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Western herbal medicine consultations for common menstrual problems; practitioner experiences and perceptions of treatment

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Treating menstrual problems: A Western Herbal Medicine perspective

Keywords: PMS, dysmenorrhoea, heavy periods, irregular periods, Western herbal medicine

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ABSTRACT:

Objective: To explore the prevalence with which Australian Western herbalists treat menstrual problems and their related treatment, experiences, perceptions and inter-referral practices with other health practitioners.

Methods: Members of the Practitioner Research and Collaboration Initiative (PRACI) practice-based research network identifying as Western Herbalists (WHs) completed a specifically developed, on-line questionnaire.

Results: WHs regularly treat menstrual problems, perceiving high, though differential, levels of effectiveness. For menstrual problems WHs predominantly prescribe individualised formulas including core herbs, like *Vitex agnus-castus*, and problem-specific herbs. Estimated clients' weekly cost (median= \$25.00) and treatment duration (median= 4-6 months) covering this Western herbal medicine (WHM) treatment appears relatively low. Urban-based women are more likely than those

rurally-based to have used conventional treatment for their menstrual problems before consulting WHs ($p=0.001$). Only 19% of WHs indicated direct contact by conventional medical practitioners regarding treatment of clients' menstrual problems despite 42% indicating clients' conventional practitioners recommended consultation with WH.

Conclusion: WHM may be a substantially prevalent, cost-effective treatment option amongst women with menstrual problems. A detailed examination of the behaviour of women with menstrual problems who seek and use WHM warrants attention to ensure this health care option is safe, effective and appropriately co-ordinated within women's wider health care use.

Introduction

On average women experience monthly menstrual cycles for around four decades of their lives, typically only interrupted by pregnancies, lactation practices, mental and/or physical health problems (Rowland, Baird et al. 2002). Whilst menstrual cycles can vary in length and bleeding duration, the majority of women (between 80 – 97%) will in addition experience problematic symptoms, associated with menstruation at some point within these years (Milewicz and Jedrzejuk 2006) . Premenstrual syndrome (PMS) and dysmenorrhoea are the most commonly reported conditions, with prevalence rates of around 50% (Taylor 2005, Direkvand-Moghadam, Sayehmiri et al. 2014) and up to 91% (Ju, Jones et al. 2014) respectively, but heavy and/or irregular menstruation are also frequently experienced (Milewicz and Jedrzejuk 2006).

PMS is a set of symptoms occurring any time post-ovulation and prior to menstruation which resolves at the start of bleeding or some days after its onset. The symptoms may be physical, mental, behavioural, emotional or combinations of any number of these (Taylor 2005). Irregular menstrual periods vary from the normal regular cycle where bleeding occurs every 21 to 35 days and/or are associated with altered bleeding patterns such as inter-menstrual bleeding or prolonged bleeding (Dovom, Tehrani et al. 2016). Heavy periods have been defined as the loss of more than 80 ml of menstrual blood per cycle which left unchecked results in iron deficiency with its widespread, concomitant health consequences (Fraser, Mansour et al. 2015). Without being able to quantify blood loss, an alternative definition of heavy menstrual bleeding

relates to excessive menstrual blood loss that interferes with aspects of women's normal daily function and quality of life (Munro 2017). Dysmenorrhoea, cramp-like pelvic pain associated with menstruation, occurs just prior to bleeding or for up to three days into bleeding, and can radiate to other parts of the lower pelvic area or upper legs (Stewart and Deb 2016). Due to CPPD there are days in the cycle when women's lives are impacted through mood disturbances, reduced resilience to stress and lack of ability to perform or concentrate on normal daily tasks affecting family, social and professional life (Sharp, Taylor et al. 2002). These functional losses have a further economic cost to women, through extra out-of-pocket medical and self-treatment expenses and lost work-days (Heinemann, Minh et al. 2012), and to the state from reduced levels of productivity (Fraser, Langham et al. 2009) and increased health care costs. For example 0.4% of Danish health expenditure went on treating heavy menstrual bleeding alone in 2005 (Fraser, Langham et al. 2009).

Individual menstrual symptoms, which have been numbered at over 200 (Taylor 2005), have largely been examined in isolation and initiatives within the field of gynaecology have sought to bring these under the single umbrella term of Cyclic Perimenstrual Pain and Discomfort (CPPD) (Sharp, Taylor et al. 2002). The widespread nature and variable frequency of perimenstrual symptoms, has led many women to seek multiple solutions. These have included using conventional medicine such as pharmaceuticals, surgery and psychological counselling which can have limitations in terms of efficacy (Kaunitz, Rowe et al. 2008, Fraser, Mansour et al. 2015), risks of adverse events (Marjoribanks, Ayeleke et al. 2015) and implications for future fertility or conception

(Sharp, Taylor et al. 2002, Munro 2017); self-help therapies such as heat packs, analgesics and dietary supplements (Sharp, Taylor et al. 2002); and treatment offered beyond conventional medicine such as acupuncture and massage therapy (Fisher, Sibbritt et al. 2016). These options may be used on their own by women at different times or concurrently as complementary therapy. There was a noted fall in medical prescription rates for PMS in the United Kingdom between 1993-1998 (Wyatt, Dimmock et al. 2002), a decline which continued till 2013 (Sammon, Nazareth et al. 2016). Data from North America, France and Germany also support reduced rates of PMS diagnosis from 2004-2006 indicative of lower consultation rates by women and at odds with reported PMS prevalence (Weisz and Knaapen 2009). These findings may be illustrative of a move by women to find alternative, non-pharmaceutical solutions.

