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The Diagnosis and Management of Insomnia in Australia

By

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ABSTRACT

Insomnia is the most common sleep disorder in Australia impacting the lives of millions of people every day. Chronic insomnia is defined as frequent difficulty falling asleep or staying asleep, which causes significant daytime impairment for a period of at least three months. The recommended treatment for insomnia is Cognitive Behavioural Therapy for insomnia (CBTi) but most people do not receive this evidence-based treatment. Most general practitioners (GPs) currently prescribe hypnotic or sedative medications, which are associated with high rates of adverse side effects, development of dependence, and withdrawal effects. This thesis investigates why the discrepancy between clinical guidelines and clinical practice exists, identifies barriers to the management of insomnia from the perspectives of people living with insomnia, GPs and psychologists, and explores how the management of insomnia in Australia can be improved.

This mixed methods research project included four studies. Studies 1 and 2 included large surveys conducted online which investigated the current help seeking behaviours of people with insomnia in Australia. Findings indicated most people with current chronic insomnia symptoms in a large community sample did not have a previous diagnosis of insomnia. The most common help seeking behaviours for people with insomnia were adjusting sleep routines, relaxation, alcohol and sleep medication. The findings show that only 37% of people with insomnia discussed sleep with their GP in the past year, 9% discussed sleep with a psychologist, and less than 1% received treatment that included CBTi. Studies 3 and 4 included interviews with GPs and psychologists about the current management of insomnia. Findings from these qualitative studies identified barriers and opportunities to managing insomnia in Australia. These barriers include lack of training in CBTi for health professionals, a need for increased awareness of insomnia as a primary condition and use of mental health treatment plans for insomnia.

The results of these studies are combined in the final chapter to provide overall findings regarding the management of insomnia in Australia from the different perspectives of people with insomnia, GPs and psychologists. Three themes are identified: low priority of sleep, impaired knowledge and awareness, and inadequate access to care. Barriers to effective management of insomnia are also identified within each theme and are discussed from the different perspectives. Barriers include people with insomnia feeling helpless about improving their sleep, unawareness of psychological treatments for insomnia, other health conditions take priority, lack of training in CBTi and cost concerns. Finally, recommendations are made to improve access to evidence-based care for people with insomnia in Australia.

DECLARATION

I certify that this thesis:

1. does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university

2. and the research within will not be submitted for any other future degree or diploma without the permission of Flinders University; and

3. to the best of my knowledge and belief, does not contain any material previously published or written by another person except where due reference is made in the text.

Signed: Jennifer Haycock

Date: 2 June 2023

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LIST OF ABBREVIATIONS

AASM	American Academy of Sleep Medicine
AHPRA	Australian Health Practitioner Regulation Agency
APAC	Australian Psychology Accreditation Council
APS	Australian Psychological Society
ASA	Australasian Sleep Association
BBTi	Brief Behavioural Therapy for insomnia
BEACH	Bettering the Evaluation and Care of Health Study
CBT	Cognitive Behavioural Therapy
CBTi	Cognitive Behavioural Therapy for insomnia
DSM-V	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
EMDR	Eye Movement Desensitisation and Reprocessing
GP	General Practitioner
GPMHP	GP Mental Health Treatment Plan
HP	Health professional
ICSD-3	International Classification of Sleep Disorders-third edition
MBS	Medicare Benefits Schedule
MHCP	Mental Health Care Plan
MHTP	Mental Health Treatment Plan
MOSiP	Management of Sleep Apnea and Insomnia in Primary care study
NCSHSR	National Centre for Sleep Health Services Research
NHMRC	National Health and Medical Research Commission
NMHC	National Mental Health Commission

OSA	Obstructive Sleep Apnea
PBS	Pharmaceutical Benefits Scheme
RACGP	Royal Australian College of General Practitioners
REDCap	Research Electronic Data Capture
SD	Standard Deviation
SHF	Sleep Health Foundation
TIB	Time in bed

PUBLICATIONS

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PRESENTATIONS

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Haycock, J., Hoon, E., Sweetman, A., Lack, L., Lovato, N. Managing Insomnia: Current Practices, Knowledge and Attitudes of Psychologists. Poster Presentation. *Flinders University College of Medicine and Public Health Emerging Leaders Showcase 2021,* 25-26 November 2021, Adelaide: Australia.

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1 INTRODUCTION

Insomnia is the most common sleep disorder in Australia, with 10-15% of adults experiencing chronic difficulty falling asleep or staying asleep which causes significant daytime impairment (Deloitte Access Economics, 2017; Reynolds et al., 2019). Primary Care is the first point of contact with the health system for people suffering from insomnia and General Practitioner (GP) clinical guidelines recommend Cognitive Behavioural Therapy for insomnia (CBTi) (Ree et al., 2017). However, most GPs currently prescribe hypnotic or sedative medications which are associated with high rates of adverse side effects, development of dependence, and withdrawal effects (Miller et al., 2017). General Practitioners are potentially well placed to provide treatment and support, however current management appears somewhat problematic. Despite clear guidelines for the treatment of insomnia, most people with insomnia do not gain access to the evidence based and recommended treatment, CBTi. The thesis addresses this large disparity between clinical guidelines and clinical practice.

The studies described in this thesis form part of a larger body of work conducted by the National Centre for Sleep Health Services Research (NCSHSR - www.ncshsr.com/). The Centre of Research Excellence (CRE) National Centre for Sleep Health Services Research is aimed at positioning Primary Care at the centre of sleep health management (National Centre for Sleep Health Services Research, 2019).

1.1 Insomnia definition, prevalence and causes

1.1.1 Definition of insomnia

Insomnia is defined as difficulty getting to sleep, staying asleep or waking too early on at least three nights per week, despite having adequate opportunity for sleep (American Psychiatric Association, 2013). Since 2013 the definition of insomnia has also required that these night-time symptoms are also associated with significant impairment of daytime functioning such as fatigue and difficulties with everyday cognitive, emotional, and physical functioning. Insomnia persisting for longer than three months is classified as chronic, self-perpetuating, and can persist for years and even decades (Buysse et al., 2008; Morin, Belanger, et al., 2009).

1.1.2 Prevalence of insomnia

Insomnia is a very common condition, 11.3% of the Australian population are estimated to experience insomnia without comorbidities (Deloitte Access Economics, 2017). However, there is considerable variation in prevalence with estimates ranging from 5-33% (Appleton et al., 2022; Bin et al., 2012; Reynolds et al., 2019), largely due to differences in definitions. Population based data indicate that about one third of adults (30%-36%) report at least one nocturnal symptom of

insomnia, but this rate decreases to between 10-15% when daytime consequences are also included in the definition of insomnia (Deloitte Access Economics, 2017).

Physical and mental health related quality of life is significantly impaired in people with insomnia (Hoon et al., 2021). Fatigue, irritability, and mild depression are commonly reported particularly after one or two nights of poor sleep (Smith et al., 2015). A high rate of comorbidity exists between chronic insomnia and mental health conditions, particularly depression and anxiety (Morin & Benca, 2012; Reynolds et al., 2019). Other chronic health conditions are also associated with insomnia including cardiometabolic diseases (Fernandez-Mendoza & Vgontzas, 2013; Grandner, 2014). There is emerging evidence that suggests insomnia is associated with an increased risk of dementia and may be linked to cognitive impairment in older adults (Sexton et al., 2019).

Insomnia also has a significant cost to society, the health care system and the economy. This condition is associated with reduced work performance and social participation, limited life aspirations, and feelings of isolation (Kyle et al., 2010). Insomnia also increases the risk of workplace and motor vehicle accidents (Daley et al., 2009). The total financial cost of insomnia in Australia was estimated in 2010 to be $10.9 billion (AUD) (Deloitte Access Economics, 2011). This significant cost highlights the importance of effective, accessible, and affordable treatments for insomnia.

1.1.3 Causes of insomnia

In the 1980's Arthur Spielman defined the 3Ps Model of insomnia (Spielman, Caruso, et al., 1987) as three factors (predisposing, precipitating and perpetuating factors) which interact to cause insomnia. Predisposing factors include traits that make some people more vulnerable to the development of insomnia, such as anxiety and worry. Precipitating factors are triggers such as stress which can lead to sleep disruptions. Perpetuating factors include hyperarousal and dysfunctional cognitions related to sleep, and habits that develop to help cope with the sleep disruption. These habits, such as spending more time in bed than is necessary, usually do not increase sleep time and can lead to increased wakefulness, which maintains the insomnia.

1.2 Insomnia treatment guidelines

Clinical practice guidelines in Australia and globally recommend Cognitive Behaviour Therapy for Insomnia (CBTi) as the first line treatment for insomnia. Examples of some recommended treatment guidelines are listed below:

- The Australasian Sleep Association (ASA) recommends CBTi as the first line treatment in the management of insomnia, and medication use, if deemed necessary, should be limited to the lowest dose and shortest duration possible (Miller et al., 2017; Ree et al., 2017).

- The Royal Australian College of General Practitioners (RACGP; 2020) clinical guidelines for the treatment of insomnia state that “Cognitive Behavioural Therapy (CBT) based treatment packages for chronic insomnia, including sleep restriction and stimulus control, are effective and therefore should be offered to patients as first-line treatment.”
- The Sleep Health Primary Care Resources (Zwar & Soenen, 2023) developed by the National Centre for Sleep Health Services Research in Australia states “The evidence based non-drug interventions BBTi [Brief Behavioural Therapy for insomnia] and CBTi administered by specifically trained health professionals including GPs and psychologists is recommended to be used as the first-line treatment for insomnia disorder by Australian and international sleep and medical guidelines.”
- The American Academy of Sleep Medicine (AASM) clinical practice guidelines strongly recommend that clinicians use multicomponent cognitive behavioral therapy for insomnia for the treatment of chronic insomnia disorder in Adults (Edinger et al., 2021a).

1.2.1 Cognitive Behavioural Therapy for insomnia (CBTi)

CBTi includes several components (behavioural interventions, cognitive restructuring and education) and is most effective when delivered as a package of care (Harvey et al., 2014; Trauer et al., 2015). The components of CBTi are discussed below.

Stimulus control therapy

Stimulus control therapy is a behavioural technique targeting the conditioned response that can occur with chronic insomnia. Behavioural modifications are recommended for the treatment of insomnia to break the cycle of maladaptive learning, this results in significant improvements in symptoms which are long lasting and superior to medications (Lack & Lovato, 2017; Morin, Vallières, et al., 2009; Schutte-Rodin et al., 2008; Wilson et al., 2019). As described by the 3Ps Model, insomnia can be a learned or conditioned response to a stressful event, this leads to wakefulness in bed and heighted arousal. Over time this distress becomes associated with the bedroom and bedtime routines, and causes further anxiety and hyper arousal, and prevents sleep (Lack & Lovato, 2017). This maladaptive learning process maintains the insomnia and behaviour change is needed to establish new associations and cues with bedtime and the bedroom environment (Lack & Lovato, 2017). Stimulus control therapy is based on operant conditioning where a behaviour is triggered by the presence or absence of a stimulus (Bootzin, 1972). Over a period of time of having trouble initiating sleep the person learns to associate the bedroom environment with not being able to sleep. The aim of stimulus control therapy is to associate the bedroom environment with falling asleep quickly such that falling asleep, rather than increased alertness, anxiety and hyper arousal, is triggered by the bedroom environment. Stimulus control therapy involves a set of instructions for the patient to follow including only going to bed when sleepy and getting out of bed after 15 minutes if unable to sleep. These instructions are repeated until sleep occurs within 15 minutes. Another important instruction is to get up at the same time

each morning regardless of sleep onset time (Lack & Lovato, 2017). This process helps to build sleep pressure and stabilise the circadian phase to guard against delaying sleep onsets over subsequent sleep opportunities. It avoids long periods of wakefulness in the bedroom environment and reassociates the bed with sleep. This process is most often used with sleep onset insomnia, but is effective with all types of insomnia.

Sleep restriction therapy

Sleep restriction therapy is a behavioural technique that aims to consolidate sleep by reducing time spent in bed to the pre-treatment average reported amount of time slept each night (Spielman, Caruso, et al., 1987). A sleep diary is used to calculate sleep efficiency (percentage of time in bed asleep), and then determine the optimal time to go to bed to attempt sleep and get out of bed in the morning. For example, if a person spends an average of eight hours in bed each night, and sleeps for an average of six hours, then their sleep efficiency is 75%. The person should spend six hours in bed each night and time in bed is titrated each week. When sleep efficacy exceeds 85% then time in bed is extended by 30 minutes. As sleep efficiency increases so can the time in bed over a period of weeks until time in bed is titrated to a point where daytime sleepiness and fatigue is no longer elevated, and the individual is meeting their sleep need while still maintaining a high (>85%) sleep efficiency (Kyle et al., 2015; Lack & Lovato, 2017). This process is usually recommended for sleep maintenance problems and patients spending considerably more time in bed than time being asleep.

Brief Behavioural Therapy (BBTi)

Brief behavioural therapy for insomnia (BBTi) is a brief, manualised, behavioural treatment programme that is based on the core principles of CBTi. BBTi has been found to be effective in the treatment of insomnia (Buysse et al., 2011; Falloon et al., 2015; Fuller et al., 2016) and could also be considered for use in Australian general practice. This more condensed treatment can be delivered over four shorter sessions following a set of rules (Lovato et al., 2014; Sweetman, Zwar, et al., 2021; Troxel et al., 2012) which focus on the behavioural components of CBTi, sleep restriction and stimulus control therapy. BBTi does not require large amounts of specialist training, other health practitioners including practice nurses could be trained to provide BBTi in a primary care setting. The more condensed nature of the BBTi treatment programme make it an ideal treatment option for less complex cases of insomnia in primary care.

Cognitive therapy

Cognitive therapy aims to identify, challenge, and replace dysfunctional thoughts, beliefs and attitudes about sleep and insomnia. Such misconceptions may include unrealistic expectations of sleep, fear of missing out on sleep, and overestimation of the negative consequences of poor sleep (Trauer et al., 2015). These dysfunctional beliefs are thought to exacerbate anxiety about their sleep pattern and thus intensify cognitive arousal and the insomnia (Harvey et al., 2014).

Relaxation therapy

Relaxation techniques such as meditation, progressive muscle relaxation, breathing techniques and mindfulness can limit cognitive arousal and reduce muscular tension, which helps facilitate sleep (Trauer et al., 2015). These techniques are usually used in combination with behavioural interventions.

Sleep education

Sleep education about the nature of sleep may include the build-up of sleep pressure with restricted sleep which is useful to understand when administering the behavioural therapies. The normal sleep pattern includes 90-minute sleep cycles in which light sleep phases occur regularly across the night and may naturally lead to brief awakenings. Sleep need varies between individuals such that less than the recommended sleep for a certain age group may be adequate for an individual with less sleep need than average. Circadian rhythms strongly determine the level of alertness and sleepiness. Mistimed rhythms may contribute to some types of insomnia.

Sleep hygiene instructions or tips for healthy sleep include advice about maintaining a regular sleep routine and reducing caffeine, alcohol, and nicotine intake, and are usually presented in a pamphlet or website link. Sleep hygiene material alone is not an effective treatment for chronic insomnia, but is often used as part of sleep education (Chung et al., 2018). Sleep hygiene instructions seem to be used as a default management of insomnia when other recommended non-drug treatments are unavailable and when practitioners are reluctant to prescribe medications.

CBTi administration

Treatment usually involves a referral to a psychologist specialised in delivering CBTi and is provided over six to eight sessions, this produces robust and durable improvements in sleep and daytime functioning. This is currently the best practice treatment for insomnia but remains underutilised (Qaseem et al., 2016).

CBTi can be administered face-to-face, via telehealth and more recently in a digital or online format. A number of digital CBTi programs have been developed and some are available in Australia such as This Way Up (https://thiswayup.org.au/courses/managing-insomnia-course). These self-administered digital sleep-improvement programs are based on CBTi techniques and are usually delivered in six sessions via the internet. While treatment outcomes are superior using face-to-face CBTi, digital CBTi trials do show significant improvements in insomnia symptoms (Espie et al., 2019; Lancee et al., 2019). Digital CBTi may complement face-to-face treatments and offer a more cost effective treatment option, and also improves access for patients in rural and remote locations, particularly when supported by a health professional (i.e. phone call check ins) (Forsell et al., 2019; Ho et al., 2014).

Evidence for CBTi

CBTi has been shown to be effective in addressing the cycle of insomnia, resulting in clinically meaningful reductions in insomnia symptoms and daytime impairments, and in maintaining these improvements over time (Davidson, Dawson, et al., 2019). There is strong evidence for the effectiveness of behavioural treatments for insomnia over many decades. The behavioural intervention of stimulus control therapy was first described by Richard Bootzin in 1972 (Bootzin, 1972), and sleep restriction developed by Arthur Spielman in 1987 (Spielman, Caruso, et al., 1987). Meta-analyses conducted in 1994 and 1995 on the efficacy of nonpharmacological interventions for insomnia found these behavioural treatments produced reliable and durable changes in the sleep patterns and subjective sleep experiences of people with insomnia (Morin et al., 1994; Murtagh & Greenwood, 1995). Studies comparing the effectiveness of CBTi and medications for insomnia found CBTi is an effective treatment for insomnia, producing results in a relatively short time (three to four weeks) that are more durable and without withdrawal, tolerance and side effects of medications (Mitchell et al., 2012). More recent reviews of clinical trials have found CBTi consistently produces clinically meaningful improvements in critical outcomes, is preferred by patients over pharmacological treatment and is cost-effective (Edinger et al., 2021b). While sleep restriction is associated with reduced total sleep time and increased daytime sleepiness and performance impairment (Kyle et al., 2014), these negative side effects are short term and can be carefully managed in clinical care.

1.2.2 Medications

Sedative hypnotics

Sedative hypnotics drugs, otherwise known as “sleeping pills”, are commonly used to treat insomnia. Benzodiazepines (e.g., temazepam, oxazepam, nitrazepam) and non-benzodiazepines or “z-drugs” (e.g., zopiclone, zolpidem, zaleplon) are a class of psychoactive drugs that are commonly used to treat short term, acute insomnia. Benzodiazepines are a large family of anxiolytics and hypnotics and first developed in the 1950s, these drugs were initially considered safe and were readily prescribed to treat insomnia (Mehdi, 2012). In the 1980s the addictive nature of benzodiazepines became apparent, and evidence of side effects began to emerge. In 1988 the UK Committee on Safety of Medicines published recommendations limiting treatment to four weeks at the lowest dose possible (Committee on Safety of Medicines (UK), 1988). Z-drugs were introduced in clinical practice in the 1990s as a safer alternative for the treatment of insomnia, but concerns relating to abuse and dependence have been increasingly reported (Schifano et al., 2019). These medications are not recommended for longer term use due to the high potential for developing dependence and withdrawal effects, and side effects such as falls and memory impairment which are particularly problematic for older adults (Brandt & Leong, 2017; Glass et al., 2005; Miller et al., 2017; Qaseem et al., 2016; Sweetman, Putland, et al., 2021). Despite these

problems with the sedative hypnotics, they are the most commonly prescribed drugs for insomnia and prescription for them often goes well beyond recommended restriction to short term use.

Antidepressants/antipsychotics

Antidepressants and antipsychotics (e.g., amitriptyline, mirtazapine, quetiapine) are commonly used to treat depression, and some have a sedating effect. These are not recommended for treatment of chronic insomnia but are often used in patients with comorbid depression (Sateia et al., 2017; Sweetman, Lack, et al., 2021).

Melatonin

Melatonin is a hormone that regulates the body's circadian rhythm timing. It can also be taken as a supplement and is sometimes used for jetlag or people with disrupted circadian rhythms. There is limited research on the efficacy of melatonin in the treatment of insomnia (Sateia et al., 2017) and it is only likely to be helpful if the circadian disruption is an underlying cause/perpetuating factor of the insomnia. Melatonin has been available in Australia without prescription since 2021 (Therapeutic Goods Administration, 2020), leading to increased availability with potential for use/misuse for treatment of insomnia.

1.2.3 Other treatments

Other psychological treatments such as Mindfulness, and Acceptance and Commitment Therapy (ACT) have been used for the treatment of insomnia. Although there is emerging evidence for their use in treatment of insomnia (Kennett et al., 2021; Ong et al., 2014; Rafihi-Ferreira et al., 2022), more research is needed in this area to assess its effectiveness in comparison with CBTi. Bright light therapy can also be helpful for the treatment of circadian rhythm disorders, but it's role in the treatment of insomnia needs further research (Lovato & Lack, 2013).

1.3 Primary care in Australia

Primary care is central to the delivery of care for insomnia. Primary care aims to promote health and wellbeing, prevent illness, provide treatment, assist rehabilitation and recovery, and provide a pathway to specialist services (Swerissen et al., 2018). Primary care practitioners include GPs, nurses, pharmacists, dentists and many allied health professionals including psychologists. Research in this thesis focused on GPs and psychologists as these health professionals are the primary providers in the management of insomnia. In 2021/2022 there were 34,654 registered GPs and 44,917 registered psychologists in Australia (Australian Health Practitioner Regulation Agency, 2022).

GPs are central to primary care and are commonly the first point of medical contact for people in Australia (Britt et al., 2016). Most GPs work in privately-owned practices within a largely publicly supported health care system with universal access to care. GPs are paid a fee for services

provided, and patients are eligible for a rebate through the Medicare Benefits Schedule (MBS) (Australian Government Department of Health, 2020c; Swerissen et al., 2018). The cost of most prescribed medications is also subsidised by the Pharmaceutical Benefits Scheme (PBS) (Australian Government Department of Health, 2020a). Funding streams exist within the MBS for the management of chronic diseases and mental health conditions (Australian Government Department of Health, 2014, 2018).

People with insomnia are eligible for subsidised psychological treatment through the Better Access initiative (Australian Government Department of Health, 2018). This initiative provides access to mental health trained professionals through use of an MBS funded GP Mental Health Treatment Plan (MHTP). To be eligible for a MHTP patient's need a diagnosis of a mental disorder in ICD-10 Chapter V Primary Care Version, which includes sleep problems and insomnia (Australian Government Department of Health, 2019; World Health Organization, 1996).

1.3.1 Treatment of insomnia in primary care

The current management of insomnia is problematic. Despite RACGP clinical guidelines recommending CBTi, the majority of patients are currently prescribed hypnotic or sedative medications. The Bettering the Evaluation and Care of Health (BEACH) program (Miller et al., 2017) investigated Australian general practice activities from 2000-2015. This study found that when patients present to their GP with insomnia 90% receive medication, 20% receive counselling or advice, and less than 1% receive a referral to a psychologist, sleep clinic, counsellor or psychiatrist. During the 15-year study period advice and education about sleep increased, but management actions (including medications, clinical treatments, tests ordered, and referrals made) changed little. The 2017 South Australian Health Omnibus Survey found that 53% of people with a current diagnosis of insomnia reported taking medication for their sleep (Hoon et al., 2021).

Despite clinical guidelines recommending CBTi, practitioners rely on sleep hygiene and pharmacotherapy for various reasons (Cheung, Atternäs, et al., 2014; Sake et al., 2019). Sleep hygiene advice is often provided to patients with insomnia as the initial treatment, however randomised clinical trials have found sleep hygiene to be ineffective in the treatment of chronic insomnia (Chung et al., 2018), and randomised controlled trials often use it as a credible but ineffective control condition to compare with active treatments such as CBTi.

Use of hypnotic or sedative medications for insomnia are problematic as they are associated with high rates of adverse side effects, and development of dependence and withdrawal effects following long term use (Glass et al., 2005; Miller et al., 2017; Qaseem et al., 2016; Sweetman, Putland, et al., 2021). Long term users of benzodiazepines, typically elderly people, have been found to have less total sleep than non-users, and develop tolerance and withdrawal symptoms which maintain medication use (Barter & Cormack, 1996). Sudden withdrawal from benzodiazepines has been found to produce rebound insomnia (Kales et al., 1991), with worse

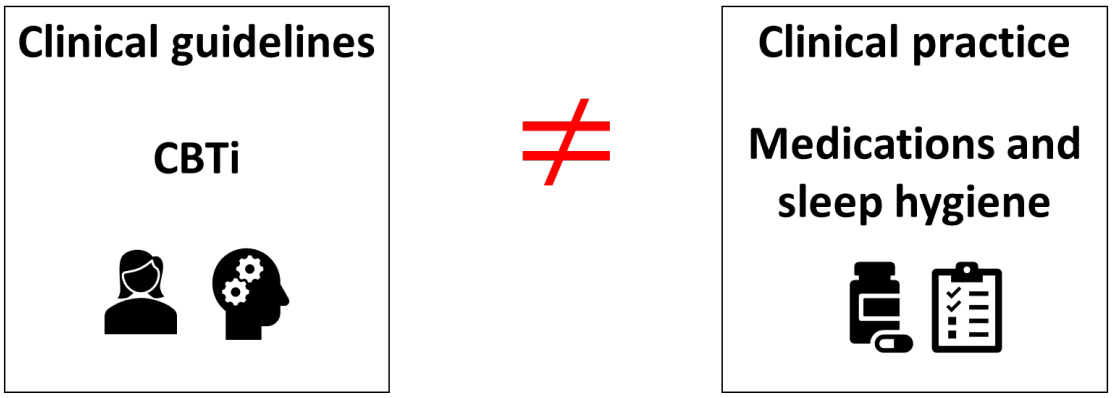
sleep and anxiety than before the use of the hypnotic. This can lead to continued drug-taking and increased risk of drug dependence (Kales et al., 1991) and also perpetuates dysfunctional beliefs around the need for medications to get a ‘solid’ night of sleep. Many elderly patients with patterns of long-term sedative-hypnotic use are motivated to withdraw from medications, but require specific withdrawal information and structured support from their GP (Barter & Cormack, 1996; Glass et al., 2005). Although acute insomnia is often triggered by a stressful life event, the development of chronic insomnia is dominated by behavioural and psychological causes. Medications do not address the underlying factors that maintain the insomnia, the therapeutic effects are lost as soon as the medication is ceased.

Primary care needs a range of different treatment options available to suit different patient needs. Stepped care models can be used to address some of the shortcomings in primary care such as different patient preferences and expectations, short consultation times, and the need for clear guidelines and referral pathways integrated into primary care. As a response to the 2014 National Mental Health Commission (NMHC) review of mental health services a guide titled *Working with the Stepped Care Model: Mental health services through general practice* has been produced (General Practice Mental Health Standards Collaboration, 2019). This guide supports the implementation of the Stepped Care Model for mental health treatment in primary care in Australia and promotes shared-care decision making with carers and consumers.

A service delivery model for insomnia based on “stepped care” principles was proposed by Espie (2009). This model enables CBTi to be delivered in a cost-effective way to achieve optimal development of insomnia treatment services and best clinical care. This model proposed five levels ranging from self-administered CBT to specialist care, people would be referred up to the next level if there is an incomplete therapeutic response to a lower level intervention (Espie, 2009). In a primary care setting a stepped-care model could be implemented to improve accessibility and delivery of behavioural treatments for insomnia (Mack & Rybarczyk, 2011). Stepped care models can include a range of evidence based CBTi treatments with varying levels of efficacy including self-help, digital CBTi, brief behavioural treatment, and CBTi with a psychologist. In a community setting stepped care models have been shown improve service efficiency, when provided with an initial low-intensity intervention for insomnia fewer people accessed the more intensive steps (Vincent & Walsh, 2013). A stepped care approach that added face-to-face CBTi for non-remitters to digital CBTi was found to be an efficacious model for insomnia treatment (Cheng et al (2019).

1.4 Summary

Previous research shows most patients presenting to primary care with insomnia are currently prescribed hypnotic or sedative medications. However, clinical guidelines and evidence show that CBTi is more effective, longer lasting and has fewer side effects compared with sleep medications. This represents a surprisingly large gap between clinical guidelines and clinical practice in the management of insomnia. Whenever new guidelines are recommended by expert panels for any specific disorder based on the best science it creates a gap with present practice (Cabana et al., 1999). In the case of insomnia management clinical practice seems stubbornly immovable. The evidence base for CBTi is uncontroversial and extends over 50 years. The medical guidelines for CBTi have now been present for over 20 years (Morin et al., 1999). Yet current clinical practice looks similar to that of decades ago. Exploring the reasons for this gap is important to fully understand the discrepancies in guidelines and practice, with the aim of improving our ability to move practice more quickly to that of clinical guidelines.



While there are many limitations in primary care which could impact on treatment choices, these are not fully understood and the impact on the management of insomnia is unclear. Patient treatment preferences, beliefs, attitudes, and experiences also play a key role in dictating sleep health outcomes, but these preferences are not well understood (Cheung et al., 2018). International research also identifies this discrepancy in treatment of chronic insomnia and discusses the issues and challenges (Morin, 2017; Ogeil et al., 2020; The Lancet, 2022).

In 2019 a Australian Government parliamentary inquiry acknowledged the considerable impact of insomnia on Australian society, and recommended that sleep health become a national priority (Commonwealth of Australia, 2019). A Centre of Research Excellence (CRE) National Centre for Sleep Health Services Research was established and is aimed at positioning Primary Care at the centre of sleep health management (National Centre for Sleep Health Services Research, 2019). The CRE was developed to address the discrepancies between guidelines and clinical practice, to investigate the reasons for this, and to explore suggestions for implementing new packages of

practice in primary care in order to increase the implementation of guidelines. This PhD was conducted as part of the CRE research programme.

Despite previous research, it is unclear why this large disparity still exists between clinical guidelines and clinical practice in the management of insomnia, and how this issue may effectively be addressed. This research aims to answer the following questions to address this significant gap in the management of insomnia in Australia.

1.4.1 Research questions

1. What are the barriers and facilitators to managing insomnia in primary care from the perspectives of people with insomnia, GPs and psychologists?
2. Why does this gap exist between clinical guidelines and clinical practice in the management of insomnia?
3. How can the management of insomnia in Australia be improved?

1.4.2 Research methodology

This research project used a pragmatic (Dewey, 1925; Morgan, 2014), inductive mixed methods approach to explore the current management of insomnia in Australia in a real-world setting. To fully understand and identify challenges in the management of insomnia, and make recommendations for improvements, it is essential to consider the range of perspectives of the key stakeholders involved. Pragmatism as a paradigm accepts that there are multiple realities and has an emphasis on human experience (Dewey, 1925; Morgan, 2014). Pragmatic research is oriented toward solving practical problems in the real world, and supports the use different research methods and analysis (Feilzer, 2010). The focus is on the problem to be researched and the consequences of the research.

The current mixed methods research project used both quantitative and qualitative research methods to extend our understandings of the experiences of people with insomnia and health professionals involved in their care. Four research studies were conducted to investigate the management of insomnia from a variety of perspectives. Research methods used include online surveys and semi-structured interviews.

- Study 1: Community sample – online survey
- Study 2: People with insomnia – online survey
- Study 3: General Practitioners – semi-structured interviews
- Study 4: Psychologists – semi-structured interviews

Data from two large online surveys were used to understand the help seeking experiences of people with insomnia. Surveys were used here to collect data from large samples, and identify people with insomnia who were not engaged in treatment who can be difficult to reach when

developing study samples. One survey included open ended questions to collect more detailed information about their experiences, and content analysis (Vaismoradi et al., 2013) was used to analyse these data. In depth qualitative interviews were conducted with GPs and psychologists to better understand their experiences of managing insomnia and to identify barriers and facilitators to changing clinical practice in this area. Interviews allowed for rich data to be collected from health professionals with a range of practice experiences. Thematic analysis (Braun & Clarke, 2006) was used to generate common themes and patterns in the interview data. The methodology of each study is discussed in detail in the research chapters.

The integration of these quantitative and qualitative research methods provided an opportunity to extend the scope of the research and explore different aspects of the same problem (Johnson et al., 2007). Data triangulation was used iteratively through the project in order to develop a more complete picture of the current management of insomnia in Australia and better understand the treatment journey, while considering the multiple perspectives of patients and health professionals. The findings of these research studies were combined to identify themes in the management of insomnia and barriers to the use of CBTi.

1.4.3 Research aims

This research aims to:

1. Investigate the help seeking behaviours and experiences of people with insomnia.
2. Better understand the current practices, knowledge and attitudes of GPs and psychologists in Australia managing insomnia.
3. Identify barriers and facilitators to the management of insomnia operating at both the patient and health practitioner level.
4. Identify ways to improve the treatment of insomnia in Australia.

Chapter 2 - Study 1: Sleep help seeking behaviours in large community sample survey. This chapter explores the sleep help seeking behaviours of Australian adults reporting current chronic insomnia symptoms and/or a previous diagnosis of insomnia. The aim of this chapter is to understand the help seeking behaviours of people in a community sample identified with current chronic insomnia and/or a reported previous diagnosis of insomnia.

