

# BMJ Open Challenging history taking encounters: a systematic review, meta-analysis and phenomenological framework

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## ABSTRACT

**Objectives** All physicians will experience challenging history taking encounters, where communication is impaired and negatively impacts the diagnostic process. The aims of this systematic review were to (1) undertake a meta-analysis of the frequency of challenging encounters; (2) collate adverse outcomes of challenging encounters; (3) identify underlying causes of challenging encounters; (4) identify strategies to deal with different challenges; and (5) align these strategies with our published phenomenological framework of history taking challenges.

**Design** This was a systematic review and meta-analysis of prevalence data adhering to the Preferred Reporting Items for Systematic reviews and Meta-Analyses and the Meta-analyses of Observational Studies in Epidemiology guidelines.

**Data sources** A literature search in MEDLINE, Embase and Cochrane databases was performed on 12 July 2020, and updated on 4 August 2025, focusing on challenging history taking encounters in any clinical setting.

**Eligibility criteria** Articles reporting on the frequency, adverse outcomes, causative factors or strategies used to address challenges in the history taking process in any clinical area of medicine.

**Data extraction and synthesis** Factors associated with challenging history encounters (causative or consequential) were categorised using inductive coding and referenced to a phenomenological framework. Meta-analysis was used to estimate the prevalence of history taking encounters using a restricted maximum likelihood model with  $\tau^2$  and  $I^2$  as tests for heterogeneity and funnel plot with Egger's test for publication bias.

**Results** 73 articles were included in the analysis. The overall prevalence of challenging history taking encounters was 19.5% (95% CI 14.2% to 24.7%). Adverse outcomes of patient dissatisfaction (level 1 evidence) and diagnostic uncertainty (level 3 evidence) were identified. Factors associated with (n=22) and strategies to mitigate challenging encounters (n=13) were categorised. Correlation of factors and strategies with a phenomenological approach created a framework to assist novice history takers in approaching such circumstances.

**Conclusions** Challenging history taking encounters are common. Little is known of the relative importance of factors associated with challenging history taking encounters or the impact of suggested strategies. Many

## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ Use of a systematic approach to the identification of relevant articles and critical appraisal ensures completeness and reliability of data collected.
- ⇒ Use of systematic review and meta-analysis checklists ensures robustness of the analysis.
- ⇒ Consistency between the published literature and the existing phenomenological framework provides construct validity.
- ⇒ The ubiquity of 'history taking' in medical practice research and ambiguous language around 'challenging encounter' required steps to be taken to reasonably limit search results, meaning some relevant literature may have been missed.
- ⇒ The lack of higher level evidence and quantitative studies (other than challenging encounter prevalence) means recommendations from this review can only be advisory and the true educational value of the approach suggested needs to be formally tested.

of the suggested strategies to facilitate meaningful communication in these situations involve a departure from standard history taking. More research is required to better define the nature of challenges encountered in history taking with a view to develop better educational models for trainee physicians.

## INTRODUCTION

The art of history taking lies at the centre of medical diagnostic processes and is pivotal in delivering optimal patient outcomes.<sup>1</sup> The importance of attention to detail during the history taking encounter has been reiterated for decades, if not millennia.<sup>1,2</sup> The primacy of the history taking process in making an accurate diagnosis and focusing the subsequent confirmatory examination and investigations has resulted in medical education curricula devoting considerable time and effort to teaching communication skills.<sup>3</sup> The focus here has rightly been on students



acquiring good generic communication skills (open questions, relaxed frame, displaying empathy, reflecting emotions)<sup>4</sup> and the promotion of history taking templates (eg, SOCRATES).<sup>15</sup> Evidence suggests that clear articulation and repeated practicing of this process hastens the acquisition of good generic history taking skills among younger generations of junior doctors.<sup>4</sup> Despite this, novice history takers in particular, and even experts, will occasionally experience history taking encounters that challenge their skills, as, for example, when interviewing someone with cognitive impairment. For novice history takers, this can lead to the conclusion that the patient is a ‘poor historian’ and the history taking process is curtailed or abandoned. Subsequent examination and investigations may be misguided as a consequence, leading to potential adverse outcomes.

The importance of recognising and managing challenging history taking encounters has been previously acknowledged and there is much written on the subject. However, the most common approach has been to outline strategies in the context of knowing the cause of the challenge. A typical example would be the challenge of a patient with cognitive impairment who denies any problems.<sup>6,7</sup> A standard approach to asking about symptoms will typically yield little or no information, except that the patient feels well but is becoming slightly irritated by the conversation. Typical strategies in this situation would be to adopt an alternative history taking approach such as taking a ‘life history’ (‘where were you born?’, ‘where did you first work?’) to assess when the story begins to break down. In busy clinical environments, time constraints pose additional challenges, but this alternate history taking process will often yield considerable useful information and also crosses over into clinical examination, as long-term and recent memory are indirectly assessed. The difficulty for a novice history taker in a setting where the patient is not previously known and there is no collateral history available is that they may not realise the underlying problem is one of cognitive impairment until well into the encounter.

Experts will generally identify the clinical signs of such challenges earlier in the process and adapt their history taking approach accordingly, often subconsciously. Recognising this challenge for novice history takers, we recently conceptualised a phenomenological framework articulating the most common types of challenges encountered, their underlying causes and targeted strategies to address these, using an iterative process.<sup>8</sup> For example, on encountering a patient exhibiting ‘talkative’ behaviour the history taker should redirect and summarise.<sup>8</sup> We have thereby provided a vocabulary for learners in medical education to begin to identify different types of challenges.