Complementary and alternative medicine (CAM) includes a range of diverse health-related strategies that can be described as predominantly operating outside the conventional medical curriculum and medical profession (WHO 2013). Women are predominant adopters of CAM with prevalence rates amongst Australian women having risen significantly between 1993 and 2004 (MacLennan, Myers et al. 2006). Direct evidence of varying quality exists for the efficacy of a variety of CAM in treating menstrual problems including acupuncture, aromatherapy, nutritional supplements and WHM for dysmenorrhoea and PMS (Fugh-Berman and Kronenberg 2003, Izzo, Hoon-Kim et al. 2016).

Traditional herbal medicine is considered one of the oldest CAM modalities, with its ethnic diversity reflecting the flora present in specific geographical locations and its practices often enshrined in local pharmacopoeias. Whilst WH practice is largely self-regulated worldwide, governing bodies have been established to oversee the quality of education and define ethical and practice limitations. Treatment strategies are holistic, addressing both the mental and physical aspects of an individual's health. Whole medicinal plant parts may be used as teas, tablets and/or as alcohol/water extracts – tinctures - which are the predominant form used in modern practice, usually blended into individualised formulations. Official endorsement and promotion of its use has come from the World Health Organisation (WHO 2013). WHM use is increasing worldwide, predominantly amongst women (MacLennan, Myers et al. 2006). It has been suggested that women's increased uptake of non-prescription alternatives for PMS coupled with a concomitant rise in visits to WHM clinics, may be possible explanations for the drop-off in UK prescription rates for PMS (Wyatt, Dimmock et al. 2002). Further to this, a survey undertaken around this time reported PMS was one of the main health problems being treated by WHs (Barnes and Ernst 1998). Additionally, indirect evidence from cross-sectional studies conducted worldwide suggests women are adopting WHM to specifically address commonly experienced menstrual symptoms (Fisher, Sibbritt et al. 2016). Indeed, there is gathering evidence of the beneficial role that WHMs may have in treating aspects of CPPD (Izzo, Hoon-Kim et al. 2016). Clinical trials (Schellenberg, Zimmermann et al. 2012) and a recent review (Izzo, Hoon-Kim et al. 2016) for example suggest chaste tree (*Vitex agnus-castus*) is a potentially beneficial treatment for PMS, a condition for which it is routinely prescribed by German doctors

(Schellenberg, Zimmermann et al. 2012). There is however a dearth of robust, clinical trials of herbal medicine in treating CPPD with many studies lacking good methodology and associated with risks of bias. Whilst systematic reviews have concluded, that within these limitations, herbal medicines may have significant benefits over placebo and in some cases equivalence with conventional medicine in terms of efficacy, they are largely considered inconclusive due to lack of quality studies (Javan, Yousefi et al. 2016, Verkaik, Kamperman et al. 2016).

Given the health burden and cost to women it is important to examine all health-seeking behaviours with a view to ensuring that women are using oral medicines appropriately and with proper guidance regarding effective dosages and potential interactions if they are used concurrently. The objective of our study was to assess WHs consultations with women for the menstrual-related disorders of PMS, dysmenorrhoea, irregular and heavy periods, with a focus on examining the prevalence, perceptions, experiences and inter-referral practices of WHs regarding treatment. Our analyses provide the first insights regarding the behaviour and role of this health provider group in the health care of women affected by CPPD in Australia.

Method

Sample

A subset of practitioners, identifying as WHs, from the Practitioner Research and Collaboration Initiative (PRACI) were surveyed between November 2016 and January

2017. PRACI is an Australian national database of 14 CAM professions whose individual members elected to join what is the largest practice-based complementary healthcare research network worldwide (Steel, Adams et al. 2014). There are currently 764 PRACI members representing a 60% uptake of those initially invited to participate after completing the 2015 baseline survey. Participants and non-participants were not significantly different in terms of age, gender, urban/rural location, qualifications but there were some geographical discrepancies. WH participants were more often urban based and are less well spread geographically than the general CAM workforce (Steel, Sibbritt et al. 2017). Based on data from the profile of WHs in Australia carried out in 2014 (Leach, McIntyre et al. 2014), PRACI WH participants represent a small proportion of those practitioners registered with the main Australian, WHM professional body.

Ethical approval for this survey was granted by the Human Ethics Committee at the University of Technology Sydney (UTS HREC ETH16-0534).

PRACI members registered as currently practising as WHs at the time of this survey were invited to participate in this sub-study into their treatment of specific menstrual problems (PMS, dysmenorrhoea, irregular and heavy menstruation), by electronically receiving a new, specifically designed, self-administered, on-line questionnaire. Identity codes used by PRACI ensured anonymity of participant data and access to survey

responses were processed only by lead researchers and stored on a private secure, electronic device.