Chapter 3 - Study 2: Sleep help seeking experiences of people with insomnia. This chapter explores the experiences of a large group of people who sought help with their insomnia in Australia by voluntarily registering on our research laboratory database. The aim of this chapter is to identify barriers and preferences in accessing treatment for insomnia.

Chapter 4 - Study 3: Interviews with GPs about management of insomnia. This chapter explores the current practices, knowledge and attitudes of general practitioners about the management of

insomnia. The aim of this chapter is to identify barriers and opportunities to managing insomnia by GPs in primary care.

Chapter 5 - Study 4: Interviews with Psychologists about management of insomnia. This chapter explores the current practices, knowledge and attitudes of psychologists about the management of insomnia. The aim of this chapter is to identify barriers and opportunities to managing insomnia by psychologists in Australia.

Chapter 6 combines the findings from research with people with insomnia, GPs and psychologists regarding the management of insomnia in Australia. The aim of this chapter is to synthesise the findings of the four studies in order to consider why this gap exists between clinical guidelines and clinical practice in the management of insomnia, identify barriers and opportunities and make recommendations to improve access to effective treatment for insomnia.

2 HELP SEEKING BEHAVIOURS OF PEOPLE WITH INSOMNIA IN AN AUSTRALIAN COMMUNITY SAMPLE

This chapter has been prepared as an academic manuscript intended for publication (journal to be decided) in 2023.

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2.1 Abstract

Introduction

Chronic insomnia negatively impacts quality of life for millions of Australians. Most people with insomnia do not receive the recommended treatment Cognitive Behavioural Therapy for insomnia (CBTi), and many are prescribed sedative-hypnotic medications. This study aims to better understand the help seeking behaviours of people with insomnia, and to identify barriers to treatment in order to improve access to evidence-based care.

Methods

A total of 2044 people in a community sample (Mean age = 46.6 years, *SD* = 17.3, 51.3% Female) completed the 2019 Sleep Health Foundation Insomnia Survey which included questions on sleeping difficulties, daytime impairment and help seeking behaviours. Chronic insomnia was identified using the ICSD-3 diagnostic criteria.

Results

Results show 14.8% (*n* = 303) of the total sample met diagnostic criteria for current chronic insomnia, but 91% (*n* = 275) of these participants do not have a previous diagnosis of insomnia. A third (32%) of these participants had discussed sleep with their GP in the past year and only 8% had seen a psychologist. The most common help seeking behaviours for this group were increasing time in bed (50%), strict sleep habits (47%), reducing time in bed (38%), alcohol (37%) and relaxation (36%).

Discussion

Despite evidence-based guidelines recommending CBTi as the ‘first line’ treatment for insomnia, in Australia most people manage their insomnia with strict sleep habits or relaxation techniques. These findings highlight the importance of GPs discussing sleep with patients, and having adequate knowledge and access to appropriate treatment and referral pathways for management of insomnia.

2.2 Introduction

In Australia 10-15% adults are estimated to suffer from chronic insomnia (Reynolds et al., 2019) which has a significant negative impact on quality of life (Hoon et al., 2021). Chronic insomnia is defined as frequent difficulty initiating or maintaining sleep (DIMs) despite adequate sleep opportunity, and impaired daytime functioning, lasting at least three months (American Academy of Sleep Medicine, 2014; American Psychiatric Association, 2013). Insomnia commonly co-occurs with other mental health conditions such as anxiety and depression (Hertenstein et al., 2019; Sweetman, Lack, et al., 2021), and is associated with reduced ability to participate in work and other daily tasks, and increased risk of accidents (Bharadwaj et al., 2021; Deloitte Access Economics, 2017; Garbarino et al., 2017; Leger et al., 2014; Shahly et al., 2012). The impact of poor sleep health has substantial economic costs due to reduced quality of life, productivity and increased use of health care resources (Natsky et al., 2020) and has been recognised as a national priority by the Australian Government parliamentary inquiry (Commonwealth of Australia, 2019).

The recommended 'first line' treatment for insomnia is Cognitive Behavioural Therapy for insomnia (CBTi) best provided by a trained psychologist (Edinger et al., 2021a; Qaseem et al., 2016; Ree et al., 2017; Royal Australian College of General Practitioners, 2015). General practitioners (GPs) in Australia may refer patients to a psychologist for treatment of insomnia using the Better Access Initiative Mental Health Care Treatment Plan (MHTP) (Australian Government Department of Health, 2021; Liotta, 2021). This initiative funds a rebate to eligible people that covers a large portion of the costs of appointments with a psychologist.

Despite clear clinical guidelines, very few people with insomnia receive a referral to a psychologist, most are prescribed sedative-hypnotic medications (Begum et al., 2021; Miller et al., 2017), which are associated with adverse side effects, dependence and withdrawal effects (Glass et al., 2005; Qaseem et al., 2016; Sweetman, Putland, et al., 2021). Analysis of Australian general practice activities from 2000–2015 (Miller et al., 2017) found 90% of patients with insomnia were prescribed medications, 20% received counselling and advice, and only 1% were referred to another health care provider (i.e. psychologist for CBTi).

Previous research shows patients' treatment preferences, beliefs, attitudes, and experiences play a key role in dictating sleep health outcomes, but these preferences are not well understood (Cheung et al., 2018). Studies indicate that use of self-care products and practices, often with medications, was frequent among people with insomnia (Meredith et al., 2020), and people with insomnia have often tried a number of self-help strategies before they seek professional help (Cheung, Bartlett, et al., 2014). Research with US veterans found that most people with self-

reported insomnia had not talked to their primary care provider about sleep, and preferred to try to work it out on their own (Shepardson et al., 2014). Previous research has indicated that increasing insomnia severity is associated with a preference for behavioural treatments, and older age with a preference for pharmacological treatments (Perez et al., 2022). It is important to understand what drives help seeking behaviours (Attard et al., 2019) to inform public health messaging and identify strategies to increase health care provider knowledge and improve access to care. Research at community level is important to understand patient motivations, symptoms, help seeking experiences before they present to clinical settings.

Only a minority of research on help-seeking behaviours of people with insomnia has focused on community samples. In an Austrian community sample of 1,004 participants, 7.8% (*n* = 78) met ICSD-3 diagnostic criteria for chronic insomnia. Of those with chronic insomnia, 52.6% reported seeking treatment for their sleep problem most commonly from their family doctor, psychologist or psychotherapist, and 34.6% reported taking sleeping pills (Seidel et al., 2021). In a community study of 2,231 adults in Hong Kong, 9.6% (*n* = 216) reported insomnia symptoms in the past 12 months (Liu et al., 2016). Only 40.3% of those with insomnia symptoms reported they sought help, and of these 34.5% selected complementary and alternative medicine (e.g., traditional Chinese medicine, aromatherapy, tai chi) as their preferred treatment, 33.3% selected conventional Western medicine practice (usually prescribed sleep medications). In a Canadian telephone survey with 2,001 participants, 9.5% (*n* = 194) met criteria for insomnia syndrome. Of those with insomnia syndrome 42.3% reported they had consulted a healthcare provider for sleep problems at least once in their lifetime, 35.7% reported using natural products, and 33.2% prescribed medications to help sleep (Morin et al., 2006). Very few studies have investigated treatment preferences for insomnia in an Australian community sample. In 2008 a large postal survey of 3,300 Australian adults found that 33% of the population reported difficultly falling or staying asleep, but only 11.1% had visited their doctor to discuss their sleep (Bartlett et al., 2008).

This current study explores help seeking behaviours in Australian adults with current chronic insomnia symptoms and/or a previous diagnosis of insomnia. As people with a previous diagnosis will have seen a health care professional to receive their diagnosis, it is important to compare the help seeking behaviours of people with insomnia symptoms with and without a diagnosis. Understanding current help-seeking behaviours for insomnia in Australia will assist with allocating resources for community messaging, developing treatment pathways and improving clinician education, to facilitate better access to evidence-based treatment for people with chronic insomnia.

2.3 Method

This descriptive study provides a secondary analysis of a cross-sectional web-based survey supported by the Sleep Health Foundation to investigate sleep health in the general population of Australia (Reynolds et al., 2019). A total of 2,044 adults completed the survey between April and May 2019 which included questions on sleeping difficulties, help seeking behaviours and treatments for sleep tried in the past. Respondents were recruited by Dynata to be representative of the Australian population on key indicators including age, sex, education, income, and location of residence (Adams et al., 2017). A three-stage randomisation process was used and specific project details were not included in the survey invitation in order to avoid selection bias for respondents with sleep problems (Appleton et al., 2020; Appleton et al., 2022). Ethics approval was obtained from the University of Adelaide Office of Research Ethics, Compliance and Integrity's Human Research Ethics Committee (H-2018-214).

2.3.1 Survey questions

Demographic questions

Respondents were asked demographic questions including gender (female, male, other); age (How old are you? Enter age) and to record the postcode of the house they live in.

To provide an estimation of socio-economic status respondents were also asked "*I would now like to ask you about your household's income. We are interested in how income relates to lifestyle and access to health services. Before tax is taken out, which of the following ranges best describes your household's income, from all sources, over the last 12 months?".* Respondents could select one response from a list of incomes increasing by intervals of $10,000, ranging from "up to $12,000" to "more than $200,000".

Chronic insomnia symptoms

Insomnia symptoms were defined according to current diagnostic criteria (ICSD-3) (American Academy of Sleep Medicine, 2014; Reynolds et al., 2019) as difficultly initiating or maintaining sleep (DIMS) at a frequency of "A few nights a week" or "every or almost every night" in the past month.

Daytime impairments were defined as experiencing one or more of the following daytime feelings "A few days a week" or "every or almost every day" in the past month: Sleepiness that interfered with daily activities; Felt sleepy when sitting during the day or early evening; Fatigue or exhaustion; Irritable or moody; Reduced motivation or energy; Reduced concentration, attention or memory; Hyperactive, impulsive or aggressive; Had little interest/pleasure in doing things; or Felt down, depressed or hopeless.

Adequate sleep opportunity was defined as reported current work schedule or typical weekday routine, including your duties at home, allows enough sleep “all/most of the time”.

To distinguish chronic insomnia from acute insomnia, chronicity of sleep problems was defined as the presence of the reported night sleep difficultly and daytime symptoms for “at least 3 months or more”.

Previous Insomnia Diagnosis

Previous Insomnia Diagnosis was defined as a "Yes" response to the question “*Have you been diagnosed with insomnia*?” (Possible response options were Yes/No).

Health professionals

Respondents were asked “*During the last 12 months have you discussed your sleep with any of the following health professionals?”* and could select multiple responses from the following list: general practitioner; physiotherapist; chiropractor; specialist in private practice; hospital physician (with or without admission); other physician; psychologist; psychiatrist; pharmacist; other (free text response); none of these.

Reason for discussing sleep with a health professional

Respondents who indicated they had discussed sleep with a health professional were asked what prompted the discussion. Possible responses were: I felt unwell physically; I felt unwell emotionally (moody, disturbed, etc); I was aware of feeling sleepy/ unfocussed; I was worried about my ability to do my job; I was worried about my ability to do other non-work tasks; in comparison to other peoples’ sleep patterns, I was worried about my sleep, although I wasn’t feeling tired during the day; I didn’t feel safe driving; a family member suggested I needed to speak to a professional; a friend suggested I needed to speak to a professional; I went to my health professional with another concern/ issue but sleep was discussed; the health professional raised the issue of my sleep.

Help seeking behaviours

A list of 19 help seeking behaviours were assessed by asking “*Over the past 12 months, how frequently have you used the following specifically to help you sleep?”* Possible treatments/therapies included the following: sleep medication prescribed by a doctor (e.g. temazepam, valium); melatonin prescribed by a doctor; melatonin bought on-line; herbal supplements (e.g. valerian); cognitive behavioural therapy (CBTi) techniques for insomnia from a health care professional; counselling or hypnosis; alternative therapy (e.g. acupuncture or homeopathy); online modules or sleep apps (e.g. insomnia apps); relaxation techniques; meditation or mindfulness techniques; stretching or yoga; strict sleep habits and timing; increased the amount of time spent in bed; reduced the amount of time spent in bed; alcohol (e.g. beer or wine); wearable devices (e.g. fitbit/fitness trackers); mask or earplugs; other store-bought sleep

aids (e.g. anti-snoring pillow); special mattress or bedding. Possible responses were: every night or almost every night; a few nights a week; a few nights a month; rarely; never; refused; don't know.

Reasons for not seeing a psychologist

Respondents who indicated they had discussed sleep with a health professional, but not seen a psychologist, were asked "*Why didn't you receive psychological treatment for your sleep disorder?"* Possible responses were: no private health insurance; cost concerns/too expensive; GP not referred me/raised as a possibility; concern about needing a mental health treatment plan to access psychologist; my sleep problem didn't bother me enough; other reason (free text response).

Treatment from a psychologist

Respondents who indicated they had received treatment for a sleep problem from a psychologist were asked what sort of treatment did you receive? Possible responses were CBTi; counselling; hypnosis; other (free text response).

To assess how psychology appointments were funded, respondents were asked *"How did you pay for psychologist consultations?"* Possible responses were: private health insurance (including gap payments); pay out of own pocket entirely; Medicare with mental health care plan; public hospital clinic. Respondents were also asked *"Did your GP provide you with a mental health care treatment plan to access a psychologist?"* Possible responses were Yes or No.

Other conditions

Respondents were asked if they had ever been told by a doctor that they had any medical conditions, from a list of 15 conditions including depression/bipolar disorder and anxiety/panic disorder.

2.3.2 Data analysis

Data were analysed using IBM SPSS version 25 (IBM Corporation, Armonk, NY, USA). Descriptive statistics are reported, and the Pearson χ^2 statistic was used to determine differences in the distribution of categorical variables of interest. Multivariate analyses were not conducted as this analysis is intended to be a high-level overview focussing on describing help seeking behaviours across different insomnia groups within this community sample.

2.4 Results

The survey was completed by 2,044 adults. In total 14.8% (*n* = 303) of respondents currently met ICSD-3 criteria for chronic insomnia and 7.5% (*n* = 153) reported a previous diagnosis of insomnia (Reynolds et al., 2019). To better understand the relationship between current chronic insomnia, previously diagnosed insomnia and help seeking behaviour, respondents were separated into four groups for this analysis (Table 2-1). Of those respondents who met current ICSD-3 criteria for insomnia (*n* = 303), the majority (*n* = 275) did not have a previous insomnia diagnosis.

Table 2-1: Respondents and classification of insomnia

Insomnia group name	**Description**	***n* (%)**
1. Current chronic insomnia and previous diagnosis	Currently meet ICSD-3 criteria for chronic insomnia and previously diagnosed with insomnia	28 (1.4%)
2. Previous insomnia diagnosis only	Previously diagnosed with insomnia but do not currently meet ICSD-3 criteria for chronic insomnia	125 (6.1%)
3. Current chronic insomnia only	Currently meet ICSD-3 criteria for chronic insomnia but not previously diagnosed with insomnia	275 (13.5%)
4. No current chronic insomnia and no previous diagnosis*	Do not currently meet ICSD-3 criteria for chronic insomnia and not previously diagnosed with insomnia	1616 (79.1%)

* the group with no current chronic insomnia and no previous diagnosis will include respondents with acute insomnia and less severe insomnia symptoms who do not meet ICSD-3 criteria for chronic insomnia.

Respondent characteristics by insomnia group are presented in Table 2-2. There were significant differences in respondent characteristics across current insomnia and previous diagnosis groups for gender (p=.005), age (p <.001), residential area (p=.01) and income (p < .001). Respondents with 'current chronic insomnia only' included more males (57.5% v 40.3%), were older (52 years v 42.6 years) and more lived in a rural location (38.5% v 34.4%) when compared to respondents with a 'previous insomnia diagnosis only'. Respondents with a 'previous insomnia diagnosis only' were more likely to have a lower annual household income of under $40,000 (41.2% v 33.5%) when compared to respondents with 'current chronic insomnia only'.

Table 2-2: Respondents characteristics [*n* (%)] by insomnia group, for all respondents.

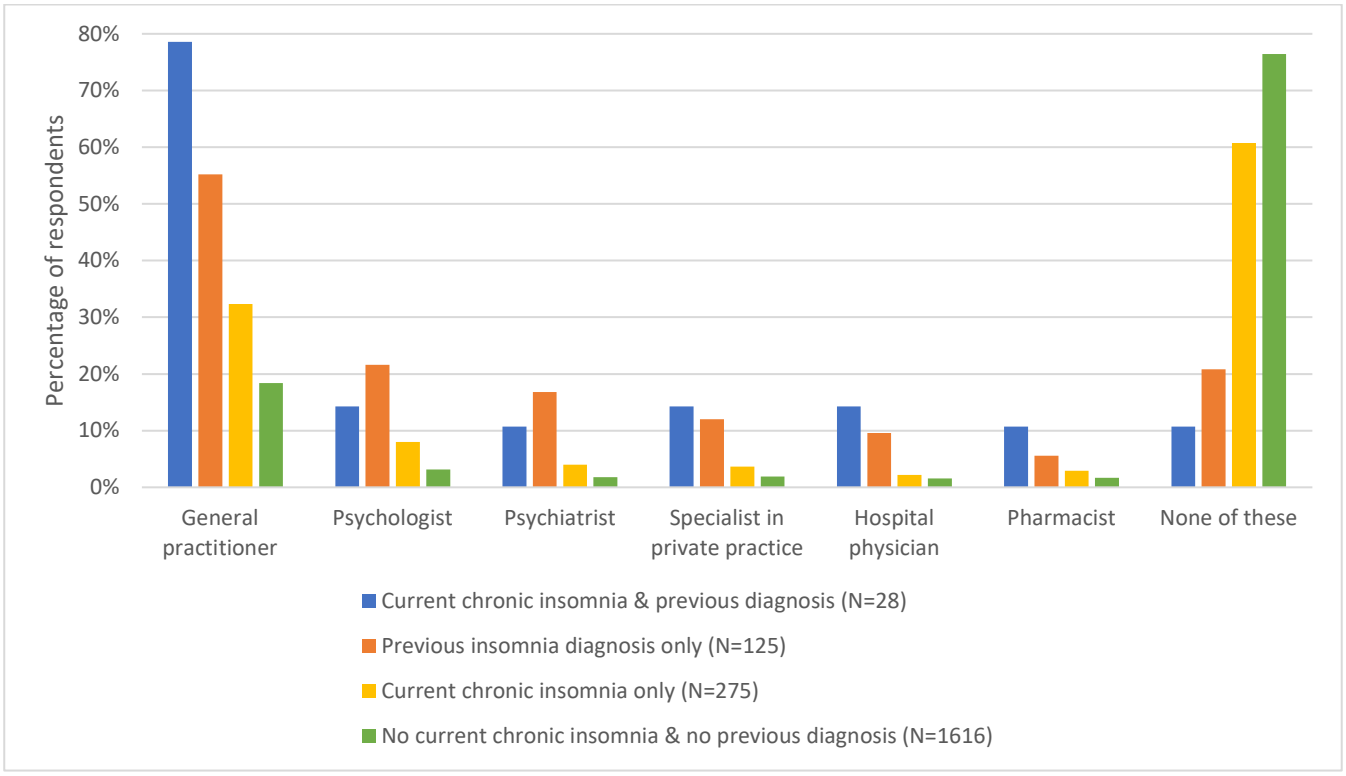
	Current chronic insomnia & previous diagnosis (*n* = 28) *n* (%)	**Previous insomnia diagnosis only (*n* = 125) *n* (%)**	**Current chronic insomnia only (*n* = 275) *n* (%)**	**No current chronic insomnia & no previous diagnosis (*n* = 1616) *n* (%)**	**Total sample (*n* = 2044) *n* (%)**	***P* value across insomnia groups**
Gender						
Male	12 (42.9%)	50 (40.3%)	158 (57.5%)	774 (47.9%)	994 (48.6%)	
Female	16 (57.1%)	74 (59.7%)	117 (42.5%)	841 (52.1%)	1048 (51.3%)	**.005**
Age						
(Mean and SD)	45.6 (16.5)	42.6 (17.6)	52.0 (17.9)	46.0 (17.0)	46.6 (17.3)	**<.001**
Residential area						
Metro	22 (78.6%)	82 (65.6%)	169 (61.5%)	1142 (70.7%)	1415 (69.2%)	
Rural/regional	6 (21.4%)	43 (34.4%)	106 (38.5%)	474 (29.3%)	629 (30.8%)	**.01**
Annual household income						
<$40,000	14 (50.0%)	49 (41.2%)	85 (33.5%)	395 (28.4%)	543 (30.3%)	
$40,001-$80,000	11 (39.3%)	32 (26.9%)	103 (40.6%)	442 (31.7%)	588 (32.8%)	
>$80,001	3 (10.7%)	38 (31.9%)	66 (26.0%)	556 (39.9%)	663 (37.0%)	**<.001**

Bold p-value: significant at the .05 level. Chi squared, age ANOVA.

2.4.1 Discussing sleep with health professionals

Figure 1-2 displays the prevalence of respondents discussing sleep with health professionals in the past year, by insomnia group. As expected, respondents with a previous insomnia diagnosis were more likely to have discussed sleep with a health professional than those without a diagnosis, regardless of current chronic insomnia. Almost one third (32.4%) of respondents with 'current chronic insomnia only' (no previous diagnosis) had discussed sleep with their GP in the past year, and 60.7% of this group had not discussed sleep with any health professional. Very few respondents reported discussing sleep with a psychologist, the most likely (21.6%) were respondents with a 'previous insomnia diagnosis only' (no current chronic insomnia). See Appendix 1 for data tables.

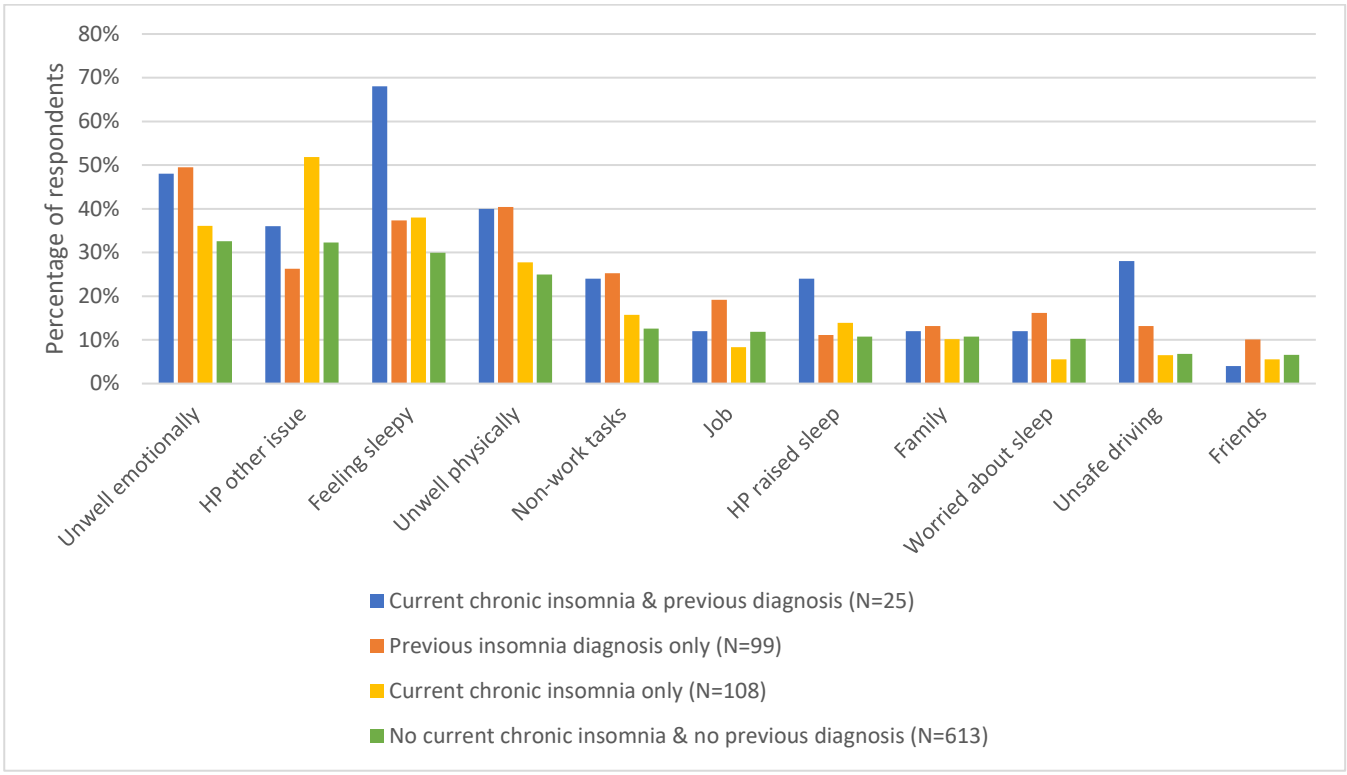
Figure 2-1: The percentage of respondents discussing sleep with health professionals in past year by insomnia group, for all respondents.



2.4.2 Reasons for seeing a health professional

Figure 2-2 illustrates the frequency of reasons for discussing sleep with a health professional by insomnia group. The most common reasons varied across groups, for respondents with 'current chronic insomnia and a previous insomnia diagnosis' the most common reasons to discuss sleep with a health professional were feeling sleepy (68%), and unwell emotionally (48%) or physically (40%). In contrast, respondents with 'current chronic insomnia only' (no previous diagnosis) were most likely to see a health professional with another concern/issue but sleep was discussed (51.9%).

Figure 2-2: The percentage of respondents reporting reasons for discussing sleep with a health professional by insomnia group, for respondents who saw a health professional in the past year.

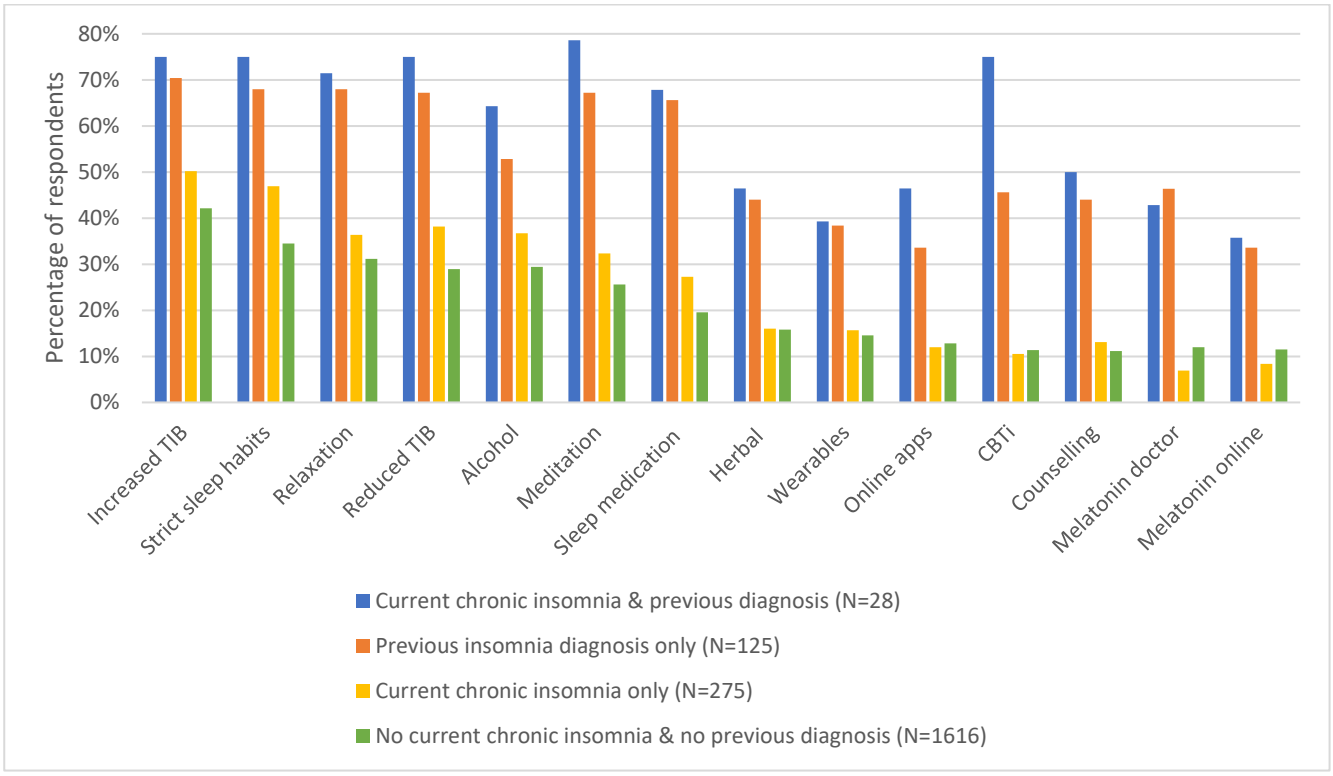


HP= Health Professional.

2.4.3 Help seeking behaviours

Figure 2-3 displays the prevalence of treatments and sleep behaviours used by respondents in the past year for each of the insomnia groups. Respondents with a previous insomnia diagnosis were more likely to engage in all types of help seeking behaviours compared to respondents without a diagnosis, regardless of current chronic insomnia. The most common help seeking behaviours for all groups were adjusting sleep routines (strict sleep habits, increasing or reducing time in bed), relaxation, meditation and mindfulness techniques, alcohol and sleep medications. Interestingly, the percentage of respondents engaging in CBTi varied considerably between groups, with 75% in the 'current chronic insomnia and previous diagnosis group', and 10.5% in the 'current chronic insomnia only' group. See Appendix 3 for data tables.

Figure 2-3: The percentage of respondents reporting treatments and sleep behaviours ever used in past year by insomnia group, for all respondents.

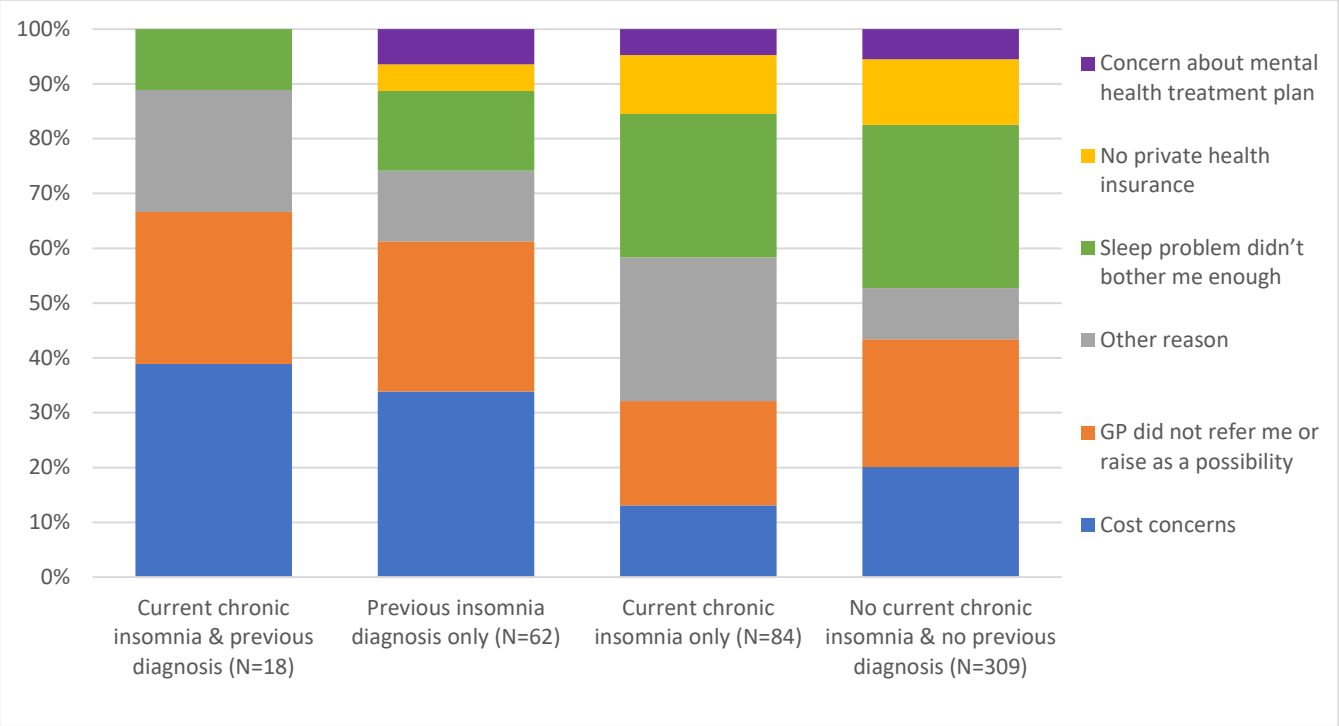


TIB=Time in bed

2.4.4 Reasons for not seeing a psychologist

Respondents who reported they had discussed their sleep with a health professional in the past year (*n* = 613) but did not see a psychologist (*n* = 509) were asked why they didn't receive psychological treatment for their sleep disorder (see Figure 2-4). The most common reason for not seeing a psychologist reported by those with 'current chronic insomnia and a previous diagnosis' was "cost concerns" (38.9%), followed by "GP did not refer me or raise as a possibility" (27.8%). These findings are also similar for respondents in the 'previous insomnia diagnosis only' group. More respondents in the 'current chronic insomnia only' group reported that the lack of treatment from a psychologist was for the reason "My sleep problem didn't bother me enough" (26.2%) or other reasons (26.2%) which included "I didn't think a psychologist could help" or "I have seen a psychologist in the past". See Appendix 4 for data tables.

