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**"Let's talk about sleep health": Patient perspectives on willingness to engage in psychological interventions for insomnia**

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## **Abstract**

### **Background**

Cognitive behavioural therapy for insomnia (CBT-I) is recommended as the first-line treatment yet remains underutilised in general practice. Understanding patient motivations and barriers to engaging in psychological interventions for insomnia is critical. Theoretical frameworks, such as the Theory of Planned Behaviour, are needed to identify variables related to intentions and behaviour change.

### **Aim**

To explore key influences that motivate individuals' intention to engage with psychological interventions for insomnia.

### **Design and Setting**

An online survey and interviews with 20 community-dwelling participants with insomnia, aged 26-75 years.

### **Method**

Guided by the Theory of Planned Behaviour, reflexive thematic analysis was used to identify factors influencing participants' intention to engage with psychological interventions for insomnia.

### **Results**

Participants reported positive attitudes towards psychological interventions for insomnia, stemming from negative beliefs about pharmacological sleep aids and the perceived benefits of a structured and evidence-based intervention. Important others positively influenced participants' intention to engage, however the GP influence was less consistent and often indirect. Participants believed in the efficacy of psychological interventions, but several barriers hampered their ability to benefit from them.

Accessibility was identified as a key facilitator, whilst lack of knowledge and clear

referral pathways were the main barriers impacting uptake.

### **Conclusion**

This study highlights key factors influencing patients' intention to engage in psychological interventions for insomnia as well as opportunities for GPs to support uptake and engagement. Routine conversations about sleep health are essential to reduce the burden of untreated insomnia in the community, and active promotion of evidence-based psychological interventions are needed.

### **Keywords**

insomnia; theory of planned behaviour; qualitative research; general practice

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**How this fits in**

Psychological interventions for insomnia are recommended as the first-line treatment but remain underutilised in primary care settings relative to pharmacological treatments. Coupled with known harms regarding prolonged use of benzodiazepine receptor agonists (BZRAs) to manage insomnia, the need for increased uptake of psychological interventions is critical. This study explored the influence of key factors that motivate individuals' intention to engage with psychological interventions, revealing the importance of active involvement of GPs in this process from the initial consultation through to supporting treatment adherence long-term. By understanding the consumer perspective in conjunction with the unique clinical expertise of GPs, we have offered guidance on how to enhance patient-practitioner collaboration across the entire treatment process and increase GP confidence to facilitate increased engagement with evidence-based psychological treatment modalities.

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## Introduction

Insomnia is a common health issue that presents significant treatment difficulties for general practitioners (GPs) in primary care. Despite leading to impaired functioning across several domains (e.g., reduced work productivity, social participation, risk of motor vehicle accidents) (1, 2) treatment-seeking for insomnia remains low (3, 4). Prevalence estimates of insomnia in adults vary widely across studies, ranging from 5% to 50%, with most data drawn from western populations (5, 6). Whilst treatment of insomnia falls within the scope of general practice, its complexity renders it difficult to treat within this context (7). For example, insomnia rarely occurs in isolation and is often comorbid with mental health issues or chronic health conditions (8-10). GPs are therefore faced with the tension between prioritising the insomnia complaint versus treating comorbid conditions, including the development of a dependency on pharmacological sleep aids (i.e., benzodiazepine receptor agonists [BZRAs]). Unfortunately, patients often defer professional help until their sleep problems take on a more severe and chronic trajectory (3, 11). Less than half of individuals will consult a healthcare professional to discuss insomnia as their primary complaint, and of those that do, the vast majority contact their GP, and only when symptoms have reached more severe levels or persisted for longer durations (i.e., several months or years) (4).

As the primary point of contact for patients presenting with insomnia, GPs are well positioned to facilitate increased uptake of psychological interventions, given that cognitive behavioural therapy (CBT-I) is recommended as the first-line treatment approach (12, 13). However, in most cases, individuals presenting to general practice with insomnia receive a prescription for a pharmacological sleep aid, predominantly a BZRA (14). Despite reported decreases in BZRA prescriptions overall, both initial and repeat prescriptions of Z-drugs (e.g., zopiclone) have increased in recent years

regarding insomnia management (15). Long-term use of BZRAs is contraindicated due to risks of dependence and other harms (e.g., cognitive deficits, falls, risk of motor vehicle accidents, and worsening sleep quality) (16-19).