The purpose of this systematic review and meta-analysis was to examine the published literature for articles describing or researching challenging history taking encounters. We have striven to maintain a focus solely on the process of ‘history taking’ as part of the diagnostic

process. There exist many other challenging situations in medicine (eg, breaking bad news, managing a dependent doctor–patient relationship, effecting change in behaviour). These are specialised areas that we believe have been adequately addressed in the literature and relevant textbooks.<sup>9</sup> Additionally, in these situations, the nature of the challenge is generally known in advance of the encounter. The five principal aims of this systematic review were to: (1) identify data reporting on the frequency of challenging history taking encounters and undertake a meta-analysis of this data; (2) collate data on adverse outcomes of challenging encounters; (3) identify causative factors; (4) identify strategies to deal with different challenges; and (5) synthesise these strategies with our published phenomenological framework of history taking challenges. We hypothesised that the frequency of challenging encounters would be significant (5–35%) and that the potential contributing factors and strategies to address some issues would have been defined.

## METHODS

This was a systematic review of published research regarding challenges encountered in the history taking process. Our focus was the structure and skills required to take an accurate history. With regard to causative factors, consistent with our patient-centred approach and our focus on facilitating the diagnostic process, we have concentrated on ‘intrinsic’ (patient) factors. For completeness, ‘extrinsic’ (clinician and situational) factors have been listed but were excluded from the analysis. History taking was defined as ‘the systematic process of gathering information about a patient’s past and present health to aid diagnosis and treatment’ and our focus was very much on the history of presenting concern.<sup>10</sup> This review was conducted with reference to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement.<sup>11</sup> The protocol for this systematic review was registered with Open Science Framework (DOI: <https://doi.org/10.17605/OSF.IO/YTMKU>, Date registered, 26 November 2020).<sup>12,13</sup>

## Search strategy and data extraction

MEDLINE, Embase and Cochrane databases were searched using the search string: “medical history taking” AND “anamnesis” as MeSH terms together with search terms “doctor” OR “clinician” OR “physician” OR “doctor-patient” OR “clinician-patient” OR “physician-patient” (as general key terms) AND “poor” OR “difficult” OR “challenging” OR “issue” OR “problem”. Some words were truncated (eg, challeng\*) to ensure all variants were searched. The initial search was conducted on 12 July 2020 and updated on 4 August 2025. Additional records were identified from personal knowledge and screening bibliographies of included studies. Screening of articles was based on title and abstract. To be included, articles needed to report on the frequency, adverse outcomes,

causative factors or strategies used to address challenges in the history taking process in any clinical area of medicine. Cross-sectional, cohort, qualitative and opinion articles were included. Only full-text articles were considered.

The exclusion criteria were: (1) setting other than history taking (eg, counselling); (2) limited to specific aspect of history (eg, sexual history); (3) participant other than medical practitioner (eg, nurse); (4) objectives purely educational (not research); and (5) language other than English. For completeness, where factors and strategies from our prior framework were not identified in the literature review, a subsequent literature search with added terms to target each relevant factor or strategy was conducted. Consistent with our patient-centred focus, we reworded pejorative terms and challenges cited from a practitioner perspective (eg, 'manipulative patient' became 'conflicting agendas'). We have also taken the view that factitious illness and malingering are extremely rare and require a specialised approach which is beyond the scope of this review.<sup>14</sup> The search, screening and reviewing were undertaken by the authors. All articles were screened by two independent reviewers and selected full-text articles were reviewed by two reviewers independently. Data was extracted independently by two reviewers and any disparities in data were checked and adjudicated by a third reviewer. Articles were collated in Excel (Microsoft, Washington, USA).

### Critical appraisal and levels of evidence

Critical appraisal of qualitative and cohort studies was performed using the Critical Appraisal Skills Programme (CASP) Critical Appraisal Tool.<sup>15</sup> The Joanna Briggs Institute (JBI) Critical Appraisal Tools were used for prevalence, cross-sectional, quasi-experimental studies and systematic reviews.<sup>16</sup> Commentaries and opinion pieces were not appraised. The Oxford Centre for Evidence-Based Medicine<sup>17</sup> levels of evidence were used to determine the level of evidence for articles referring to factors associated with ('how common is the problem'), strategies to address ('does the intervention help') and impacts or adverse outcomes ('what are the common harms') of challenging encounters.<sup>17</sup> Levels ranged from 1 to 5, with 1 being the highest. The overall level of evidence for each factor, strategy and impact/adverse outcome was determined by the highest level of evidence among the citing articles. Critical appraisals and levels of evidence were independently reviewed by at least two researchers to ensure consistency in interpretation. Disagreements were resolved through consensus of the research team.

### Meta-analysis of challenging history frequency

In addition to the prevalence (n/N (%)) of challenging history taking encounters, details regarding the year of publication, mean age and sex distribution of patients, geographical location, clinical discipline, clinical setting (primary care or hospital) and measure or tool used to assess degree of challenge were tabulated for each study. Risk of bias was assessed using the JBI Critical Appraisal

Tool for prevalence studies.<sup>16</sup> Articles were excluded from the meta-analysis if no estimate of prevalence was given (pre-encounter) or author list, timing and summary demographic data indicated that a duplicate sample had been presented. Articles with missing age and sex data were excluded from meta-regression analysis.