The questionnaire was pilot tested by a sample of experienced herbalists who after completing the survey provided feedback on all aspects of the questionnaire including content, topics enquired into and practical aspects of completing the survey in terms of comprehensibility, provision of responses and time to complete. The questionnaire therefore has face validity. Note that none of the questionnaire items measure skills, knowledge, abilities, personality traits, or judgements. Nor do they measure clinical or personal phenomena of individualised patient care (i.e. psychometric or clinometric factors). The questionnaire received approval by the PRACI steering committee prior to its being sent out.

The survey had a brief explanation that highlighted the background issues of CPPD and its goals before leading into the questionnaire. The questionnaire consisted of 51 questions and encompassed a range of measures of practitioner characteristics and questions specifically related to the treatment of menstrual problems.

Questionnaire format

The questionnaire comprised of five sections, as outlined below. There were no compulsory questions. Practitioners were advised that their participation in the survey was entirely voluntary and that their consent would be implied by their completion of the questionnaire.

Practitioner demographics

Data was gathered on age, gender, practitioners' clinic(s) location and qualifications.

Practice details

Practitioners were asked to indicate if they worked alone or with other practitioners in their clinic(s) and about their clinic in terms of size, including other practitioners and client numbers, client make-up and duration of consultations.

Treatment of Specific menstrual problems

Questionnaire items explored WHs' diagnostic confidence and methodology, routine enquiry of menstrual history, numbers of affected clients identified as having menstrual issues, treatment approaches, perceived treatment efficacy and instruments used for this assessment, the advantages, disadvantages and potential side-effects of treatment, herbs most frequently prescribed for each problem, average treatment cost and treatment duration, consultation frequency and sources used to access the latest relevant research.

Interaction with other practitioners

Practitioners were asked about their inter-disciplinary formal contact with other health professionals and their cross-referral patterns and attitudes to contact with conventional health practitioners. Practitioners were also asked about the importance

of scientific research with regards to herbal treatment of CPPD, and the extent to which such research altered their prescribing practices.

Perceived client behaviour

Practitioners' knowledge of clients' behaviour was explored including their clients' previous conventional treatment, concurrent use of WHM with conventional treatment, motivations and reasons for choosing WHM treatment.

Menstrual problems

The menstrual symptoms of PMS, dysmenorrhoea, heavy and irregular periods were selected for study as these symptoms were considered those that occur commonly, are cyclical and largely idiopathic in nature.

Statistical analyses

Bivariate analyses were carried out using either Fisher's exact test or Wilcoxon rank sum, where appropriate. Statistical significance was at $\alpha=0.05$. All statistical analyses were conducted using Stata 14.2.

Results

From the PRACI database, 98 Australian-based WHs were eligible and invited to participate in our study, of these six invitations were returned "undeliverable". The final response of 40 completed surveys represents a response rate of 43.5%.

Professional demographics and practice details

The breakdown of demographic data by gender is shown in **Table 1**. Most respondents were female (73%), urban-based (69%), sole practitioners (60%), with a predominantly female client base (78%), around half of whom were in their reproductive years. The majority of WHs worked from urban locations (73%) and operated from a single clinic (65%). No WHs were the sole CAM practitioners in a conventional medical setting.

WHs with degrees or higher qualifications in WHM comprised around 40% of respondents. Comparing this demographic data with that from the much larger study published in 2014 (Leach, McIntyre et al. 2014) our participants are representative of the wider WH practitioners in Australia in terms of location ($p=0.4702$) and age ($p=0.0868$) but there was a lower proportion of females ($p=0.0306$). In addition, although our survey appears to identify fewer graduate level or higher qualified practitioners ($p<0.001$) this is likely to be because information sought in the two questionnaires are not directly comparable, our questionnaire sought the respondents' highest qualification in herbal medicine whereas the NHAA study enquired into the highest educational qualification.

Treatment of menstrual problems

WHs reported the monthly average number of women who specifically sought treatment for menstrual issues was 15 (median=6) and the average weekly estimate of the number of women who the WHs believed were suffering with menstrual problems was 4.7 (median=5). The approach to WHM prescription for women with menstrual issues varied amongst the WHs. Up to 40% of the WHs included a prescription for a

single herb (median=10%) and between 2-90% (median= 35%) employed pre-formulated, proprietary products as part of their treatment, but no WHs relied on either of these forms of herbal product by themselves to treat women's menstrual issues. Most WHs (median=70%) included a prescription for a combination of herbs, tailored to the woman's needs, whilst 20% used individualised formulas exclusively. However, the majority of WHs (42%) employed a combination of all three types of herbal formulations in their treatment of women with menstrual problems. The average estimated weekly cost to clients for herbal medicine prescriptions to treat menstrual complaints ranged from \$5.00 to \$75.00 (median=\$25.00) with a median treatment duration of between 4 to 6 months (data not shown).

The characteristics of WHs relating to evaluation of their training and confidence in treating menstrual symptoms are presented in **Table 2**. Comprehensiveness of professional training and diagnostic confidence in the four named menstrual symptoms were rated positively by most respondents. However, WHs with diplomas or advanced diplomas were significantly more confident in diagnosing irregular periods ($p=0.026$), heavy periods ($p = 0.009$) and dysmenorrhoea ($p = 0.034$) than those WHs whose qualifications were at degree or higher level.