Figure 2-4: The percentage of respondents reporting reasons for not seeing a psychologist by insomnia group, for respondents who saw a health professional but did not see a psychologist. (NB Respondents could only select one reason).



2.4.5 Respondents who saw a psychologist for sleep

A total of 104 respondents in the whole survey sample (5.1% of the survey sample) reported they had discussed sleep with a psychologist in the past year. Overall, respondents who saw a psychologist were more likely to report a previous diagnosis of anxiety (79.6%, *n* = 82) or depression (76.7%, *n* = 79) than insomnia (29.8%, *n* = 31).

2.4.6 Treatment from a psychologist, payment and mental health treatment plan

Of respondents who indicated they discussed sleep with a psychologist (*n* = 104), most (78.8%, *n* = 82) reported the treatment they received was counselling, and only 29.8% (*n* = 31) reported formal cognitive behavioural therapy for insomnia (CBTi).

The majority (85.6%, *n* = 89) of respondents who discussed sleep with a psychologist reported their GP provided a mental health treatment plan. When asked how they paid for treatment 66.3% (*n* = 69) reported they paid with a mental health treatment plan, 17.3% (*n* = 18) paid with private health insurance, 9.6% (*n* = 10) went to a public clinic and 6.7% (*n* = 7) paid out of their own pocket.

2.5 Discussion

This study provides a descriptive analysis of the help seeking behaviours of people with insomnia in a community sample, and compares findings for respondents with current chronic insomnia and/or a previous insomnia diagnosis. While the prevalence of chronic insomnia using ICSD-3 criteria reported in this Australia community sample is 14.8% (*n* = 303), only 28 of these people had a previous diagnosis of insomnia. This discussion will focus on the large group (*n* = 275) who met current ICSD-3 criteria for chronic insomnia but did not have a diagnosis. Little is known about the help seeking behaviours of people with current insomnia who do not receive a diagnosis, and understanding their experiences before they present to clinical settings may support improvements in access to care.

Respondents with current chronic insomnia and no previous diagnosis (*n* = 275) were less likely to seek help than respondents with a diagnosis, 60.7% of this group reported they had not discussed sleep with any health professional in the past year. This is similar to other research where the most preferred treatment for people with insomnia was to work it out on their own, followed by seeing a primary care provider (Shepardson et al., 2014). One-third (32.4%) of this group with current chronic insomnia and no previous diagnosis reported they discussed sleep with their GP in the past year, indicating they could have discussed their sleeping problems and been recommended treatment, but not been diagnosed with insomnia. One-half (51.9%) of these respondents reported they went to see a health professional with another concern or issue but sleep was discussed. This highlights the importance of GPs screening for sleeping difficulties when patients present with

other health issues (e.g., anxiety and depression). This group with current chronic insomnia and no previous diagnosis included significantly more males (57.5%) than the other groups, which is consistent with data indicating that women are more likely to engage with health services and receive a diagnosis (Royal Australian College of General Practitioners, 2022). This sample group was also older than other groups (mean age 52 years) and were more likely to live in rural settings where it could be difficult to access health services (Royal Australian College of General Practitioners, 2022).

Only 8% of this group with current chronic insomnia and no previous insomnia diagnosis reported they had discussed sleep with a psychologist in the past year. This group frequently reported they did not see a psychologist as their sleep problem didn't bother them enough (26.2%). Although this could indicate their sleep problems were less severe, it is important to highlight that early identification and treatment of insomnia results in better outcomes (Morin & Benca, 2012). There may also be people in the community who meet diagnostic criteria for chronic insomnia but do not prioritise the importance of sleep or may be unaware a psychologist could help with sleep problems. Previous research found people with insomnia did not seek care as they did not believe insomnia was a valid reason to seek help, or were concerned about GP knowledge and receiving prescriptions (Cheung, Bartlett, et al., 2014; Henry et al., 2013; Venn & Arber, 2012; Venn et al., 2013).

Respondents commonly relied on self-initiated strategies to manage their sleeping problems. Some of these strategies could be helpful and are evidence-based such as strict sleep habits (46.9%), decreasing time in bed (38.2%) and relaxation techniques (36.4%), but some are harmful to sleep such as increasing time in bed (50.2%) and alcohol use (36.7%). These findings are similar to previous research showing people with insomnia symptoms commonly rely on self-care treatments such as over the counter drugs, herbal products and meditation (Meredith et al., 2020). Help seeking patterns for this group were similar to those for the largest group (n = 1,616) of respondents with no current chronic insomnia or previous diagnosis. This latter group most likely will include respondents with acute insomnia or less severe insomnia symptoms not meeting ICSD-3 criteria for chronic insomnia, so it is expected some of these people would also engage in help seeking behaviours, some helpful and some unhelpful. This highlights the need for public health messaging to encourage effective evidence based self-management activities.

It is unsurprising that respondents with a previous insomnia diagnosis were more likely to have discussed sleep with a GP, engaged in help seeking, and be prescribed medications. People who reported they had been diagnosed with insomnia would most likely interpret this as a medical practitioner diagnosis, so would be expected to have seen a GP. This is consistent with previous research showing people with insomnia were more likely to discuss sleep with their GP than other health professionals (Cheung et al., 2014; Morin et al., 2006) and the most common treatments for

insomnia are medications (Liu et al., 2016; Seidel et al., 2021). The most common reasons reported for seeing a health professional for respondents with a previous diagnosis and current chronic insomnia were feeling sleepy (68%), unwell emotionally (48%) and/or physically (40%). Previous research also reports fatigue and psychological distress as the most common reasons for seeking help with poor sleep (Morin et al., 2006). A high percentage of the respondents with a previous diagnosis and current chronic insomnia reported receiving CBTi (75%, *n* = 21), this contrasts with the low number reporting they had seen a psychologist (14.3%, *n* = 4). Likewise, those with only an insomnia diagnosis reported CBTi at a higher rate (45.6%) than consulting with a psychologist (21.6%). This could indicate respondents' understanding of CBTi may be vague and different from that of researchers/clinicians specialising in CBTi.

Most common reasons reported for not seeing a psychologist for the insomnia diagnosed groups were cost concerns (~37%) or GP did not refer (~27%). Thus, only a small minority (~20%) of those diagnosed with insomnia, presumably from a GP, discussed their sleep with a psychologist. For the large majority of diagnosed insomnia cases who did not see a psychologist, there were significant barriers that could account for this including high cost and lack of referral from the GP. A higher proportion of respondents with a previous insomnia diagnosis but no current chronic insomnia (*n* = 125) reported discussing sleep with a psychologist (21.6%) in the past year, this could indicate they had received treatment for their sleep disorder in the past year and therefore no longer met criteria. The insomnia diagnosis could also have been over a year ago, so not all of this group may have needed care. This may indicate discussing sleep with a health professional, and receiving a diagnosis, increases opportunities for treatment.

Respondents who discussed sleep with a psychologist were most likely to report a previous diagnosis of anxiety or depression, very few reported a diagnosis of insomnia. The most common treatment from a psychologist was counselling, few reported CBTi. Mental health treatment plans have been reported as a treatment barrier in previous research (Cheung, Bartlett, et al., 2014), but in this study most respondents who saw a psychologist had a MHTP, and did not report concerns with using these.

The findings of this study add to the growing body of research indicating that most people (91%) with chronic insomnia symptoms are not diagnosed with insomnia. Despite 32% of people with insomnia having discussed sleep with their GP recently, most use self-initiated strategies to manage their insomnia, such as strict sleep routines and relaxation techniques. Further research is needed to explore whether the primary issue is patient's do not seek help or GP's do not have the expertise to make a diagnosis and implement treatment. Sleep is not always seen as a priority by the community, patients, and health professionals. Community messaging is important to help people with insomnia understand that GPs now have increasing ability to assess for chronic

insomnia and administer or refer patients for evidence-based behavioural treatment (Sweetman et al., 2020; Sweetman, Zwar, et al., 2021).

2.5.1 Study Strengths and Limitations

A key strength of this study is the use of survey data from a large community sample that was representative of the Australian population. As this was an online survey, respondents needed access to the internet, and could be more familiar with technology and possibly more interested in online treatments.

Limitations exist regarding the identification of respondents with insomnia. Respondents had to report one nocturnal and one day time symptom several times a week for at least three months to meet the ICSD-3 chronic insomnia criteria, but this was not confirmed via clinical interview and no attempt was made to measure insomnia severity. The number of respondents reporting chronic insomnia symptoms and a previous diagnosis is very low (n = 28), but this could be because most people with insomnia symptoms have not discussed their sleep with a health professional to receive a diagnosis.

The insomnia diagnosis reported could have been any time in the past, it is unclear whether respondents were diagnosed with insomnia relatively recently or long ago and have been successfully treated. This could account for the low number of people with a previous insomnia diagnosis who met current insomnia criteria. More investigation is needed to fully understand this discrepancy between previous diagnoses and current symptoms.

The number of respondents reporting they had received CBTi treatment is inconsistent, one explanation could be uncertainty of respondents' understanding of CBTi when responding to some treatment questions, and different interpretations of what CBTi represents and which treatment components should be included. More research is needed to better understand what treatment people are receiving when they see a psychologist for treatment of insomnia.

This is a cross-sectional study of a moment in time and provides a snapshot of help seeking behaviours of people with chronic insomnia symptoms. Future research could follow people in a community sample with insomnia symptoms over time to further investigate the time course of insomnia symptoms, diagnosis, treatment seeking and outcome.

2.6 Conclusion

Based on the findings of this study most people with chronic insomnia do not discuss their sleep problems with a health professional, instead they rely on self-initiated strategies which have varying demonstrated effectiveness and do not receive access to recommended treatment CBTi.

Public education is needed to raise the priority of sleep and knowledge of effective treatment options.

3 TREATMENT PREFERENCES AND HELP SEEKING EXPERIENCES OF AUSTRALIAN ADULTS WITH INSOMNIA

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Author Contributions: JH led the study conceptualisation and design, recruitment, data collection, data analysis, results interpretation, and manuscript preparation. LL, EH, AS and NL contributed to the study conceptualisation and design, data analysis, results interpretation, and manuscript preparation. SA contributed to the data analysis and results interpretation. KL and HS contributed to the recruitment and data collection.

3.1 Abstract

Introduction

Medical practice guidelines for the treatment of insomnia recommend Cognitive Behavioural Therapy for insomnia (CBTi) as the first-line treatment, ideally provided by a psychologist. However, most people with insomnia are prescribed sedative-hypnotic medicines instead. This study surveyed people seeking treatment for insomnia to better understand their help-seeking experiences and treatment preferences.

Methods

A total of 745 Australian adults who had previously expressed interest in a clinical trial treating insomnia (Mean age = 54.46 years, *SD* = 13.39, 69% Female) completed an online survey about sleeping difficulties, help seeking behaviours, and treatment preferences. Insomnia Severity Index (ISI) scores of >15 were used to identify people with clinical insomnia. Open-ended questions allowed respondents to expand and extend their responses. Content analysis was used to identify patterns and trends in these data.

Results

Results indicate that 64% of respondents with clinical insomnia discussed sleep with their general practitioner in the previous year but only 16% saw a psychologist about their sleep. Lack of referral to a psychologist (43%) and concerns about costs associated with treatment (21%) were the main reasons for not seeing a psychologist. Only 13% of respondents who selected CBTi as their preferred treatment had accessed this treatment. When asked what CBTi treatment included most described sleep hygiene or relaxation advice, less than 1% (*n* = 3) of those with clinical insomnia described treatment that included the behavioural components of CBTi.

Discussion

Most people in Australia who are seeking treatment for insomnia discuss sleep with their GP, but do not receive a referral to a psychologist or any CBTi. Understanding the help seeking experiences of people with insomnia helps identify barriers in the management of insomnia such as lack of awareness of recommended psychological treatments, and presents a challenge to improve access to evidence-based treatment.

3.2 Introduction

Insomnia is a common condition impacting the lives of millions of Australian every day. Chronic insomnia is defined as frequent difficulty getting to sleep or waking during the night despite adequate opportunity for sleep, and co-occurring daytime impairments, that last for at least three months (American Academy of Sleep Medicine, 2014; American Psychiatric Association, 2013). Chronic insomnia has a significant negative impact on quality of life (Hoon et al., 2021) and is associated with reduced ability to participate in work and other daily tasks, and increased risk of accidents (Deloitte Access Economics, 2017) and cardiometabolic diseases (Fernandez-Mendoza & Vgontzas, 2013; Grandner, 2014). Insomnia commonly co-occurs with other mental health conditions such as anxiety and depression (Lovato & Gradisar, 2014; Riemann et al., 2020; Sweetman, Lack, et al., 2021) and other sleep disorders, such as obstructive sleep apnea (Sweetman et al., 2019), and may exacerbate the severity of these co-morbid conditions. Despite the high prevalence rate of insomnia reported in 10-15% Australian adults (Deloitte Access Economics, 2017; Reynolds et al., 2019), the primary care management rate of insomnia in Australia from 2008-2015 is 1.31 per 100 GP encounters (Miller et al., 2017). This suggests a disconnect between the prevalence of insomnia and presentations to primary care, which further increases the negative health impact of insomnia.

The recommended treatment for insomnia is Cognitive Behavioural Therapy for insomnia (CBTi) which includes the behavioural treatments stimulus control therapy (Bootzin, 1972) and sleep restriction (Spielman, Saskin, et al., 1987) to address learned or conditioned responses, and cognitive therapy to address maladaptive thoughts and feelings about sleep (Edinger et al., 2021a; Qaseem et al., 2016; Ree et al., 2017; Royal Australian College of General Practitioners, 2015). Despite the substantial burden of insomnia, most patients do not receive the recommended first-line treatment CBTi most effectively administered by a trained psychologist. The BEACH study (Miller et al., 2017) found 90% of general practice patients with insomnia were prescribed sedative-hypnotic medications and only 1% received referral to a psychologist (Miller et al., 2017). More recent research found that, although prescriptions for benzodiazepine and benzodiazepine agonist drugs are declining, prescriptions for anti-depressants, anti-psychotic drugs and melatonin are increasing (Begum et al., 2021), and long-term benzodiazepine prescribing for some groups of patients with insomnia is still common (Woods et al., 2022).

In order to better understand the basis of this disparity between contemporary clinical guidelines and clinical practice, it is important to explore the help seeking behaviours, treatment preferences and perspectives of people with insomnia (Attard et al., 2019). With a better understanding of this disparity it may be possible to inform strategies designed to improve access to evidence-based treatments. International research in community samples shows many people with insomnia do not seek professional help. In Canada 42% of people with insomnia had discussed sleep with a health

professional (Morin et al., 2006), a similar rate is reported in Austria (Seidel et al., 2021) and in China 40.3% of adults with insomnia report they sought help (Liu et al., 2016). People with insomnia commonly report trying various self-help strategies before they seek professional help for their insomnia (Cheung, Bartlett, et al., 2014), but their treatment preferences are not well understood (Cheung et al., 2018). It is important to include the perspectives of people with insomnia who have not received effective treatment to better understand help seeking experiences and identify barriers to effective care. Patient decision making is influenced by many factors including individual illness and treatment beliefs, prior treatment experiences, psychosocial beliefs and external social factors. Being aware of these influences during clinical consultations may facilitate clinical management of the insomnia in a way that is meaningful for the patient (Cheung et al., 2018), increasing patient satisfaction and adherence/compliance with treatment. Patient treatment preferences, beliefs, attitudes, and experiences play a key role in dictating sleep health outcomes, but these preferences are not well understood (Cheung et al., 2018).

The aim of this study was to explore the help seeking experiences and treatment preferences of a large sample of people with insomnia who were actively seeking innovative and novel approaches to manage their insomnia having expressed their interest in a research trial. Studying this unique group will add to the help seeking analysis in a community sample in the previous chapter, and will provide the opportunity for a more detailed analysis and potentially different insights into help seeking experiences.

3.3 Method

Respondents were recruited from the Adelaide Institute for Sleep Health (AISH) Research Volunteer Registry. All respondents were seeking participation in a clinical trial for an emerging home-based self-administered therapy for insomnia but were not recruited for the trial due to the very high response rate and intake being limited to only 200 participants. In July 2021, potential participants who were not recruited for the insomnia treatment study were sent an email with alternative treatment suggestions. They were encouraged to discuss their sleep problems with their GP and provided contact details of sleep psychologists in their state.

Four months later in November 2021, a total of 2,077 people with insomnia symptoms were sent an email inviting them to take part in an online follow-up survey. The follow-up survey included questions about sleeping difficulties, treatments tried in the past, and preferred treatments. The survey questions were based on questions in the survey to register their interest for the trial (baseline survey) and the Sleep Health Foundation (SHF) Online Insomnia Survey of the general population (Appleton et al., 2022; Reynolds et al., 2019) that formed the basis of the Chapter 2 study. Open ended questions were also included to encourage respondents to extend and expand on their responses to closed questions.

The survey was created and sent to respondents using REDCap (Research electronic data capture), a secure web-based data capture platform designed to support research (Harris et al., 2019; Harris et al., 2009). Respondents were sent an email inviting them to take part in a follow-up survey between November 2021 and January 2022, and non-responders were sent three email reminders to complete the survey. Respondents were invited to enter a raffle draw to win 1 of 40 gift vouchers valued at $50 each in recognition of their contribution and time. Participation was voluntary, and all respondents provided written informed consent prior to completing the survey. Ethics approval was obtained from the Flinders University Human Research Ethics Committee (Project ID: 4770).

3.3.1 Follow-up survey questions

Demographic questions

Demographic variables of sex (female, male, other) and age (date of birth) were recorded at the baseline survey.

Other demographic variables were recorded in the follow-up survey including education (primary or high school, TAFE/College/Other or University); and financial situation (spend more than we get, have just enough money, some money left over, save a bit of money, save a lot of money).

Email follow-up

Respondents were asked whether they remembered receiving an email with information about treatment of insomnia from the Adelaide Institute for Sleep Health after they registered interest in participating in an insomnia research study in July 2021.

If respondents remembered receiving the email, they were asked if they contacted a GP, psychologist or other health professionals about their sleep problems after receiving the email.

If respondents reported they had contacted a health professional they were asked if they had seen any health professionals about their sleep problems after receiving this email.

These respondents were then asked about what happened when they spoke to the health professional and were encouraged to provide as much information as possible regarding these conversations and any treatment provided via an open-ended question.

Respondents who reported that they had not contacted a health professional to discuss their sleep were asked why this was the case and were encouraged to expand their answer via an open-ended question.

Insomnia

Insomnia Severity Index (ISI) (Bastien et al., 2001) scores in the follow-up survey were used to assess daytime and night time insomnia symptoms. ISI scores of 8-14 were used to identify people with sub-clinical insomnia symptoms, and >15 as clinical insomnia.

Epworth Sleepiness Scale (ESS) (Johns, 1991) scores were used to measure daytime sleepiness, to help describe the insomnia sample.

Health professionals

Respondents were asked if they had discussed their sleep with any of the following health professionals in the past 12 months: general practitioner; physiotherapist; chiropractor; specialist in private practice; hospital physician (with or without admission); other physician; psychologist; psychiatrist; pharmacist; other; none of these.

Reason for discussing sleep with a health professional

Respondents who indicated they had discussed their sleep with a health professional were asked which of the following reasons prompted them to discuss sleep with a health professional: I felt unwell physically; I felt unwell emotionally (moody, disturbed, etc); I was aware of feeling sleepy/ unfocussed; I was worried about my ability to do my job; I was worried about my ability to do other non-work tasks; in comparison to other peoples' sleep patterns, I was worried about my sleep, although I wasn't feeling tired during the day; I didn't feel safe driving; a family member suggested I needed to speak to a professional; a friend suggested I needed to speak to a professional; I went to my health professional with another concern/ issue but sleep was discussed; the health professional raised the issue of my sleep.

Symptoms hoping to improve

Respondents were asked which of the following symptoms or problems they were hoping to improve through treatment for their sleeping problems: waking up during the night; difficulty falling asleep; feeling fatigue or exhaustion; reduced motivation or energy; waking up too early; reduced concentration, attention or memory; feeling sleepiness that interferes with your daily activities; feeling irritable or moody; having little interest or pleasure in doing things; feeling down, depressed or hopeless; feeling sleepy when sitting quietly during the day or early evening; or feeling hyperactive, impulsive or aggressive.

Help seeking behaviours:

Respondents were asked if they had used the following treatments or behaviours specifically to help their sleep over the past 12 months: sleep medication prescribed by a doctor; melatonin prescribed by a doctor; melatonin bought on-line; herbal supplements such as valerian; cognitive behavioural therapy (CBTi) techniques for insomnia from a health care professional; counselling or

hypnosis; alternative therapy, such as acupuncture or homeopathy; online modules or sleep apps, including insomnia apps; relaxation techniques; meditation, mindfulness techniques; stretching, yoga; strict sleep habits and timing; increased the amount of time you spend in bed; reduced the amount of time you spend in bed; alcohol, beer or wine; wearable devices e.g., Fitbit, fitness trackers; an eye mask or earplugs; other store-bought sleep aids e.g. anti-snoring pillow; special mattress or bedding.

Did not see a psychologist

Respondents who indicated they had discussed sleep with a health professional, but not seen a psychologist, were asked to select from the following reasons why they didn't receive psychological treatment for their sleep disorder: no private health insurance; cost concerns too expensive, GP not referred me/raised as a possibility; concern about needing a mental health treatment plan to access psychologist; other reason (specify).

Respondents who indicated they did not seek or receive psychological treatment for an other reason were asked to describe this reason, and encouraged to provide as much information as possible in an open ended question.

Treatment from a psychologist

Respondents who indicated they had received treatment for a sleep problem from a psychologist were asked to select from the following what sort of treatment did you receive: Possible responses were CBTi; counselling; hypnosis; other.

Respondents who indicated they had received formal Cognitive Behavioural Therapy for insomnia (CBTi) or other treatment from a psychologist were asked to describe what this treatment involved, and encouraged to provide as much information as possible in an open ended question.

Respondents who indicated they had received treatment for a sleep problem from a psychologist were asked did your GP provide you with a mental health care treatment plan to access a psychologist. These respondents were also asked to select from the following how they paid for psychologist consultations: private health insurance (including gap payments); pay out of own pocket entirely; Medicare with mental health care plan; public hospital clinic.

Preferred treatment

Respondents were asked to select their preferred treatment from the following list: sleep medication prescribed by a doctor such as temazepam, valium; medications or herbal supplements from a chemist or purchased online such as valerian; relaxation, meditation, mindfulness techniques; cognitive behavioural therapy (CBTi) techniques for insomnia from a health care professional; strict sleep habits and timing; other therapy, such counselling, hypnosis, acupuncture

or homeopathy; and online treatment modules or sleep apps, including insomnia apps. They were also asked if they had been able to access their preferred treatment.

Respondents who reported they had been able to access their preferred treatment for their sleeping problems were asked was this treatment helpful, and encouraged to provide as much information as possible in an open-ended question.

Respondents who reported they had not been able to access their preferred treatment for their sleeping problems were asked why have you not accessed this treatment, and encouraged to provide as much information as possible in an open-ended question.

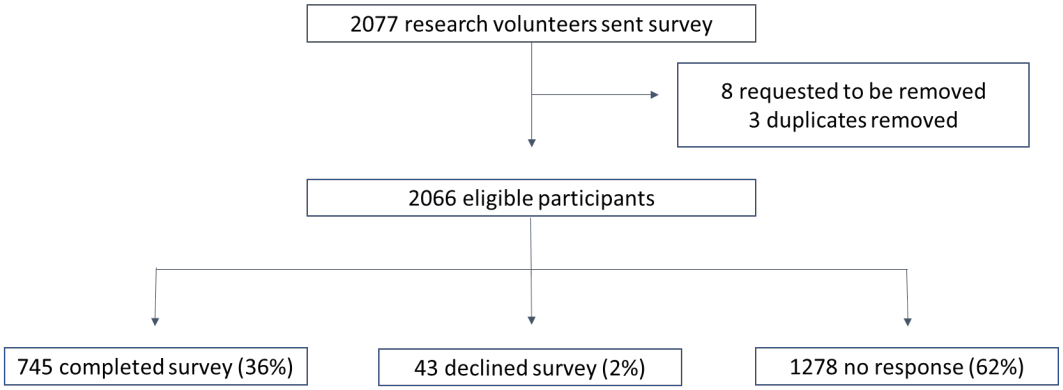
3.3.2 Data analysis

Data were analysed using IBM SPSS version 25 (IBM Corporation, Armonk, NY, USA). Descriptive statistics are reported, and chi-square analyses and ANOVAs were conducted to assess for differences in demographic and help seeking data between insomnia groups. Pearson's point biserial correlation coefficients were conducted to investigate the linear relationship between total ISI scores, age, sex and help seeking behaviours. P-values <0.05 were considered statistically significant. Content analysis was conducted to categorise and code text responses in open ended questions to determine patterns and trends (O'Cathain & Thomas, 2004; Vaismoradi et al., 2013). All responses to open ended questions were initially reviewed and coded by one researcher (JH), with two other researchers (EH and NL) independently coding 10% of responses. The overall coding results were reviewed and agreed to by all three coders.

3.4 Results

3.4.1 Respondents

The follow-up survey was sent to 2,077 people who previously self-reported they were experiencing insomnia symptoms and were seeking treatment. After the survey invitations were sent out, eight people requested to be removed from the research registry, and three duplicates were removed. A total of 2,066 eligible people were invited to complete the survey, of these 745 people (36%) gave consent, completed the follow-up survey and were used in the analysis, 43 people (2%) declined the consent question in the survey or emailed the researchers declining to complete the survey. A further 1,278 people (62%) did not respond to the survey.



Survey responders were more likely to be female (69%) than those who declined to complete the survey (63%) or did not respond to the survey invitation (63%). Respondents who completed the follow-up survey were slightly younger (Mean age 54.5 years, *SD* = 13.4) than those who declined (61.5 years, *SD* = 14.2), but older than those who did not respond (51 years, *SD* = 14.1). Mean ISI was slightly higher (18, *SD* = 4) for those who completed the survey compared to those who declined the survey (16, *SD* = 5). The mean ESS was 6 for all groups. No questions in the survey were mandatory and there are missing data throughout the survey, 569 respondents (76.4%) completed the entire survey but all responses to questions are used in analysis.

Sleep problems reported in follow-up survey

Insomnia Severity Index (ISI) scores ranged from 5-28, with a mean of 17.5 (*SD* = 4.23). Clinical insomnia (ISI 15-28) was reported in 75% of respondents (*n* = 505). Epworth Sleepiness Scores (ESS) ranged from 0-24, with a mean of 6.8 (*SD* = 4.93). Excessive daytime sleepiness (ESS 11+) was reported in 22% of respondents.

3.4.2 Characteristics of respondents

See Table 3-1 for characteristics of respondents. Respondents were separated into two insomnia groups based on ISI scores: clinical insomnia (ISI 15-28; *n* = 505) and sub-clinical insomnia symptoms (ISI 8-14; *n* = 170). The three respondents who reported ISI values under 8 were excluded from the insomnia severity analysis.

Table 3-1: Respondents characteristics and classification of insomnia

	Total sample N (%), or Mean (SD) *n* = 745	**Clinical insomnia *n* = 505 (74.5%)**	**Sub-clinical insomnia symptoms *n* = 170 (25.1%)**	**P value across insomnia groups**
Sex				
Female	512 (68.7%)	354 (70.1%)	109 (64.1%)	
Male	232 (31.1%)	150 (29.7%)	61 (35.9%)	
Other	1 (0.1%)	1 (0.2%)	0	.279
Age	54.5 (13.4)	54.1 (13.0)	55.9 (14.0)	.074
Education				
Primary or High School	122 (21.4%)	94 (22.4%)	26 (19.4%)	
TAFE/College/Other	186 (32.6%)	148 (35.3%)	32 (23.9%)	
University	262 (46.0%)	177 (42.2%)	76 (56.7%)	**.04**
Financial situation				
Spend more than we get	18 (3.5%)	15 (3.9%)	2 (1.7%)	
Have just enough money	66 (12.7%)	56 (14.5%)	7 (5.9%)	
Some money left over	21 (4.0%)	17 (4.4%)	3 (2.5%)	
Save a bit of money	223 (43.0%)	168 (43.6%)	50 (42.4%)	
Save a lot of money	191 (36.8%)	129 (33.5%)	56 (47.5%)	**.028**

Bold p-value: significant at the .05 level. Chi squared, age ANOVA.

As only one respondent reported a sex of other, this person was excluded from the sex analysis. There were significant differences in respondent characteristics across insomnia groups for education (p=.04) and financial situation (p=.028). Respondents with clinical insomnia were more likely to have attended TAFE or College (35.3% v 23.9%) but less likely to have attended University (42.2% v 56.7%) when compared to respondents with subclinical insomnia. Respondents with clinical insomnia were more likely to report they have just enough money (14.5% v 5.9%) and less likely to report they could save a lot of money (33.5% v 47.5%) when compared to respondents with subclinical insomnia.

3.4.3 Health professionals seen to discuss sleep

Among respondents with clinical insomnia, the health professionals most frequently contacted in the past year to discuss sleep with were GPs (64.2%), psychologists (16%) and pharmacists (13.9%). Respondents with more severe insomnia were more likely to discuss sleep with a health professional, the strongest positive correlations for insomnia severity were with GP (p < .001) and pharmacist (p < .001).

Younger respondents were more likely to seek mental health care, with negative correlations for age and psychologist (p < .001) and psychiatrist (p < .001). Female respondents were more likely

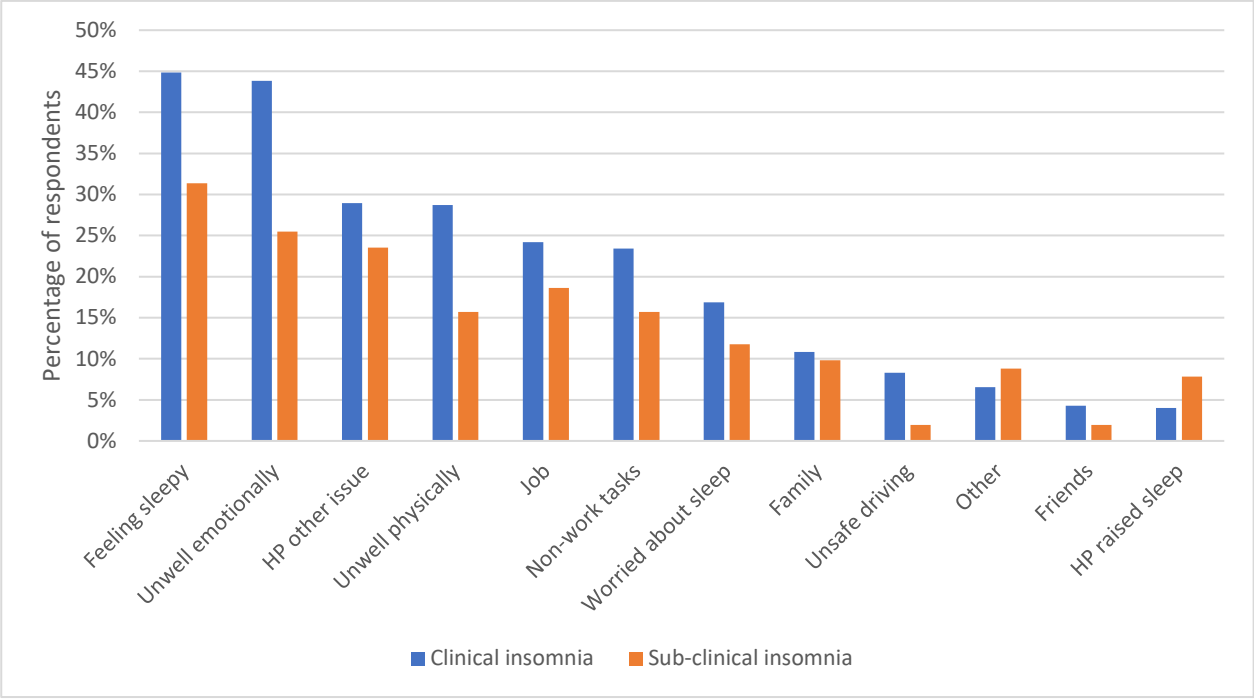
to see a medical health professional e.g., correlations between sex (female) and specialist (p = .006), pharmacist (p = .007), GP (p = .01) and other physician (p = .05), while males were more likely not to seek professional health e.g., correlations between sex (male) and "none of these" (p = .001). See Appendix 5 for data tables.