Corresponding authors of papers were contacted to provide additional information where data was incomplete. Meta-analysis was performed in R using the JASP package (V.0.95.3, JASP Team 2025, Netherlands) using the restricted maximum likelihood method. Heterogeneity was assessed using Q test and  $\tau^2$  and  $I^2$  values. A random effects model was used when significant heterogeneity was present.<sup>18</sup> Egger regression with funnel plot<sup>19</sup> was used to assess publication bias ( $p < 0.05$ ). Leave one out sensitivity analysis was undertaken to identify potential outliers. Meta-regression analysis (also performed in R with restricted maximum likelihood method) was used to assess the potential influence of year, age, sex, location, clinical setting and measure of challenge on prevalence of challenging encounters. Meta-analysis was performed in accordance with the Meta-analysis of Observational Studies in Epidemiology guidelines.<sup>20</sup>

### Qualitative coding

All included articles were reviewed for underlying factors associated with challenging history taking encounters and strategies recommended to address those challenges. Both factors and strategies were then categorised using inductive coding.<sup>21</sup> All papers were examined to identify specific text segments relevant to causative factors or strategies. These text segments were first labelled with narrowly defined themes according to recurring key words, then further condensed, initially to 30–40 categories, then condensed to 15–20 broader categories and finally to 3–8 overarching categories.

### Phenomenological categorisation

Causative factors and strategies to deal with challenging encounters were tabulated according to our previously published phenomenological framework.<sup>8</sup> This phenomenological framework<sup>8</sup> describes 'phenomenon' as 'challenges encountered by a clinician without relying on the diagnosis or characterisation of the patient' and refers to the challenge as experienced by the history taker at that time. This framework was developed for application to patient-centred, history taking contexts with the purpose of identifying the nature of challenges for novice history takers and providing potential strategies to better deal with those challenges. The framework was developed using an iterative process involving both experienced and novice history takers, who were asked to identify the way in which a challenge manifested itself during the history taking interview (the phenomenological 'sign'), what the common underlying causes were and how to address each type of challenge. Patients and lay people also commented on the draft framework. The phenomenological presentations, factors and strategies from this framework were

also included in the present review. In tabulating the final set of factors and strategies, we have only considered 'intrinsic' (patient) factors and 'situational' factors (disparities as perceived by the patient, eg, doctor having a different social background to the patient), and relevant strategies in the context of the history taking process. Thus, physician-related factors and strategies that purely relate to ongoing patient management (eg, flexibility in care) have been excluded, to ensure only immediate strategies that are useful during the history taking process have been included.

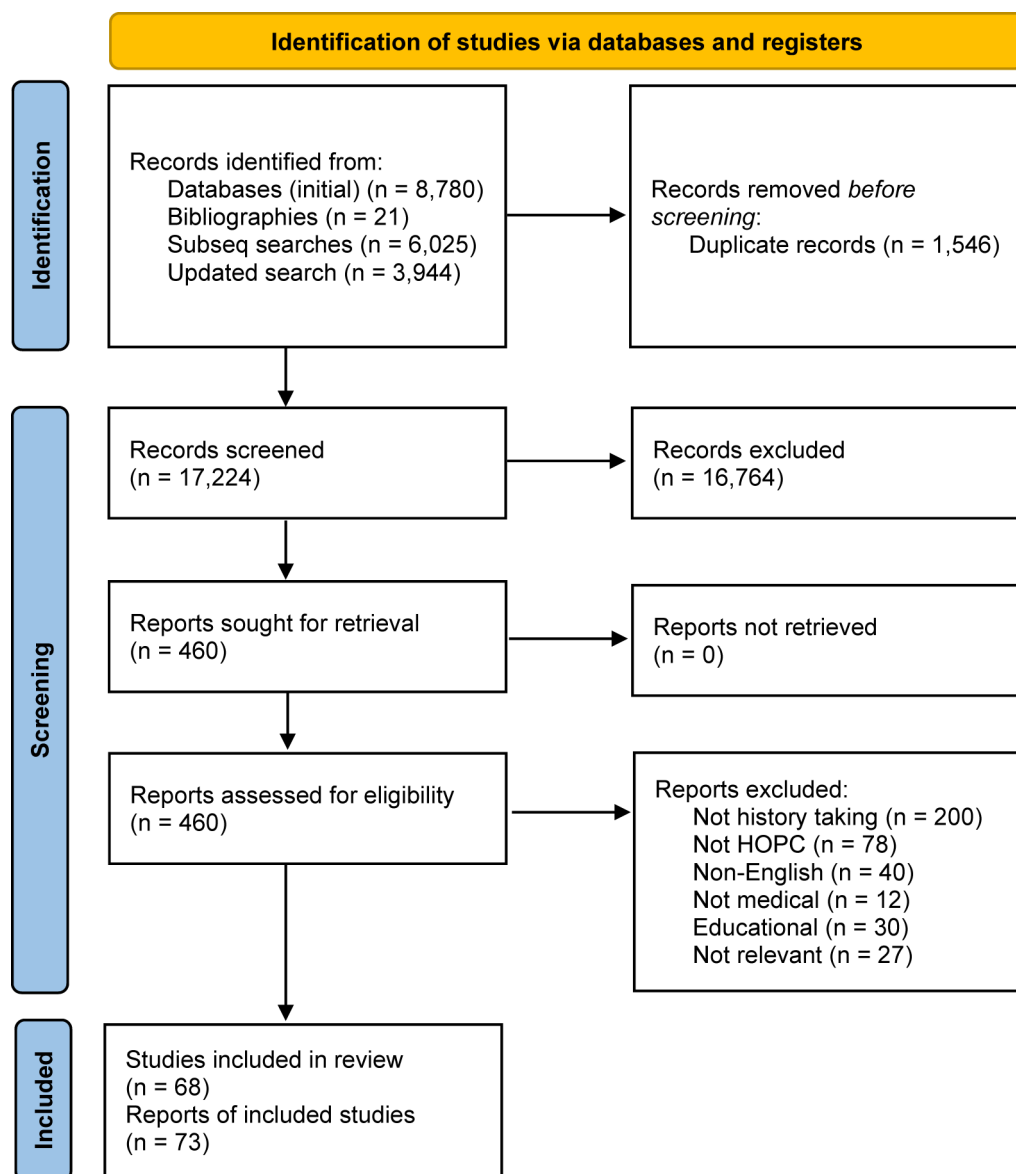
Exclusion criteria for strategies during phenomenological categorisation were (1) generic communication skills expected of every physician (eg, open questioning, active listening), (2) passive strategies (eg, observing something), (3) advice on 'what not to do' (eg, interrupt less) and (4) strategies relating to management (eg, establish boundaries). This was done to ensure that advice

