Never	Rarely	Sometimes	Often	Always	
31 I have felt satisfied at school/college/work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
32 I have felt satisfied with my emotional relationship(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
33 I have felt satisfied with my sex life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
34 I have felt satisfied in my leisure activities and hobbies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
35 I have <u>not</u> felt satisfied with my friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
36 I have felt satisfied with the support I have received from other significant people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
37 I have <u>not</u> felt satisfied with my health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
38 I have felt satisfied with life in general	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset

Survey Page 3 of 5

Please answer the survey questions as honestly as possible, there are no right, or wrong answers and you will not be judged as a result of your answers. If the answers to any of the questions does not match your answer exactly, please choose the answer that is closest to your response. When you have answered all of the questions please click on the 'Submit' button to continue.

The following link will take you to a list of [Self-Help Resources](#) should you become distressed by any of the questions in the survey.

K-10 (Kessler et al., 2002)					
In the past 30 days, about how often:					
	None of the time	A little of the time	Some of the time	Most of the time	All of the time
1) Did you feel tired for no good reason?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
2) Did you feel nervous?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
3) Did you feel so nervous that nothing could calm you down?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
4) Did you feel hopeless?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
5) Did you feel restless or fidgety?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
6) Did you feel so restless that you could not sit still?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
7) Did you feel depressed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
8) Did you feel that everything was an effort?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
9) Did you feel so sad that nothing could cheer you up?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
10) Did you feel worthless?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
					reset
To continue please click 'Submit'.					
<input type="button" value="Submit"/>					

G.2.3 Study 3: Control Group Online Demographics



Survey Queue

AAA



Demographics

Please answer all of the demographic questions. When you have answered all of the questions please click on the 'Submit' button to continue.

1) In which region were you born?	<p><input type="radio"/> Australia</p> <p><input type="radio"/> New Zealand</p> <p><input type="radio"/> United Kingdom and Ireland</p> <p><input type="radio"/> Asia</p> <p><input type="radio"/> Europe (excl United Kingdom and Ireland)</p> <p><input type="radio"/> North America</p> <p><input type="radio"/> Pacific Islands</p> <p><input type="radio"/> Middle East , Africa and South Africa</p> <p><input type="radio"/> Other</p>	reset
2) What sex were you assigned at birth?	<p><input type="radio"/> Female</p> <p><input type="radio"/> Male</p> <p><input type="radio"/> Other</p>	reset
<p>Sex or sex assigned to you at birth refers to the sex recorded on your original birth certificate.</p>		
To continue please click 'Submit'.		
<input type="button" value="Submit"/>		

G.2.4 Study 3: Control Group Online Survey

Survey Page 1 of 2

Please answer the survey questions as honestly as possible, there are no right, or wrong answers and you will not be judged as a result of your answers. If the answers to any of the questions does not match your answer exactly, please choose the answer that is closest to your response. When you have answered all of the questions please click on the 'Submit' button to continue.

The following link will take you to a list of [Self-Help Resources](#) should you become distressed by any of the questions in the survey.

Survey Instructions

The GPSQ-2 consists of 14 questions relating to your thoughts and feelings about gender, including your own sense of gender identity.

Gender refers to whatever gender you identify as yourself (e.g. masculine, feminine, transgender, gender-queer, or other gender variants), which may or may not be the same as your sex.

Sex or sex assigned to you at birth refers to the sex recorded on your original birth certificate.

When answering these questions, please select the answer that best reflects your thoughts and feelings over the past two weeks.

	Never	Rarely	Sometimes	Often	All the time	
1) Over the past two weeks how often have you thought about your gender?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
2) Over the past two weeks how often has your gender identity affected everyday things such as school, work, recreation, or purchases?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
3) Over the past two weeks how often has your sense of what gender you identify with changed at all?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
4) Over the past two weeks how often have you felt annoyed because you have been prevented from living in accordance with your gender identity?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
5) Over the past two weeks how often have you been upset by issues relating to gender?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
6) Over the past two weeks how often has your understanding of your gender, or how you describe gender to others, changed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
7) Over the past two weeks how often have you been worried about telling others about your gender identity or past gender history?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset

<p>8) Over the past two weeks how often have you changed the way you behave around others in order to fit in with what they expect from your gender?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
<p>9) Over the past two weeks how often have you felt that you wanted to change the physical appearance of your body to match your gender identity (e.g., surgery, hormones or puberty blockers)?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
<p>10) Over the past two weeks how often have you felt uncertain, anxious or confused about your gender identity?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
<p>11) Over the past two weeks how often have you felt annoyed because you have been expected to behave differently or act in certain ways because of the sex assigned to you at birth?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
<p>12) Over the past two weeks how often have you felt sad or hurt as a result of any changes to your gender (e.g., unintended impact on family, relationships, friends, fertility, finances or career)?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
<p>13) Over the past two weeks how often have you stopped yourself from participating in any activity, behaving in a certain way, or purchasing anything because of your gender?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
<p>14) Over the past two weeks how often have you felt you should change how you express your gender (e.g., pronoun or name, how you dress, wear your hair or behave)?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	reset
<p>To continue please click 'Submit'.</p>						
<input type="button" value="Submit"/>						

Appendix H: Self-Help Resources

H.1.1 Study 2 - Pilot Study: Adolescent Self-Help Handout



Gender and Young People Specific Self-Help Resources

Immediate Help

If you experience any distress in the future, you can contact the following resources, 24 hours a day every day, to talk to somebody about how you are feeling.