Reasons for seeing a health professional

Figure 3-1 illustrates the frequency of reasons for discussing sleep with a health professional by insomnia severity, and indicates that the most common reasons for both groups were feeling sleepy and unwell emotionally. Insomnia severity correlated positively with most reasons for seeking help. See Appendix 6 for data tables.

Sex correlated negatively (female) with feeling unwell emotionally (p =.006), indicating that females were more likely than males to discuss sleep with health professional due to feeling unwell emotionally (moody, disturbed etc). Age correlated negatively with a number of reasons for seeking help, younger people were more likely to seek professional help due being worried about ability to do non-work tasks (p <.001), worried about ability to do job (p <.001), family member suggested (p <.001), and also with feeling unwell physically/emotionally, sleepy.

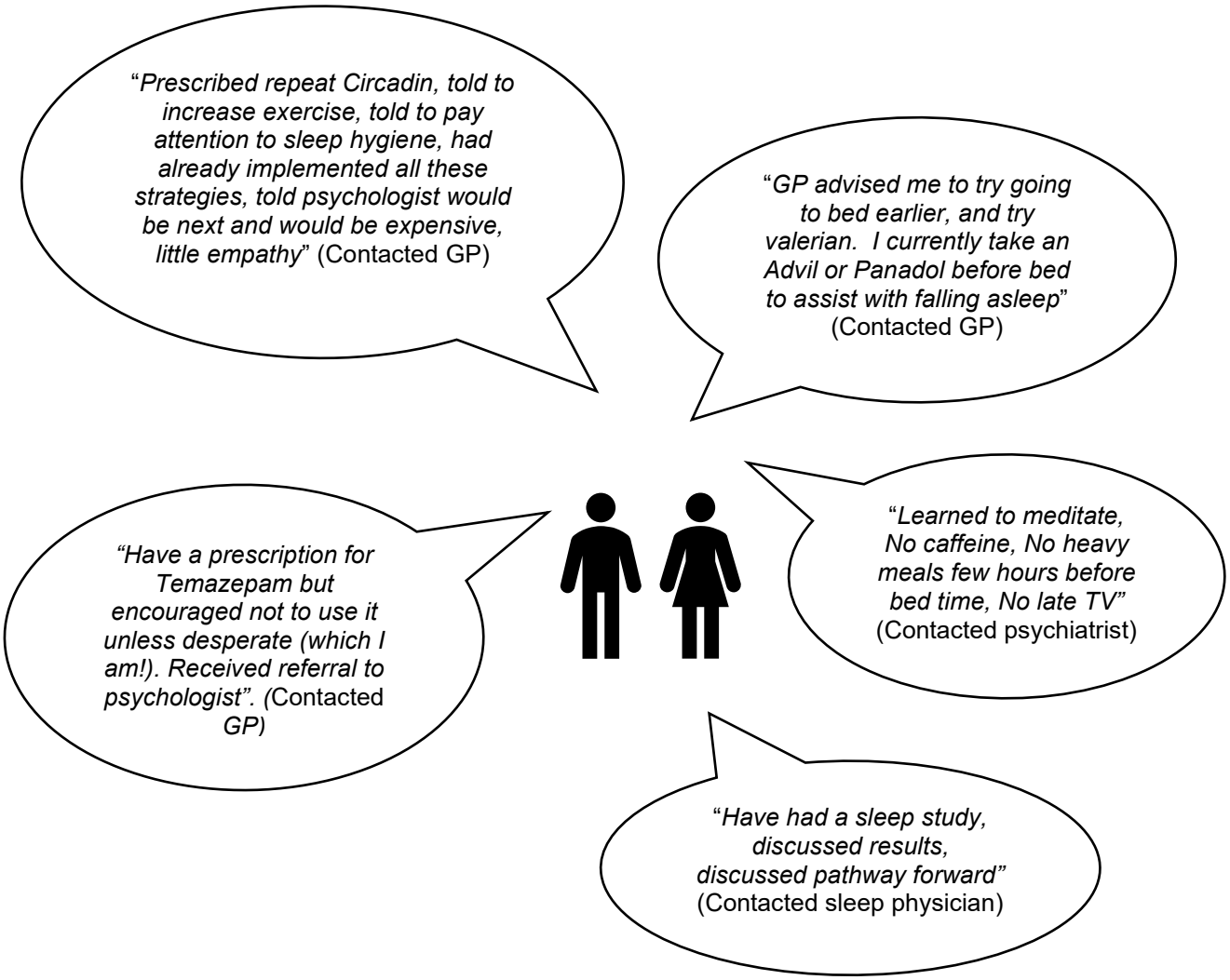
Figure 3-1: Frequency of reasons for discussing sleep with a health professional by insomnia severity.



What happened when contacted a health professional

Respondents who reported that they had contacted or seen a health professional in the past few months (*n* = 258/537, 48%) after receiving an email with treatment advice, were asked what happened (*n* = 243 responses). Over half (*n* = 146, 60.1%) of the respondents reported they were prescribed medication. Other common responses were; sleep hygiene and sleep routine advice (*n* = 38, 15.6%), referral to a sleep physician or sleep specialist (*n* = 35, 14.4%) or psychologist (*n* = 24, 9.9%). See Figure 3-2 below for exemplar quotes from respondents about what happened when they contacted a health professionals.

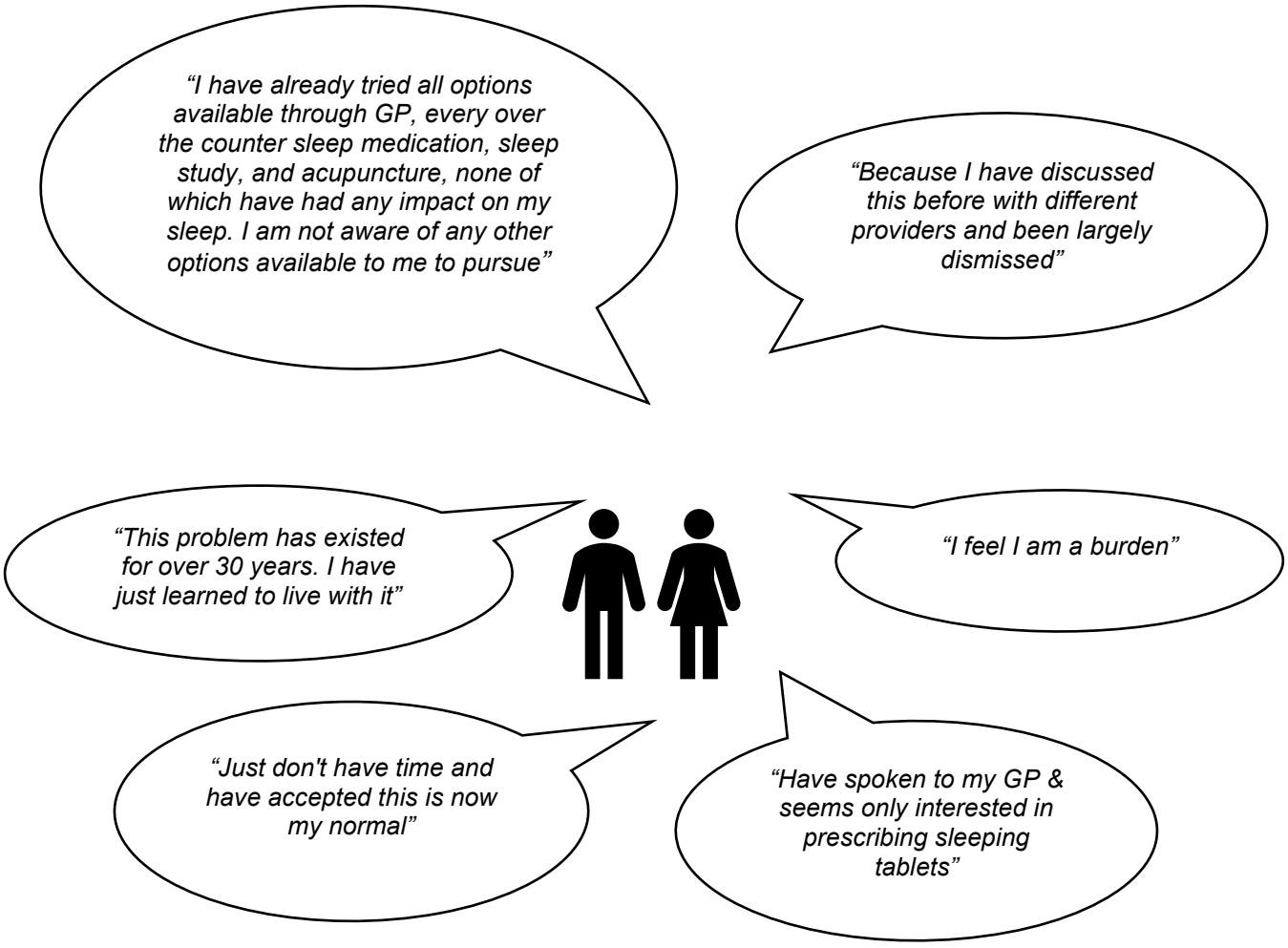
Figure 3-2: What happened when contacted a health professional



Reasons for not contacting a health professional

Respondents who reported they did not contact a health professional (*n* = 279/537, 52.0%) after receiving an email with treatment advice were asked why they did not contact anyone. Common reasons included respondents had discussed previously and tried everything, or felt they were not listened to (*n* = 87, 31.2%). Other reasons included concern the GP will only prescribe medication (*n* = 37, 13.3%), too busy and other concerns took priority (*n* = 42, 15.1%) or have just learnt to live with it and prefer to self-manage (*n* = 28, 10.0%). See Figure 3-3 below for exemplar quotes from respondents about reasoning for not contacting a health professional.

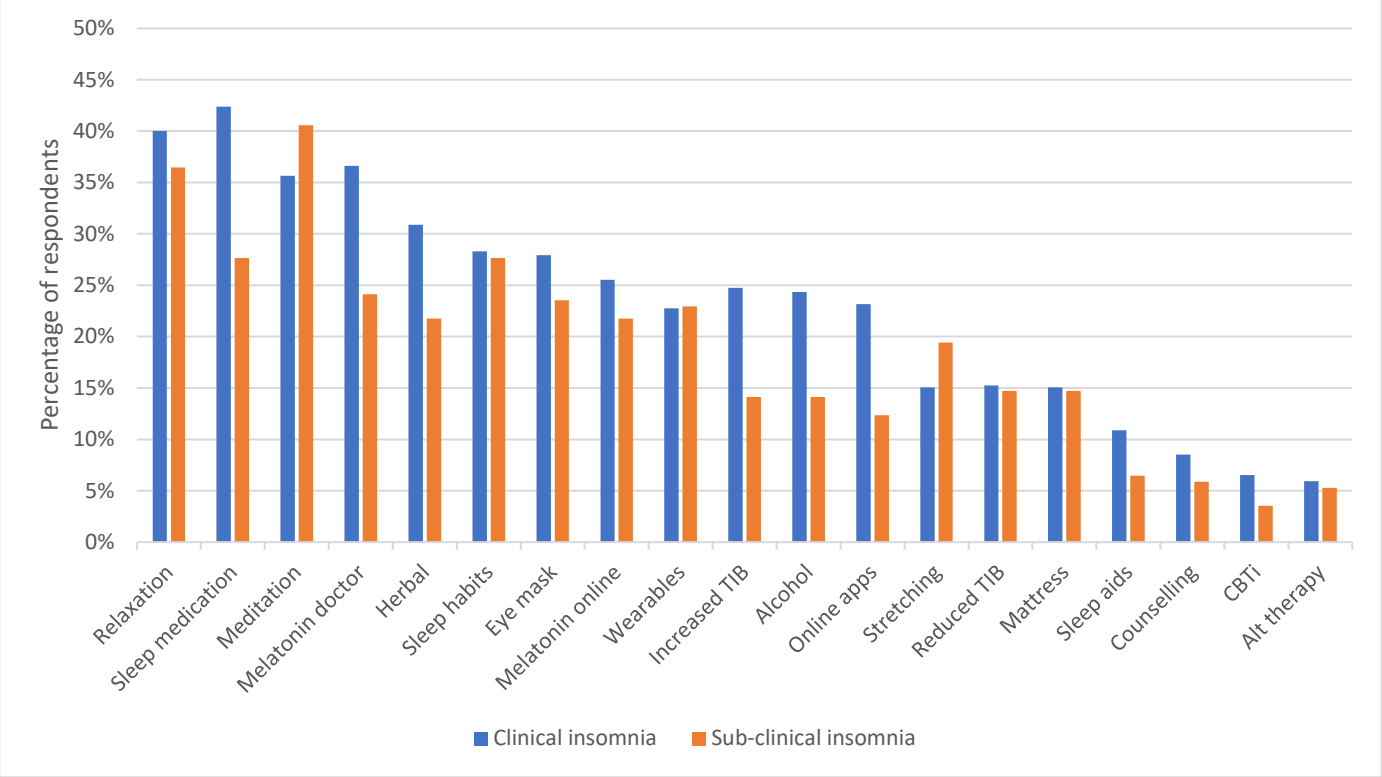
Figure 3-3: Reasons for not contacting a health professional



3.4.4 Treatments and behaviours to help sleep

Figure 3-4 displays the prevalence of treatments and behaviours used by the two severity groups in the past year to help sleep. The most common help seeking behaviours reported by people with clinical insomnia were relaxation/meditation and sleep medications, these behaviours were used by 36-42% of respondents in the past year. Only 6.5% of respondents with clinical insomnia reported they had used CBTi in the past year. See Appendix 7 for data tables.

Figure 3-4: Prevalence of treatments and behaviours used by respondents in the past year to help sleep by insomnia severity.



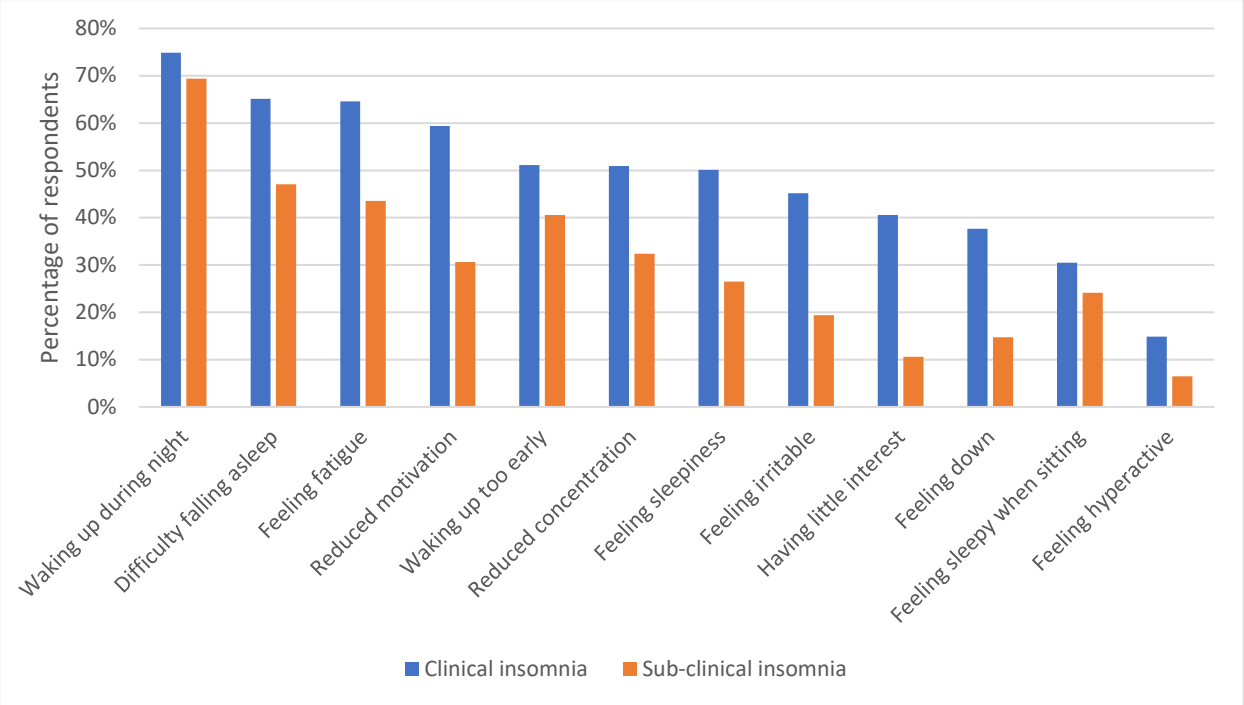
Insomnia severity correlated positively with some but not all of the common treatments, the strongest correlations were with sleep medications ($p < .001$), melatonin prescribed by a doctor ($p < .001$), online apps ($p < .001$), CBTi ($p = .001$), counselling ($p = .003$) and relaxation ($p = .004$). Insomnia severity also correlated positively with some unhelpful behaviours such as increased time in bed ($p = .001$). Age correlated positively with using sleep medications ($p = .005$) and negatively with meditation ($p = .005$).

Females were more likely than men to engage in most help seeking behaviours, particularly natural products and therapies. There was a strong negative correlation between sex (female) and relaxation ($p < .001$), meditation ($p < .001$), melatonin prescribed by a doctor ($p < .001$), herbal supplements ($p = .009$) and online apps ($p = .001$). Sex correlated positively (male) with alcohol use ($p < .001$).

Symptoms that respondents are hoping to improve through treatment

Figure 3-5 indicates the frequency of symptoms that respondents reportedly are hoping to improve through treatment by insomnia severity. Night time symptoms of waking during the night and difficultly falling asleep were commonly reported, along with feeling fatigue and reduced motivation. Insomnia severity correlated positively with all symptoms except waking up during the night. See Appendix 8 for data tables.

Figure 3-5: Frequency of symptoms respondents are hoping to improve through treatment by insomnia severity.



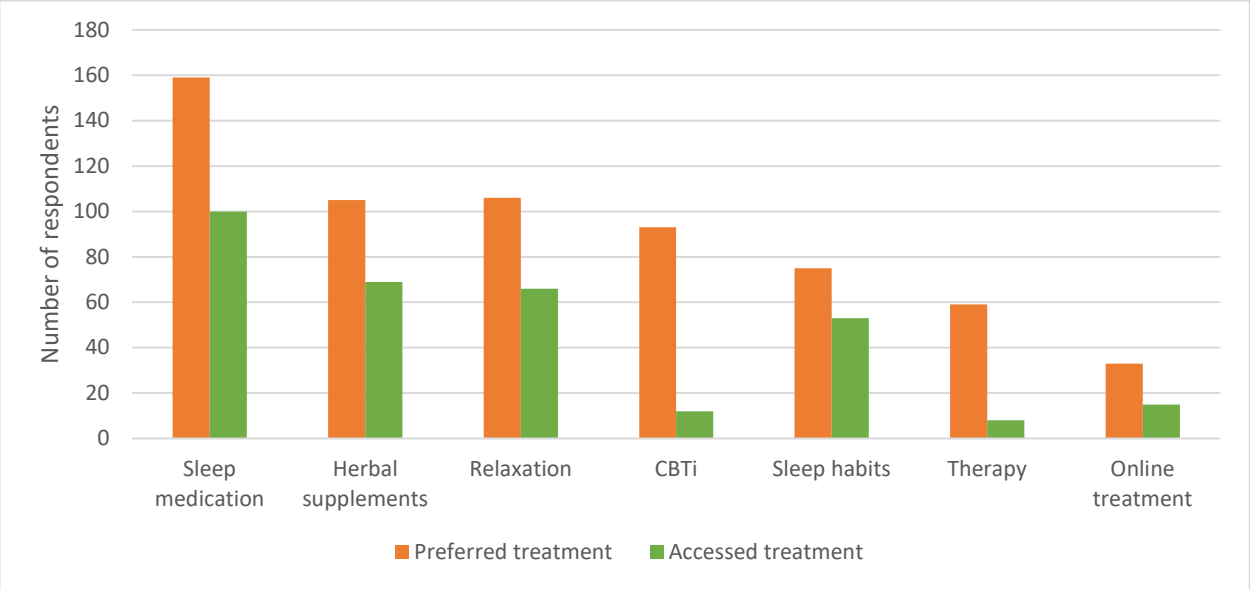
Age correlated positively with waking in the night (p <.001) and negatively with many daytime symptoms including feeling irritable (p <.001), feeling fatigue (p <.001) and feeling down (p <.001). Older people more concerned about waking in the night, while younger people more concerned about daytime symptoms.

Females were significantly more likely to report seeking treatment for waking in the night (p =.045) and reduced motivation (p =.045), when compared to males.

Preferred treatment

Figure 3-6 illustrates respondents most preferred treatment for their sleeping problem and whether they had accessed that treatment. When combined with medication or herbal supplements, 41.9% of respondents preferred pharmacological or herbal medicines. Behavioural strategies such as relaxation, meditation, mindfulness and CBTi were selected by 31.6% of respondents. The majority of respondents who selected medications from a doctor (62.9%) or chemist (65.7%), relaxation techniques (62.3%), or strict sleep habits (70.7%) had been able to access treatment. Only 12.9% of respondents who selected CBTi as their preferred treatment had been able to access treatment.

Figure 3-6: Most preferred treatments and accessed treatments.



Helpfulness of preferred treatment

Respondents who reported they had been able to access their preferred treatment were asked if it was helpful, 303 respondents responded. For respondents who reported their preferred treatment was sleep medication, most reported (77%, *n* = 77/100) they found this helpful in the short term, but many expressed concern about taking medications long term e.g., "*It's helpful but I do worry about the dependency on sleeping pills and ultimately would like to one day not need them*" and "*Temazepam was very effective to start with, but I can't use it several days in a row b/c then it stops working. Even now taking it 3 times a week, sometimes it hardly works and sleep is very poor*".

Most respondents (50%, *n* = 33/66) who reported their preferred treatment was relaxation found this somewhat helpful but only in the short term e.g., "*Yes it helps me fall asleep but it doesn't keep me asleep. When I wake in the middle of the night I very rarely get back to sleep*" while others (17%, *n* = 11/66) reported relaxation was ineffective e.g., "*I've tried on my own to meditate before bed but it's never helped*".

Only a small number of respondents who reported their preferred treatment was CBTi had been able to access treatment (13%, *n* = 12/93) and most commented they had only just started treatment e.g., "*I cannot assess the efficacy of the treatment as I have only begun with the psychologist*".

Reasons for not being able to access preferred treatment

Respondents who reported they had not been able to access their preferred treatment were asked why not, 289 respondents responded. For respondents who reported their preferred treatment was sleep medications the most common reason they could not access this treatment was GP would not prescribe (44%, *n* = 26/59) e.g., "*They don't like prescribing sleeping tablets long term".*

For respondents whose preferred treatment was CBTi the most common reason why they could not access treatment was they were unaware (56%, *n* = 45/81) *"I was not aware of this, no doctor ever suggested this option*". Other barriers to CBTi treatment included costs, time and access issues e.g., "*I don't have private health insurance currently and I can not afford to do so*" and "*No time, don't know where to go".*

3.4.5 Psychological treatment

Table 3-2 shows the treatments received from a psychologist and payment methods for the 102 respondents who indicated they had seen a psychologist for their sleep problem. Most (71.6%) reported they received counselling, and only 19.6% received CBTi. The majority (81.4%) of respondents who saw a psychologist reported their GP provided a Medicare mental health care plan.

Table 3-2: Treatment from a psychologist (*n* = 102)

You indicated that you have received treatment for a sleep problem from a psychologist. What sort of treatment did you receive?		
CBTi	20	19.6%
Counselling	73	71.6%
Hypnosis	3	2.9%
Other	19	18.6%
Did your GP provide you with a mental health care treatment plan to access a psychologist?		
Yes	83	81.4%
How did you pay for psychologist consultations?		
Private health insurance (including gap payments)	9	8.8%
Pay out of own pocket entirely	12	11.8%
Medicare with mental health care plan	70	68.6%
Public hospital clinic	4	3.9%

Descriptions of CBTi

Respondents who reported they received CBTi from either a psychologist or psychiatrist (*n* = 23) were asked to describe the treatment. The most common responses related to sleep hygiene strategies describing bedtime routines and behaviours to help sleep (43%, *n* = 10) e.g., "*Strategies to help improve relaxation before sleep. Regular things to undertake such as complete distraction from life's worries such as doing a crossword before bed. Glass of milk before bed. Complete darkness in the bedroom. Get up and read*". Other common responses related to relaxation (22%, *n* = 5) and mindfulness (17%, *n* = 4) techniques e.g., "*Mindful techniques to try and stop the constant racing thoughts that create anxiety and therefore stop me sleeping*" and general counselling (22%, *n* = 5) "*Counselling and delving into separate psychological issues*". A very small number of respondents described the behavioural components of CBTi (13%, *n* = 3), less than 1% of those with clinical insomnia. This was assessed from statements such as "*The treatment that I participated in involved restricting my time in bed for week 1 to 6 hours and then increasing time in bed by half an hour each week after that*."

Other treatment from psychologist or psychiatrist

Respondents who reported they received other treatment from a psychologist or psychiatrist (*n* = 28) were asked to describe the treatment. The most common responses from respondents who had seen a psychiatrist related to pharmacotherapy or medications (32%, *n* = 9). Other responses for those seeing a psychologist were quite varied and mentioned EMDR, hydrotherapy, relaxation, meditation, sleep hygiene strategies e.g., "*Just him telling me to go to bed at the same time and only sleep 6 hrs. Wake at the same time etc*" or general CBT e.g., "*CBT but more related to mood and thoughts in general rather than sleep specific*". One respondent described sleep restriction therapy "*Sleep restriction treatment, where you restrict your hours in bed to force your body into a deep sleep. You then increase each week by ½ hour until you find the right number of hours to suit your body*".

Reasons for not seeing a psychologist

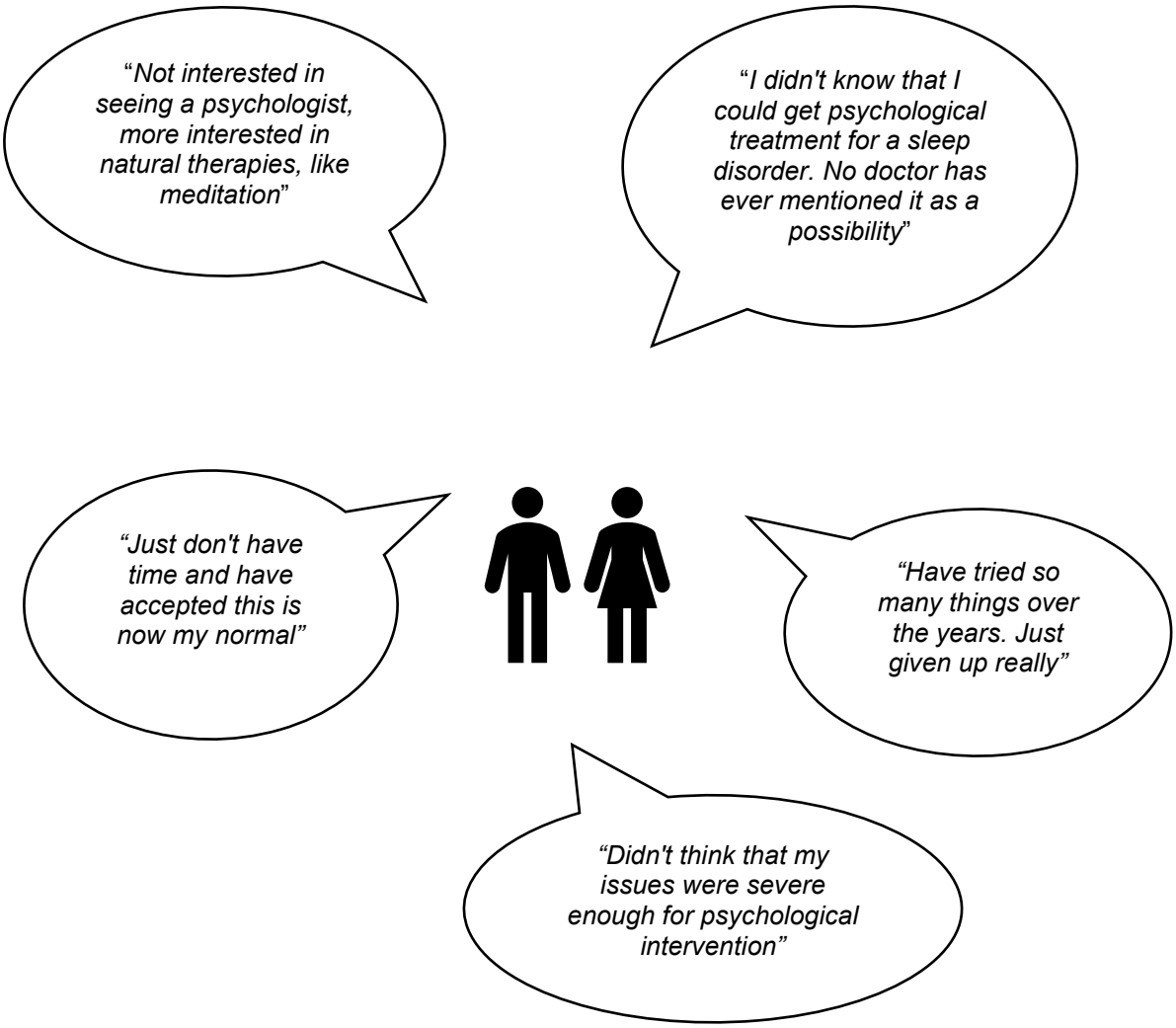
Respondents who reported they had discussed their sleep with a health professional in the past year, but did not see a psychologist (*n* = 460), were asked why they didn't receive psychological treatment for their sleep disorder. The most common reasons reported by those with clinical insomnia were GP did not refer them (43.7%) and other reasons (25.9%). Other reasons are discussed below.

Overall respondents who reported that they did not see a psychologist due to concerns about needing a MHTP (*n* = 27, Mean = 58.1 years, *SD* = 10.6 years) were more likely to be older, while respondents who reported cost concerns or too expensive (*n* = 119, Mean = 52.3 years, *SD* = 13.0 years) were younger.

Other reasons for not seeing a psychologist

Respondents who reported they didn't receive psychological treatment due to other reasons (*n* = 220) were asked to describe the reason. The most common responses were not interested or didn't believe that psychology would help (24%, *n* = 53) and/or were unaware or didn't consider link with psychology (20%, *n* = 43). Other responses included hopelessness or learnt to live with it (15%, *n* = 34), not needed or my sleep problem is not that bad (15%, *n* = 34) and not enough time or too busy (12%, *n* = 27). See Figure 3-7 below for exemplar quotes from respondents about reasoning for not seeing a psychologist.

Figure 3-7: Other reasons for not seeing a psychologist



3.5 Discussion

The findings of this study indicate that although 64% of people with clinical insomnia reported they have discussed their sleeping problems with their GP in the past 12 months, very few received the recommended treatment CBTi. Only 16% of respondents with clinical insomnia had discussed their sleep with a psychologist, and less than 1% described care that included behavioural components of CBTi.

Overall, the most common treatments and behaviours utilised to improve sleep were relaxation/meditation strategies and sleep medications. In line with previous research (Seidel et al., 2021), respondents with more severe insomnia were more likely to engage in help seeking, particularly medications. People with less severe insomnia were more likely to use relaxation and meditation strategies, and self-care treatments (Meredith et al., 2020) and prefer to work it out on their own (Shepardson et al., 2014). Consistent with general healthcare trends (Royal Australian College of General Practitioners, 2022), females were also more likely to engage in help seeking and to talk to their GP about their sleep, but females also tended to report more severe insomnia which could explain their increased help seeking.

Importantly, of the few respondents (16%) who reported they had seen a psychologist for sleep most did not receive the recommended treatment for insomnia, CBTi. The most commonly reported treatment from a psychologist was counselling. When the small number of respondents who reported they received CBTi were asked what this involved, most described sleep hygiene strategies such as regular bedtime routines, relaxation and mindfulness, and counselling. Most respondents who did see a psychologist reported they used a MHTP to access the Medicare rebate. Patient concerns about mental health care plans do not appear to be a barrier to treatment which has been reported in qualitative research (Cheung, Bartlett, et al., 2014). This discrepancy with previous research could be because people with insomnia who did not see a psychologist in the current study were unaware of the existence of MHTPs, or possibly MHTPs are now more widely accepted and commonly used in general practice.