for novice history takers is proactive and relevant to the encounter.

Strategies were classified as either a structural change or a targeted communication skill. Structural changes were defined as when 'the clinician changes the direction or structure of their history taking process to address the challenge'. Targeted communication skills were defined as 'higher order changes in verbal or non-verbal communication styles to facilitate the history taking process'. The Grading of Recommendations Assessment, Development and Evaluation (GRADE) tool was used to assess the certainty of evidence for the final phenomenological framework developed.<sup>22</sup>

## RESULTS

The initial search returned 8780 articles and an additional 21 articles were identified from bibliographies of included



**Figure 1** Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow chart of results from literature search strategy. HOPC, history of presenting concern.

articles. Nine additional searches were then conducted using additional search terms for factors ('mania', 'intoxication', 'psychological trauma', 'multisystem endocrine disease', 'frontal lobe disease') and strategies ('collateral history', 'exploring day to day life', 'exploring life history', 'reframe purpose') identified elsewhere. These searches yielded an additional 6025 articles. Another 3944 articles were identified in the updated search. Of the total 17 224 results (after exclusion of duplicates), 460 full-text articles were reviewed and 73 articles met our inclusion and exclusion criteria covering 68 separate studies. The final disposition of reviewed articles is summarised in figure 1.

### Critical appraisal

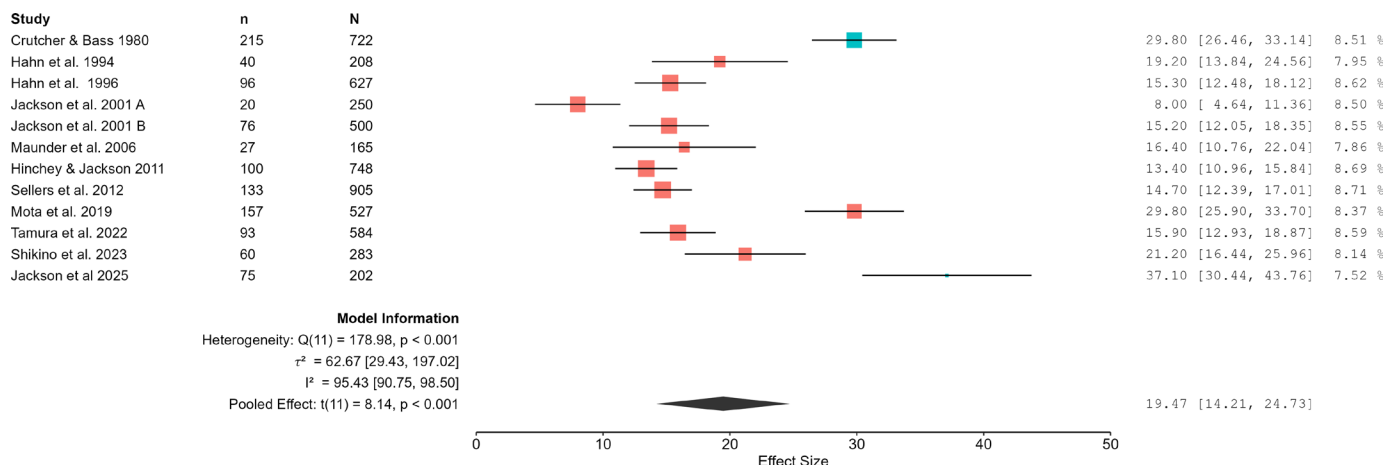
The results of critical appraisal are summarised in online supplemental tables 1 and 2. A total of 50 studies were appraised,<sup>6 23-71</sup> while 23 articles that were commentaries, opinion pieces or case reports were not appraised.<sup>7-9 72-91</sup> All 16 qualitative and 1 cohort study mostly fulfilled CASP criteria and were included. All 27 prevalence studies, 4 cross-sectional studies, 1 systematic review and 1 quasi-experimental study fulfilled most JBI criteria and were included in the review.