- Kids Helpline 1800 551 800 or www.kidshelpline.com.au.
Counselling service specifically for young people.



- Lifeline – 13 11 14 or www.lifeline.org.au.
Crisis support and suicide prevention.



- Suicide Call Back Service – 1300 659 467 or www.suicidecallbackservice.org.au
Professional telephone and online counselling for suicide related issues.



Other Resources

The following resources may provide useful information and support.

- Q-Life - 1800 184 527 or www.qlife.org.au.
LGBTIQ+ Telephone and webchat peer support and referral service.
3 pm to midnight every day.



- eHeadSpace - www.eheadspace.org.au
Online and telephone support and counselling to young people 12-25 and their families and friends.



- reachout.com - www.reachout.com
Online mental health resources for young people and their parents.



H.1.2 Study 2 - Pilot Study: Adult Self-Help Handout



Self-Help Resources

Immediate Help

If you experience any distress in the future, you can contact the following resources, 24 hours a day every day, to talk to somebody about how you are feeling.

- Lifeline – 13 11 14 or www.lifeline.org.au.
Crisis support and suicide prevention.



- Suicide Call Back Service – 1300 659 467 or www.suicidecallbackservice.org.au
Professional telephone and online counselling for suicide related issues.



Other Resources

The following resources may provide useful information and support.

- Q-Life – 1800 184 527 or [www.qlife.org.au](http://www qlife.org.au).
LGBTIQ+ Telephone and webchat peer support and referral service.
3 pm to midnight every day.




- Beyond Blue – 1300 22 46 36 or www.beyondblue.org.au
Mental health and wellbeing support.
24 hours a day every day.



- eHeadSpace - www.eheadspace.org.au
Online and telephone support and counselling to young people 12-25 and their families and friends.



H.2.1 Study 2 – Validation Study, Study 3, and Study 4: Online Self-Help Resources

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Self-Help Resources

If you are upset or experiencing any distress you can contact the following resources to talk to somebody about how you are feeling.

Australia

Q-Life - 1800 184 527 or [www.qlife.org.au](http://www qlife.org.au). **LGBTIQ+** Telephone and webchat peer support and referral service - 3 pm to midnight every day.

Kids-Helpline - 1800 551 800 or www.kidshelpline.com.au. 24/7 Counselling service specifically for young people.

Lifeline - 13 11 14 or www.lifeline.org.au. 24/7 Crisis support and suicide prevention.

Suicide Call Back Service - 1300 659 467 or www.suicidecallbackservice.org.au. 24/7 Professional telephone and online counselling for suicide related issues.

New Zealand

OUTLine - 0800 688 5463 or outline.org.nz. **LGBTIQ+** Telephone support line - 6 - 9 pm every day.

Kidsline - 0800 54 37 54 or www.kidsline.org.nz. 24/7 Counselling service specifically for young people.

Lifeline - 0800 543 354 or www.lifeline.org.nz. 24/7 Crisis support and suicide prevention.

The following online self-help resources and social groups may also be useful.

Australia

MINUS18 - www.minus18.org.au. Online support and advocacy for **LGBTQIA+** youth.

Trans Pride Australia - www.transprideaustralia.org.au Online support groups for **Transgender** and **Gender Diverse** individuals and their allies.

Beyond Blue - 1300 22 4636 or www.beyondblue.org.au. Mental health and well-being support. 24 hours a day every day.

eHeadSpace - www.eheadspace.org.au. Online support and counselling to young people 12-25 and their families and friends.

reachout.com - www.reachout.com. Online mental health resources for young people and their parents.

New Zealand

Rainbow Youth - ry.org.nz. Online chat and support services for **queer** and **gender diverse youth**.

Gender Minorities Aotearoa - www.genderminorities.com. Online **takataapui**, **transgender** and **intersex** community social and support network.

The Low Down - 0800 111 757 or www.thelowdown.co.nz. Telephone, text, email and webchat resources for young people who experience anxiety and depression.

depression.org.nz - 0800 111 757 or www.depression.org.nz. Mental health and well-being support. 24 hours a day every day.

Thank-you for participating in our research. Please click 'Submit' to close the survey.

Submit