While the results show respondents prefer a range of different treatments for insomnia, some treatments such as medications, relaxation and strict sleep habits (sleep hygiene) are clearly more accessible than the recommended treatment CBTi. Common reasons for not contacting a health professional included they didn't think the GP could help, and they had learned to live with their sleep disorder or discussed before and nothing could be done. Respondents also reported they did not see a psychologist because their GP did not refer them or they were unaware of psychological treatments and felt a sense of hopelessness. This indicates both GPs and the general public need education about the value of behavioural treatments and what to expect from psychological and behavioural treatments for insomnia. The results here indicate that people with insomnia may be

unsure what a psychologist does and believe a psychologist mainly treats psychopathological problems which do not apply to them since ‘they are just having problems with their sleep’. Previous research found people with insomnia did not seek care as they did not believe insomnia was a valid reason to seek help, or were concerned about inadequate GP knowledge about insomnia and the likelihood of receiving prescriptions for hypnotic/sedative drugs (Cheung, Bartlett, et al., 2014; Henry et al., 2013; Venn & Arber, 2012; Venn et al., 2013).

Common reasons for discussing sleep with a health professional included feeling unwell emotionally and feeling sleepy or unfocussed. This is similar to previous research which reports fatigue and psychological distress as the most common reasons (Morin et al., 2006). A number of respondents also reported they went to their health professional with another concern but sleep was discussed, this highlights the importance of GPs being aware of and asking patients about sleeping difficulties, as patients may not always raise sleep concerns. The most common symptoms respondents were hoping to improve through treatment were night-time symptoms of waking up during the night and difficulty falling asleep, and day-time symptoms of fatigue and reduced motivation. Interestingly although waking during the night was the most common symptom respondents are hoping to improve, this did not correlate with insomnia severity, indicating all respondents were concerned about waking during the night. This emphasises the importance all people place on their sleep, possibly because they are worried that their sleep pattern doesn’t conform to a culturally determined belief about normal healthy sleep (7-8 hours of unbroken sleep) (Bruck et al., 2015) or they suffer daytime impairments after experiencing awakenings from sleep. The highest correlations between insomnia severity and symptoms were all daytime symptoms such as having little interest in doing things, feeling sleepy, feeling down or hopeless and feeling irritable or moody. This highlights the impact of sleep on daytime functioning, daytime symptoms are most important to people with severe insomnia. Insomnia has a significant impact on people’s daytime activities (Cheung, Atternäs, et al., 2014) and is often experienced as a 24 hour problem that affects quality of life in many domains (Araujo et al., 2017). Daytime symptoms drive help seeking rather than the nocturnal symptoms in isolation, so patients usually seek help when daytime symptoms worsen (Cheung, Bartlett, et al., 2014).

The findings of this study add to the growing body of research indicating that very few people with clinical insomnia receive effective evidence-based treatment. In this study with people who were actively seeking treatment, most respondents had spoken to their GP in the past year about sleep but the most common treatments were medications and relaxation strategies. People with insomnia were not referred to a psychologist, and if they did see a psychologist the most common treatment was counselling, not CBTi.

3.5.1 Study Strengths and Limitations

A key strength of this study is it includes a large sample of people with clinical insomnia who were seeking participation in a clinical trial for a novel insomnia treatment. It is rare to have such a large sample of treatment seeking insomnia sufferers. This sample was acquired as a result of a popular television channel featuring a story on its nationwide daily news broadcast. This sample may be a group of insomnia sufferers relatively more motivated than usual as they were looking for new or different treatments for insomnia and had successfully registered their interest in taking part in a clinical trial. However, even this highly motivated group had been unable to access appropriate care. People with insomnia in the wider population might be less adventurous and willing to try new therapies. While most respondents with clinical insomnia in this study had discussed sleep with their GP in the past year (64%), the frequency of help seeking behaviours was lower than in previous study. Less respondents in this study with clinical insomnia reported taking medications prescribed by a doctor (42%) compared to participants with a diagnosis the previous study (68%). This may indicate more respondents in this study were seeking alternative treatments to medications than in the general population.

Another limitation is missing data, 62% of participants who were sent this follow-up survey did not respond. People who did not respond to the survey could have accessed treatment already and felt no need to respond, however there were no differences in the age, gender and insomnia severity or daytime sleepiness between the participants that did vs didn't respond to the follow-up survey. The survey design was quite complex with multiple branch points, and questions in the survey were not mandatory. This may have contributed to the lower response rate (36%) and entire survey completion rate (76%). There are missing data throughout the survey with some evidence of participant fatigue with more missing data later in the survey. It is possible that participants who completed the survey may have been more motivated, which could also extend to motivation to seek treatment for insomnia, introducing a possible bias in the results to favour more motivated individuals.

Some questions asked respondents to remember over the past 12 months if they had seen a health professional or received treatments. Recall bias could have impacted results of these questions if respondents could not accurately remember if they had engaged in treatment.

3.6 Conclusions

The findings of this study show that most people with insomnia and motivated to seek treatment in response to a news broadcast about insomnia treatment do discuss sleep with their GP. However, from this GP discussion they are generally unaware of psychological treatments for insomnia and are not receiving the recommended care.

4 MANAGEMENT OF INSOMNIA BY GENERAL PRACTITIONERS

This chapter includes a manuscript which was accepted for publication in BMC Family Practice in July, 2021.

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Author Contributions: EH, NG, R.DM, AV, AR, NZ and BS designed the research study; AR, EH, NZ, NS, AV, LL, R.DM and OF created and reviewed the interview guide; EH and NG conducted the interviews; EH, JH and NG analysed the results; LL, NL, BS, SM, RA and AS provided expertise on insomnia; NZ, NS and OF provided expertise on primary care. All authors provided feedback, contributed to writing of the manuscript and have approved the final draft of this work.

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4.1 Abstract

Background

Chronic insomnia is a highly prevalent disorder, with ten to thirty percent of Australian adults reporting chronic difficulties falling asleep and/or staying asleep such that it causes significant daytime impairment. Current Australian general practice guidelines recommend Cognitive Behavioural Therapy for insomnia (CBTi) as first line treatment for insomnia however, research suggests that most general practice consultations for insomnia result in a prescription for hypnotic or sedative medicines. Although the first point of contact for patients experiencing symptoms of insomnia is often general practice, little is known about the current role, experiences and capacity of Australian general practitioners to manage insomnia. This study aimed to address that gap by exploring the attitudes and opinions of general practitioners regarding insomnia management, to inform the development and implementation of new models of best practice insomnia care within general practice.

Methods

A descriptive, pragmatic qualitative study. Purposive sampling was used to recruit practising Australian general practitioners, varying in age, years of experience and geographic location. Semi-structured interviews were conducted, and data analysed using Thematic Analysis.

Results

Twenty-eight general practitioners participated in the study. Three major themes were identified: 1) Responsibility for insomnia care; 2) Complexities in managing insomnia; and 3) Navigating treatment pathways. Whilst general practitioners readily accepted responsibility for the management of insomnia, provision of care was often demanding and difficult within the funding and time constraints of general practice. Patients presenting with comorbid mental health conditions and insomnia, and decision-making regarding long-term use of benzodiazepines presented challenges for general practitioners. Whilst general practitioners confidently provided sleep hygiene education to patients, their knowledge and experience of CBTi, and access and understanding of specialised referral pathways for insomnia was limited.

Conclusions

General practitioners report that whilst assessing and managing insomnia can be demanding, it is an integral part of general practice. Insomnia presents complexities for general practitioners, and greater clarity about funding options, targeted education about effective insomnia treatments, and referral pathways to specialist services would benefit insomnia management within general practice.

Keywords

Insomnia; Sleep; Primary Care; General Practitioners; General Practice; Family Practice; Australia; Qualitative research

4.2 Background

Chronic insomnia is a common sleep disorder, with 10-30% of adults in Australia reporting chronic difficulties falling asleep and/or staying asleep, to an extent that it causes significant daytime impairment (American Academy of Sleep Medicine, 2014; Deloitte Access Economics, 2017; Kyle et al., 2010). Insomnia reduces work performance, social participation and health-related quality of life, and increases the risk of workplace and motor vehicle accidents (Daley et al., 2009; Deloitte Access Economics, 2017; National Institutes of Health, 2005; Ree et al., 2017). Chronic insomnia is associated with other chronic health conditions including cardiometabolic diseases (Fernandez-Mendoza & Vgontzas, 2013; Grandner, 2014). Comorbidity also exists between chronic insomnia and mental health conditions, most significantly depression and anxiety (Morin & Benca, 2012; Reynolds et al., 2019). Chronic insomnia clearly represents a major public health issue in Australia, supported by a 2019 Australian Government parliamentary inquiry which acknowledged the considerable impact of insomnia on Australian society, and recommended that sleep health become a national priority (Commonwealth of Australia, 2019). The serious risks associated with insomnia make access to effective and affordable treatments important.

In Australia, general practitioners (GPs), also known as family physicians, are central to primary care (Swerissen et al., 2018) and commonly provide treatment for sleep disorders. Most GPs in Australia work in privately-owned practices within a largely publicly funded health care system. GP consultations and the cost of most prescribed medications are subsidised by the Medicare Benefits Schedule (MBS) (Australian Government Department of Health, 2020c) and the Pharmaceutical Benefits Scheme (PBS) (Australian Government Department of Health, 2020a) respectively. In 2019-20, 87% of all GP consultations were provided free at point-of-care without any co-payment (Australian Government Department of Health, 2020b). Funding streams exist within the MBS for the management of chronic diseases and mental health conditions (Australian Government Department of Health, 2014, 2018).

Guidelines published by the Royal Australian College of General Practitioners (RACGP) recommend Cognitive Behavioural Therapy for Insomnia (CBTi) as the first line treatment in the management of chronic insomnia, and advise that medication use should be limited to the lowest dose and the shortest duration possible (Royal Australian College of General Practitioners, 2015). Hypnotic or sedative medicines for insomnia are associated with high rates of adverse effects, and long term use can lead to dependence and issues with withdrawal (Glass et al., 2005; Miller et al., 2017; Qaseem et al., 2016; Sweetman, Putland, et al., 2021). Unlike medications, cognitive and

behavioural modifications such as CBTi address the underlying psychological and behavioural factors that maintain insomnia and break the cycle of maladaptive learning, resulting in sustained improvements (Lack & Lovato, 2017; Morin, Vallières, et al., 2009; Schutte-Rodin et al., 2008; Wilson et al., 2019). Whilst guidelines for insomnia management are available to Australian GPs, it is unclear if they are being utilised, with recent studies finding that Australian GPs rely heavily on sleep hygiene and pharmacotherapy when consulting with patients with insomnia rather than using cognitive behavioural treatments (Cheung, Atternäs, et al., 2014; Miller et al., 2017; Sake et al., 2019). This represents a clear gap between recommended best practice management and current clinical care.

Recently there has been growing interest in the development of new models of care for insomnia management in an attempt to improve usage and access to CBTi (Espie, 2009; Sweetman et al., 2020). This study was conducted to inform the development of new models of insomnia care by exploring the current role and experiences of GPs within insomnia assessment and management and by identifying barriers and facilitators that influence the provision of best practice insomnia care within general practice. This study was conducted as part of a larger research program exploring the implementation of new models of sleep health care within the primary care setting.

4.3 Methods

4.3.1 Study design

This qualitative study employed a pragmatic inductive approach within a larger mixed-methods program of research. Semi-structured interviews were conducted and Thematic Analysis guided the data analysis (Braun & Clarke, 2006). Informed consent was obtained from all participants prior to participation in the study. Ethics approval was obtained from the University of Adelaide Human Research Ethics Committee (Reference H-2018-257).

4.3.2 Setting

Participants were practising Australian GPs registered with the Australian Health Practitioner Regulation Agency. Participants practising in metropolitan, rural and remote regions of Australia were included as it was thought that participant's experience in insomnia management could vary with distance from metropolitan specialist services.

4.3.3 Recruitment strategy

Purposive sampling was undertaken through two recruitment sources, a GP-led closed Facebook group GPs Down Under (https://www.facebook.com/groups/gpsdownunder/about) and professional networks of the research team, using advertising that explicitly stated that the study was about improving care for patients with sleeping issues. This sampling strategy aimed to recruit an information-rich sample (Small, 2009) varied in terms of age, level of experience, rurality and state

of Australia. Recruitment continued until data saturation was achieved, whereby new interview data provided few further insights (and no new themes) beyond data previously collected (Saunders et al., 2018).

4.3.4 Data Collection

Data were collected between February and August 2019. A semi-structured interview guide was developed, informed by a review of implementing change in primary care (Lau et al., 2016) and clinical experience of the researchers. Pilot interviews were conducted, and as there were limited changes to the interview guide post-piloting, these data were included in the study. Except for one face-to-face interview at the request of the participant, all interviews were conducted by telephone by an experienced qualitative researcher (EH) and a primary care registered nurse/research assistant (NG). Interviews were audio recorded with consent of participants and transcribed verbatim. Reimbursement ($150 AUS) for participation was provided, commensurate with an accepted hourly rate for GPs.

4.3.5 Data analysis

An inductive Thematic Analysis was undertaken to analyse the data (Braun & Clarke, 2006). Three researchers (EH, NG and JH) familiarised themselves with the data individually and all transcripts were checked for accuracy. Data were coded independently with NVivo 12 software (QSR International Pty Ltd, Doncaster, Victoria, Australia) using an open coding method with each of the researchers developing initial codes, followed by multiple discussions until reaching an agreed coding framework. All three researchers identified patterns and relationships in the data and developed potential themes through the process of Thematic Analysis (Braun & Clarke, 2006). These themes were then discussed and refined by the three researchers until reaching a consensus on the final themes reported within this paper.

4.4 Results

4.4.1 Participant characteristics

A total of 28 GPs participated in the study. Participants practised as a GP across the six states of Australia, with 61% (*n* = 17) working in a metropolitan area, 32% (*n* = 9) in a rural area and a further 2 participants (7%) in a remote location. Years working as a GP varied greatly within the group, ranging from 0.3-42 years (median 6 years). Most participants reported working part time, with only four participants (14%) working full-time (mean 0.6 [range 0.2-1.0] full-time equivalent). Sixty-one percent of participants identified as female (*n* = 17). Seventy one percent of participants reported consulting with at least 5 patients with insomnia each month. More detailed participant characteristics are presented in Table 4.1.

Table 4-1: Participant characteristics

Participant	Rurality	Age group	Gender	Years practising as a GP
P1	Rural	25-34	Female	3.0
P2	Rural	35-44	Male	4.0
P3	Metropolitan	25-34	Male	5.0
P4	Metropolitan	25-34	Female	2.0
P5	Rural	25-34	Female	3.0
P6	Metropolitan	35-44	Male	1.0
P7	Metropolitan	55-64	Female	29.0
P8	Metropolitan	35-44	Female	6.0
P9	Metropolitan	55-64	Female	26.0
P10	Metropolitan	35-44	Female	6.0
P11	Metropolitan	55-64	Male	35.0
P12	Metropolitan	55-64	Male	42.0
P13	Metropolitan	35-44	Male	10.0
P14	Rural	25-34	Female	5.0
P15	Metropolitan	45-54	Female	20.0
P16	Metropolitan	35-44	Female	17.0
P17	Metropolitan	35-44	Female	0.3
P18	Metropolitan	35-44	Female	3.0
P19	Metropolitan	35-44	Female	14.0
P20	Rural	55-64	Male	30.0
P21	Remote	45-54	Male	20.0
P22	Rural	55-64	Male	30.0
P23	Rural	55-64	Female	30.0
P24	Rural	25-34	Male	4.0
P25	Remote	25-34	Male	5.0
P26	Metropolitan	25-34	Female	5.0
P27	Metropolitan	45-54	Female	26.0
P28	Rural	25-34	Female	2.0

Following analysis of the data, three major themes were identified:

1) Responsibility for insomnia care
2) Complexities in managing insomnia
3) Navigating treatment pathways

4.4.2 Theme 1: Responsibility for insomnia care

This theme identified a sense of responsibility for insomnia management by GPs. Participants consistently recognised that the management of insomnia was within the scope of general practice.

> *For insomnia, I probably don't see that as a referral out of general practice very often. Unless there's a very significant mental health component to it. (Participant 7)*

> *I can't remember ever referring someone for insomnia. Maybe once I've referred someone to a psychologist, but not – generally, no. That's something that to me sits in the scope of general practice. (Participant 22)*

A number of participants stated that they would initiate referrals to other services as needed, but this was most commonly for the management of co-morbid insomnia and another condition such as anxiety or depression, or for cases of severe, chronic insomnia.

> *It depends on the severity and depends on if there's...a comorb with psychiatric illness then I would probably be referring on to my psychiatric colleagues. (Participant 5)*

> *I think when it gets to that sort of [chronic] level I would probably outsource it, so I would probably speak to a sleep clinic or a sleep psychologist, if that were the case. (Participant 8)*

Although the management of care for patients with insomnia was considered routine practice by participants, the time taken to provide the care was not so readily accepted. Many GPs reported concerns about the significant demands that insomnia management entailed.

> *If…someone were to come in for a 10 minute appointment and go through insomnia, that would take about 15 to 20 minutes, and the pressure of running late, keeping someone else waiting tends to start playing on you at some point down the line. (Participant 10)*

> *Teasing out the things that are contributing to it takes a lot of time, and then if you're wanting to change particular behaviours and then doing the motivational interviewing to go with that then that takes time. (Participant 18)*

Participants reported that for most patients, insomnia symptoms presented with symptoms of other co-morbid conditions, and that unpacking the issues relating to insomnia took time and contributed to longer consultation times.

> *In terms of time limitations, it's often brought up in the context of multi-disciplinary comorbid care, so it takes a long time to sort these things out and trying to disentangle it from all the multiple presentations, and patients very rarely present with insomnia as their sole issue. (Participant 7)*

Funding constraints were identified as limiting more comprehensive insomnia management. Many GPs reported that the current MBS funding model incentivised shorter consultation times, resulting in those offering longer appointments being disadvantaged financially.

> *You're kind of taking on a time bomb [providing insomnia management], because…if you can put through three people every 15 minutes, you're going to get paid a lot more than those really long extended consults. So while it's rewarding, it's not financially rewarding. That's the sticking point. (Participant 16)*

One participant stated that, although he was interested in being more involved in the management of insomnia, he was currently unwilling to provide more comprehensive care due to the funding limitations associated with the extended time required to provide insomnia management.

> *Unless there was…a stellar rebate for it…I'm not doing that on a – on the Medicare, what, 36 bucks or whatever they pay us. (Participant 6)*

4.4.3 Theme 2: Complexities in managing insomnia

This theme highlights the greatest challenges presented to GPs' managing patients with insomnia, namely overlapping insomnia and mental health conditions, and the management of patients taking benzodiazepines.

Many GPs reported that consultations for the management of insomnia were complex. Participants reported that care of insomnia was rarely straightforward, with patients commonly presenting with insomnia symptoms in the presence of another comorbid condition, and that the care of insomnia could be demanding.

> *Often they're hard…patients [to see] as well, because there's often a lot of other complex issues going on as well. It's not just [that they] can't sleep. (Participant 26)*

Insomnia was also not always a priority for patients, with patients often presenting for care of the other conditions comorbid with insomnia rather than for management of the insomnia itself.

> *It's normally, "And by the way, I'm having trouble sleeping. I've come in for this, but by the way…" So it tends to be…the bigger of the two issues, but they don't perceive it as that. (Participant 10)*

Participants recognised a strong correlation between mental health and insomnia. Most commonly, GPs related a complex comorbidity between insomnia, depression and anxiety. Some GPs reported that at times, it was only through an assessment for mental health issues that insomnia symptoms were identified.

> *Some, if they are depressed, part of their screening is you ask about their sleep and things, when they are anxious…if there is any mental health complaint as part of the screening, you could ask about sleep, and you realise it's a lot of that. (Participant 1)*

Some participants reported that mental health issues and insomnia were often so interrelated that it is necessary to treat them concurrently.

If they keep coming in – if it's due to an underlying depression, then…you go, "How's the sleep? And how's your mood?" So it's very much interrelated. You can't sort of separate it. (Participant 10)

A distinction between insomnia and mental health was not always clear, with one participant stating that it may be difficult for some GPs to recognise insomnia in the midst of mental health symptoms.

A lot of doctors ended up taking, you know, the fatigue, the depression, but that's not the real cause of the problem. That's a consequence of the chronic insomnia. (Participant 1)

Of note, one GP considered insomnia not as a condition in itself, but rather as a symptom of other conditions.

Insomnia isn't actually a disease. It's a symptom only…insomnia doesn't happen by itself. (Participant 11)

Benzodiazepines also presented complexities for GPs. Many participants recognised risks associated with long-term use of benzodiazepines and were reluctant to prescribe benzodiazepines beyond the short term.

I really, really try to avoid it [prescribing benzodiazepines]. Just knowing the harm that it can potentially do, and I just feel like it's quite a Band-Aid. It doesn't solve the issue at hand. It's not a long-term solution. Yes. And I certainly make that very clear up front with my patients these days. (Participant 14)

Some participants, whilst reluctant to prescribe benzodiazepines, acknowledged that there were some situations in which they were required.

Even though sometimes you can't find – even if you find the reason, you still end up having to use some sort of a chemical medication like a benzodiazepine sometimes. (Participant 11)

GPs frequently reported that they prescribed benzodiazepines in very limited amounts in acute situations or for shift-work disorder.

I very, very, very rarely use benzodiazepines. I think basically, my use for benzodiazepines would be restricted to a grief type scenario…then I might actually just give them three tablets or something. I'm quite a miser with such things. (Participant 8)

With shift work insomnia, I may use a benzodiazepine, and I give them at the start of a – you know, when they finish their nightshift, and they're trying to get their sleep/wake cycle back to normal. (Participant 21)

Contributing to the GPs' reluctance to prescribe benzodiazepines was an understanding of the problematic consequences of long-term use. Many participants described a group of patients that had long-term dependence on benzodiazepines, often 'inherited' from other GPs, from times when the awareness of risks of benzodiazepines was less apparent.

And 20 or 30 years ago the practice of using benzos was obviously a lot more prevalent, and so we've inherited people who have been on their Temazepam or their Serepax for 30 years, and you try to get them off of it, but it just doesn't work, because they're so dependent. (Participant 16)

Denying a prescription of benzodiazepines to these patients was challenging and many GPs reported difficulties in achieving treatment change with these patients. Maintaining rapport with patients, whilst attempting to wean them off benzodiazepines, was difficult, particularly when the GP was not well known to the patient.

Well, back in the sixties, everyone got that, so everyone was addicted, and so you have a lot of people in their seventies…[that] have been on things like that for 20 years, and you are a brave person to try and change the direction the wind blows. (Participant 13)

So I just have to try and establish some trust and rapport with them, so that they can trust what I'm saying…There has been one doctor that prescribed for maybe a long time, and then maybe that doctor has retired or they will see someone else for whatever reason, and then…suddenly, they find they've got trouble getting the medication…the patient feels like it's their fault that they've become addicted to the medication or that they're seeking it when…in their mind, a doctor prescribed it to treat their insomnia, so the patients will get a little bit defensive as well. (Participant 4)

For some GPs the challenges of supporting long-term patients to curtail their use of benzodiazepines was so difficult that it had led to a termination of their relationship, with patients instead seeking ongoing prescriptions elsewhere.

So if I don't give them what they want, after my 22 minutes in a 15 minute booking, they will go to the six minute medicine man around the corner and get what they want. (Participant 15)

I just feel like I have to continue, but I will only agree to be their doctor – part of the deal is we try and wean [benzodiazepines] down. So – have had some – you lose a bunch of patients, because of that. (Participant 6)

For one GP, the challenge of withdrawing benzodiazepines resulted them being placed in a life-threatening situation.

But with benzos, we've definitely had…threatened violence, threatened use of weapons…losing a litre of blood, because they didn't get the medications they're after. So we're in a very confronting kind of situation. (Participant 27)

The difficulties of managing patients seeking long-term benzodiazepine prescriptions resulted in GPs seeking alternative care options for their patients. Several participants stated that they referred patients to psychiatrists for review of their benzodiazepine use once they had exhausted all approaches available to them.

I referred a few people to the psychiatrists, because we've had – like they're wanting long term prescription for benzodiazepines, and I felt that I reached the end of what I could offer. (Participant 4)

Other participants reported a need for specialist addiction support but identified a lack of appropriate services available to assist these patients with benzodiazepine withdrawal.

> *And then for all those troublesome patients who are in their 70s and who are now on two tablets of Temazepam and have been for 50 years maybe there is somewhere that I can refer them to do this in a joint [way] between the specialists and I, and go, right, let's get this down. That would be useful. (Participant 10)*

> *If there was a service available to help with benzodiazepine, like addiction and withdrawing slowly, that would be excellent...even if the patient didn't want to engage with them...If there was a decision-making tool that could help with making a withdrawal plan that would be excellent. (Participant 4)*

4.4.4 Theme 3: Navigating treatment pathways

This theme reports the approaches used by GPs when providing care for patients with insomnia. It is apparent from this theme that, whilst GPs consistently provided sleep hygiene, their approach to managing complex insomnia was more varied.

The provision of sleep hygiene, that is habits that are considered to be conducive to good sleep such a reducing caffeine intake and regular bedtimes, was commonly reported by participants as a strategy used to manage insomnia. Almost all of the GPs interviewed expressed confidence in providing advice about sleep hygiene with most stating that it was their first line of treatment for patients presenting with symptoms of insomnia.

> *Sleep hygiene I recommend to everyone. So I've got some handouts and stuff for sleep hygiene that I give out to people if it's clear that their sleep hygiene is poor. (Participant 21)*

For some GPs offering sleep hygiene education was used as a means to avoid prescribing benzodiazepines, and for others, a way of supporting patients looking for a 'quick fix' for their insomnia. One GP reported that this 'simple' education was, at times, all that was needed to treat insomnia.

> *There's this expectation that you're going to fix and clearly insomnia is not something that you're going to fix today, but having something to give to patients as like a takeaway pack of written down instructions of sleep hygiene, that would be really helpful. You would feel like you've given them something, and it's almost like a deflector for the requests for benzos. (Participant 16)*

> *Sometimes we give advice that, to us, seems ridiculously simple and the patient comes back and says they're totally cured, and it's all wonderful, and we feel we haven't done much. (Participant 12)*

However, many participants acknowledged that insomnia management was not always straightforward. The approach to managing more complex cases of insomnia by GPs varied, as did their knowledge about insomnia management strategies and referral pathways. Some GPs reported an awareness of Cognitive Behavioural Therapy (CBT) as one element of managing insomnia, particularly the use of CBT to target anxiety associated with insomnia.

> *Often there's an element of anxiety…so you run them through mindfulness and a bit of CBT and meditation and that sort of stuff to help them chill out a bit and relax. (Participant 25)*

No participants referred to Cognitive Behavioural Therapy for Insomnia (CBTi) without a prompt by the interviewer, and very few were aware of specific CBT techniques for insomnia. A small number of GPs reported offering a variation of sleep restriction therapy, however there was no acknowledgement by those participants of it being a component of CBTi.

> *Sometimes I would do something like sleep restriction with them, getting them to work out how many hours of sleep they're actually getting and then delaying bedtime until that and bringing it back however many stepwise. (Participant 8)*

Some GPs expressed uncertainty about referral options for complex cases of insomnia. As reported in Theme One, participants referred patients to other health professionals when required, but at times they were unsure about the referral pathways available to them. Some GPs were comfortable referring patients to a psychologist or psychiatrist, but others were unsure whether it was appropriate to refer a patient to a sleep physician. Reasons for this varied, including a lack of understanding of the role that sleep physicians play in insomnia management and a belief that insomnia may not be not significant enough for a referral to a specialist.

> *Probably consider a sleep physician, but then again, I don't know. It depends what I feel like they might be able to offer. (Participant 14)*

> *I wouldn't necessarily refer someone to a sleep physician for this. I don't even know if they – now, that I'm talking to you, maybe they do it, maybe they don't. I actually have no idea. (Participant 10)*

> *If I'm not getting anywhere with all of that, I guess, referring for specialist in – but I would very, very rarely refer to a sleep specialist just for insomnia. (Participant 28)*

When referral pathways were available, cost was identified as a barrier to treatment, with one GP reporting that it was cheaper for patients to pay for medication than to see a psychologist.

> *I would say that's probably like less than five per cent of my patients would actually go to someone to talk about their sleep issues, because of the cost, the cost limiting factor. (Participant 15)*

> *It's much easier to pay $6.90 for Temazepam than going to see a psychologist for my sleep. (Participant 4)*

There was also uncertainly expressed about the appropriateness of using an MBS funded GP Mental Health Treatment Plan (GPMHP) for the management of insomnia. Despite distress from sleep issues being an eligible condition for a GPMHP (Australian Government Department of Health, 2019; World Health Organization, 1996), insomnia was almost never considered by GPs as the primary diagnosis for a GPMHP and several participants believed that insomnia was not an eligible condition for a GPMHP.

> *On the mental health plan that I am sending with them, the diagnosis is probably not primarily insomnia, because that doesn't fit within the guidelines for mental health care plans. (Participant 23)*

Of the participants who reported creating a GPMHP in the context of insomnia management, almost all considered insomnia as a secondary condition for the plan, co-existing with a mental health condition such as anxiety and/or depression, that was used as the primary diagnosis for the GPMHP.

> *I've referred someone for mental health issues that were contributing to insomnia, but that's a referral not for the insomnia, that's for the mental health condition. (Participant 22)*

> *I think I've probably got a lot of patients – well, a reasonable number of patients who have insomnia who are on a mental health care plan for their depression or their anxiety or anything like that, but purely – I don't think I have put them on for insomnia. (Participant 24)*

4.5 Discussion

This qualitative study provides insights into barriers or facilitators that could influence the implementation of new models of insomnia care within general practice, specifically those that had the potential to increase the delivery of evidenced-based behavioural treatments as an alternative to medications.

The findings of this study indicate a discrepancy between current clinical practice and the RACGP clinical guidelines which recommend CBTi as the first line treatment for insomnia (Royal Australian College of General Practitioners, 2015). GPs rely on sleep hygiene education treatment with scarce reference to the other components of CBTi, consistent with previous research on this topic (Davy et al., 2013; Everitt et al., 2014; Linder et al., 2020). This is of concern given limited evidence about the effectiveness of sleep hygiene as a standalone treatment in primary care (Chung et al., 2018). Education for GPs targeting efficacy of insomnia treatments should be considered with the aim of improving uptake of CBTi, the most effective treatment.

Despite previous research indicating that the majority of insomnia patients in primary care are managed with pharmacotherapy (Miller et al., 2017), GPs within this study consistently reported that they avoid benzodiazepines as the first-line, or long-term treatment of insomnia. These GPs highlighted specific challenges involved in managing patients who had been taking benzodiazepines for many years: difficulties maintaining relationships with patient's seeking benzodiazepine prescriptions, and a lack of accessible support services targeting medication withdrawal. It is of note that while in this study benzodiazepines were specifically identified by participants as complex to manage, all medications prescribed for insomnia have associated challenges, such as side effects and issues of dependency (Reynolds & Adams, 2019). Health professionals not only need education and training on benzodiazepine withdrawal, but also require

increased accessibility of alternative management options to drug treatment and medication withdrawal support services (Sirdifield et al., 2013).

The study highlighted that insomnia presentations are complex and often overlap with mental health conditions. The Better Access initiative in Australia (Australian Government Department of Health, 2018) provides access to mental health trained professionals through use of a GPMHP, but most GPs in this study do not recognise insomnia as an appropriate diagnosis for a GPMHP. Insomnia was sometimes mis-conceptualised as a secondary condition by participants despite changes to diagnostic criteria in 2005 which recommended that 'comorbid insomnia' instead be used to encourage targeted diagnosis and treatment of insomnia per se (National Institutes of Health, 2005). This finding again highlights the need for education and training for GPs, focussed on diagnostic criteria for insomnia and use of GPMHPs for chronic insomnia.

Maintaining a clinical relationship with patients, developing trust and rapport, and managing patient expectations were identified as important in managing this complex condition, but also very demanding and time-consuming within a primary care consultation. This is of particular importance given that other studies have identified that maintaining patient satisfaction and good relationships with patients can be drivers for GPs prescribing benzodiazepines for insomnia (Everitt et al., 2014). This study also confirmed (Cheung, Atternäs, et al., 2014) how the current Medicare funding structure favouring financial reimbursement to the GP for short, timed consultations, makes longer and comprehensive treatment for complex conditions such as insomnia, challenging. CBTi, the recommended first-line treatment for insomnia is generally administered over weekly 30-60 minute sessions, which may be difficult to achieve in primary care. Potential solutions could include improved financial incentives for longer consultations, task shifting to practice nurses/practice pharmacists and education about the use of GPMHPs for insomnia management (Australian Government Department of Health, 2014, 2018). More condensed brief behavioural therapy for insomnia (BBTi) could also be considered for use in Australian general practice (Fuller et al., 2016; Sweetman, Zwar, et al., 2021; Troxel et al., 2012).