### Frequency of challenging history taking encounters

27 articles described some measure of frequency of challenging encounters.<sup>24 28 34-36 38-44 46-48 53 55 59 61-64 68-71</sup> 15 studies were excluded from the meta-analysis for the following reasons: no relevant data (n=7)<sup>46 48 53 61 62 69 71</sup>; duplicate sample (n=4)<sup>24 36 39 40 43 44 47</sup>; prevalence based on perceived challenge over time (n=2)<sup>24 47</sup>; and external assessors of challenge (n=1).<sup>70</sup> One of the studies based on perceptions over time also targeted high users of health-care services.<sup>47</sup> The details of included and excluded prevalence studies are given in online supplemental table 3. Risk of bias assessment using the JBI appraisal tool for the included articles was deemed to be low (online supplemental table 4). The clinical settings of studies included

primary care (n=5), internal medicine (n=4), emergency medicine (n=1), psychiatry (n=1) and inpatients (n=1). The definition of 'challenging encounter' varied between papers. 10 articles used the Difficult Doctor-patient Relationship Questionnaire (DDPRQ)-10 which consists of 10 questions covering various aspects of potential challenge or its predecessor the DDPRQ-30. Each question is responded to using a 6-point Likert scale, giving a total score that ranges from 6 to 60 for the DDPRQ-10<sup>35</sup> or 30-180 for the DDPRQ-30.<sup>34</sup> A challenging encounter was defined as a score  $\geq 30$  for the DDPRQ-10<sup>35</sup> and  $\geq 90$  for the DDPRQ-30.<sup>34</sup> Two studies used a binary determination of the encounter giving a 'troubled feeling'<sup>28</sup> or being 'difficult'.<sup>45</sup> In the meta-analysis, values for  $\tau^2$  of 64.2 and  $I^2$  of 95.6% indicated significant heterogeneity (p<0.01) and therefore a random effects model was appropriate.<sup>18</sup> The overall estimate of challenging history prevalence was 19.5% (95% CI 14.2% to 24.7%) (figure 2). Funnel plot (online supplemental figure 1) and Egger's test (p=0.088) did not suggest significant publication bias. Leave one out sensitivity analysis indicated that two studies were potential outliers (online supplemental table 5).<sup>28 59</sup>

Meta-regression analysis (online supplemental table 6A) showed that only the challenge measure used (DDPRQ vs other) significantly influenced the prevalence of history taking challenging encounters (p=0.005). Subgrouping by challenge measure (online supplemental figure 2) gave a prevalence of 16.8% (95% CI 12.7% to 20.8%) for studies analysed using DDPRQ and 32.1% (95% CI 0.0% to 75.0) for other measures. The  $\tau^2$  and  $I^2$  values for both subgroups and overall were lower, but significant heterogeneity remained (online supplemental figure 2). Excluding outliers and studies not using a version of the DDPRQ (online supplemental figure 3) yielded an estimate of 15.1% (95% CI 12.4% to 17.9%) with more studies being contained within the funnel plot (online supplemental figure 4). While not significant (p=0.124)



**Figure 2** Forest plot of meta-analysis of studies reporting frequency of challenging history taking encounters. Analysis performed using restricted maximum likelihood method. Data are presented as prevalence (%) with (95% CI). Study weight given at far right. Studies using the DDPRQ are indicated in red. Studies using other measures of challenge are indicated in blue. See online supplemental table 3 for details of included and excluded studies and online supplemental table 4 for risk of bias assessment.



**Table 1** Impacts and adverse outcomes from challenging encounters identified from literature search

Category	Impacts and adverse outcomes	Level of evidence <sup>refs</sup>
Patient	Diagnostic uncertainty	3 <sup>6 62 79</sup>
	Over treatment/ investigation	5 <sup>57 79 83</sup>
	Inadequate treatment/ investigation	5 <sup>57 83</sup>
	Misdiagnosis	5 <sup>25 57</sup>
	Unmet expectations/ dissatisfaction	1 <sup>38 40 44 59</sup>
	Inappropriate treatment	5 <sup>25 76</sup>
Healthcare system	Physician burnout (psychological and emotional stress)	1 <sup>9 34 36 49 59 62 65 66 69 72 79 86</sup>
	Physician low job satisfaction	1 <sup>36 59 65 72</sup>
	Higher use of healthcare services	1 <sup>40 50 59 62 69</sup>
refs, references.		

year of publication did hint at increasing prevalence over time when challenge measure was also included in the model (online supplemental table 6B) and online supplemental figure 5A. This model reduced the  $\tau^2$  to 23.2 in the overall dataset and the  $R^2$  indicated that 63.1% of the variability in prevalence was explained by these two factors. However, significant residual heterogeneity remained ( $p < 0.001$ ). Age and proportion of females did not show any significant effect on prevalence (online supplemental figure 5B and C). Using the GRADE quality of evidence framework, we would have moderate confidence in the estimate for prevalence of challenging history taking encounters when outliers and studies using non-DDRPQ measures are removed.

### Impacts and adverse outcomes

21 articles with relatively few text segments regarding impacts and adverse outcomes of a challenging encounter were identified (online supplemental table 7).<sup>6 8 24 25 31 34 35 38–40 42 44 47 51 54 69 72 76 79 83 86</sup> Only a two-step process was required for the inductive coding resulting in nine themes under two main categories: (1) impacts on the patient, (2) impacts on the healthcare system. These are summarised in table 1.

None of the literature reviewed provided statistical evidence regarding the frequency of reported impacts.