Psychological interventions for insomnia, such as CBT-I, have been found to produce both short-term and sustained improvements in insomnia symptomology (20-23) and reduced reliance on pharmacological sleep aids (24, 25). Although an effective treatment approach, a range of barriers limit their uptake in those dealing with insomnia. We argue that there needs to be greater emphasis on understanding what specific factors influence patients' motivation and intention to engage with psychological interventions. This knowledge is critical to inform how GPs can best respond to patients presenting with sleep complaints in primary care settings.

There has been limited research that has investigated patient motivations and barriers to engaging in psychological interventions for insomnia (26, 27). At the provider level, GPs report having poor screening processes for insomnia, limited knowledge and experience with psychological interventions and insufficient understanding of referral pathways for insomnia (7, 28-30). Similarly, at the patient level, limited knowledge and access have been shown to hinder the uptake of psychological interventions such as CBT-I (28-30). However, factors that might impact patients' intention to explore this treatment modality have received less attention and require exploration and analysis.

To better understand the putative influences on intention to engage with psychological interventions for insomnia, utilisation of health behaviour theoretical frameworks (including the Theory of Planned Behaviour; TPB) (31) are warranted. The TPB posits that three key motivational influences determine an individual's intention to engage in behaviour change: whether the individual is favourable or unfavourable

toward the behaviour (*Attitudes*), perceived social pressures to perform the behaviour (*Subjective Norms*), and the degree to which the individual believes that (1) psychological interventions will be effective for their insomnia and (2) they have control over the outcomes of the intervention (*Perceived Behavioural Control*).

Although the TPB has been extensively used to predict behaviour change and as a framework to guide intervention development across diverse domains (e.g., school/work behaviour, physical activity, nutrition, sexual behaviour, and alcohol use) (32, 33) it remains underutilised in the context of sleep health improvement despite a recent review highlighting its utility in this area (34). Drawing on the TPB to facilitate a comprehensive understanding of behaviour change is important, both to guide the proposed research questions and inform the primary care response to promote increased uptake of psychological interventions for insomnia.

Therefore, the overall objective of this study was to (1) explore what factors influence community-dwelling individuals' intention to engage with psychological interventions for insomnia and (2) use this knowledge to inform the development of provider-based recommendations regarding how GPs may best facilitate their increased uptake in general practice. To achieve these objectives, we drew on the three constructs of the TPB (*Attitudes*, *Subjective Norms*, *Perceived Behavioural Control*). The first aim was to explore how *Attitudes* regarding psychological interventions for insomnia influenced participants' current intention to engage. The second aim was to explore the role (if any) of *Subjective Norms* on participants' intention to engage with psychological interventions, specifically how important others influenced their decision to engage. The third aim was to explore how participants' confidence level and sense of control over the treatment influenced their intention, including understanding practical-level



facilitators and barriers to the uptake of psychological interventions for insomnia  
(*Perceived Behavioural Control*).

## **Method**

### **Participants**

Participants were 20 community-dwelling adults residing in Victoria, Australia, purposively sampled for heterogeneity in age, gender and duration of sleep disturbance (Table 1). Participants had expressed interest in a psychological intervention for sleep and completed an initial online questionnaire. Eligible individuals (i.e.,  $\geq 18$  years of age and Insomnia Severity Index score;  $ISI > 14$ , clinical level of severity) (35) were subsequently invited via email to participate in an interview regarding their perspectives towards psychological interventions for sleep problems. Individuals with mental health comorbidities or current use of pharmacological sleep aids were not excluded from participation. The relevant institutional review board (DUHREC) approved all study procedures.

### **Data Collection**

Demographic and sleep-specific data were captured, and participants completed several validated measures of physical and mental health. The ISI provided a measure of insomnia severity (35). Anxiety and depressive symptomology were measured via the Generalised Anxiety Disorder (GAD-7) (36) and Patient Health Questionnaire (PHQ-9) (37).

Interviews were conducted between September and November 2022 by a single researcher and field notes were documented from each interview. A semi-structured interview guide was developed (Appendix A) by all authors based on the TPB and directly aligned with the study aims. Pilot testing was conducted with individuals naïve to the study ( $\geq 18$  years) for coherence, clarity, and timing of the initial interview

schedule. Feedback was collated and discussed amongst the research team to facilitate further refinement. The final guide elicited information relating to the core constructs of the TPB – *Attitudes*, *Subjective Norms*, and *Perceived Behavioural Control*. This enabled an exploration of the putative influences on behaviour change with respect to individuals' intention to engage with psychological treatment, adopting the TPB as a primary framework.