In line with other recent research (Cheung, Atternäs, et al., 2014; Sake et al., 2019), GPs' management of insomnia is also influenced by a lack of viable referral pathways to specialist care for complex cases. Awareness of professional networks is important to provide the most effective care to patients with complex insomnia. For some GPs there are no viable pathways because of accessibility issues related to cost and geographic distance from appropriate services. GPs were unsure whether referral to a sleep specialist was appropriate for insomnia, possibly reflecting an understanding that sleep specialists are almost exclusively sleep apnea specialists. Local Health Pathways (HealthPathways Community Canterbury District Health Board and Streamliners NZ, 2020) are being developed in various Primary Health Networks across Australia, and where these

primary care focussed systems are able to identify accessible local referral pathways, they could potentially be useful tools for Australian GPs when providing care for people with insomnia.

To improve care for people with insomnia, other modalities and treatment options for CBTi should be considered. Stepped care models where incremental levels (steps) of intervention complexity have proven to be effective in the treatment of insomnia (Espie, 2009) and could be evaluated in general practice. Many GPs provide sleep hygiene education, and this information could be upgraded to include self-help CBTi treatments (Morgan et al., 2012). Several digital CBTi treatment programs are now available and have the potential to be further utilised in general practice (Byambasuren et al., 2020).

4.5.1 Study strengths and limitations

The use of appropriate research strategies and techniques was a key strength of this qualitative study and ensured rigour throughout the study design, sample selection, data gathering and analysis phases (Tuckett, 2005). These strategies included purposeful sampling to allow for a maximally varied sample, consistent data collection techniques until data saturation was reached, and ongoing analysis by multiple researchers enabling triangulation. The perspectives of participants were emphasised with thick description by the inductive approach to data collection and analysis (Whittemore et al., 2001). A limitation of this study was that an understanding of the term insomnia was not explored with participants, with it unclear at times if GPs were reflecting on their experiences managing chronic insomnia or sleep difficulties more broadly.

4.6 Conclusions

It is evident from this study that GPs recognise that the management of insomnia is within the scope of general practice, but that managing this condition can be difficult. Chronic insomnia is often a complex health problem, frequently associated with co-morbid mental health conditions and benzodiazepine dependency. Whilst this study demonstrates that there are some barriers to change in the management of insomnia in primary care, there are also many facilitators supporting the implementation of new models of care. By harnessing the motivation and interest of GPs to be involved in insomnia management, there would appear to be some specific opportunities to improve the provision of care for patients presenting with insomnia to the general practice setting within Australia. By providing GPs with relevant and targeted education and resources, including appropriate financial reimbursement through the MBS system and support for managing benzodiazepine withdrawal, GPs may be empowered to better address the needs of the many patients living with chronic insomnia.

5 MANAGEMENT OF INSOMNIA BY PSYCHOLOGISTS

This chapter includes a manuscript which was accepted for publication in Australian Psychologist in June, 2022.

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5.1 Abstract

Objective

Although clinical guidelines recommend Cognitive Behavioural Therapy for insomnia (CBTi) as the first-line treatment for insomnia, many people with insomnia do not have access to CBTi and are prescribed sedative-hypnotic medicines by medical health professionals. Psychologists have training in CBT and may be well placed to deliver behavioural therapy for insomnia. However, the current treatment of insomnia, amount of sleep-specific training and knowledge of CBTi among Australian psychologists remains unknown.

Method

This qualitative study conducted semi-structured interviews with Australian psychologists. Interviews included case study scenarios to provide an in-depth exploration of psychologists' knowledge and skills in the management of insomnia. Interview transcripts were analysed using thematic analysis to identify themes.

Results

Twenty-six psychologists participated in this study. Four themes were identified in the data: 1) Sleep is important but rarely a treatment priority; 2) Confusion about funding pathways discourages treatment of insomnia; 3) A variety of approaches are used in the management of insomnia; 4) Psychologists with experience in CBTi are rare.

Conclusions

Most Australian psychologists are not well equipped to manage insomnia effectively with CBTi. Along with other primary health care professionals, psychologists need training in the delivery of evidence-based insomnia treatment.

Keywords: insomnia, sleep, psychologists, psychology, Cognitive Behavioural Therapy for insomnia, CBTi

Key Points

What is already known about this topic:

1. The recommended treatment for insomnia is Cognitive Behavioural Therapy for insomnia (CBTi) but most people with insomnia do not receive this treatment
2. The most common treatments for insomnia are sedative hypnotic medications and sleep hygiene education

3. Most people with insomnia are not referred to a psychologist.

What this topic adds:

1. Most psychologists and other primary care professionals lack specific knowledge and training in insomnia and CBTi
2. Psychologists use a range of treatments for insomnia, most common is sleep hygiene and relaxation
3. Insomnia is often regarded as a secondary problem and clients are not usually referred to psychologists for treatment of insomnia.

5.2 Introduction

Chronic insomnia is defined as frequent difficulty getting to sleep or staying asleep, with impaired daytime functioning, for at least 3 months (American Academy of Sleep Medicine, 2014; American Psychiatric Association, 2013). The prevalence of chronic insomnia among Australian adults is estimated to be 5-15% (Bin et al., 2012; Reynolds et al., 2019). Chronic insomnia commonly co-occurs with other mental health conditions such as anxiety and depression (Sweetman, Lack, et al., 2021), and has a significant negative impact on quality of life, including reduced ability to participate in work and other daily tasks, and increased risk of accidents (Bickley et al., 2021; Deloitte Access Economics, 2017; Hoon et al., 2021). The burden of insomnia was recently acknowledged in the 2019 Australian Government parliamentary inquiry, recommending that sleep health should be a national priority (Commonwealth of Australia, 2019).

Current best practice clinical guidelines recommend Cognitive Behavioural Therapy for insomnia (CBTi) delivered by a trained psychologist as the first line treatment for insomnia (Edinger et al., 2021a; Royal Australian College of General Practitioners, 2015). CBTi breaks the conditioned responses that perpetuate insomnia by addressing the underlying psychological and behavioural factors. Insomnia can be triggered by a stressful event, whereby initial distress causes wakefulness and hyper arousal. Over time wakefulness, rather than sleep, can become associated with the bedroom and bedtime routines. This learned or conditioned response can be self-perpetuating and chronic (Lack & Lovato, 2017). CBTi includes behavioural therapies such as bedtime restriction (Spielman, Saskin, et al., 1987) and stimulus control therapy (Bootzin, 1972) to establish new sleep habits and routines, and cognitive restructuring together with sleep education to change thoughts and feelings about sleep (Harvey et al., 2014).

In Australia, psychological issues, including depression, anxiety and sleep disturbances are the most common reasons for visiting a General Practitioner (GP) (Royal Australian College of General Practitioners, 2020). Studies indicate that when people with insomnia visit a GP they are commonly

prescribed sedative-hypnotic medications (Begum et al., 2021; Miller et al., 2017) which are associated with adverse side effects, and dependence and withdrawal effects (Glass et al., 2005; Qaseem et al., 2016; Sweetman, Putland, et al., 2021). GPs commonly rely on sleep hygiene instructions (e.g. avoid caffeine in the evening, avoid using electronic devices while in bed) for cases of chronic insomnia, however these instructions are not a sufficient stand-alone treatment (Chung et al., 2018; Edinger et al., 2021a; Haycock et al., 2021).

GPs in Australia may refer patients to a psychologist for treatment of insomnia using the Better Access Initiative Mental Health Care Treatment Plan (MHTP) (Australian Government Department of Health, 2021; RACGP, 2021). This initiative funds a rebate to eligible people that covers a large portion of the costs of appointments with a psychologist. Despite clinical guidelines recommending CBTi, very few people with insomnia in Australia receive a referral to a psychologist (Miller et al., 2017). Our recent study found that reasons Australian GPs rarely consider referral to psychologist for insomnia treatment include uncertainty about referral pathways, cost barriers, and lack of recognition that chronic insomnia as an eligible diagnosis for a referral to a psychologist (Haycock et al., 2021). This misunderstanding can be addressed with an education campaign directed to GPs. However, the extent to which practicing psychologists are prepared to treat insomnia with CBTi is unclear. This qualitative study uses in-depth interviews to explore the management of insomnia by practicing Australian psychologists.

5.3 Materials and Methods

5.3.1 Study Design

This qualitative study employed a pragmatic inductive approach to explore Australian psychologists' knowledge, attitudes and practices in managing chronic insomnia. This study was conducted within a larger mixed-methods program of research exploring the potential for the implementation of new models of best practice sleep health management within the Australian primary care setting. Semi-structured interviews were conducted and reflexive thematic analysis was used (Braun & Clarke, 2006; Braun & Clarke, 2021a). Informed consent was obtained from all participants prior to participation in the study. Ethics approval was obtained from the Flinders University Social and Behavioural Research Ethics Committee (Project Number 8580).

5.3.2 Setting

Participants were psychologists practising in Australia and registered with the Australian Health Practitioner Regulation Agency.

5.3.3 Recruitment Strategy

Purposive sampling was undertaken through multiple recruitment sources. Participants were recruited in three stages – pilot, social media and targeted email recruitment. Pilot interviews were conducted with two psychologists known to specialise in insomnia management and two psychologists with more general experience. Secondly, participants were recruited via advertisements placed on several online social networking platforms for Australian psychologists, including closed Facebook groups and online forums. The advertisements invited participants to take part in an interview to help shape new models of care, and did not specifically mention insomnia or sleep, to extend responses beyond those psychologists with a particular focus on sleep and encourage responses from psychologists with a wide range of experiences and interests. Finally, psychologists were recruited from the Australian Psychological Society (APS) 'Find a Psychologist' website (https://www.psychology.org.au/Find-a-Psychologist) by direct email. A random selection of psychologists who self-reported they treat sleeping disorders were sent an email inviting them to participate in an interview about the management of insomnia.

This sampling strategy aimed to recruit an information-rich sample (Small, 2009). Recruitment continued until a diverse range of participants had been recruited, providing a broad range of stories and rich data for analysis and interpretation, leading to development of themes (Braun & Clarke, 2021b). The overall sample varied in terms of age, level of experience, rurality and State/Territory in Australia.

5.3.4 Data Collection

A semi-structured interview guide was developed, informed by the research groups' previous qualitative research work with GPs, and clinical psychology and sleep expertise (see supplement). Pilot interviews were conducted and as there were only minor changes to the interview guide post-piloting, these pilot data were included in the study. The interviews included case study scenarios of people with insomnia disorder to assess psychologist knowledge and treatment strategies. The initial pilot interviews included three case study scenarios. The findings from these scenarios were discussed with the research team and the two most informative scenarios were included in the final interview guide (see supplement). The first case study was an older client with sleep maintenance insomnia and depression with long-term benzodiazepine use, the second was a younger client with sleep onset insomnia. For each case study, participants were asked about the potential underlying mechanisms that contributed to the insomnia, and how they would manage it. This strategy was used to encourage psychologists to talk more about insomnia aetiology, assessment and management approaches to obtain more in-depth, rich data.

Data were collected between April 2020 and January 2021. A total of 26 interviews were conducted online, using Zoom software, by a PhD student with experience in psychology and qualitative research (JH), with an experienced qualitative researcher (EH) also taking part in a

subset of five interviews for training and supervision purposes. Interviews were audio recorded with consent of participants and transcribed verbatim. Reimbursement ($150 AUD) for participation was provided, commensurate with an accepted hourly rate for psychologists.

5.3.5 Data Analysis

An inductive reflexive thematic analysis was undertaken to analyse the data and generate themes (Braun & Clarke, 2006). All transcripts were checked for accuracy and data were coded using NVivo 12 software (QSR International Pty Ltd, Doncaster, Victoria, Australia) by one researcher (JH) using an open coding method to develop initial codes. A second researcher (EH) independently coded one interview, and reviewed coding on all interviews. Responses to case study scenarios were reviewed by a psychologist with extensive experience in teaching and treatment of insomnia using CBTi (LL) in order to assess psychologist knowledge. One researcher (JH) identified patterns and relationships in the data and developed potential themes through the process of reflexive thematic analysis (Braun & Clarke, 2006; Braun & Clarke, 2021a). The themes identified were discussed and refined by the research team (JH, EH, NL, LL, AS) until reaching a consensus on the final themes reported within this paper.

5.4 Results

5.4.1 Participant Characteristics

A total of 26 psychologists participated in the study, 4 participants were recruited in the pilot stage, 15 via social media and 7 via targeted email recruitment. In the social media recruitment, a total of 21 psychologists responded to advertisements and 15 (71%) agreed to be interviewed. In the targeted email recruitment, 321 psychologists were identified as treating sleeping disorders on the Australian Psychological Society (APS) 'Find a Psychologist' website and 88 psychologists (27%) were randomly selected and sent an email inviting them to participate in an interview about the management of insomnia. Of the psychologists who were sent the email, 17 responded (19%) and seven of these (41%) went on to be interviewed.

Participants from six states/territories of Australia were represented, with 88.5% working in a metropolitan area. Years working as a psychologist varied greatly within the group, ranging from 0.5-45 years (mean 15.8 years, *SD* 10.2). Most participants reported working full-time (58% 1.0 FTE), ranging from 0.4-1.0 FTE (mean 0.85 FTE, *SD* 0.2). Eighty-five percent of participants were female which is reflective of the psychologist profession (Australian Health Practitioner Regulation Agency, 2020). See Table 5.1 for participant characteristics.

Table 5-1 Participant Characteristics, *n* (%)

Gender		**Age**		**State/Territory**	
Female	22 (85%)	Under 35	2 (8%)	SA	8 (31%)
Male	4 (15%)	35-44 years	9 (35%)	Victoria	8 (31%)
		45-54 years	6 (23%)	NSW	4 (15%)
Location		55-64 years	4 (15%)	Queensland	3 (12%)
Metro	23 (88.5%)	65+ years	5 (19%)	WA	2 (8%)
Rural	3 (11.5%)			Tasmania	0
Remote	0			ACT	1 (4%)
				NT	0

The psychologists interviewed were from a variety of workplace settings and worked with a diverse range of client groups. Most participants worked in private practice, two in hospital settings and another two in education settings. Eight psychologists had endorsement in clinical psychology, two counselling psychology, one health psychology, and one in forensic psychology.

Themes

Following analysis of the data, four major themes were identified:

1. Sleep is important but rarely a treatment priority
2. Confusion about funding pathways discourages treatment of insomnia
3. A variety of approaches are used in the management of insomnia
4. Psychologists with experience in CBTi are rare

5.4.2 Theme 1: Sleep is important but rarely a treatment priority

All participants stressed the importance of sleep, reporting good sleep as essential for wellbeing, mental and physical health, and general functioning.

> *I think it's actually quite important and it really is overlooked. Because if you're not getting enough sleep like you can't function. You can't concentrate, you can't remember things. (Participant #9)*

The participants reported sleep disturbances were common in all workplace settings and client groups. Most participants indicated that more than half of their clients had insomnia or sleep

problems. Participants reported that sleep difficulties were generally identified in their initial assessment and history taking, with most psychologists including specific questions about sleep habits in their routine clinical interview.

> *I usually do a full clinical interview first to see what all their problems are because they don't usually come with one problem. In that process I find out about their sleep and then more specifically I would assess that. (Participant #23)*

All psychologists in this study reported that insomnia is a common comorbid presentation alongside other conditions such as anxiety, depression, trauma and chronic pain. Many participants commented that insomnia was not the client's presenting problem and conceptualised insomnia as a secondary diagnosis or symptom.

> *The primary presenting issue is usually something else, sleep is considered, it's part of the problem or it's an adjunct to the problem, and it's really interwoven. (Participant #6)*

Many participants commented that client preferences and treatment goals were also important and influenced treatment decisions. They emphasised that treatment was very collaborative, sometimes sleep was a priority and clients were motivated to work on this, but not always. Many participants believed psychologists had an important role to play in education about the importance of healthy sleep, and the impairments and health risks of poor sleep.

> *I think there's a lot of misinformation out there about sleep, so it's sets up this unrealistic expectation that you just learn this one thing, do this one thing, and you're going to be able to sleep, and what I find really interesting is people that are taking benzos, all sorts of meds, and they're still not sleeping. (Participant #20)*

This theme highlights that although psychologists think sleep is important, sleep is not always a treatment priority for clients and insomnia is often viewed as a symptom or secondary condition.

5.4.3 Theme 2: Confusion about funding pathways discourages treatment of insomnia

The participants reported receiving referrals for clients from a range of sources, the most common referral pathway being GPs using the Medicare Better Access Mental Health Treatment Plan (MHTP).

> *About 90 per cent would come from the GP and they present under Better Access to mental health with the Medicare initiative. (Participant #24)*

Most participants reported that GP referrals under a MHTP focused on other mental health conditions such as depression, anxiety or trauma, and these conditions were the priority during treatment. Sleep was reportedly an interwoven part of the problem, but insomnia was rarely the presenting problem or primary reason for the referral.

> *It's a comorbid condition, that is present in lots of different presentations, but I wouldn't have any clients that are referred for insomnia. (Participant #12)*

Despite insomnia being an eligible condition for a MHTP referral (Liotta, 2021; Sweetman et al., 2020) only the two 'pilot interview' psychologists, who specialised in sleep, reported receiving referrals specifically for the treatment of insomnia. Three participants stated that insomnia was not an eligible condition for a MHTP and Medicare funding did not allow for treatment of insomnia.

> *Because they need a diagnosis, it [insomnia] wouldn't be the presenting issue. So the GP needs to write something that fits in with the better access stuff and insomnia does not. (Participant #7)*

One participant commented they had tried to set up an insomnia group programme but it was unsuccessful as they received no referrals from primary health providers.

> *I actually wanted to run insomnia groups because I think it's a huge issue that doesn't get adequate treatment and we could not get an insomnia group up because no one, no primary health care provider was referring for insomnia. (Participant #12)*

This theme highlights that although poor sleep is a common problem, psychologists do not receive referrals from GPs for insomnia and other mental health conditions take priority in the referral process.

5.4.4 Theme 3: A variety of approaches are used in the management of insomnia

Despite clear clinical guidelines for treatment of insomnia recommending CBTi, psychologists in this study reported using a range of treatments for sleeping problems that depended on their knowledge and interests, and the client's treatment goals and preferences. The most common treatments for insomnia, reported by all participants, included sleep hygiene, psychoeducation and relaxation techniques.

> *In terms of difficulty sleeping, I would probably look at just their lifestyle as well, sleep hygiene, things like that. So we would go through what their routine is, try to put in place a better routine for them, particularly at the end of the evening. Maybe just a little bit of education for them about things that can assist them. Sometimes I recommend apps, mindfulness, breathing exercises, things like that. (Participant #8)*

Many participants reported using cognitive behavioural techniques, but only the two psychologists known to specialise in insomnia management confidently provided information suggesting they carried out specific behavioural therapies for insomnia such as stimulus control therapy or bedtime restriction therapy. When participants mentioned CBTi they commonly focused on cognitive techniques to challenge negative thoughts associated with sleep, and behavioural strategies regarding bedtime routines and other sleep hygiene habits.

> *Sleep hygiene and then obviously with the cognitive behavioural therapy model, we're often looking at the behaviours first and then going through the cognitions. (Participant #24)*

Several participants named the CBTi behavioural therapies or described the general concepts, but these comments were not very specific and did not give the impression they could confidently administer behavioural therapies for insomnia.

> *So after they bring back the sleep chart then I would look at how long they're spending in bed versus how long they're actually sleeping, and try and initiate a sleep restriction type plan where they don't stay in bed longer than they are actually sleeping or try to get it to about 85%. (Participant 23)*

Three participants stated they did not use CBTi strategies as they felt these focused too much on sleep and created anxiety, and they preferred relaxation and mindfulness strategies.

> *I wouldn't go into things like sleep restriction, because I think that's counterproductive for insomnia. I think it builds up the stress about sleep. (Participant #10)*

> *A lot of the literature says that if you wake up you're supposed to get up, wander around, until you get sleepy again. And I don't agree with that… because I think once you get up you're creating a new pattern, a new rhythm. (Participant #26)*

Other common treatments mentioned during the interviews were mindfulness and Acceptance and Commitment Therapy (ACT). A small number of participants reported using Eye Movement Desensitisation and Reprocessing (EMDR) techniques with some clients.

> *I work more and more from a brain basis, physiological perspective, so it's about teaching them to enable themselves to put themselves into a deep relaxation, … and sometimes people will say, "I feel like going to sleep. I'm nearly asleep." So that has seemed to be very effective. (Participant #17)*

There were stark differences in responses to case scenarios. Only the psychologists experienced in sleep confidently described CBTi behavioural treatments, and mentioned using other evidence-based therapies for some types of insomnia such as bright light therapy and chronotherapy. Most of the other psychologists in this study focused on treating comorbid conditions including behavioural strategies to treat depression and cognitive strategies to manage stress and anxiety. Specific treatment for insomnia was usually sleep hygiene techniques focusing on regular sleep/wake times and relaxation.

> *So looking about thoughts and their beliefs and assumptions about sleep and seeing if we can shift those and then also the behavioural aspects as well. So sleep hygiene, trying to break down any not so good associations that they might have with their sleep space. (Participant 25)*

This theme discusses the variety and range of treatments used by psychologists in treating insomnia, and highlights the stark difference in reported knowledge of CBTi between participants with specific sleep expertise and all other participants in this study.

5.4.5 Theme 4: Psychologists with experience in CBTi are rare

Other than the two psychologists that specialised in insomnia management, all psychologists in this study reported they had received limited education about insomnia and sleep during their clinical training. Some participants could not remember any specific lectures about sleep, while others could only remember a few lectures about sleep usually included in training about general wellbeing, or symptoms of other mental health disorders.

> *I do not recall any. Other than it being a symptom of mood disorders, basically. I do not recall any specific training in this, no. (Participant #18)*

> *Only as part of kind of self-care, so it would be sleep, diet, exercise, relaxation. So it's kind of in one of those categories, but not sleep by itself. (Participant #8)*

Many participants said they would like more training in sleep, and some had sought out further education in sleep or expressed surprise there was not more training as it was such an important area.

> *It's one of those areas where every time I do come up against it, I always think, "Gee, I wish I knew more about this."…it's a really important area and not one that I really feel comfortable in, so I would really like to address that gap. (Participant #5)*

Some participants commented that psychologists often develop specialist areas of interest and were aware of psychologists who specialised in sleep, although only three participants reported they had referred clients or sought advice.

> *So, I guess, there would certain psychologists, if they are specifically trained and skilled in sleep … it would vary between psychologists as well. Some are specifically trained in that, and that is their kind of niche area. (Participant #19)*

This theme discusses the reported lack of specific training about sleep and insomnia received by participants, and how sleep psychology is viewed as a specialist field. This knowledge gap helps to explain the previous theme about variety in treatment, and provides potential area for professional skill development. However, such training would need to address the key issue of how insomnia management fits with other conditions that currently take treatment priority.

5.5 Discussion

This research shows that although psychologists recognise sleep is essential to general wellbeing, insomnia is not commonly a treatment priority and most people with insomnia do not receive effective, evidence-based CBTi care (Edinger et al., 2021a).

The psychologists in this study reported using a wide variety of management techniques for insomnia, often focusing on sleep hygiene education and relaxation techniques. Although these strategies are part of CBTi, they are not recommended as effective stand-alone treatments for insomnia (Chung et al., 2018; Edinger et al., 2001). Behavioural components of CBTi such as

stimulus control and bedtime restriction therapy need to be included for treatment to be most effective (Edinger et al., 2021a). Other commonly reported treatments for insomnia with emerging evidence included mindfulness and ACT therapies (Kennett et al., 2021; Ong et al., 2014). A small number of participants also reported using EMDR techniques which are not currently recommended as treatment for insomnia due to insufficient evidence (Scelles & Bulmes, 2021). The variation in treatment approaches is partially explained by psychologists' treatment preferences and beliefs, and client treatment goals and priorities, so having different evidence-based treatment options may be important for patient centred treatment and outcomes.

There is limited previous research about Australian psychologists' confidence in treating sleep disorders (Meaklim et al., 2020). The findings in this study are similar to international research from the US and Canada where clinical psychologists report that although they felt moderately prepared to treat insomnia, the most commonly used treatment approach was sleep hygiene information (Zhou et al., 2020). Qualitative research in the UK found counselling psychologists' knowledge about sleep varies widely and is often based on media representations and popular lay beliefs, rather than evidence presented in psychological training (Cross et al., 2009).

The psychologists in this study reported that most clients were referred by GPs using a Mental Health Treatment Plan (MHTP). Although insomnia is an eligible condition for a MHTP (Australian Government Department of Health, 2021; Liotta, 2021), clients with sleeping difficulties are primarily referred for other mental health conditions, such as depression and anxiety, and these conditions are the focus of treatment. Some GPs do not believe that MHTPs can be used specifically for the treatment of insomnia, thus limiting the access of insomnia sufferers to treatment by psychologists (Haycock et al., 2021). Psychologists, along with other health care professionals, often view insomnia as a symptom or secondary comorbid condition to other mental health disorders. Primary health care professionals need education to understand that insomnia is an eligible condition for a MHTP, and if initial treatment focuses on insomnia this can improve outcomes for other mental health conditions (Sweetman, Lack, et al., 2021). However, even if this misunderstanding on the part of GPs can be corrected, there appear to be few practicing psychologists with knowledge and experience in the best practice guidelines of CBTi for the treatment of insomnia.

The psychologists in this study report very limited education about insomnia and CBTi. These findings are similar to recent research in Australia, reporting that 47% of postgraduate psychology students receive no formal sleep education and report low confidence to manage sleep disturbances (Meaklim et al., 2021; Richardson et al., 2021). Overseas research reports similar findings (Pallesen et al., 2007). There is a need for more sleep psychology education to be included in the psychology curriculum (Ellis, 2012; Meaklim et al., 2020; Meltzer et al., 2009) as

well as a concerted effort of greater post-tertiary professional development education and workshops for CBTi.

A central tool of treatment in the practice of psychology is Cognitive Behaviour Therapy (CBT). It is featured in post-graduate training programs and professional development workshops (Kazantzis & Munro, 2011; Pachana et al., 2006), and is commonly used with most psychologists being proficient in its administration to treat many psychological problems (Hofmann et al., 2012). Given the existing CBT knowledge of the 40,000 registered psychologists in Australia (Australian Health Practitioner Regulation Agency, 2020), it should be possible to translate this basic knowledge of CBT to specific insomnia treatment principles (CBTi) to up-skill more psychologists to deliver evidence-based insomnia treatment.

Education programs and standardised accreditation programs are needed to upskill psychologists in CBTi, and help clients and healthcare professionals to identify 'sleep' accredited psychologists through tools like the APS 'Find a Psychologist' website (https://psychology.org.au/find-a-psychologist) and Health Pathways (https://www.healthpathwayscommunity.org/).

5.5.1 Study Strengths and Limitations

The use of appropriate research strategies and techniques was a key strength of this qualitative study and ensured rigour throughout the study design, sample selection, data gathering and analysis phases (Tuckett, 2005). These strategies included purposeful sampling to allow for a maximally varied sample, consistent data collection techniques, and ongoing analysis and discussion with multiple researchers to develop themes. The perspectives of participants were emphasised with detailed descriptions and interpretation in the inductive approach to data collection and analysis (Whittemore et al., 2001). A strength of this study was the use of case scenarios to gain a more in-depth understanding of insomnia treatment and knowledge.

A limitation of this study was that interviews were conducted during the COVID-19 pandemic. This was highlighted at the start of the interview and participants were asked to think back to before the pandemic, and also given opportunities to talk about the pandemic during the interview. This may have impacted on the generalisability of findings to other settings, however it is very unlikely that the pandemic impacted psychologists' knowledge of sleep, insomnia and CBTi components. The pandemic did not affect the number of clients with insomnia or the opportunity to manage the disorder with CBTi as psychologists in Australia still operated via telehealth.

Although this study used purposeful sampling techniques to ensure participants were from a range of workplace settings and interest areas, psychologists are a very diverse professional group and these findings may not be representative of all psychologists.

5.6 Conclusions

This study clearly indicates that most Australian psychologists are not well equipped to manage insomnia with CBTi. Along with other primary health care professionals, psychologists need training in the delivery of evidence-based insomnia treatment. This may be achieved through insomnia and CBTi education programs embedded in post-graduate psychology courses, and offered through professional societies.

GPs also need education to clarify referral pathways, and tools to identify psychologists with training in sleep. A change to the current discourse about insomnia is essential to ensure insomnia is perceived as independent condition and treatment priority, by both health care providers and patients. The potentially effective role of psychologists in delivering insomnia management as part of their generalised work needs to be recognised.

With upskilling of the psychology workforce in CBTi, education of GPs, and a change to current clinical and community perceptions about the priority of insomnia and effectiveness of CBTi, more people will have access to effective and durable non-drug treatment for insomnia.

6 DISCUSSION

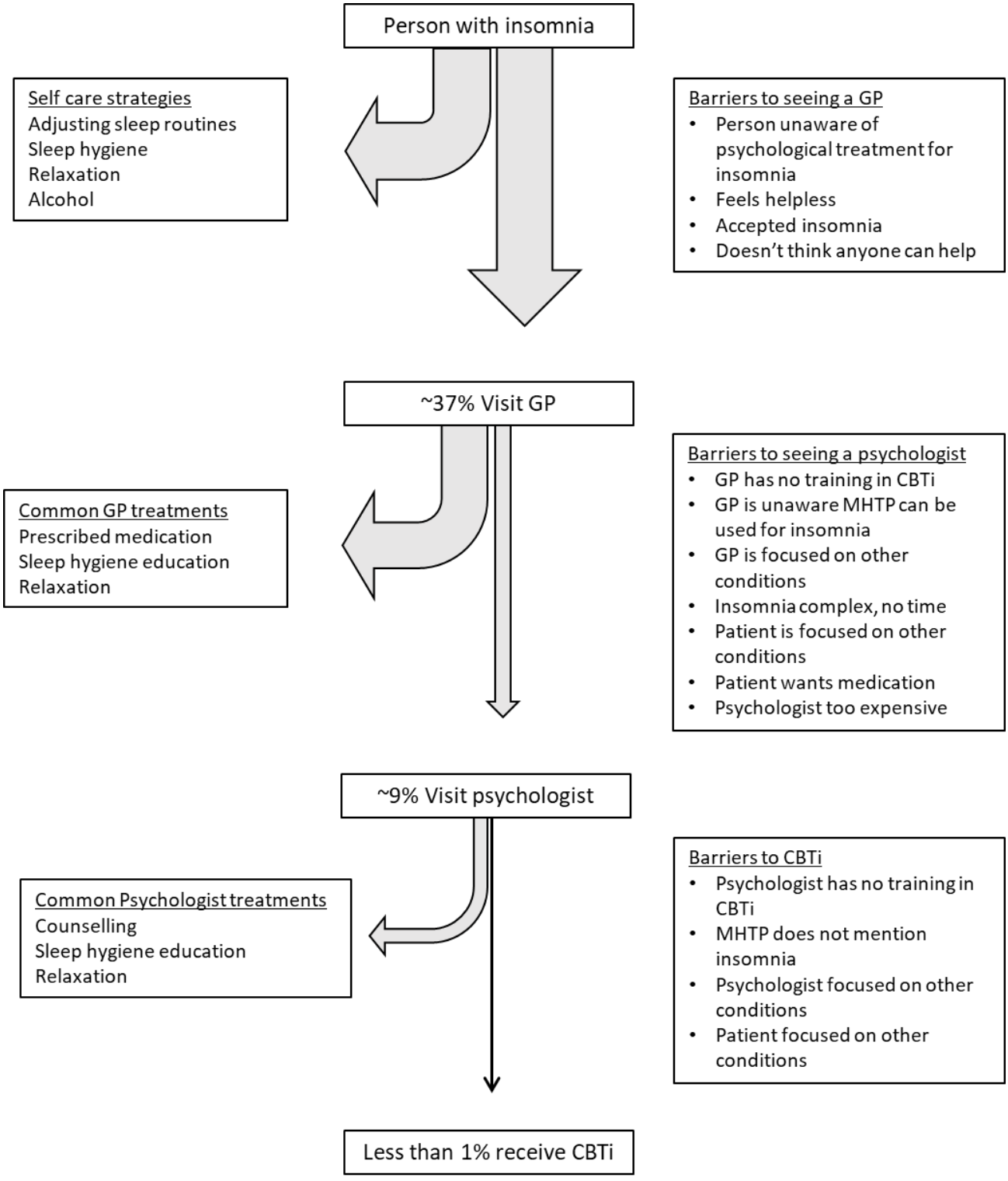
6.1 Aims

The aim of this thesis was to provide an in-depth analysis of how insomnia is currently managed in Australia. A pragmatic inductive approach was used to identify the main barriers and facilitators to delivering evidence-based care for this condition. A secondary aim of this research was to develop policy and practice recommendations to address these barriers and improve access to evidence based Cognitive Behaviour Therapy for insomnia (CBTi) in the Australian health system. The series of studies presented here provided a comprehensive picture of current management practices from the perspectives of people with insomnia and health care providers. Survey-based studies explored the experiences of people with insomnia symptoms, and in-depth qualitative studies were conducted with the main health professionals providing care for insomnia, GPs and psychologists.