Challenging encounters were associated with more diagnostic tests than was seen in satisfied patients (mean number (SD) of diagnostic tests 4.72 (7.5) vs 2.61 (2.2) used in the preceding year,  $p=0.03$ ).<sup>47</sup> Impacts on healthcare systems were associated with physician impacts and higher healthcare utilisation.<sup>38 39 47</sup> Patients seen in challenging encounters had higher 6-month utilisation rates of healthcare services (6-month utilisation rates: 7.3 vs 4.7,  $p < 0.001$ ).<sup>38</sup>

### Causative factors

Causative factors for challenging encounters were initially grouped into 35 categories, then condensed to 19 and then to 6 high level categories from 56 articles.<sup>5–8 25 26 28 29 31–40 43 44 46–51 53 54 56–59 62 63 65–77 79 80 82 83 85–89</sup> Causative factor categories were divided into ‘intrinsic’ (patient related), and ‘extrinsic’ (situational or physician related) factors and are summarised in online supplemental tables 8 and 9. Pejorative terms from articles have been re-named with a focus on likely underlying causes. For example, ‘manipulative behaviour’ likely reflected a perception of the encounter from the physician’s perspective. Using our patient-centred perspective and following further reading of the literature, this group was subdivided into ‘preconceived ideas’ and ‘mismatch between patient and physician expectations’. Factors including ‘self-destructive behaviour’, ‘dependent behaviour’, ‘functional syndromes with poorly understood pathophysiology’ and ‘non-adherence/compliance’ were excluded as they relate to ongoing patient management. ‘Language barrier’ was excluded as this is usually obvious and the solution (use of an interpreter) should be immediately apparent.

35 causative factors that contribute to challenging encounters were identified, of which 22 (63%) were intrinsic patient factors: 5/22 (23%) related to specific psychiatric diagnoses; 9/22 (41%) to demographic or personality-related factors; and the remainder 8/22 (36%) to the patient’s medical background. This last category included ‘patients with drug/alcohol dependence’, ‘cognitive impairment’ and ‘medically unexplained symptoms’.

There was no data on the relative frequency of each causative factor contributing to a challenging encounter. We have inferred relative frequency by recording the number of articles that mention each factor. The most commonly cited factors were ‘mismatch between patient and doctor expectations’ (17) and ‘medically unexplained symptoms’ (11). Approximately 14/22 (63.6%) of underlying causative factors had level 1 evidence, 5/22 (22.7%) had level 3 evidence and 3/22 (13.6%) had level 5 evidence.

### Strategies

Text segments relating to strategies for a challenging history taking encounter fell into a limited range of categories and so a two-step inductive coding process was used. This yielded 32 strategies classified under 5

overarching categories as summarised in online supplemental table 10. As described in the methods, strategies classed as generic communication skills, passive strategies, advice on ‘what to avoid’, passive communication skills and strategies relating to ongoing management were excluded, leaving 14 included strategies. Most strategies were generic communication skills (online supplemental table 10) and were rarely linked to the causative factors or phenomenological presentations for a challenging encounter, presented instead as general strategies for optimising the doctor–patient relationship.

A few classical communication skills were retained as they were targeted to certain situations; ‘speaking slowly’<sup>51 77</sup> and ‘using alternate descriptors’<sup>47 51 85</sup> were recommended for patients with intellectual disability,<sup>51</sup> while ‘summarisation’,<sup>31 56 67 80 82 83 88 89</sup> ‘prompting the patient’<sup>31 58 66 77 82 88</sup> and ‘redirecting the patient’<sup>31 54 72</sup> were recommended for talkativeness.<sup>31</sup> Several sociability strategies emerged; ‘explore interests’ (deviating from history of presenting concern to establish rapport)<sup>29 31 66 81 88 91</sup> was recommended for talkative,<sup>31</sup> Aboriginal<sup>85</sup> and older patients.<sup>29</sup> ‘Emotional support’<sup>9 31 72 77 88</sup> was a strategy for talkative patients,<sup>31</sup> and ‘empathising with the patient verbally and internally’<sup>7 9 31 36 50 53 66 70 72 80 86 88</sup> was recommended for patients with preconceived ideas, mismatch between patient and physician expectations<sup>9 72</sup> and talkative patients.<sup>31</sup> ‘Agenda setting’ (stating goals and signposts for the encounter)<sup>6 31 54 57 66 80 86 88</sup> was an important structural strategy recommended for talkativeness.<sup>31</sup> ‘Exploring psychosocial factors’ (eg, discussing emotional concerns)<sup>9 31 36 47 50 72 82 88</sup> was also recommended for talkativeness.<sup>31</sup> ‘Exploring collateral history’<sup>78 84 90</sup> was recommended for imprecise patients. It should be noted that ‘establishing doctor–patient boundaries’<sup>9 72 86</sup> mainly related to ongoing care, but could influence the history taking process when behaviour is inappropriate. 4 strategies related to targeted communication skills and 10 strategies related to structural changes. The level of evidence for these strategies was level 2 in (4/14) 29% and level 5 in 10/14 (71%).