Table 3 shows the characteristics of WHs practice and assessment of treatment for menstrual problems. Treatment efficacy was rated highest for PMS, where it was deemed 'always effective' by 84% of WHs; with 81%, 71% and 61% rating treatment as 'always effective' for dysmenorrhoea, irregular periods and heavy periods respectively.

The 'always effective' rating compared across symptoms was statistically significantly different between PMS and heavy periods only ($p = 0.010$). In terms of diagnostic methods used respondents use of standard diagnostic tests ($p=0.6574$), Diagnostic and Statistical Manual of Mental Disorders (DSM) or other validated questionnaires ($p=0.7832$), charts ($p=0.3878$) and client history taking ($p=0.5656$) were no different across the menstrual problem concerned. There was also no difference in the distribution of frequency of efficacy of herbal treatments across the menstrual problems ($p=0.2992$) or in the respondents' believed benefits of their use of herbal medicine for treating the different menstrual problems ($p=0.9999$).

Whilst nearly all WHs relied on clients' self-evaluation to assess treatment efficacy, questionnaires were used by 27% and laboratory testing by 40% as additional aids. Those WHs who used established tools to diagnose any of the menstrual conditions were also more likely to use laboratory testing and/or questionnaires to evaluate treatment efficacy ($p = 0.045$). However, whilst this associated likely use of tools to assist in diagnosis and evaluation is true also for the individual problems of PMS ($p = 0.017$), heavy periods ($p = 0.005$) and dysmenorrhoea ($p = 0.027$), the likelihood does not hold for respondents in relation to irregular periods ($p = 0.164$) (data not shown).

Table 4 lists the herbs most often prescribed by WHs for each menstrual symptom.

Whilst a small number of herbs such as *Vitex agnus-castus*, *Paeonia lactiflora*, *Actaea racemosa* and *Angelica sinensis* were reported as those most often prescribed by WHs

to cover the treatment of all four symptoms, other herbs that were commonly prescribed were specific to the prevailing symptom.

Side-effects of herbal medicines were cited by 10% of WHs as one of the drawbacks to their treatment. For all side-effects enquired into WHs perceptions were that these were largely 'never' or 'rarely' reported back to them by their clients being treated for menstrual problems. However, of those side-effects that were 'sometimes' reported to them by these same women 23% indicated this to be for nausea, 19% for diarrhoea, 10% for bloating, 6% for headaches and 3% for insomnia. Respondents were invited to add reports of other side-effects not listed resulting in a further five instances, which were skin rash (1), initial worsening of symptoms (2), upset stomach (1) and vomiting (1). The frequency of these events was not specified by respondents.

Interaction with other health practitioners regarding treatment of patients with menstrual problems

Frequency of formal contact to other CAM health practitioners and conventional health practitioners, as reported by participants, was 48% and 35% respectively. Contact initiated by conventional health practitioners to WHs (19%) was reported to be less frequent than contacts to WHs from other CAM therapists (45%). WHs who indicated they received more frequent levels of contact ('sometimes / often') initiated by conventional health practitioners were also more likely than those indicating that this contact occurred 'rarely / never' to have a practice with an average of 21 or more clients per week ($p = 0.043$). This association between practises of 21 or more was not

significantly related to frequent contact from other CAM practitioners ($p = 0.233$) or where frequency of contact from WHs was to CAM practitioners ($p = 0.252$) or to conventional practitioners ($p = 0.217$) (data not shown). When asked which health practitioners were known to have recommended their services, or that of any WH, to treat menstrual symptoms 68% of WHs reported other CAM practitioners as the main source, while 45% recorded recommendations coming from general practitioners and 26% that medical specialists had made the recommendation.

Referral patterns of clients by WHs to other practitioners were predominantly to general practitioners (57%), followed by other CAM professionals (40%) and counsellors (23%) with 20% making referrals to women's clinics (20%). The majority of WHs (74%) indicated they were comfortable in communicating with their clients' conventional health practitioners, and 71% that such collaboration was desirable. Nearly all WHs (97%) reported always or sometimes encouraging their clients to disclose their WHM use to their conventional medical practitioner.

Most WHs (94%) reported enquiring with their clients about whether the client had already consulted a medical practitioner for their presenting menstrual problem(s) and of these, the percentage of clients estimated to have received conventional medicine prior to approaching the WH varied widely (mean=64%, median=70%). WHs practising in urban settings were more likely than those practising in rural settings to respond that over half of their clients had received conventional medical treatment for their

menstrual problems before the clients consulted with them ($p = 0.001$) (data not shown).

Discussion

This paper reports findings from the first survey to examine WHM consultations for the treatment of common menstrual problems as well as their expectations of treatment duration, costs, actual herb choices, diagnostic assessments, perceptions of the benefits and adverse events of WHM and inter-referral practises. Some interesting points arise from our analyses and are discussed below.

According to responding WHs an average of 15 women per month per practitioner specifically sought help for menstrual problems. In addition, WHs also estimated they identified, on average, around 20 women per month (five women per week) in their consultations who they believed suffered menstrual problems. It is therefore possible an additional number of affected women are being identified during consultation whose primary reason for seeking the services of a WH is not around menstrual issues. Also from this data it is likely that WHs are regularly treating these prevalent menstrual problems. A survey of UK WHs in 1997 identified PMS as one of the leading conditions treated (Barnes and Ernst 1998) and another in 2010 indicated that women made up on average 67% of WHs' client base and of these 59% were seeking help to treat women's issues (Nissen 2010).