Written informed consent was obtained prior to interviews. Interviews ( $M = 31.94$  minutes) occurred online via a video platform (Zoom), which uses end-to-end encryption with embedded audio-recording capacity, enabling the interviewer to transcribe verbatim. All identifiers were removed from final transcripts, and participants were offered the opportunity to review and amend their transcript content as necessary. Participants received a voucher as reimbursement for their time.

### **Data Analysis**

QSR NVivo software (release 1.7.1) was used for qualitative analysis. A mixed inductive and deductive lens to coding and thematic development was adopted. Specifically, codes were derived both from the data and TPB constructs. Braun and Clarke's reflexive thematic analysis approach was selected as the qualitative methodology due to its theoretical flexibility (38, 39). Coding was performed by two researchers (BS and EO) with reference to both semantic and latent features of the data. Data familiarisation entailed independent reviewing of interview transcripts followed by recursive coding of the data, meaning codes were revisited, amended, and revised as coding progressed. Researchers met to discuss code content and cluster individual codes into higher-order patterns of meaning. Candidate themes were developed and refined in an iterative process developing key themes. Regular meetings were held to ensure

rigour and facilitate reflexivity. The consolidated criteria for reporting qualitative research (COREQ) guided the reporting of results (40).

## **Results**

### **Participants**

Of 21 individuals who consented to participate, 20 proceeded to complete interviews ( $n = 1$  cancelled prior to the interview). Participant characteristics are outlined in Table 1. Half of the sample reported long-standing insomnia (i.e., greater than 10 years), with most ISI scores falling in the moderate range ( $n = 17$ ) and a handful in the severe range ( $n = 3$ ) of severity. Eighty per cent of the sample had previously sought help for their sleep problem, most commonly via GP consultation ( $n = 14$ ). The cohort further reported high levels of anxious and depressive symptomatology. Specifically, half of participants' scores fell in the moderate to severe range of anxiety ( $n = 10$ ) and three quarters in the moderate to severe range of depression ( $n = 15$ ). Of note, the sample was well-educated, with eighty per cent having attained either an undergraduate ( $n = 8$ ) or post-graduate ( $n = 8$ ) tertiary qualification.

<<Insert Table 1 here>>

### **Qualitative results**

Themes identified from the interviews were mapped onto the TPB constructs of *Attitudes*, *Subjective Norms*, and *Perceived Behavioural Control* (see Table 2).

Attitudes focused on both positive and negative beliefs about psychological interventions for insomnia and general perceptions towards psychological interventions.

Subjective Norms captured the social influence of important others and the GP on individuals' intention to engage in psychological interventions for insomnia. Perceived Behavioural Control reflected participants' confidence that the psychological intervention would be effective, how much control they had over the intervention, and

what influenced their uptake of the psychological intervention (i.e., barriers and facilitators).

<<Insert Table 2 here>>

### **Attitudes**

Overall, participants reported favourable attitudes towards psychological interventions, reflecting an openness and willingness to engage in them, consistent with this being a treatment-seeking sample.

*Belief sleeping aids have negative consequences:* Underlying the cohort's positive attitude towards psychological interventions for insomnia was that there were minimal associated risks, unlike pharmacological sleep aids, which were perceived to have unfavourable consequences, such as dependence:

*“Because of the dependency issues that surrounded them, they were just not something that I really wanted to go down those pathways of.” (P2)*

*“...I don't want to become addicted.” (P5)*

For many, concerns around dependency stemmed from direct prior-treatment-seeking experiences which influenced participants' current intention to consider psychological interventions for insomnia:

*“I don't want to pop pills for the rest of my life, I don't want to do that...if [psychological interventions] can help, I'm all for it.” (P7)*

Most of the cohort had previously used a prescription sleep aid and overwhelmingly expressed negative beliefs about their use. Almost half of these participants reported a prescription medication as the only treatment avenue explored. Several had tried melatonin with varied perceptions of its efficacy. Although some preferred it as a natural alternative, reported drawbacks included experiencing a similar

hangover effect to synthetic sleeping aids. Some also “self-medicated” via the use of psychoactive substances (i.e., alcohol, cannabis) to promote sleep.