### Alignment of causes and strategies with phenomenological framework

Online supplemental table 11 was constructed using our previously published phenomenological framework.<sup>8</sup> This table provides a summary of the 28 unique underlying causes aligned to 8 phenomenological presentations and 14 associated strategies that have been linked to each cause. For example, a physician may find history taking from a patient who is quiet to be challenging. ‘Quiet’ would be referred to as the phenomenon or clinical sign. The causes of a quiet patient include the patient exhibiting shyness, being embarrassed or fearful, having a learning disability, expressive dysphasia or cultural differences between the patient and the doctor. The causative factors are linked to potentially useful strategies aimed at facilitating the history taking process. These may be specific to the cause or linked to multiple different causes.

Of the 14 strategies, 11 were found in both the reviewed literature and our phenomenological framework,<sup>8</sup> ‘reframe purpose’ was found in only the framework and 2 were found only in the literature review. Although ‘reframe purpose’ could be thought of as a specialised form of agenda setting, in this context it has a very specific intent, referring more to the clinician-centred view of explaining the history taking process and the purpose of questioning, while ‘agenda setting’ refers more to the collaborative approach where both clinician and patient outline respective expectations. This data has been condensed into figure 3 with the aim of providing practical advice for novice history takers when conversation is not flowing despite the clinician using general communication skills to facilitate the history taking process. Using the GRADE assessment for levels of evidence for medical interventions we would appraise this advice for novice history takers as low. The importance of challenging history-taking encounters is moderate, but negative consequences can be significant. The risks of any intervention are likely to be low. The underlying factors are supported by considerable evidence from many studies, but the strategies to manage challenges are largely drawn from expert opinion, the success of these strategies in practice has not been tested and the educational tool developed has not been tested.

During the course of this review, it became apparent that a ninth phenomenon was frequently being referred to, although its nature was not always clearly articulated. This phenomenon was ‘triggering of emotions within the doctor’ which then negatively impacted on the encounter. This was often couched in terms of feelings of frustration<sup>6 23 34 62 66 77 86</sup> or being manipulated,<sup>72</sup> but could also include sadness, fear and even anger.<sup>34 35 62 63 86</sup> This phenomenon has been much discussed, primarily in the process of psychoanalysis where it is referred to as countertransference.<sup>92</sup> In standard doctor–patient encounters, it is important for physicians to recognise these emotions and, where possible, remain detached from them. If this is not possible, it may be necessary to suspend the encounter and reconvene at a later date.<sup>93</sup> Consistent with our patient-centred approach, we have not added this phenomenon to our framework, but we acknowledge its importance here.

### DISCUSSION

After screening 17 224 articles, we identified 73 articles of relevance to our review. All studies reporting original findings met our critical appraisal inclusion criteria. Three articles were excluded from the estimate of frequency of challenging encounters due to lack of relevant data, despite contacting the authors to request missing information.

Meta-analysis gave an overall prevalence estimate for frequency of challenging history taking encounters as 19.5% (95% CI 14.2% to 24.7%). A lower frequency of challenge was observed when the DDPRQ-10 was used

Phenomenon	Strategy ("Example")	Possible Causal Factors [freq]
Quiet	Reassure ("I would like to reassure you that anything you tell me will be regarded as confidential. Is there anything I can do to make you more comfortable?") Explore interests ("What do you like to do when you're not here at the hospital? Do you have any hobbies?") Reflect emotions ("You seem rather quiet, is there anything troubling you?")	Shyness [4] Cultural mismatch [4] Fear [2] Embarrassment [2] Expressive dysphasia [1]
No problem	Explore day-to-day life ("What is a typical day like for you? Has life changed in any way for you recently?")	Cognitive impairment [7] Denial [3] Mania [1]
Imprecise	Provide lists of options ("Was it happening once a week, once a month or once a year?") Summarise ("From what you have told me it seems..... is that correct?")	Cognitive impairment [7] Chronic alcohol use [6] Medically unexplained symptoms [4]
Confused	Explore life-history ("Where did you grow up? What did you do when you left school?")	Cognitive impairment/Delirium [9] Thought disorder [1] Receptive dysphasia [1]
Emotional	Reassure ("Its OK to let your feelings show. You can tell me as much or as little as you want. If this is distressing, we can take a break.") Reflect emotions ("I can see that you are upset, can you tell me about how you are feeling?")	Fear [10] Personality disorder [6] Mood disorder [6]
Jargonistic	Reframe purpose ("For me to fully understand what might be happening here, it is very important that I get a clear description of the symptoms that you have been experiencing. This will assist my interpretation of the tests you have had done.")	Somatisation [8] Preconceived constructs [5] Medically unexplained symptoms [4] Healthcare professionals [1]
Many problems	Prioritise ("OK, so there is quite a lot there, which of the symptoms you have mentioned is troubling you the most and perhaps we'll start there") Redirect ("Just coming back to the pain can you tell me what that felt like?") Explore underlying concerns ("Is there anything else that you are concerned about?") Explore objective impacts ("How is this affecting your day to day life? How do you spend your days?")	Medically unexplained symptoms [4] Somatisation [8] Anxiety [6]
Talkative		Chronic alcohol use/Intoxication [7] Loneliness [2] Chatty [1] Mania [1]

**Figure 3** Phenomenological framework of potential history taking challenges as perceived by the clinician, potential strategies to deal with the challenge and potential underlying causes. Strategies for 'Many problems' and 'Talkative' have been combined as there was considerable overlap in the suggested approaches. freq, number of times each cause was cited.