Between 2004 and 2006, based on reliable health care data derived from five different countries, the actual diagnosis of PMS and its more severe form, Premenstrual Dysphoric Disorder (PMDD), made annually by conventional medical practitioners represented less than 0.1% of all women's consultations irrespective of nationality (Weisz and Knaapen 2009). PMS itself has a prevalence of around 50% (Taylor 2005) and that of PMDD is estimated at between 3-9% (Milewicz and Jedrzejuk 2006, Kaunitz, Rowe et al. 2008). In spite of the fact that some women included in the Weisz and Knaapen calculation would have fallen outside the relevant age range for menstruation the finding still suggests conventional consultation rates are very low. In 1998 the rate of prescription-linked diagnosis of PMS in the West Midlands of the UK was estimated at 0.42% of all women in the area, this was lower than the same data collected in 1993 (Wyatt, Dimmock et al. 2002). Furthermore according to a 2014 Australian survey of a large GP population that claims to provide the 'most comprehensive and objective' measure of GP activity worldwide, the mean duration of consultations reported was 14.4 minutes and almost 60% of these consultations dealt with a single health problem (Britt H 2014). The relatively short consultations, no doubt inherent in busy conventional medical settings, are likely to preclude questioning into women's menstrual histories if this is not the presenting issue. By contrast, the relatively long consultations and routine questioning around menstruation, as reported in our survey of WHs, improve the likelihood of exposing undiagnosed or untreated menstrual problems. Based on data provided by WHs in our survey a relatively higher proportion of women they treat may be receiving WHM for

their menstrual disorders than the proportion being treated by conventional medical practitioners. These factors may have significance for the possible efficacy of and/or preference by women to treat menstrual problems with WHM and further research is warranted to arrive at a better understanding of the import of these data.

As perceived by practitioners, WHM appears associated with few, relatively minor side effects regarding menstrual problem treatment. This view is currently supported for some herbs by independent assessment (Izzo, Hoon-Kim et al. 2016). However, this is a field still requiring greater corroboration. Comparisons of conventional medicine rates for effective treatment of all four menstrual issues have been reported as variable across reviews (Sharp, Taylor et al. 2002, Yonkers, O'Brien et al. 2008, Marjoribanks, Lethaby et al. 2016) and/or to be subject to significant risk of side effects (Taylor 2005, Kaunitz, Rowe et al. 2008, Marjoribanks, Ayeleke et al. 2015) and in the case of hormone therapies such as oral contraceptives and GnRH (gonadotrophin-releasing hormone) agonists (Yonkers, O'Brien et al. 2008), and surgery (hysterectomy or oophorectomy) (Yonkers, O'Brien et al. 2008) carry the significant drawback of being unsuitable for women contemplating pregnancy. Not only have health service managers acknowledged that CAM practitioners can bridge gaps in their service and improve holistic care and choices for clients (Singer and Adams 2014) but some general and specialist conventional health practitioners have endorsed having CAM options available for treating gynaecological issues (Münstedt, Maisch et al. 2014). Scope may therefore exist for increased treatment options for

women but further investigation involving suitable clinical trials of WHM would be a pre-requisite.

Our analyses do suggest that referrals between conventional medical practitioners and WHs are already occurring, although perceived warning signs/reasons for referral were not part of this survey and should be examined in more detail in the future to assess the safety of WH practice. A 2013 Australian survey of an organisation representing a range of natural health practitioners recorded only 2% of their respondents worked in clinics which included conventional medical practitioners (Grace, Rogers et al. 2013) much lower than the 25% recorded in our survey. One possible interpretation of our finding is that herbalists may be more frequent participants in multidisciplinary clinics which include conventional medical practitioners than CAM practitioners from other modalities. Another is that the level of WHs integration into this type of clinic may have risen significantly, supported by data from a 2004 naturopath/herbalists survey where 7% identified as working in this type of multidisciplinary environment (Bensoussan, Myers et al. 2004). Increased integration of WHs into multidisciplinary clinics in either case may indicate that conventional medical practitioners have increasingly found WHs of benefit to their healthcare provision. Further research is needed to clarify this situation.

The uncertain and multi-factorial aetiology of menstrual symptoms has led to over 300 therapies being prescribed as part of conventional medical treatment (Milewicz and Jedrzejuk 2006). These include the use of a variety of pharmaceuticals such as anti-

depressants and hormone therapy (oral and/or implants), alongside symptom-specific treatments such as analgesics, diuretics and/or anti-fibrinolytics and possibly also psychological, dietary and lifestyle support and/or surgery (Sharp, Taylor et al. 2002, Taylor 2005, Kaunitz, Rowe et al. 2008). In addition, treatment choices can be further complicated as women often experience several perimenstrual issues concurrently.

This has prompted gynaecology specialists to recommend the adoption of individualised strategies in conventional treatment of women with CPPD.