*Lack of improvement from sleeping aids:* participants reported the lack of perceived improvement from using a range of sleeping aids resulted in feelings of frustration and desperation, which further promoted a more open attitude towards psychological interventions:

“*I’m at the point where I’m, I’m willing to try anything.*’ (P7)”

“*...I’ve had enough of, ... not getting quality sleep, and I’m at the stage where I need to do something, um, so...I’m going to do everything in my power to make sure that I follow them [psychological interventions].*’ (P2)”

*Perceived need for structured support:* overwhelmingly, participants perceived a need for structured professional guidance, support, and accountability to assist their efforts to improve sleep. Despite several participants’ awareness and practice of sleep hygiene strategies, there was recognition that they could benefit from additional knowledge and support in this practice:

“*...I’m aware-, I’ve read a bit about sleep hygiene...I didn’t find that help-, has helped me much.*’ (P19)”

“*I just think having some guidance and professional skills, that’s what I’m looking for, ...like I just need strategies...and a therapy that I can follow.*’ (P4)”

*Belief in strong evidence base of psychological interventions for insomnia:*

participants further expressed that knowing psychological interventions have a strong evidence base enhanced their willingness to consider this treatment modality to resolve their insomnia:

*“...I think specifically because it’s evidence-based as well...I feel like that kind of gives it like a sense of like credibility to it, and that I feel more inclined to, like, believe in the efficacy of it.’ (P8)”*

*Belief that psychological interventions lead to long-term improvements:* importantly, psychological interventions were considered to lead to long-term, sustainable sleep outcomes, resulting in a generalised increase in well-being with transferable benefits to other areas of life.

*“I think it could...be advantageous to like other aspects of life, mental health in general, and, um, even anxiety...it’s all, inter-, interlinked.’ (P15)”*

*Belief that psychological interventions for insomnia are not a quick fix:* while there were several reported negative beliefs regarding psychological interventions, participants indicated these did not affect their current intention to engage. The predominant negative beliefs were that psychological interventions required time, effort, and commitment to be effective:

*“I would say they are not an immediate quick fix, it’s often something that I guess takes time...they are often to do with a practice, so it’s something you need to continually work on and implement. It’s not as easy as taking a tablet...it takes work.’ (P12)”*

*Belief that psychological interventions may not fully resolve insomnia:* some also expressed concern that psychological interventions would not completely resolve their condition, and others were concerned that overreliance or rigid use of psychological strategies might lead to reduced treatment effectiveness:

*“Um, I’m confident that it will have some impact. I’m not confident that it will completely solve the issue.’ (P13)”*

“*Overuse of them [psychological strategies] sometimes is a disadvantage...like they're successful, and it's like, you keep using them and using them and then all of a sudden...they don't become useful anymore.*” (P2)”

### **Subjective Norms**

*Important others can positively influence engagement with psychological interventions for insomnia:* most individuals perceived that psychological interventions for insomnia were viewed favourably by important others (i.e., family or close friends):

“*I know one hundred per cent that everyone would be supportive. Everybody wants to know. I've told people, they're like “as soon as you find out, can you please tell me?”*” (P4)”

Indeed, several participants reported that important others (i.e., family members or friends) had actively promoted this treatment avenue:

“*It was my husband that sent me the Facebook feed through...to say, “why don't you, why don't you try that?”*” (P1)”

*GP hesitation to prescribe prompts for patients to explore psychological interventions for insomnia:* the GP influence tended to be indirect, resulting from caution or an unwillingness to prescribe pharmacological sleep aids long-term, leaving participants feeling the need to explore other avenues:

“*When I ask for Imovane, he [GP] says “oh, you know, I'll prescribe it now, but, um, maybe we need to talk about, um, sleep health and that sort of thing”.*” (P20)”

Whilst some GPs were collaborative and patient-centred in their approach, other participants reported that their GP was dismissive of their experience, neither willing to prescribe a pharmacological sleep aid nor able to support alternative treatments:

*“...[GPs] would flat out refuse and said, “no, we don’t do that...you need to try other things” ...and that’s sort of the end of the conversation. They say try other things, but there’s no, um, no like, you know, “go here” or “do this” or “this program’s great.” ’ (P9)”*

*GPs lack confidence and/or knowledge to actively promote psychological interventions for insomnia:* in some cases, GPs promoted generalised sleep hygiene strategies, yet only one participant reported being informed about more comprehensive interventions (i.e., CBT-I). Almost half of the participants believed that their GP lacked sufficient knowledge to offer psychological interventions (and therefore relied on pharmacological sleep aids) and perceived GP confidence to promote psychological interventions for insomnia as low:

*“The doctor said, “oh well, just take some more, take some more, take some more” – it’s not right. It’s not, not fixing the problem, it’s only masking it.’ (P17)”*

*“I just don’t know if they [GPs] have the experience to have been able to offer me anything else for sleep besides what they already had.’ (P2)”*

*Societal shift in being more accepting of psychological interventions for insomnia:* lastly, several participants, primarily males, reported a societal shift in attitudes towards seeking psychological support. For these participants, perceived reductions in stigma and normalisation of help-seeking underpinned their current intention to engage:

*“Um, but I’m seeing a lot of positive change in, in society now. It’s becoming a lot more receptive and more open to accepting, ah, psychological assistance.’ (P14)”*



*“I don’t think there’s a stigma around psychological intervention for sleep’*  
(P18)”

### **Perceived Behavioural Control**

*Knowledge and/or insight into psychological interventions for insomnia linked to confidence in their efficacy:* in general, participants expressed moderate to high levels of confidence that psychological interventions would be effective, increasing their willingness to engage. Higher levels of confidence were more evident in participants who possessed knowledge about psychological interventions more broadly or perceived their insomnia to originate from cognitive or behavioural factors:

*“I think they [psychological interventions] probably could help a lot because I’m sure it’s all, a lot of it’s in my head, my mind.’ (P5)”*

*Prior lack of success reduces confidence in psychological interventions for insomnia:* in contrast, moderate levels of confidence were more evident in those who either had unsuccessful prior-treatment-seeking experiences with pharmacological sleep aids, lacked knowledge of what to expect from treatment, or stemmed from self-preservation (i.e., not wanting to get their hopes up):

*“If I hadn’t tried a million other things before then, you know, maybe my confidence would be up.’ (P16)”*

*Commitment and motivation influence ability to engage:* whilst participants almost universally recognised that outcomes related to engaging with psychological interventions were self-determined, therefore under their control, they noted a range of barriers and facilitators. Many participants recognised that their degree of commitment, consistency, and motivation to engage could be either a barrier or facilitator influencing the success of the intervention.

*Personal and situational factors can impede successful engagement:* specific barriers reported at the individual level that could impede successful adherence to a psychological intervention were energy levels, time, mood, and stress:

“*My own motivation, that’s more where my concerns come in, it’s not so much psychological interventions that I’m concerned about, it’s more me following any plans that get put into place...*’ (P2)”

“*It is having the time, but also the energy to be able to commit and implement and follow through...the energy is then linked to the poor sleep. So, that’s a kind of a whole cyclic problem in and of itself.*’ (P12)”

Participants further anticipated employment (e.g., travel, shift work) and sleep environment (e.g., disruptions attributable to environmental noise, children, or pets) as external barriers to successfully engage with psychological interventions:

“*Things happening at home stops me from focusing on carrying out the treatment...it’s kind of hard to block out the environmental sort of things.*’ (P8)”

*Psychological intervention related factors can facilitate successful engagement:* in terms of facilitators, most participants reported that psychological interventions needed to provide certain qualities to be effective. These included the need for an evidence-based treatment, a collaborative and consultative therapeutic relationship, and an intervention that was both personalised and delivered in a manner that facilitated understanding of the content.

*Ease of access supports uptake of psychological interventions for insomnia:* participants described several barriers and facilitators impacting their uptake of the psychological intervention in the first place. Facilitators all related to accessibility, namely that the intervention was delivered online, did not require referral or assessment, there were little to no wait times, and incurred no cost:

*“...to go through the, the loops of, um, like mental health plans at the sleep clinics, there’s waiting lists, I felt like this [psychological intervention] was great because it was straight away.’ (P1)”*

*Lack of clear referral pathways hinders earlier uptake of psychological interventions for insomnia:* barriers to earlier uptake of a psychological intervention reflected a lack of clear treatment pathways, where participants reported being overwhelmed by the information available online, lacking guidance from GPs and sleep specialists, and limited understanding about psychological interventions and insomnia more broadly:

*“...prior to today, I didn’t think they [psychological interventions] were relevant to me, um, because I don’t have any trouble falling asleep.’ (P10)”*

*“...it’s [psychological interventions] a new avenue I hadn’t really considered or, um, heard of.’ (P14)”*

## **Discussion**

### **Summary**

Findings from this study indicate that participants’ favourable attitudes towards psychological interventions were primarily related to dissatisfaction with prior treatment-seeking experiences (i.e., pharmacological sleep aids). Our sample was treatment-seeking for chronic insomnia, which, in addition to prompting feelings of frustration and desperation, may have culminated in their expressed need for structured professional guidance and evidence-based psychological interventions to improve their sleep. Secondly, the positive influence of family and friends on engaging with a psychological intervention was encouraging and, in many cases, appeared to be the impetus for trying something new. In contrast, the GP influence was less clear or consistent in promoting intention to engage, highlighting the need for more active GP

involvement in managing insomnia in primary care. Lastly, participants believed psychological interventions would effectively treat their insomnia, particularly if they perceived their sleep issue had psychological or behavioural underpinnings. They were realistic about their ability to adhere to the intervention, recognising the impact of their own motivation and commitment, as well as situational influences. It appeared that ease of access was a key facilitator that saw participants enrol in a psychological intervention, whereas lack of support, information, and clear referral pathways impeded earlier engagement.