6.2 Comparison of management of insomnia from perspectives of people with insomnia and healthcare providers

Figure 6-1 uses the combined findings of the four studies to illustrate the common treatments, and challenges and barriers at each stage of the treatment journey of a person with insomnia. Only 37% of people with insomnia reported they had talked to their GP about sleep in the past year, and 9% (of the total people with insomnia) had discussed sleep with a psychologist in the past year. Of those who saw a psychologist, only three received CBTi (less than 1% of the total people with insomnia). The results of each study are summarised in detail below.

Figure 6-1: Challenges and barriers along the journey of a person with insomnia to CBTi



6.2.1 Perspectives on insomnia management of people with insomnia

Chapter 2 reported the sleep help seeking behaviours in a large community sample. Key findings were that for people whose responses indicated they met the ICSD-3 diagnostic criteria for chronic insomnia (*n* = 303), the vast majority (91%, *n* = 275) had not been previously diagnosed with insomnia by a health professional. Of those with current chronic insomnia (with or without a previous diagnosis), 37% (*n* = 111/303) reported they had discussed their sleep with their GP in the past 12 months, and 9% (26/303) had seen a psychologist. People in this community sample with current chronic insomnia and no diagnosis did not engage in best practice treatments for insomnia, and instead reported adjusting sleep habits (38%-50%), relaxation techniques (36%) and alcohol (37%) as the most common treatments for insomnia.

Chapter 3 reported the sleep help seeking experiences of 745 people with insomnia. Compared to Chapter 2, respondents in Chapter 3 had responded to a request for a clinical trial so were likely to be more motivated to seek treatment. Of the 505 people with clinical insomnia (based on an ISI score of ≥15), 64% (*n* = 324/505) reported they had discussed sleep with their GP, and 16% (*n* = 81/505) had seen a psychologist. A key finding from Chapter 3 was that most people with insomnia symptoms were unaware that insomnia is most appropriately treated by a psychologist. Of those who saw a psychologist, only 20 people reported they received CBTi, and only three people (less than 1% of the whole sample) described treatment that included the behavioural components of CBTi. People with clinical or sub-clinical insomnia symptoms who did not see a psychologist (*n* = 460) were asked why they didn't seek psychological help for their sleeping difficulties. Fifty one percent reported their GP did not refer them to a psychologist. Others reported they did not believe a psychologist could help (24%), or they had felt hopeless and had learnt to live with their insomnia (15%).

6.2.2 Perspectives on insomnia management of GPs

Chapter 4 reported findings from interviews with GPs about the management of insomnia. The main themes from these interviews include:

1. GPs feel responsible for insomnia care but find management difficult in general practice timeframes.
2. GPs report insomnia management is complex, they lack knowledge in CBTi but also need more treatment options: Although most interviewed GPs were reluctant to prescribe medications for insomnia, many reported patients expected medications and GPs felt their other treatment options were very limited. Most GPs do not have knowledge of CBTi and rely on sleep hygiene education as the only alternative to medication for the treatment of insomnia.

3. GPs report difficulties in navigating treatment pathways and are uncertain about the use of MHTPs for insomnia: GPs are unclear about referral pathways and the use of MHTPs for insomnia, and do not refer patients to psychologists for insomnia perhaps because some GPs conceptualise insomnia as a symptom or secondary condition and not an independent disorder requiring treatment on its own.

6.2.3 Perspectives on insomnia management of psychologists

Chapter 5 reported findings from interviews with psychologists about the management of insomnia. The main themes from these interviews include:

1. Sleep is important but rarely a treatment priority, other conditions are the focus of care: Psychologists interviewed recognised the importance of sleep but reported they do not focus on the treatment of insomnia. Psychologists reported patients were not referred to them for insomnia and, like the GPs, they conceptualise insomnia as secondary and not an independent disorder. Patient's treatment goals also influenced treatment plans, psychologists reported patients often wanted to focus on other problems and did not prioritise sleep.

2. Confusion about funding pathways and use of MHTPs discourages treatment of insomnia and limits access to care: Treatment plans were guided by the conditions listed in the MHTP provided by GPs, which many psychologists reported did not include insomnia.

3. A variety of approaches are used in the management of insomnia, but CBTi is rarely used: Sleep hygiene education and relaxation strategies were the most common treatments for insomnia used by psychologists. Although a broad range of treatments were reported, virtually all have no evidential basis for their effectiveness for chronic insomnia.

4. Psychologists do not receive training in CBTi and those with experience in CBTi are rare: There are very few psychologists (only two in this study and they were purposely recruited because of their experience in CBTi) who are trained in the delivery of CBTi for insomnia.

6.3 Barriers and facilitators to delivering evidence-based care for insomnia

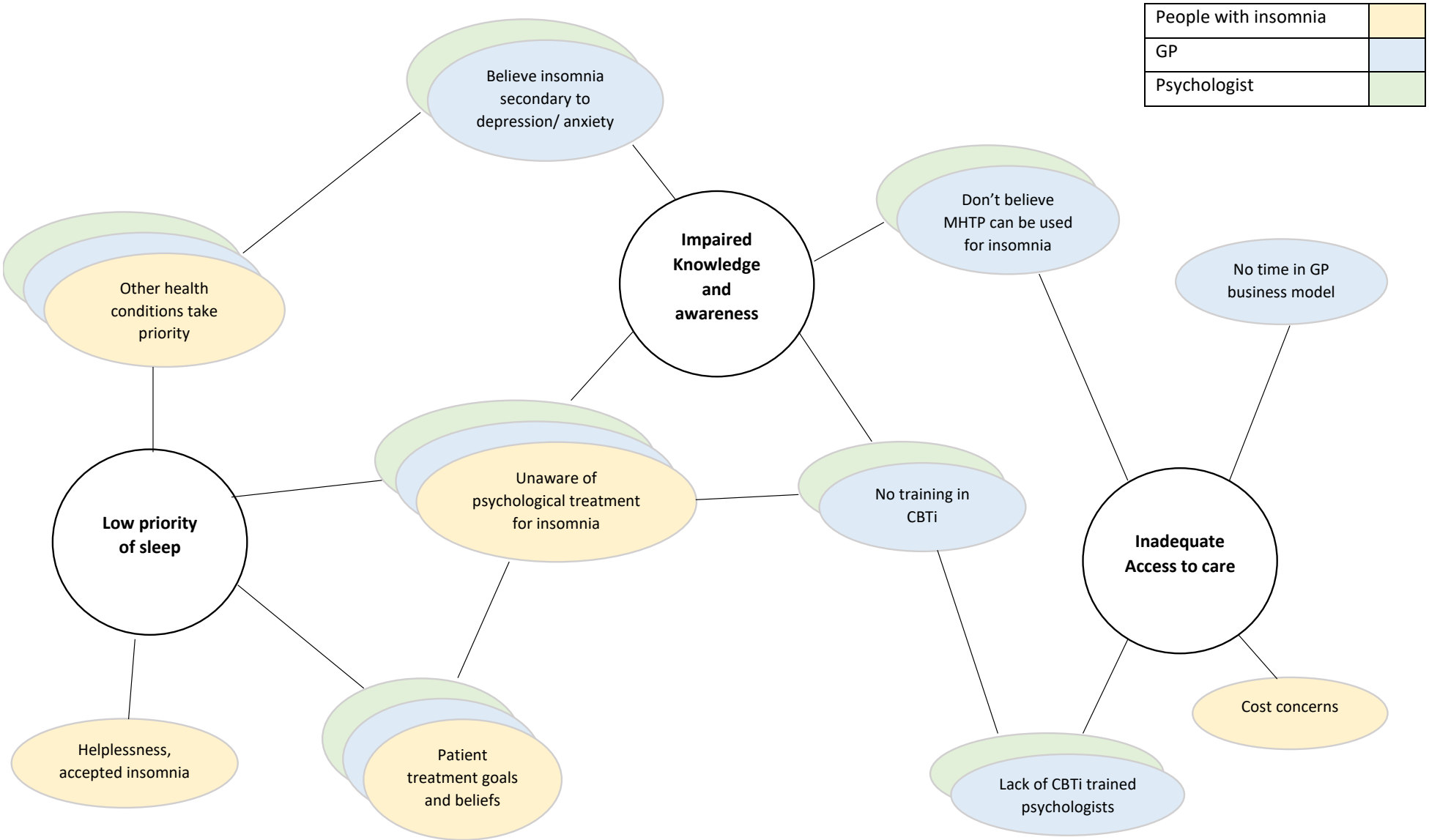
The purpose of this discussion is to integrate all the data and information gathered in this research to further understand the barriers and facilitators to management of insomnia from the different perspectives of people with insomnia, GPs and psychologists. This will enable identification of opportunities to change behaviours and practices, to ultimately improve access to best practice, evidence-based care.

This analysis identified three themes that are common across all perspectives:

- Low priority of sleep
- Impaired knowledge and awareness
- Inadequate access to care

Barriers to effective management of insomnia from each perspective are also identified within each theme. Figure 6.2 on the following page illustrates the relationship between these key themes and the barriers to effective management. Each theme is then discussed in detail, comparing findings in the current studies to previous research.

Figure 6-2: Key themes and barriers to effective management of insomnia from people with insomnia, GPs and psychologists



6.3.1 Low priority of sleep

The findings of this research show that only 37% of people with insomnia had discussed their sleep concerns with their GP in the past year. People with insomnia in Chapters 2 and 3 often relied on self-care strategies such as adjusting sleep routines, sleep hygiene and relaxation to manage their sleep problems. Many people with insomnia in Chapter 3 described feelings of helplessness, reporting they had tried everything and given up or accepted insomnia as just the way things are. Other people reported they did not believe their sleep problems were severe enough for treatment or they did not think anyone could help. Some people believed GPs will only prescribe medications, and being reluctant to take hypnotic medications, therefore do not mention their sleeping difficulties. These findings are similar to other Australian research which reported people with insomnia have often tried a number of self-help strategies before they seek professional help (Cheung, Bartlett, et al., 2014). International research from Scotland found people with insomnia often report feeling isolated because of their disorder, and reported they perceived other people lacked sympathy and understanding (Kyle et al., 2010). If this is also true in Australia, it would contribute to the apparent reluctance of people to raise their insomnia with their GP.

Insomnia is a frequent presentation in general practice, but despite this it is rarely a key priority for Australian GPs and psychologists. The GPs in Chapter 4 were aware of the importance of sleep and believed they had an important role to play in the management of insomnia. The GPs also reported insomnia was complex and other conditions were often the focus of treatment. Many GPs and psychologists conceptualise insomnia as a symptom or secondary condition to another disorder and presume insomnia will improve with treatment of the perceived underlying disorder. Other research has also found insomnia management often focuses on identifying and treating what are assumed to be underlying causes, such as anxiety or depression (Sake et al., 2019). However, evidence over the past 20 years indicates that this view is incorrect. Insomnia is often comorbid with other conditions and to achieve best outcomes the clinician needs to treat both disorders. Recent research has also shown treating the insomnia only in comorbid insomnia and depression provided better outcomes than treating depression only (Cunningham & Shapiro, 2018). The distinction between primary and secondary (or comorbid) insomnia was removed in the updated DSM-V criteria for insomnia (American Psychiatric Association, 2013) and ICSD-3 (American Academy of Sleep Medicine, 2014), with insomnia now recognised as an independent disorder (Ree et al., 2017; Sateia, 2014). This change in insomnia diagnostic criteria implies a paradigm shift in terms of conceptualising and treating the disorder (Khurshid, 2015). GPs and psychologists still seem to be treating insomnia as a symptom of another condition, despite changes in the definition, conceptualisation, and management of insomnia over the last decades (Koffel et al., 2018). GPs and psychologists need education about the current diagnostic criteria for insomnia as a primary condition.

Similar to previous research, this study also found treatment decisions can also be impacted by the ideas, beliefs, values, treatment goals and preferences of the patient (Koffel et al., 2018), Psychologists in Chapter 5 reported patients often do not prioritise sleep and want to focus on other areas of their health. This could be due to a lack of understanding and awareness that improving sleep itself will benefit the other areas they are focused on such as fatigue and distress. The concept of insomnia as a secondary problem or symptom of other mental health conditions found in the qualitative work with GPs and psychologists in Chapters 4 and 5 may extend to the views of the general public.

GPs are often challenged by the patient's expectations regarding medications which can influence treatment decisions. GPs in Chapter 4 reported difficulties managing patients who have been taking benzodiazepines for a long time, and some patients who prefer medications. This might be partly due to the ease of taking a tablet, but also due to the experience of poor and distressing sleep on withdrawal from these medications that is reported by some patients. Similarly, health professionals in other research have also expressed concerns regarding patients reliance on a "quick fix" pharmacotherapy solution (Cheung, Atternäs, et al., 2014), and felt under pressure to prescribe (Everitt et al., 2014). Practitioners are reluctant to prescribe hypnotics, but patients often request medication and GPs feel empathy with the patient to prescribe (Davy et al., 2013). Patients can be resistant to withdrawal from hypnotic-sedatives such as benzodiazepines, and are typically reluctant to change their lifestyle (Sake et al., 2019). Developing and maintaining the GP-patient relationship can be difficult when expectations of the patient differ from best practice care. Some GPs avoided discussions with patients about their insomnia when they thought the patient was seeking prescriptions (Sake et al., 2019). Patient expectations and perceptions suggest that people with insomnia need to be made aware of the disadvantages and problems associated with sedative hypnotic medications, and of the recommended psychological treatment for insomnia. CBTi in general practice has been found to be effective in reducing hypnotic use (Baillargeon et al., 1998; Morgan et al., 2003; Sweetman, Putland, et al., 2021). This is particularly effective when CBTi is started while patients are still using medications, followed by gradual withdrawal commencing in the early stages of CBTi when homeostatic sleep pressure is elevated by the behavioural therapies protecting them against severe withdrawal effects (Sweetman, Putland, et al., 2021).

Previous research has highlighted a mismatch between patients' and health care professionals' perspectives on insomnia and its treatment (Araujo et al., 2017). Patients report feeling misunderstood by health professionals and feel their sleep problems are not taken seriously which leads to feeling a sense of frustration (Araujo et al., 2017). This contrasts with the GPs in Chapter 4 who claim to take insomnia seriously and assume responsibility for the management of insomnia. This could be because health care professionals focused on trying to identify and treat the underlying physical or psychological cause of the insomnia, while patients focus on the symptoms and their subjective experience (Araujo et al., 2017). Motivation and priority of sleep are important

influences of help seeking behaviours, and it is important people with insomnia feel heard and able to discuss their sleep problems with their GP.

6.3.2 Impaired knowledge and awareness

This research demonstrated that primary health care providers lack knowledge and skills in the evidence-based management of insomnia. GPs in Chapter 4 believe the management of insomnia fits within general practice, but they lack knowledge about the best evidence-based treatment of insomnia, and commonly rely on sleep hygiene and pharmacological treatments. Sleep hygiene is not recommended as effective stand-alone treatments for insomnia (Chung et al., 2018; Edinger et al., 2001). Although GPs rely on sleep hygiene advice for insomnia, this is often perceived as ineffective by GPs (Everitt et al., 2014). Some GPs felt patients switched off when given sleep hygiene advice and wouldn't even attempt to try it (Davy et al., 2013), possibly due to previous unsuccessful results when abiding by sleep hygiene advice. It seems that GPs rely on sleep hygiene advice in the absence of any other effective treatment, even though they probably suspect it is not effective. Other research also shows Australian GPs perceive a need for further training to improve the management of insomnia in primary care (Cheung, Atternäs, et al., 2014).

GPs in Chapter 4 report challenges managing patients with insomnia, including comorbid mental health conditions and long-term dependence on benzodiazepines. Although GPs prescribe benzodiazepines and "Z" drugs reluctantly and for short periods (Everitt et al., 2014), they sometimes inherit patients who have been on these medications for decades. GPs reported limited options when treating patients who have been dependent on sedative hypnotics for so long, and sometimes continued prescribing due to fears of damaging rapport with the patient.

The psychologists in Chapter 5 lacked knowledge about CBTi. Although they are aware of the importance of sleep and have used CBT for other conditions, they do not have training or experience using CBTi. In this study the most common treatments used by psychologists to treat insomnia were sleep hygiene, psychoeducation and relaxation techniques. Some psychologists are aware of others who specialise in sleep, but these psychologists with experience in CBTi are rare (only about 60 in total nationwide in Australia). This is approximately 0.2% (or 1 out of 500) of the 40,000 practicing psychologists. These findings are similar to other research. When asked to select the initial treatment approach for an adult insomnia patient from a list of options, the majority of psychologists (64.2%) chose sleep hygiene instructions, and 16.8% selected CBTi (Zhou et al., 2020). Education about sleep and insomnia in training courses for all primary care health professionals is lacking, including general practitioners, primary care nurses, pharmacists and psychologists (Meaklim et al., 2020). In Australia 47% of psychology students report they received no sleep education, and those who did reported a median of one hour of sleep education (Meaklim et al., 2021) which is less than 1% of the coursework hours of a Master of Psychology clinical course. Previous research in North America found psychologists received a median of two hours

didactic sleep training during graduate school, and 10 hours of sleep training across their entire career (Zhou et al., 2020). This lack of training means there is an exceptional shortage of clinicians with the expertise and experience to administer CBTi, making it very difficult for patients to access the recommended treatment. This strongly suggests that more psychologists need training in CBTi (Haycock et al., 2022; Meaklim et al., 2021). Both GPs and psychologists urgently need training in the management of sleep disorders and treatment of insomnia with CBTi. This significant issue is only now beginning to be addressed through the development of education programmes in Australia and internationally (Meaklim et al., 2023).

The GPs in this research were uncertain about referral pathways and the appropriateness of using MHTPs for insomnia. Most GPs and psychologists in Chapters 4 and 5 reported insomnia was very rarely considered as a primary diagnosis for a MHTP, and several GPs did not believe insomnia was an eligible condition for a MHTP referral. This is incorrect, insomnia is included in the list of eligible conditions (Liotta, 2021). This misperception impacts on referrals. GPs may not refer a patient with insomnia to a psychologist, and if they do refer, insomnia is not mentioned on the referral which impacts on psychological treatment plans. The psychologists in Chapter 5 report that although MHTPs are the most common referral pathway, only a very small minority of patients are referred for insomnia, so it is not seen as the presenting problem or focus of treatment. Both GPs and psychologists need education about the use of MHTPs for treatment of insomnia. Medicare funding items are very complex across the board and can be difficult for health care providers to navigate (Royal Australian College of General Practitioners, 2022). One simple remediation would be to include insomnia, along with depression and anxiety, in the short list of possible mental health disorders appearing on the template given to GPs in initiating a MHTP. This would provide education to GPs and psychologists to reverse the commonly held belief that the MHTP cannot be used for insomnia treatment on its own. It may also encourage GPs to seek out psychologists with CBTi skills. In turn, if this increases demand for CBTi psychologists, that will help encourage psychologists to obtain these skills through professional development programs.

People with insomnia in Chapter 3 were unaware that the best-practice treatment for insomnia is psychological, and many report their GP did not discuss a referral to a psychologist. Some people with insomnia also report they do not believe psychologists can help with insomnia. The general public need education about the importance of sleep and the existence of effective non-drug treatment options for insomnia, including psychologists and CBTi. With greater awareness people will feel more confident to raise sleep difficulties with primary care health professionals and to seek out those psychologists who advertise skills in the treatment of insomnia. Again, if this increases demand for CBTi trained psychologists, it will also contribute to an increased take-up of professional development workshops and modules including those sponsored by the Australian Psychological Society and Australasian Sleep Association.

In Chapter 3, when people were sent an email with treatment advice for insomnia, nearly half of respondents (48%) reported they contacted a health professional in the interim 4-6 month period. Over half of these people (60%) reported they saw their GPs and were prescribed medications. Interestingly only a small number of people (15%) mentioned their GP provided information about sleep hygiene, sleep routines or relaxation. These strategies were identified in the research with GPs in Chapter 4 as commonly used by them with insomnia cases (Haycock et al., 2021). However, these non-drug solutions are not commonly reported in studies with patients. Why Chapter 3 of actively help-seeking patients with clinical insomnia did not reflect this experience in their encounters with GPs is puzzling. This could indicate miscommunication between doctor and patient, or conflicting understandings of the management of insomnia. Most GPs interviewed in Chapter 4 were aware that medications are not recommended for treatment of insomnia. In recruiting GPs in this study ethics considerations required the GPs be told it was to be an interview about management of sleep disorders. One can only speculate, but there is the possibility that this sample of GPs may not be representative of GPs in general. It is possible they had more interest in sleep disorders, knew that CBTi was the preferred best practice, and may be less likely than average to prescribe medication. This could explain the GPs in Chapter 4 appearing to be more likely to highlight the provision of sleep hygiene information than is apparent in the experiences of people with insomnia in Chapter 3. Apart from a possible selection bias of the GP participants in Chapter 4, this apparent discrepancy may reflect a preference on the part of patients for medication and a lack of understanding about the effectiveness of CBTi administered by an experienced psychologist. This, of course, would also reflect the lack of psychologists with this expertise and difficulty identifying any such psychologists by the patients or GPs. CBTi was developed by academic/research psychologists and has a long established and compelling evidence base. There should be little resistance to the introduction of CBTi in university clinical training programs or extracurricular professional development programs sponsored by professional psychology associations. With more psychologists trained in CBTi, and guidance from their GP, more people should be able to access this treatment.

The greatest dissonance in insomnia treatment is that although CBTi is now the recommended treatment, the general public is not aware of this, there are very few health professionals with CBTi skills, and in practice, it is very difficult to access.

6.3.3 Inadequate access to services

Even if health professionals did have knowledge and skills in the treatment of insomnia, there are further barriers in access to services. Funding pathways limit the treatment of insomnia. The diagnosis of insomnia requires a detailed history which is difficult during an average GP consultation of 14.8 minutes (Sake et al., 2019). GPs in Chapter 4 report that insomnia is complex and often overlaps with mental health conditions, therefore requiring longer consultations which are difficult in general practice timeframes. The current health care fee-for-service payment system in

Australia supports multiple short consultation times at a higher reimbursement rate than a single long consultation. This, in combination with long GP wait lists and other time-pressures of general practice, can act as a disincentive for GPs to take the time to adequately explore the patient's sleep issues (Cheung, Atternäs, et al., 2014) or provide CBTi.

Although clinical guidelines recommend CBTi as the first line treatment for insomnia (Ree et al., 2017), many patients cannot access CBTi as it is traditionally delivered by a small number of specialist trained psychologists. In Chapters 2 and 3 only 9% of people with insomnia had discussed sleep with a psychologist in the past year, and less than 1% had received treatment that included the behavioural components of CBTi. GPs in Chapter 4 report a lack of availability and difficulty identifying psychologists with training in CBTi, psychologists with specialist sleep knowledge are rare. Referrals to a psychologist under a MHTP are often limited to patients with psychological comorbidities (e.g., anxiety and depression), and referrals by GPs to sleep clinics for insomnia are rare (Cheung, Atternäs, et al., 2014). Another Australian study found people with insomnia reported seeing a psychologist specifically for insomnia was often self-initiated and considerable time was often spent searching for solutions (Cheung, Bartlett, et al., 2014). GPs need clear referral pathways to ensure more patients have access to CBTi. Findings from these research studies add to the growing body of research indicating that most people with insomnia are not able to access effective evidence-based treatment, due to the shortage of trained psychologists and long waitlists (Koffel et al., 2018).

People with insomnia in this research study also report cost concerns. It is expensive to see a psychologist. In Australia a MHTP is required to access a psychologist under Medicare funding, but a MHTP usually only provides a partial rebate for the cost of seeing a psychologist. Medicare rebates for a psychologist are low, so most psychologists need to charge gap fees to have a viable business.

Previous research has reported that patients question the appropriateness of completing a MHTP and do not see the relevance of mental health for insomnia (Cheung, Bartlett, et al., 2014). Interestingly in the current research study in Chapters 2 and 3 only 4-5% of people with insomnia indicated they did not see a psychologist due to concerns about needing a MHTP. Although many people were unaware of the recommended psychological treatments for insomnia, and some were concerned about costs to see a psychologist, they did not specifically mention MHTPs in the open-ended discussion questions. This discrepancy with previous research could be because MHTPs are now increasingly accepted and commonly used in general practice, or it could be that people with insomnia who did not see a psychologist were unaware of the existence of MHTPs.

Despite clinical guidelines clearly recommending CBTi, GPs still report a lack of clarity in treatment recommendations (Sake et al., 2019) and need guidelines to be easily integrated into everyday practice (Cheung, Atternäs, et al., 2014). A recent cluster randomised study in Spain found that

CBTi was effective in primary care, but many primary care providers found the cognitive component of therapy too complex. Interventions need to be adapted to work in the short consultation timeframes that are common in Australian primary care, and should focus on behavioural therapy (Torrens et al., 2021). Several other studies have shown CBTi to be effective in primary care and community settings, utilising different models and stepped care frameworks (Cheung et al., 2019; Davidson, Dickson, et al., 2019). The implementation of stepped care CBTi in community settings varies. CBTi programs include different components such as cognitive therapy, relaxation, sleep restriction therapy, stimulus control therapy and sleep psychoeducation (Cheung et al., 2019). Some groups of patients may do better with different modes of delivery of CBTi. Research in Canada found people who were younger and employed, and with less severe insomnia, were less likely to progress from digital CBTi to more intensive treatment (Vincent & Walsh, 2013). Although digital CBTi enables greater access to treatment it is limited by low retentions rates, lack of online access or poor computer literacy, and requires design features focusing on trust and functionality (Middlemass et al., 2012). As behavioural therapies for insomnia are more straight forward and require less formal training for clinicians compared to more intensive cognitive therapy, these strategies provide a potentially effective option for implementing in Australian primary care, with the cognitive elements reserved for the sleep psychologist specialists. Efforts to implement a program focused on brief behavioural components of CBTi into primary care are being made here in Australia with the Management of Sleep Apnea and Insomnia in Primary Care MoSIP trial (www.mosiptrial.org.au).

In Australia, primary care is at the frontline of the health care system and GPs are well placed to provide diagnosis and some basic treatment, and referral to appropriate specialist services for common clinical sleep problems in the community. GPs report psychological issues, including sleep disturbances, are the most common issues they manage (Royal Australian College of General Practitioners, 2022), but despite this, relatively few Australians report speaking to healthcare professionals about sleep, and insomnia is often only discussed as a secondary issue during a consultation for other reasons (Reynolds et al., 2019). Findings overseas are similar, health professionals and patients in England both described a stepped care approach for insomnia in primary care, but this was limited to sleep hygiene and medication, referral or access to CBTi was rare (Davy et al., 2013).

6.4 Recommendations

Insomnia is the most common sleep disorder affecting millions of Australians every day, but the most common treatments are not CBTi, the most effective and evidenced based treatment for insomnia and recommended by medical guidelines. Instead, the problematic and less effective treatments are still medications and sleep hygiene instructions. This research conducted with people with insomnia, GPs and psychologists indicates, in line with previous research (Miller et al.,

2017), that less than 1% of people with insomnia in Australia are receiving the recommended treatment of CBTi. This analysis identified important issues regarding knowledge and awareness of CBTi, the low priority of sleep and limited access to psychological care which all contribute to the poor uptake CBTi. Probably the single most obvious shortcoming of the health system regarding treatment of insomnia is the dearth of health professionals knowledgeable about sleep and experienced in the administration of CBTi. The recommendations below provide practical recommendations to translate policy into practice and make real changes to the lives of people with insomnia.

These research findings and recommendations below have been fed back to the National Centre for Sleep Health Services Research team (NCSHSR www.ncshsr.com/) as the research was conducted. Work on some of these recommendations is already underway. The order of these recommendations is also important, although some recommendations will need to occur before others, mostly, they could be actioned concurrently and this may help to build momentum to drive change in policy and practice for the different stakeholder groups.

6.4.1 Community

1. Public education about priority of sleep: The general public need to understand it is important to discuss sleep concerns with their GP and need education about psychological/behavioural treatment for insomnia. Improving access to CBTi involves raising awareness of the effectiveness of CBTi (Ree et al., 2017). Most public awareness campaigns focus on sleep hygiene. This is unfortunate as sleep hygiene has no evidence to support any benefits for chronic insomnia treatment. The focus on sleep hygiene in the general media and primary care practice implies that it has a confirmed clinical efficacy. As a result, sleep hygiene acts as a distraction and barrier to effective CBTi administration. People need to be encouraged to directly access CBTi in primary care with brief behavioural treatment or digital on-line programs, or with a referral to a psychologist with training in CBTi. The timing of this education of the public is crucial. To precede the increase in CBTi resources in primary care and psychological services would only lead to frustration of the public and health professionals. On the other hand, this increased demand from the public should have an accelerating effect on the provision of CBTi resources in the health professions. The increased demand for CBTi may motive GPs and psychologists to get the training they need.

6.4.2 Health professionals

2. Education for GPs in the detection and management of insomnia: GPs need education about the diagnosis and treatment of insomnia, including recognising insomnia as a primary condition, effective treatment in primary care, and use of MHTPs to refer patients to psychologists. For example, easily administered and scored questionnaires

(3-5 minutes) could be used by GPs to flag the possible presence of chronic insomnia probably more reliably than a less systematic and more lengthy discussion about the patient's sleep. A score on the questionnaire indicative of insomnia could then be followed up by the GP with further discussion about the sleep problem and possible avenues for treatment. The NCSHSR team has updated the RACGP's GPLearning insomnia online education course, prepared articles in academic and clinical GP magazines, and is now developing accredited CBTi education program for GPs.

3. GPs need to recognise the potential role of psychologists in insomnia management: Work is underway through the NCSHSR team to facilitate discussions with RACGP and training workshops for GPs. For example, a simple change to the format of the present MHTP template to include insomnia in addition to depression and anxiety would flag to the GP that insomnia with or without co-morbid psychopathology is a legitimate use of the MHTP. The work presented in Chapter 5 has resulted in discussions with the Department of Health, and a NewsGP article (Liotta, 2021) to highlight that insomnia is an eligible condition for a MHTP referral.
4. Education of current and future psychologists in CBTi: Psychologists need training in the use of CBTi, more trained practitioners are needed to improve access to CBTi (Middlemass et al., 2012; Ree et al., 2017). A long-term plan to introduce clinical training programs in the psychology curriculum across all universities needs to be developed and built into the Australian Psychology Accreditation Council (APAC) accreditation standards. A short-term plan is to bridge the gap and offer introductory and more extensive professional development programs for already practicing psychologists. Discussions are already underway between the NCSHSR team and the Australian Psychological Society (APS) and the Australasian Sleep Association (ASA) to facilitate this. The APS and ASA are currently developing a CBTi education course for Australian psychologists, and in 2022 a webinar series and 2-day workshop on CBTi were held with expert Australian and international speakers.
5. Identification of psychologists trained in CBTi: Once more psychologists are trained in CBTi an accreditation system and search engine needs to be developed to help GPs and patients identify psychologists with training in CBTi. The APS already has an on-line search engine to "find a psychologist" in which psychologists can list their clinical areas of interest. Such a website should be able to identify psychologists having obtained certification in CBTi treatment offered by the APS.
6. Recognition of insomnia as a primary condition and eligible for a Mental Health Treatment Plan: There needs to be a shift in the conception of insomnia as a primary condition, not a symptom or secondary condition. Insomnia is often a comorbid condition, and is a symptom of other conditions, but research shows treating insomnia first, as an independent condition, can have a positive benefit on many other health

conditions and quality of life (Sweetman, Lack, et al., 2021; Ye et al., 2015). The recent change to the diagnostic criteria for insomnia reflects this. This recognition of the independence and treatability of chronic insomnia with CBTi needs to occur not only amongst psychologists, but with GPs and the general public via a range of health professional and public messaging campaigns.