Individualised treatment is highlighted in this survey by WHs predominantly using herbal blends. Such blends allow for a range of menstrual symptoms to be addressed within a single formulation. Furthermore, WHM has a long tradition contained in historical *Pharmacopoeias* attesting to the use of herbs to enhance women's reproductive health. However, in scientifically assessing individualised treatment, whether conventional or WHM, new and different research methodology centred on overall 'wellness' is required, such as that espoused by Whole Systems Research (Verhoef, Lewith et al. 2005). This research approach was developed in response to the sophisticated technological advances enabled by gene mapping and focuses on the more complex outcome of "maximizing patients' capacity to achieve mental and physical balance", as the endpoint measure of a treatment's efficacy (Verhoef, Lewith et al. 2005). Such a patient-based approach would regard the whole package of care, from all sources, as the intervention to be assessed and would provide an appropriate model with which to evaluate individualised treatment strategies. The field of integrative health is increasingly becoming a research interest as patients' preferences assume primary consideration (Liu, Doan et al. 2007).

As the standard current conventional treatments normally employed may not resolve the range of symptoms equally effectively, women with CPPD are often prescribed a variety of strategies and/or pharmaceuticals (Kaunitz, Rowe et al. 2008, Yonkers, O'Brien et al. 2008), involving multiple health professionals (Marjoribanks, Lethaby et al. 2016). Up to 30% of women with heavy menstrual bleeding are estimated to seek medical help during their reproductive lives (Laberge, Leyland et al. 2015). The current recommended first line treatments are endometrial ablation or hormone implant devices. However, of the women treated using these therapies up to 20% (Hussain, Barnes et al. 2016) and 60% (Marjoribanks, Lethaby et al. 2016) respectively have been found to go on to receive hysterectomies. Both implants and surgery require costly, high-level medical care. Idiopathic menstrual problems have a high prevalence and can require long-term treatment (Kaunitz, Rowe et al. 2008, Yonkers, O'Brien et al. 2008), their direct and indirect costs are undoubtedly significant (Liu, Doan et al. 2007). In addition to medical costs, women pay an extra price through their reduced participation in work/school and social life, morbidity and disability (Sharp, Taylor et al. 2002, Liu, Doan et al. 2007). Prescribing practices across four nations highlighted that when women choose to consult conventional health practitioners for PMS, 72-89% received prescriptions, as compared to 59-78% for all women patients whose consultations result in a prescription (Weisz and Knaapen 2009). Heavy menstrual bleeding alone is estimated to account for over 5% of 30-49 year-old UK women consulting their doctors each year and a further 12% of gynaecology referrals (Grant, Gallier et al. 2000). Within conventional costs for the initial treatment of menstrual

problems there are potential additional expenses from unintended side-effects. For example, to the already considerable expense generated by high hysterectomy levels secondary costs can arise from associated surgical complications, some of which may have very serious health consequences (Spilsbury, Semmens et al. 2009, Marjoribanks, Lethaby et al. 2016). Western Australia hospital records from 2000-3 recorded re-admission rates of 7.2%, following hysterectomies, due to complications (Spilsbury, Semmens et al. 2009). From the data gathered in our survey we have projected the costs reported by WHs for WHM treatment, taking average duration (4-6 months) and average, weekly cost per client this computes to between AUD \$453 - AUD \$680, excluding practitioner fees. As the Australian governmental health insurance, Medicare, covers Australian residents for conventional healthcare whilst both public and private provision for WH consultations is much more limited, for some women this cost may not be insubstantial. However, for health providers responsible for covering such costs, these figures appear to be very modest if WHM treatment should prove to be viable and effective in the long-term. Comparable data to that estimated above for WHM for conventional treatment would be near impossible to determine particularly when addressing multiple symptoms simultaneously but our data suggests that relative costs associated with WH treatment compared to current conventional costs could provide a beneficial cost-to-benefit ratio. This important topic deserves further investigation to establish both the overall cost of treatment of these wide-spread menstrual problems to achieve short term symptom-resolution as well as the associated medium and long-term outcomes.

There are limitations to our study not least of which is the low response rate although this rate is similar to previous surveys of CAM therapists which have reported response rates of around 35% (Leach, McIntyre et al. 2014). Our sample size is small and limited to English-speaking practitioners and as such may not fully represent the geographical spread of WHs throughout Australia. Larger studies are needed to corroborate our findings. In terms of the demographic profile and clinic details of participating WH practitioners our data is broadly in line with similar surveys using larger Australian samples (Grace, Rogers et al. 2013, Leach, McIntyre et al. 2014) with the possible exceptions that our sample has under-represented females and over-represented older practitioners when comparing these specific demographics to one previous WH survey (Leach, McIntyre et al. 2014). Selection bias is possible given the voluntary nature both of membership to the PRACI database and those practitioners completing our sub-study questionnaire possibly limiting the generalizability of the findings. Respondents were not asked specifically about identifying serious risks associated with menstrual issues that would require referral for detailed medical investigation, a limitation associated with the questionnaire itself. Finally, the information obtained from our survey is self-reported and so may be subject to recall and confirmation bias. However, these limitations are countered by the information obtained from our study providing the first examination of WHs' treatment of patients with menstrual problems.

Conclusion

Based on the perceptions of WHs in our survey, WHM could represent a potentially viable option in the treatment of common menstrual problems if its lack of serious side-effects and efficacy can be corroborated by robust, independent research. WHM may offer a much-needed extension to individually tailored treatments currently available.