### **Strengths and limitations**

To the authors' knowledge, this is the first study to apply a behaviour change theoretical framework to individuals' lived experience of insomnia to better understand what factors influence intention to engage with psychological interventions. This work importantly addresses recent calls for greater utilisation of health behaviour change theoretical frameworks to support sleep health improvement efforts (34). The sample included a range of demographics (i.e., varying in age and gender, psychiatric/physical comorbidities, degree of insomnia severity and chronicity, and use of pharmacological sleep aids). Therefore, the provider-based recommendations developed have wide-reaching relevance to many sub-groups with insomnia. Several limitations are also important to note. First, sample characteristics, including a mostly Caucasian and university-educated community sample, may limit generalisability to other cultural or minority groups. Education levels may be important in understanding treatment uptake, adherence, and responses to psychological interventions for mental health conditions more broadly (e.g., CBT for depression) and thus are an important avenue for future research. Second, given that we recruited participants who had expressed interest in a psychological intervention for insomnia, attitudes and intentions expressed by our

cohort may not be broadly reflective of all individuals with insomnia, particularly non-treatment-seeking segments of the insomnia population. Lastly, this study explored individuals' intention to engage as a proxy for engagement, which may not directly map onto actual uptake (i.e., participants had registered to participate but were yet to actively engage).

### **Comparison with existing literature**

Although the TPB theoretical framework has been adopted to understand intention to engage in various health behaviours (33, 41) it remains underutilised in insomnia research to date (34). Given that its utility lies in its ability to identify the key factors underlying intention to engage in behaviour change (i.e., attitudes, subjective norms, and perceived behavioural control) (31), we envisage that active translation of current findings will contribute to meaningful improvements in how insomnia is managed within medical care and health settings more broadly.

Health professionals themselves have identified limited knowledge and experience with CBT-I and insufficient understanding of referral pathways for insomnia as barriers to initiating referrals for chronic sleep problems (7, 28-30). These are mirrored by current findings, whereby participants perceived GPs lacked confidence and requisite knowledge to actively promote psychological interventions for insomnia. Of note, only one participant reported being informed about more comprehensive interventions (i.e., CBT-I) from their GP). Although sleep hygiene education is not endorsed as an effective stand-alone treatment for insomnia (42), qualitative research suggests most GPs tend to rely on it as a first-line treatment option, with some even considering it a means to avoid prescription of pharmacological sleep aids (e.g., BZRAs) (7). As echoed in our cohort, several participants referenced their GP's unwillingness to prescribe and, despite adherence to sleep hygiene recommendations,

had derived limited benefit from this approach alone. Taken together, GPs would likely benefit from additional training to facilitate increased awareness and understanding of evidence-based psychological interventions for insomnia, including CBT-I, to support optimal patient outcomes.

Moreover, when considering management strategies for patients with insomnia, GPs reported they would consider referring presentations of anxiety and depression for psychological services yet did not perceive these same interventions to be available for insomnia management (43). Indeed, insomnia complaints were rarely considered the primary issue and more often attributed to an underlying health or mental health condition (43), which is noteworthy given high rates of comorbid depressive and anxious symptomatology in our cohort. Greater GP awareness of insomnia as a primary condition, not simply a symptom of a comorbid condition, is critical in primary care settings, given its implications for early identification of insomnia and, therefore, earlier access to effective treatments.

Lastly, although scarce, research on patients' decision-making processes for managing insomnia revealed that patients' treatment beliefs, external social influences (i.e., advice from family/friends and healthcare professionals) and prior treatment-seeking experiences were linked to patients' preference for non-pharmacological interventions, rather than pharmacological interventions (44). Whilst the current study identified similar factors influencing participants' preference for psychological intervention, a limitation of earlier work was that patient preferences were based on hypothetical treatment scenarios. The present study advances understanding to suggest that treatment beliefs, social influences and prior-treatment-seeking experiences are linked not only to treatment preferences (44) but also to intention to engage and preliminary steps towards the uptake of psychological interventions (i.e., participants in

the current study had registered to take part in a psychological intervention for insomnia).