( $p < 0.001$ ). We note that challenging history taking encounters frequently occur in medical practice, comprising almost one-fifth of doctor–patient history taking encounters. We found no evidence for publication bias ( $p = 0.088$ ). There was significant heterogeneity, but 63% of the variability could be explained by the challenge measure used and the year of publication. Analysis of studies using the DDPQR and excluding one outlier gave a lower estimate of 15.1% (95% CI 12.4% to 17.9%). There was less heterogeneity across a wide range of disciplines. However, while more robust, the DDPQR may underestimate the degree of challenge when compared with simpler measures of clinician discomfort. It should be noted that a physician scoring a 6 in one or two domains may have perceived the encounter as very challenging, yet this would only score 18. Consequently, the cut-off of 30 may be too high to detect all challenging encounters. The frequency of challenge may be higher still in novice history takers, who were not found to have been specifically studied. The finding of a higher frequency of challenging encounters in primary care may reflect multiple factors, including time constraints and a triage effect with respect to referral to specialist clinics. Finally, a narrower field of expertise among specialist physicians may enhance confidence when dealing with uncertainty and specific patient factors. It is unclear why estimates of challenge are higher outside North America, but the number of studies was small.

A range of impacts and adverse outcomes for patients due to challenging encounters was found. Negative

consequences for physicians and healthcare systems were noted. While there was little data on the frequency of these outcomes, diagnostic uncertainty and over-investigation and treatment were the most common adverse outcomes cited for patients. The subsequent cost and burden on the healthcare system has not been studied, and this is a potential area for future research.

We have coalesced these data into a guide to assist novice history takers (figure 3) in responding to phenomenological presentations. Common potential underlying causes are highlighted in this framework. It is important to note that these challenges have been expressed by generations of physicians and have been articulated in various ways. These concepts are not new. However, we believe that through this review, we have provided two useful perspectives on this topic. The first is in taking a patient-centred view of the challenge. This avoids pejorative labelling and facilitates the history taker in recognising clinical signs that may be of diagnostic significance. The second is in providing phenomenologically-based guidance that is of value to novice history takers and facilitates the further acquisition of diagnostically useful information. This may lead to the avoidance of many doctor behaviours that can promote many of the challenging behaviours seen in some patients (eg, withdrawal from care due to diagnostic frustration, transmission of jargonistic terminology through direct questioning, creating unmet expectations). Ultimately, we are providing a non-technical vocabulary for novice history takers to identify the common challenges

and articulating strategies used by experienced physicians in such circumstances.

This review had a number of strengths. A systematic approach to the identification of relevant articles and critical appraisal was used. All papers were independently critically appraised using established appraisal tools<sup>16</sup> and were qualitatively analysed using established methods<sup>21</sup> by at least two researchers. There was both a qualitative and quantitative analysis of prior work. There was consistency between the published literature and the existing phenomenological framework, which was integrated into online supplemental table 11. Limitations of this review were also noted. While funnel plot and Egger's test suggest no significant publication bias in the meta-analysis of challenging history prevalence, the relatively small number of studies and the significant heterogeneity which was only partially explained by the measure of challenge used means that this prevalence estimate may not be generalisable to all settings. The ubiquity of 'history taking' in medical practice research and ambiguous language around 'challenging encounter' required steps to be taken to reasonably limit search results, meaning some relevant literature may have been missed particularly in related areas of communication not focused on history taking. Restricting the search to medical history taking may have missed some articles, but our checking of bibliographies did not suggest that this was the case. The lack of higher level evidence and quantitative studies means recommendations from this review can only be advisory and the true educational value of the approach suggested needs to be formally tested. We did not have access to suitably clinically qualified translators to undertake the inductive coding. Restriction of language to English and the primary search terms of 'medical history taking' or 'anamnesis' means that some articles may have been missed.

Further research needs to be undertaken to assess the frequency of challenging encounters in various clinical settings and examine the frequency of underlying causes. This will assist in directing more appropriate strategies recommended for the identified phenomena. The recommended strategies also need to be examined to determine their efficacy. This research may then inform further studies on how and at which stage medical students and junior doctors require educational models to improve their history taking skills. Any further research would need to control for potential confounders identified in this study, such as physician and situation-related factors, cognitive impairment and mental state.

One final observation is that many of the underlying causes of challenging history taking encounters fall under the broad terms of 'medically unexplained' or 'incompletely explained syndromes'.<sup>94</sup> Patients with such conditions are often labelled as displaying abnormal illness behaviour (dissatisfied, anxious, jargonistic, high users of health services).<sup>95</sup> However, we would note that for someone with an undiagnosed condition that is affecting their daily life, this is 'normal illness behaviour'. Many

of these conditions (chronic fatigue syndrome, fibromyalgia, functional neurological disease, musculoskeletal chest pain, irritable bowel syndrome) are not emphasised in medical school curricula despite collectively being very common.<sup>96</sup> This can lead to perceptions of these conditions as unimportant or not 'real'.<sup>97</sup> These perceptions are not missed by patients.<sup>96</sup> We therefore advocate for greater awareness of these conditions and a move towards more positive approaches to diagnosis and management. Ultimately, this will require a greater focus on research in these clinical areas.<sup>98 99</sup>

## CONCLUSIONS

This review has highlighted that challenging history taking encounters are common (19.5%) in various settings. Furthermore, challenging encounters have detrimental impacts on the patient, physician and the health-care system. Intrinsic and extrinsic factors contributing to such encounters and strategies addressing these challenges have been identified. A phenomenologically based toolkit for novice history takers has been presented to develop better educational models for trainee physicians.

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