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Table 1: Demographics of WHs by gender

Demographic	Practitioners		Total	NHAA Survey(Leach, McIntyre et al. 2014)
	Female	Male		Female Male
Gender (n=40)	29 (73%)	11 (27%)		346 (86.7%) 53 (13.3)
Age in years (n=36) 40 years of younger 40 years or older Mean	50.6 (SD=9.06)	53.3 (SD=9.94)	6 (16.7%) 30 (83.3%) 51.4 (SD=9.25)	126 (31.6%) 273 (68.4%)
Clinic description (n=40) One More than one	19 (65.5%) 10 (34.5%)	7 (63.6%) 4 (36.4%)	26 (65.0%) 14 (35.0%)	N/A
Clinic location (n=40) Urban Rural Remote	20 (69.0%) 10 (34.5%) 0 (0.0%)	9 (81.8%) 4 (36.4%) 0 (0.0%)	29 (72.5%) 14 (35.0%) 0 (0.0%)	188 (63.3%) 109 (36.7%)
Qualifications (n=40) None (grandfathered) Diploma Advanced diploma Bachelor degree Postgraduate degree	0 (0.0%) 4 (14.0%) 15 (52.0%) 7 (24.0%) 3 (10.0%)	1 (9.0%) 0 (0.0%) 4 (36.0%) 0 (0.0%) 6 (55.0%)	1 (2.5%) 4 (10.0%) 19 (47.5%) 7 (17.5%) 9 (22.5%)	3 (0.01%) 110 (27.6%)* - 148 (37.1%) 138 (34.6%)
Years since this Qualification (n=39) 1 – 5 years 6 – 10 years 11 – 15 years 16 years or more	8 (28.0%) 8 (28.0%) 4 (14.0%) 9 (30.0%)	1 (10.0%) 5 (50.0%) 4 (40.0%) 0 (0.0%)	9 (22.5%) 13 (32.5%) 8 (20.0%) 9 (22.5%)	N/A
Clinic setting Sole practitioner Sole CAM practitioner in conventional practice Multimodality clinic with conventional Multimodality clinic with other CAM No. of other practitioners if not sole practitioner	18 (62.0%) 0 (0.0%) 7 (24.0%) 4 (13.0%) 1 -17 (median=4)	6 (55.0%) 0 (0.0%) 3 (27.0%) 3 (27.0%) 1 -15 (median=6)	24 (60.0%) 0 (0.0%) 10 (25.0%) 7 (17.5%) 1 -17 (median=4.5)	N/A
Skype consultations (n=39) Yes No	16 (57.0%) 12 (43.0%)	6 (55.0%) 5 (45.0%)	22 (56.4%) 17 (43.6%)	N/A
Number of clients per week (n=40) 0 – 5 6 – 10	4 (14.0%) 8 (28.0%)	1 (9.0%) 4 (36.0%)	5 (12.5%) 12 (30.0%)	N/A

11 – 20	10 (34.0%)	3 (27.0%)	13 (32.5%)	
21 – 40	6 (21.0%)	2 (18.0%)	8 (20.0%)	
More than 40	1 (3.0%)	1 (9.0%)	2 (5.0%)	
Women clients (%) (n=39)	50 – 90 (mean=79%)	60 – 90 (mean=76%)	50-90 (78%)	N/A
Women of menstruating age (%) (n=40)	20 – 90 (mean=55%)	15 – 90 (mean=53%)	15-90 (54%)	N/A
Initial consultation (minutes) (n=40)	40 – 120 (median=75)	60 – 90 (median=60)	40 - 120 (median=72)	
<45	2 (6.9%)	0 (0.0%)	2 (5.0%)	15 (5.2%)
46-60	12 (41.4%)	8 (72.7%)	20 (50%)	121 (41.6%)
61-75	2 (6.9%)	1 (9.0%)	3 (7.5%)	93 (32.1%)
76-90	11 (37.9%)	2 (18.1%)	13 (32.5%)	46 (15.9%)
>90	2 (6.9%)	0 (0.0%)	2 (5.0%)	15 (5.2%)
Follow up consultation (minutes)(n=40)	20 – 60 (median=45)	30 – 60 (median=30)	20 - 60 (median=43)	
<15	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (1.4%)
16-30	11 (37.9%)	0 (0.0%)	17 (42.5%)	98 (33.8%)
31-45	7 (24.1%)	6 (54.5%)	9 (22.5%)	110 (37.9%)
46-60	11 (37.9%)	2 (18.1%)	14 (35.0%)	69 (23.8%)
>60	0 (0.0%)	3 (27.2%)	0 (0.0%)	9 (3.1%)

* The NHAA survey combined diploma and advanced diploma and does not specify the

qualification relates to herbal medicine.