### **Implications for practice**

Findings from this study have informed the development of a range of provider-based recommendations to support GPs in their work (see Box 1 for a complete list). These recommendations were guided by the influence of *Attitudes*, *Subjective Norms*, and participants' *Perceived Behavioural Control* to engage with psychological interventions to ultimately bridge the gap between intention to engage and actual uptake and engagement.

<<Insert Box 1 here>>

Given the cumulative harms and chronicity of insomnia, GPs need additional training and skills to routinely screen for and educate patients on insomnia and psychological treatment options. As seen in some participants in our study, patients may further lack insight into psychological contributors to their sleep problems, which may lead to developing more intractable sleep problems or ongoing use of pharmacological sleep aids. GPs initiating conversations about sleep difficulties and patients' perceived origins as routine practice are essential steps towards greater uptake and engagement with psychological interventions for insomnia. Educating patients on the impacts of untreated insomnia and the availability of evidence-based, efficacious treatments such as CBT-I also constitute key intervention points for GPs.

GPs could also consider stepped-care approaches in their approach to insomnia management, given that they accommodate diverse individual needs and allow treatment to be tailored to match each patient's preferences (27, 44). Lower-level steps may involve referrals to digital CBT-I programs if available (e.g., *Sleepio* and *This Way Up*) (45-48). Although access to locally based digital CBT-I programs with

demonstrated effectiveness remains challenging, they hold promise as a cost-effective and scalable option to support insomnia management in community settings. For individuals using a BZRA as a pharmacological sleep aid, a stage-based approach to deprescribing is recommended (49) while facilitating engagement with psychological interventions (i.e., CBT-I) to support long-term insomnia management (50, 51). Lastly, current findings further suggest normalisation of psychological help-seeking as particularly important when consulting with male patients, given that they may be more sensitive to self-stigma associated with traditional masculinity norms (52).

Beyond initial identification of insomnia, patients are also likely to benefit from GPs' continued support and monitoring throughout their engagement with psychological interventions. Given the range of factors that may influence a person's ability to adhere to psychological interventions, GPs may adopt the role of a "coach" to support optimal treatment outcomes, particularly where patients are concurrently engaged in BZRA deprescribing (53). Moreover, even one-time sleep consultations involving the GP, patient and sleep specialist can have a notable impact on GPs' attention towards sleep issues and lead to improvements in patients' sleep (54). Given time constraints inherent to general practice, these may be feasible approaches to support patients' ongoing insomnia management.

Ultimately, while insomnia is a significant health issue that needs to be proactively addressed in the primary care setting, it also warrants treatment at the population level. Increased provision of GP resources regarding insomnia assessment, management and referral pathways are needed to support GPs to enact these recommendations, given time constraints inherent in primary care settings and the degree to which GPs are presently under-resourced and overworked. Increased uptake and engagement with psychological interventions for insomnia is contingent upon a



collaborative approach to care that involves the patient, treatment providers (both GPs and sleep specialists) and input from overarching systems.

In conclusion, individuals with insomnia often endure chronic poor sleep and subsequent physical and mental health problems, before accessing adequate treatment. For GPs, insomnia often presents complexities that are challenging to manage in the primary care setting (7). Nonetheless, GPs can play a pivotal role in supporting patient engagement with psychological interventions. Current findings demonstrate that individuals are open and willing to engage with psychological interventions, but active involvement of GPs is critical to support earlier uptake. Guided by the TPB as a theoretical framework, key provider-based recommendations were developed to increase GP confidence to promote psychological interventions for insomnia.

Population-level efforts need to prioritise treatment development and implementation of low-cost psychological interventions to support GPs in this work. This study further highlights the usefulness of health behaviour change models to support increased uptake of psychological interventions for insomnia, and their continued use in sleep research is encouraged.

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### **Ethical approval**

This research was approved by the Deakin University Human Research Ethics Committee (reference number: 2021-371).

**Competing interests**

Erin Oldenhof is a benzodiazepine counsellor at Reconnexion, a non-profit specialist service that provides benzodiazepine dependence counselling and education to the community and external stakeholders. No other conflicts of interest are declared.