6.4.3 Health care system

7. Identification of more effective treatment options in primary care: To improve access to CBTi the development other treatment methods and effective low intensity options are needed (Ree et al., 2017). This could include Brief Behavioural Treatment for insomnia (BBTi), digital CBTi treatment, and clear referral pathways to specialist psychologists with experience in CBTi. Stepped care models have led to novel treatment interventions and wider dissemination of CBTi strategies in community spaces and illustrate the feasibility of providing lower-tiered CBTi programmes (Cheung et al., 2019). Recently there has been a growing interest in the development of new models of care for insomnia management in primary care in Australia (Sweetman et al., 2020). Further investigation is needed to fully understand the effectiveness and implementation of stepped care models in insomnia treatment (Cheung et al., 2019; Mack & Rybarczyk, 2011).The role of GPs and treatment options in primary care in the management of insomnia is being further explored through the Management of Sleep Apnea and Insomnia in Primary care (MoSIP trial www.mosiptrial.org.au). Evidence-based guidelines are needed to help GPs and patients navigate which levels of treatment are appropriate for different patients. In 2022 the NCSHSR team developed the Sleep Health Primary Care Resources treatment guidelines (Zwar & Soenen, 2023) which are now available online and endorsed by the RACGP and Australasian Sleep Association.
8. Better funding pathways for insomnia: Funding pathways need to exist in general practice to allow GPs to spend more time with patients needing care, and for practice nurses to deliver BBTi. This would make behavioural treatments for insomnia more accessible in primary care. Funding pathways also need to be reconsidered to make CBTi with a psychologist more accessible, more financial support through the Better Access scheme would make seeing a psychologist more affordable. Funding an evidence-based digital CBTi program would also make CBTi more available to people who are unable to afford to see a psychologist or live in remote locations. If more people can receive access to effective treatments for insomnia this will have significant positive impacts on their quality of life, and ability to function fully at work, study and all other aspects of life. Treating sleep disorders as a priority will have a positive impact on other mental and physical health conditions, reducing the burden of illness. CBTi is a proven, cost effective treatment for insomnia (Natsky et al., 2020), reducing total direct

and indirect health care costs over the long term by effectively providing a durable cure for chronic insomnia. Even though CBTi has some cost to the community, in the long term it saves money through reduced treatment costs as well as improving quality of life and daily functioning of people with insomnia. Treating insomnia not only reduces symptom severity, it also reduces likelihood of relapse for other mental health disorders (i.e. depression), so is likely a more cost effective way of treating these mental health disorders.

6.5 Next research steps

Efforts to translate policy into practice are already underway with the National Centre for Sleep Health Services Research (NCSHSR). This programme is introducing a Sleep Health Management Package that can be used in primary care to assist GPs in the management of insomnia and OSA. The new Sleep Health Management Package includes an Insomnia treatment model of care with a range of effective CBTi-based treatment options and provides resources to support primary care professionals in managing insomnia treatment choices with patients. This model of care emphasises collaborative decision making and will enable the primary care professional and patient to work together to select the best evidence-based treatment option for the patient based on individual needs and preferences. This Sleep Health Management Package is being trialled through the Management of Sleep Apnea and Insomnia in Primary Care (MoSIP) trial, assessing the feasibility of a new model of care to improve the management of sleep disorders in primary care.

Future research needs to evaluate the feasibility and effectiveness of changes implemented to improve access to evidence-based CBTi treatments. This could include evaluating the effectiveness of education programs to train GPs and psychologists in CBTi, to assess if this leads to improvements in management of insomnia. The effectiveness of public education campaigns to promote and improve management of insomnia also needs to be evaluated.

6.6 Conclusion

In Australia, primary care is at the frontline of the health care system and GPs are well placed to provide diagnosis and treatment for insomnia, or referral to a psychologist when needed. Despite this, relatively few Australians speak to healthcare professionals about sleep, and insomnia is often only discussed as a secondary issue during a consultation for other reasons.

Both patients and practitioners need education campaigns to raise awareness of the importance of sleep, and psychological treatment options for insomnia. In primary care more treatment options are needed to improve access to evidence-based treatment CBTi, including brief behavioural

treatment and online treatment options. GPs need training in the use of MHTPs for insomnia and referral pathways to psychologists, and more psychologists need training in CBTi.

To improve the management of insomnia in Australia efforts need to be made to recognise insomnia as a primary condition, increase awareness of psychological treatments for insomnia, and train more psychologists in CBTi. With these changes more people with insomnia will have access to effective, evidence-based care, which will lead to improved quality of life for the millions of people suffering from insomnia.

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APPENDICES

APPENDIX 1: CHAPTER 2: HEALTH PROFESSIONALS

The percentage of participants discussing sleep with health professionals in past year [*n* %] by insomnia group, for all participants.

	Current chronic insomnia & previous diagnosis *n* = 28		Previous diagnosis only *n* = 125		Current chronic insomnia only *n* = 275		No current chronic insomnia & no previous diagnosis *n* = 1616		Total sample *n* = 2044		χ^2	*p*
General practitioner	22	78.6%	69	55.2%	89	32.4%	297	18.4%	477	23.3%	153.41	**<.001**
Psychologist	4	14.3%	27	21.6%	22	8.0%	51	3.2%	104	5.1%	92.80	**<.001**
Psychiatrist	3	10.7%	21	16.8%	11	4.0%	29	1.8%	64	3.1%	92.51	**<.001**
Specialist in private practice	4	14.3%	15	12.0%	10	3.6%	31	1.9%	60	2.9%	55.05	**<.001**
Physiotherapist	1	3.6%	20	16.0%	7	2.5%	27	1.7%	55	2.7%	91.09	**<.001**
Chiropractor	2	7.1%	13	10.4%	4	1.5%	30	1.9%	49	2.4%	39.97	**<.001**
Hospital physician (with or without admission)	4	14.3%	12	9.6%	6	2.2%	25	1.5%	47	2.3%	51.65	**<.001**
Pharmacist	3	10.7%	7	5.6%	8	2.9%	27	1.7%	45	2.2%	18.88	**<.001**
Other physician	2	7.1%	10	8.0%	3	1.1%	16	1.0%	31	1.5%	44.45	**<.001**
Other	0	0.0%	3	2.4%	5	1.8%	11	0.7%	19	0.9%	6.64	.084
None of these	3	10.7%	26	20.8%	167	60.7%	1235	76.4%	1431	70.0%	234.00	**<.001**

Bold p-value: significant at the .05 level

APPENDIX 2: CHAPTER 2: REASONS FOR SEEKING CARE

The percentage of participants reporting reasons for discussing sleep with a health professional [*n* %] by insomnia group, for participants who saw a health professional in the past year.

	Current chronic insomnia & previous diagnosis *n* = 25		Previous diagnosis only *n* = 99		Current chronic insomnia only *n* = 108		No current chronic insomnia & no previous diagnosis *n* = 381		Total sample *n* = 613		$\chi 2$	*p*
I felt unwell emotionally (moody, disturbed, etc)	12	48.0%	49	49.5%	39	36.1%	124	32.5%	224	36.5%	11.21	**.011**
I went to my health professional with another concern/ issue but sleep was discussed	9	36.0%	26	26.3%	56	51.9%	123	32.3%	214	34.9%	18.07	**<.001**
I was aware of feeling sleepy/ unfocussed	17	68.0%	37	37.4%	41	38.0%	114	29.9%	209	34.1%	16.94	**.001**
I felt unwell physically	10	40.0%	40	40.4%	30	27.8%	95	24.9%	175	28.5%	10.90	**.012**
I was worried about my ability to do other non-work tasks	6	24.0%	25	25.3%	17	15.7%	48	12.6%	96	15.7%	10.92	**.012**
I was worried about my ability to do my job	3	12.0%	19	19.2%	9	8.3%	45	11.8%	76	12.4%	5.98	.113
The health professional raised the issue of my sleep	6	24.0%	11	11.1%	15	13.9%	41	10.8%	73	11.9%	4.43	.219
A family member suggested I needed to speak to a professional	3	12.0%	13	13.1%	11	10.2%	41	10.8%	68	11.1%	0.57	.903
In comparison to other peoples' sleep patterns, I was worried about my sleep, although I wasn't feeling tired during the day	3	12.0%	16	16.2%	6	5.6%	39	10.2%	64	10.4%	6.30	.098
I didn't feel safe driving	7	28.0%	13	13.1%	7	6.5%	26	6.8%	53	8.6%	16.62	**.001**
A friend suggested I needed to speak to a professional	1	4.0%	10	10.1%	6	5.6%	25	6.6%	42	6.9%	2.29	.514
Other	1	4.0%	11	11.1%	9	8.3%	32	8.4%	53	8.6%	1.49	.685

Bold p-value: significant at the .05 level

APPENDIX 3: CHAPTER 2: TREATMENTS

The percentage of participants reporting treatments and behaviours ever used in past year to help sleep [*n* %] by insomnia group, for all participants.

	Current chronic insomnia & previous diagnosis *n* = 28		Previous diagnosis only *n* = 125		Current chronic insomnia only *n* = 275		No current chronic insomnia & no previous diagnosis *n* = 1616		Total sample *n* = 2044		*χ2*	*p*
Increased the amount of time you spend in bed	21	75.0%	88	70.4%	138	50.2%	681	42.1%	928	45.4%	139.93	**<.001**
Strict sleep habits and timing	21	75.0%	85	68.0%	129	46.9%	557	34.5%	792	38.7%	112.49	**<.001**
Relaxation techniques	20	71.4%	85	68.0%	100	36.4%	504	31.2%	709	34.7%	129.81	**<.001**
Reduced the amount of time you spend in bed	21	75.0%	84	67.2%	105	38.2%	468	29.0%	678	33.2%	182.90	**<.001**
Alcohol, beer or wine	18	64.3%	66	52.8%	101	36.7%	475	29.4%	660	32.3%	76.41	**<.001**
Meditation, mindfulness techniques	22	78.6%	84	67.2%	89	32.4%	414	25.6%	609	29.8%	155.99	**<.001**
Sleep medication prescribed by a doctor (e.g. temazepam, valium)	19	67.9%	82	65.6%	75	27.3%	316	19.6%	492	24.1%	216.31	**<.001**
Stretching, yoga	15	53.6%	64	51.2%	59	21.5%	324	20.0%	462	22.6%	108.35	**<.001**
An eye mask or earplugs	15	53.6%	59	47.2%	43	15.6%	289	17.9%	406	19.9%	148.01	**<.001**
Special mattress or bedding	13	46.4%	60	48.0%	42	15.3%	285	17.6%	400	19.6%	130.45	**<.001**
Herbal supplements such as Valerian	13	46.4%	55	44.0%	44	16.0%	255	15.8%	367	18.0%	154.31	**<.001**
Wearable devices e.g Fitbit, Fitness trackers	11	39.3%	48	38.4%	43	15.6%	235	14.5%	337	16.5%	106.01	**<.001**
Online modules or Sleep apps, including insomnia apps	13	46.4%	42	33.6%	33	12.0%	207	12.8%	295	14.4%	122.74	**<.001**

	Current chronic insomnia & previous diagnosis *n* = 28		Previous diagnosis only *n* = 125		Current chronic insomnia only *n* = 275		No current chronic insomnia & no previous diagnosis *n* = 1616		Total sample *n* = 2044		$\chi 2$	*p*
Cognitive behavioural therapy (CBTi) techniques for insomnia from a health care professional	21	75.0%	57	45.6%	29	10.5%	183	11.3%	290	14.2%	297.26	**<.001**
Counselling or hypnosis	14	50.0%	55	44.0%	36	13.1%	180	11.1%	285	13.9%	188.21	**<.001**
Melatonin prescribed by a doctor	12	42.9%	58	46.4%	19	6.9%	194	12.0%	283	13.8%	203.23	**<.001**
Other store-bought sleep aids e.g. anti-snoring pillow	12	42.9%	46	36.8%	20	7.3%	202	12.5%	280	13.7%	197.06	**<.001**
Alternative therapy, such as acupuncture or homeopathy	14	50.0%	42	33.6%	24	8.7%	191	11.8%	271	13.3%	137.95	**<.001**
Melatonin bought on-line	10	35.7%	42	33.6%	23	8.4%	186	11.5%	261	12.8%	168.22	**<.001**

Bold p-value: significant at the .05 level

APPENDIX 4: CHAPTER 2: REASONS FOR NOT SEEING PSYCHOLOGIST

The percentage of participants reporting reasons for not seeing a psychologist [*n* %] by insomnia group, for participants who saw a health professional but did not see a psychologist. Participants could only select one reason.

	Current chronic insomnia & previous diagnosis *n* = 18		Previous diagnosis only *n* = 62		Current chronic insomnia only *n* = 84		No current chronic insomnia & no previous diagnosis *n* = 309		Total sample *n* = 473	
Cost concerns	7	38.9%	21	33.9%	11	13.1%	62	20.1%	101	21.4%
GP did not refer me or raise as a possibility	5	27.8%	17	27.4%	16	19.0%	72	23.3%	110	23.3%
Sleep problem didn't bother me enough	2	11.1%	9	14.5%	22	26.2%	92	29.8%	125	26.4%
No private health insurance	0	0.0%	3	4.8%	9	10.7%	37	12.0%	49	10.4%
Concern about mental health treatment plan	0	0.0%	4	6.5%	4	4.8%	17	5.5%	25	5.3%
Other reason	4	22.2%	8	12.9%	22	26.2%	29	9.4%	63	13.3%

Overall $\chi 2 = 38.34$, ***p<.001***

APPENDIX 5: CHAPTER 3: HEALTH PROFESSIONALS

Percentage of respondents reporting discussing sleep with a health professional in the past year by insomnia group, with correlations between ISI, sex and age.

	Clinical insomnia *n* = 505		Subclinical insomnia *n* = 170		Chi squared χ^2 / *p*		Pearson Correlation					
							Follow-up ISI		Sex		Age in years	
General practitioner	324	64.2%	72	42.4%	24.94	**<.001**	.204	**<.001**	-.091	**.013**	.004	.903
Psychologist	81	16.0%	18	10.6%	3.02	.082	.120	**.002**	-.042	.251	-.165	**<.001**
Pharmacist	70	13.9%	12	7.1%	5.52	**.019**	.172	**<.001**	-.099	**.007**	.027	.467
Psychiatrist	40	7.9%	5	2.9%	5.07	**.024**	.131	**.001**	-.017	.637	-.145	**<.001**
Specialist in private practice	38	7.5%	5	2.9%	4.48	**.034**	.107	**.005**	-.101	**.006**	-.06	.105
Physiotherapist	22	4.4%	2	1.2%	3.75	.053	.110	**.004**	-.046	.215	-.044	.23
Chiropractor	20	4.0%	5	2.9%	.37	.543	.034	.370	-.014	.711	-.038	.306
Hospital physician (with or without admission)	15	3.0%	4	2.4%	.18	.674	.005	.887	-.023	.534	.056	.126
Other physician	12	2.4%	2	1.2%	.90	.342	.003	.946	-.072	**.05**	.015	.688
Other (specify)	24	4.8%	11	6.5%	.76	.382	-.001	.989	-.058	.115	.029	.435
None of these	108	21.4%	68	40.0%	22.86	**<.001**	-.216	**<.001**	.117	**.001**	.032	.388

Bold p-value: significant at the .05 level

APPENDIX 6: CHAPTER 3: REASONS FOR SEEKING CARE

Correlations between ISI, sex age and reasons for seeing a health professional for people with insomnia seeking care.

	Clinical insomnia *n* = 505		Subclinical insomnia *n* = 170		Chi squared $\chi 2$ / *p*		Pearson Correlation					
							Follow-up ISI		Sex		Age in years	
I was aware of feeling sleepy/ unfocussed	178	44.8%	32	31.4%	16.01	**<.001**	.238	**<.001**	-.069	.061	-.170	**<.001**
I felt unwell emotionally (moody, disturbed, etc)	174	43.8%	26	25.5%	22.40	**<.001**	.275	**<.001**	-.101	**.006**	-.199	**<.001**
I went to my health professional with another concern/issue but sleep was discussed	115	29.0%	24	23.5%	5.83	**.016**	.023	.542	-.045	.216	.004	.906
I felt unwell physically	114	28.7%	16	15.7%	14.17	**<.001**	.251	**<.001**	.029	.425	-.161	**<.001**
I was worried about my ability to do my job	96	24.2%	19	18.6%	5.52	**.019**	.172	**<.001**	-.024	.511	-.201	**<.001**
I was worried about my ability to do other non-work tasks	93	23.4%	16	15.7%	7.62	.006	.235	**<.001**	-.082	**.025**	-.207	**<.001**
In comparison to other peoples sleep patterns, I was worried about my sleep, although I wasn't feeling tired during the day	67	16.9%	12	11.8%	4.74	**.029**	.093	**.015**	-.023	.539	.005	.895
A family member suggested I needed to speak to a professional	43	10.8%	10	9.8%	1.22	.270	.083	**.031**	-.003	.934	-.156	**<.001**
I didn't feel safe driving	33	8.3%	2	2.0%	7.43	**.006**	.145	**<.001**	-.054	.139	-.058	.117
A friend suggested I needed to speak to a professional	17	4.3%	2	2.0%	2.23	.135	.115	**.003**	.084	**.022**	-.04	.278
The health professional raised the issue of my sleep	16	4.0%	8	7.8%	0.88	.349	.027	.489	-.041	.26	-.079	**.031**
Other	26	6.5%	9	8.8%	0.01	.941	-.008	.827	-.061	.095	.086	**.019**

Bold p-value: significant at the .05 level

APPENDIX 7: CHAPTER 3: TREATMENTS

Correlations between ISI, sex age and treatments used in the past year for people with insomnia seeking care.

	Clinical insomnia *n* = 505		Subclinical insomnia *n* = 170		Chi squared $\chi 2$ / *p*		Pearson Correlation					
							Follow-up ISI		Sex		Age in years	
Follow-up ISI									-.085	**.028**	-.078	**.043**
Sleep medication prescribed by a doctor (e.g. temazepam, valium)	214	42.4%	47	27.6%	11.64	**<.001**	.210	**<.001**	-.065	.078	.102	**.005**
Relaxation techniques	202	40.0%	62	36.5%	0.66	.415	.111	**.004**	-.156	**<.001**	-.065	.076
Melatonin prescribed by a doctor	185	36.6%	41	24.1%	8.95	**.003**	.147	**<.001**	-.151	**<.001**	.027	.458
Meditation, mindfulness techniques	180	35.6%	69	40.6%	1.34	.248	.058	.129	-.144	**<.001**	-.103	**.005**
Herbal supplements such as Valerian	156	30.9%	37	21.8%	5.19	**.023**	.093	**.015**	-.095	**.009**	.032	.383
Strict sleep habits and timing	143	28.3%	47	27.6%	0.03	.867	.067	.079	-.049	.178	-.045	.22
An eye mask or earplugs	141	27.9%	40	23.5%	1.25	.264	.100	**.009**	-.065	.078	-.176	**<.001**
Melatonin bought on-line	129	25.5%	37	21.8%	0.98	.322	-.003	.945	-.007	.84	.054	.141
Increased the amount of time you spend in bed	125	24.8%	24	14.1%	8.36	**.004**	.124	**.001**	-.04	.273	-.086	**.019**
Alcohol, beer or wine	123	24.4%	24	14.1%	7.83	**.005**	.062	.106	.150	**<.001**	-.066	.073
Online modules or Sleep apps, including insomnia apps	117	23.2%	21	12.4%	9.15	**.002**	.156	**<.001**	-.125	**.001**	-.069	.059
Wearable devices e.g Fitbit, Fitness trackers	115	22.8%	39	22.9%	0.00	.964	.026	.501	-.064	.083	-.090	**.014**
Reduced the amount of time you spend in bed	77	15.2%	25	14.7%	0.03	.865	.064	.097	-.046	.21	-.051	.164

	Clinical insomnia *n* = 505		Subclinical insomnia *n* = 170		Chi squared *χ2 / p*		Pearson Correlation Follow-up ISI		Sex		Age in years	
Stretching, yoga	76	15.0%	33	19.4%	1.79	.181	-.025	.521	-.017	.646	-.093	**.011**
Special mattress or bedding	76	15.0%	25	14.7%	0.01	.913	.041	.285	.005	.883	-.068	.063
Other store-bought sleep aids e.g. anti-snoring pillow	55	10.9%	11	6.5%	2.82	.093	.082	**.034**	-.051	.167	-.024	.514
Counselling or hypnosis	43	8.5%	10	5.9%	1.22	.270	.113	**.003**	-.072	**.05**	-.042	.248
Cognitive behavioural therapy (CBTi) techniques for insomnia from a health care professional	33	6.5%	6	3.5%	2.11	.146	.124	**.001**	-.090	**.014**	.026	.473
Alternative therapy, such as acupuncture or homeopathy	30	5.9%	9	5.3%	0.10	.755	.089	**.02**	-.049	.183	.045	.219

Bold p-value: significant at the .05 level

APPENDIX 8: CHAPTER 3: SYMPTOMS HOPING TO IMPROVE

Correlations between ISI, sex age and symptoms hoping to improve for seeing a health professional for people with insomnia seeking care.

	Clinical insomnia *n* = 505		Subclinical insomnia *n* = 170		Chi squared *χ2 / p*		Pearson Correlation					
							Follow-up ISI *r / p*		Sex *r / p*		Age in years *r / p*	
Waking up during the night	378	74.9%	118	69.4%	1.93	.165	.064	.094	-.073	**.045**	.129	**<.001**
Difficulty falling asleep	329	65.1%	80	47.1%	17.43	**<.001**	.189	**<.001**	-.063	.086	-.075	**.042**
Feeling fatigue or exhaustion	326	64.6%	74	43.5%	23.29	**<.001**	.265	**<.001**	-.064	.079	-.186	**<.001**
Reduced motivation or energy	300	59.4%	52	30.6%	42.33	**<.001**	.278	**<.001**	-.073	**.045**	-.130	**<.001**
Waking up too early	258	51.1%	69	40.6%	5.62	**.018**	.123	**.001**	.029	.427	.069	.059
Reduced concentration, attention or memory	257	50.9%	55	32.4%	17.58	**<.001**	.255	**<.001**	-.053	.145	-.152	**<.001**
Feeling sleepiness that interferes with your daily activities	253	50.1%	45	26.5%	28.80	**<.001**	.303	**<.001**	-.007	.852	-.163	**.001**
Feeling irritable or moody	228	45.1%	33	19.4%	35.52	**<.001**	.293	**<.001**	-.005	.888	-.201	**.001**
Having little interest or pleasure in doing things	205	40.6%	18	10.6%	51.76	**<.001**	.346	**<.001**	.005	.898	-.134	**<.001**
Feeling down, depressed or hopeless	190	37.6%	25	14.7%	30.78	**<.001**	.299	**<.001**	.041	.259	-.182	**<.001**
Feeling sleepy when sitting quietly during the day or early evening	154	30.5%	41	24.1%	2.52	.113	.183	**<.001**	.027	.464	-.051	.166
Feeling hyperactive, impulsive or aggressive	75	14.9%	11	6.5%	8.04	**.005**	.195	**<.001**	-.012	.746	-.043	.245

Bold p-value: significant at the .05 level

APPENDIX 9: CHAPTER 3: REASONS FOR NOT SEEING PSYCHOLOGIST

The percentage of participants reporting reasons for not seeing a psychologist [*n* %] by insomnia group, for participants who saw a health professional but did not see a psychologist.

	Clinical insomnia *n* = 316		Subclinical insomnia *n* = 84	
GP not referred me/raised as a possibility	138	43.7%	36	42.9%
Cost concerns/ too expensive	67	21.2%	12	14.3%
No private health insurance	49	15.5%	5	6.0%
Concern about needing a mental health treatment plan to access psychologist	12	3.8%	5	6.0%
Other reason	82	25.9%	26	31.0%

APPENDIX 9: CHAPTER 4: GP INTERVIEW SCHEDULE

Interview also included initial questions about OSA

Question	Possible prompts
Insomnia – current practice	
1. Now thinking about insomnia, can you tell me how you would usually respond to a patient suspected of insomnia in terms of assessment	○ How do you assess the nature and extent of insomnia / how is it diagnosed (at GP or referrals)? ○ For referrals –What are the most common services/specialists you refer patients to? ○ Do you use any screening tools or decision support tools?
2. How do you usually respond in terms of managing insomnia with your patients?	○ What treatments/clinical sleep health care is offered? E.g. medications, referral to sleep and/or respiratory specialists; CBT; sleep hygiene; identifying underlying causes of insomnia; other ○ For those who prescribe medications: How familiar are you with other treatments for insomnia (aside from medication)? Do you have a view on how effective they are? ○ For referrals –What are the most common services/specialists you refer patients to?
3. Do you usually play a role in ongoing monitoring / follow-up of patients with insomnia?	○ How well do you think patients generally comply with your recommendations?
4. Is the practice nurse(s) involved in managing insomnia? How?	
5. Have there been any changes/alternative approaches in the treatments/ clinical sleep health care you offer patients with insomnia over the last few years? Explore	
6. What do you think of the current referral/care pathways for insomnia in supporting you in providing care for your patients?	○ For example, is there adequate capacity to assist your patients, are they timely, are there good channels of communication? ○ Are there any referral/care pathways or services that are currently unavailable that you would like to refer patients to?

Insomnia – Future intentions	
7. Thinking about insomnia, what could assist in your role? Supplementary: Would you consider referring patients to an online CBT training program for insomnia and how receptive do you think patients might be to this options?	Technology ○ Simple online screening and decision support tools linked with native primary care IT systems (e.g. Medical Director) Guidelines ○ Guidelines on what GPs can do related to behavioural management of patients with insomnia ○ Well defined care pathways for referrals to specialist psychology or physician advice/ management Education ○ Further general education/ training on insomnia management including the relative merits/ risks of drug versus behavioural treatments ○ Knowledge on how to identify patients who can be managed by a GP and when to refer for specialist psychology or physician advice/ management Funding/reimbursement model ○ Additional financial incentive ○ Integration into chronic disease care plans ○ Anything else?
8. Thinking about the role you play in treating insomnia, would you like to play a greater role or have more responsibility in managing your patients in the future?	○ Why do you say that? ○ IF YES/MORE: What do you think this could look like? / What would be different?

Barriers and enablers	Now I'd like to discuss factors that you think support or hinder the treatment of sleep disorders among GPs…
9. So in summary, what do you think are the main factors that help or hinder you in providing clinical sleep health care to patient? E.g. things about your practice, the specific approaches / interventions used for managing sleep disorders, the external context (e.g. polices / funding / patient perspectives) or your own professional approach that influence your treatment for these conditions.	○ Points for interviewer to keep in mind ○ Nature and characteristics of approaches/**interventions** for managing sleep problems For example, ▪ complexity/ clarity of approaches; ▪ views on the benefit/harm from treatments; ▪ practicality of treatments; ▪ cost-effectiveness of treatments; ▪ resources required to manage sleep disorders ○ Nature of the practice/**organisation** For example ▪ limited resources (time and funding) ▪ Skills mix ▪ Processes and systems ▪ Practice interest/involvement in sleep disorders ○ The **external context** For example, ▪ Patient perceptions ▪ Policy and legislation ▪ How funding is allocated ▪ Public awareness ▪ Treatment availability/clear referral pathways ○ Anything about experience that has helped or hindered (**professionals**)? For example, ▪ Your knowledge/familiarity in managing sleep problems ▪ Your level of authority/influence ▪ Workload/time available ▪ Competencies – having had adequate training ▪ Your confidence
	Is there anything we haven't covered that you would like to add?

Background questions	Just a few questions about you to finish off.
10. How long have you been practicing as a GP?	
11. How long have you been at this practice?	
12. When did you graduate?	
13. How many GPs and practice nurses are in the practice (Full Time Equivalents)?	
14. Thinking of the last 4 weeks, are you able to provide a rough estimate of how often you encounter patients seeking medical advice for OSA and insomnia. For OSA/Insomnia, would you say it is ○ OSA - Never/almost never; 1-4 per month; 5-10 per month; >10 per month ○ Insomnia - Never/almost never; 1-4 per month; 5-10 per month; >10 per month	
15. Do you work full-time as a GP: If not, what fraction do you work?	
16. Where is your current practice located- Remote, Rural or metropolitan?	
17. What State or territory do you practice in?	
18. How old are you? - Under 35, 35-44, 45-54, 55- 64, 65+	
19. Do you consult in a language other than English? If yes, which one?	
20. Would it be ok if we contacted you if we had any further questions about this study?	
21. How did you find out about the study?	

APPENDIX 10: CHAPTER 5: PSYCHOLOGIST INTERVIEW SCHEDULE

	Question	**Prompts:**
1. Frequency	Do you see many patients with insomnia? What percentage of the patients you see would have insomnia?	If no patients with insomnia then ask modified questions in blue
2. Referral/access	How do people with insomnia usually find out about your services? Why do you think you don't you see patients with insomnia?	Do your insomnia patients usually get referred by their GP or self present? How do your patients normally pay for treatment? How much do you charge/hour and do you have concessional rates? Are they referred with a mental health care plan? Is this the main avenue for referral? Do you receive any referrals for patients with insomnia?
3. Presentation/ diagnosis	How do you go about assessing and diagnosing insomnia? If you did see a patient with insomnia how would you go about assessing and diagnosing insomnia?	What percentage of your clients present with their major complaint being insomnia? What percentage of your clients mention insomnia as a problem? Does insomnia usually come up as a co-morbidity of some other problem (depression, anxiety, phobias, etc.) rather than the main complaint? Do you play a role in the management of OSA (only if bring up in comorbid)

4. Treatment	What particular approaches and strategies do you commonly use when treating patients with insomnia? What particular approaches and strategies would you use when treating patients with insomnia?	What is the frequency and length of appointment? Do you use hour consultations for insomnia patients or a mixture of hour and half hour? Are you familiar with cognitive and behaviour therapy for insomnia (CBTi)? CBTi includes many components. Can you elaborate on the ones you use the most or specify different components depending on the nature of the insomnia case? Are your patients motivated to engage in treatment? Generally what success do they usually have? What percentage would respond, remit, cure? Rural/remote – ask about telehealth if have interviews with rural participants
5. Scenario / case study 1 Sleep Hygiene Sleep Restriction Stimulus Control Cognitive therapy	Jane is a 40 year old woman who has had difficulty falling asleep and maintaining sleep for many years. She suffers from daytime fatigue and finds it hard to concentrate at work. She is very anxious about her sleep and worries about not being able to get a good solid refreshing sleep. She doesn't take any medications. She would like to sleep more and feel better during the day. She typically goes to bed about 10pm because she is so tired, but often takes more than a half hour to get to sleep and wakes during the night and has trouble getting back to sleep. She gets out of bed at 6am feeling unrefreshed. She thinks she sleeps for only about 5-6 hours/night.	What do you think is maintaining her insomnia? How would you go about treating it?

6. Scenario / case study 2 Sleep Hygiene Medication withdrawal Cognitive therapy Sleep Restriction? Stimulus Control?	John is a 62 year old man who has had difficulty maintaining sleep for many years and wakes frequently during the night, his GP prescribed a longer acting benzodiazepine) 10 years ago when his wife died. He lives alone, doesn't leave his house much and feels depressed. He has tried to stop this medication over the years but has not been successful. Despite the medication, he still sleeps poorly and rarely feels refreshed. He would like to stop medication, feel happier and sleep better.	What do you think is maintaining his insomnia? How would you go about treating it? How do you treat insomnia with clients already taking hypnotic medications for it? Do you recommend tapering before treatment or during treatment or after successful treatment?
7. Scenario / case study 3 Sleep Hygiene Bright light therapy Melatonin	Damien is a 22 year old whose main problem is getting to sleep initially. This is particularly true during the work week when he attempts to get to sleep before midnight, when it will take him up to an hour to fall asleep. On the weekend he stays up later and falls asleep a bit more easily and can sleep in late to catch up on sleep lost during the week. Once asleep, he sleeps all right.	What do you think is maintaining his insomnia? How would you go about treating it?
8. Knowledge, training and education	What specific education have you received about sleep and insomnia?	Undergraduate exposure to sleep? Post-graduate clinical education in CBTi? APS workshops on the treatment of insomnia? Would you like more education about sleep? In general, do you think Psychologists have a good knowledge and understanding of sleep and insomnia? What kind of resources and guidelines do you have available for treating insomnia?

9. Responsibility	What role do you see Psychologists having in the management of insomnia, and how do other providers fit with the Psychologists role?	What referral networks exist? What other professional groups do you have relationships with regarding sleep, how could these be developed? Do you work closely with Psychiatrists? Do you have patients on medications?
10. Other	Is there anything else we haven't covered that you would like to add?	
11. Background questions	Just a few questions about you to finish off	• How long have you been practising as a Psychologist? • Thinking of the last 4 weeks, are you able to provide a rough estimate of how often you see patients seeking treatment for insomnia. Would you say it is: Never/almost never; 1-4 per month; 5-10 per month; >10 per month • Do you work full-time as a Psychologist? If not, what fraction do you work? • Where is your current practice located – remote, rural, or metropolitan? • What state or territory do you practice in? • Which age group are you in - Under 35, 35-44, 45-54, 55-64, 65+ • Do you consult in a language other than English? If yes which one? • Would it be ok if we contacted you if we had any further questions about this study? • How did you find out about this study?