Table 2: WHs characteristics regarding treatment of menstrual problems

	PMS				Irregular periods				Heavy periods				Dysmenorrhoea			
	Highest qualification in Herbal Medicine				Highest qualification in Herbal Medicine				Highest qualification in Herbal Medicine				Highest qualification in Herbal Medicine			
	Total n (%)	Diploma	Degree	p-value	Total n (%)	Diploma	Degree	p-value	Total n (%)	Diploma	Degree	p-value	Total n (%)	Diploma	Degree	p-value
Comprehensive training (n=31)																
Very	14 (45)	10	4	0.159	15 (48)	11	4	0.149	16 (51)	12	4	0.073	15 (48)	11	4	0.149
Somewhat	16 (51)	7	9		15 (48)	6	9		12 (39)	4	8		14 (45)	5	9	
Other	1(4)	1	0		1 (4)	1	0		3 (10)	2	1		2 (7)	2	0	
Confidence to diagnose (n=30)																
Very	23 (77)	16	7	0.084	24 (80)	17	7	0.026	23 (77)	17	6	0.009	23 (77)	16	6	0.034
Somewhat	7 (23)	2	5		6 (20)	1	5		7 (23)	1	6		7 (23)	2	6	
Other	0 (0)	0	0		0 (0)	0	0		0 (0)	0	0		0 (0)	0	0	

Note:

Diploma = Diploma or Advanced diploma.

Degree = Degree or Postgraduate degree.

Table 3: Characteristics of WHs practice and assessment of treatment for menstrual problems

	PMS	Irregular	Heavy	Dysmenorrhoea	p-value
Diagnosis methods used (n=31)					0.6575
Standard test	7 (23%)	11 (36%)	11 (36%)	10 (32%)	0.7832
DSM/questionnaire	11 (36%)	8 (26%)	8 (26%)	8 (26%)	0.3879
Charts	11 (36%)	14 (45%)	9 (29%)	8 (26%)	0.5656
Case history	31 (100%)	30 (97%)	31 (100%)	30 (97%)	
Efficacy of herbal treatment (n=31)					0.2992
Always	26 (84%)	22 (71%)	19(61%)	25 (81%)	
Sometimes	5 (16%)	9 (29%)	11 (36%)	6 (19%)	
Never/rarely	0 (0%)	0 (0%)	1 (3%)	0 (0%)	
Benefits of treatment (n=31)					0.9999
Very effective	28 (90%)	22 (71%)	23 (74%)	27 (87%)	
Few side effects	22 (71%)	22 (71%)	22 (71%)	24 (77%)	
Holistic way to better health	23 (74%)	23 (74%)	21 (68%)	24 (77%)	
Better long-term outcomes	22 (71%)	20 (65%)	19 (61%)	22 (71%)	
Other	2 (6%)	4 (13%)	3 (10%)	2 (6%)	

Table 4: Herbs most often prescribed by WHs to treat specific menstrual symptoms									
Herbs used	Botanical Name	Premenstrual Syndrome		Irregular periods		Heavy periods		Dysmenorrhoea	
		Frequency	%	Frequency	%	Frequency	%	Frequency	%
Chaste tree	<i>Vitex agnus-castus</i>	21	80.8	22	84.6	11	42.3	8	30.8
Peony	<i>Paeonia lactiflora</i>	7	26.9	10	38.5	3	11.5	8	30.8
Crampbark	<i>Viburnum opulus</i>	3	11.5					16	61.5
Bupleurum	<i>Bupleurum falcatum</i>	4	15.4						
Shatavari	<i>Asparagus racemosus</i>	2	7.7	6	23.1			2	7.7
Passionflower	<i>Passiflora incarnata</i>	3	11.5						
Black cohosh	<i>Actaea racemosa</i>	5	19.2	5	19.2	3	11.5	4	15.4
Dong quai	<i>Angelica sinensis</i>	6	23.1	5	19.2	4	15.4	10	38.5
Indian ginseng	<i>Withania somnifera</i>	6	23.1	3					
St John's wort	<i>Hypericum perforatum</i>	7	26.9						
Chinese foxglove	<i>Rehmannia glutinosa</i>	3	11.5	2	7.7				
Magnolia berry	<i>Schizandra sinensis</i>	2	7.7						
Skullcap	<i>Scutellaria lateriflora</i>	2	7.7						
False unicorn root	<i>Chamaelirium luteum</i>			3	11.5				
Liquorice	<i>Glycyrrhiza glabra</i>			6	23.1				
True unicorn root	<i>Aletris farinosa</i>			2	7.7				
Lady's mantle	<i>Alchemilla vulgaris</i>					11	42.3	2	7.7
Shepherds purse	<i>Capsella bursa-pastoris</i>					11	42.3		
Beth root	<i>Trillium pendulum</i>					4	15.4		
Yarrow	<i>Achillea millefolium</i>					4	15.4		
Black haw	<i>Viburnum prunifolium</i>							2	7.7
Tienchi	<i>Panax notoginseng</i>					4	15.4		
Raspberry leaf	<i>Rubus idaeus</i>					2	7.7		
Golden seal	<i>Hydrastis canadensis</i>					2	7.7		
Wild yam	<i>Dioscorea villosa</i>							8	30.8
Turmeric	<i>Curcuma longa</i>							3	11.5
Blue cohosh	<i>Caulophyllum</i>							2	7.7
Ginger	<i>Zingiber officinale</i>							4	15.4
Corydalis	<i>Corydalis ambigua</i>							3	11.5
Pukatea	<i>Laurelia novae-zelandiae</i>							2	7.7

(Frequency = number of times the herb was mentioned for each condition. % respondents = practitioners who selected the herb as a percentage of those responding to this section)