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Table 1. Participant characteristics

<b>Demographic variables</b>	<b>Participants, <i>N</i> = 20</b>	
Age, <i>n</i> (%)		
25-34	5	(25%)
35-44	4	(20%)
45-54	4	(20%)
55-64	4	(20%)
≥ 65	3	(15%)
Identified gender, <i>n</i> (%)		
Female	13	(65%)
Male	7	(35%)
Educational attainment, <i>n</i> (%)		
Some high school (no certificate)	3	(15%)
Year 12 equivalent	1	(5%)
TAFE/Diploma or Degree	8	(40%)
Postgraduate Degree	8	(40%)
Employment, <i>n</i> (%)		
Part-time/full-time	16	(80%)
Casual	1	(5%)
Retired	1	(5%)
Other (self-employed, student)	2	(10%)
<b>Sleep variables</b>		
Prior medications for sleep, <i>n</i> (%)		
Benzodiazepine or Z-drug	8	(40%)
Antidepressant (e.g., amitriptyline, doxepin, mirtazapine)	2	(10%)
Antipsychotic (e.g., quetiapine)	1	(5%)
Antihistamine (e.g., promethazine, doxylamine succinate)	5	(25%)
Melatonin	13	(65%)
None	7	(35%)
Current medications for sleep, <i>n</i> (%)		
Benzodiazepine or Z-drug	2	(10%)
Antidepressant (e.g., amitriptyline, doxepin, mirtazapine)	2	(10%)

Antihistamine (e.g., promethazine, doxylamine succinate)	3 (15%)
Melatonin	8 (40%)
None	7 (35%)
<hr/>	
Duration of sleep problem, <i>n</i> (%)	
4 – 6 months	1 (5%)
1 – 2 years	2 (10%)
2 – 5 years	3 (15%)
5 – 10 years	4 (20%)
> 10 years	10 (50%)
<hr/>	
ISI scores, mean ± SD	18.5 ± 2.5
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<b>Mental health variables</b>	
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PHQ-9 scores, mean ± SD	12.9 ± 3.6
GAD-7 scores, mean ± SD	9.2 ± 5.4
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*ISI = Insomnia Severity Index. PHQ-9 = Patient Health Questionnaire-9. GAD-7 = Generalized Anxiety Disorder-7. SD = standard deviation.*

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Table 2. Themes mapped onto the Theory of Planned Behaviour constructs

Behavioural Intention	Construct	Themes
<i>Intention to engage with a psychological intervention (PI) for insomnia</i>	<i>Attitudes</i>	Belief sleeping aids have negative consequences Lack of improvement from sleeping aids Perceived need for structured support Belief in strong evidence base of PI Belief that PI leads to long-term improvements Belief that PI are not a quick fix Belief that PI may not fully resolve insomnia
	<i>Subjective Norms</i>	Important others can positively influence engagement with PI GP hesitation to prescribe, prompts patients to explore PI GPs lack confidence and/or knowledge to actively promote PI Societal shift in being more accepting of PI
	<i>Perceived Behavioural Control</i>	Knowledge/insight into PI linked to confidence in their efficacy Prior lack of success reduces confidence in PI Commitment and motivation influence ability to engage Personal and situational factors can impede successful engagement PI related factors can facilitate successful engagement Ease of access supports uptake of PI Lack of clear referral pathways hinders earlier uptake of PI

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Box 1. Provider-based recommendations to support engagement with CBT-I

Stage of client readiness	Provider recommendations
Non-treatment seeking for insomnia: increase patient receptiveness to psychological interventions	<ul style="list-style-type: none"> <li>○ Prioritise engagement and rapport-building</li> <li>○ Routinely initiate conversations about sleep (including psychoeducation about insomnia and screening for sleep disorders)</li> <li>○ Motivational interviewing to assess and promote readiness to engage in treatment</li> <li>○ Raise awareness regarding the impacts of untreated insomnia</li> <li>○ Education about short-term and intermittent use of BZRAs</li> </ul>
Early treatment-seeking for insomnia: increase intention to engage with psychological interventions	<ul style="list-style-type: none"> <li>○ Raise awareness and explore impacts of untreated insomnia</li> <li>○ Education about short-term and intermittent use of BZRAs</li> <li>○ Promote effectiveness of psychological interventions (i.e., CBT-I) for sleep and mental wellbeing</li> <li>○ Motivational interviewing to support uptake of psychological interventions for insomnia</li> <li>○ Refer to online evidence-based programs with low or no associated patient cost</li> <li>○ Refer to stepped-care treatments where possible</li> </ul>
Patient engaged with CBT-I: increase/maintain adherence to psychological interventions	<ul style="list-style-type: none"> <li>○ Regularly review progress and impacts on insomnia and mental wellbeing</li> <li>○ Reinforce the effectiveness of evidence-based treatments such as CBT-I</li> <li>○ Motivational interviewing to increase or maintain adherence to psychological interventions</li> <li>○ Shared-care approach: collaborate with sleep health practitioners and patients to support optimal treatment outcomes</li> </ul>