Original Research

Perceptions of Insomnia among an Iranian Population: Causes and Responses

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Abstract

Background and Objective: People's perceptions toward insomnia are influenced by the socio-cultural context of their lives. Therefore, the purpose of this study was to investigate beliefs, attitudes, and practices of the participants about causes of insomnia and its management.

Materials and Methods: Nineteen participants with a self-reported history of insomnia from the community were recruited in this study. Semi-structured qualitative interviews were conducted. The interviews were recorded and transcribed verbatim. The transcriptions were analyzed using thematic analysis.

Results: Four themes were identified: underlying causes of insomnia, help-seeking barriers, my coping strategies, and good food - bad drugs. Participant's reactions to insomnia depended on their broader socio-cultural beliefs.

Conclusion: Studying these perceptions and responses in our sample would contribute to better understanding of patients' therapeutic preferences. It would also help to identify effective socio-cultural beliefs on insomnia self-management methods. Identification of these beliefs and practices also can contribute to adaptation of common insomnia treatments.

Keywords: Insomnia; Beliefs; Qualitative research

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Introduction

Insomnia is the most prevalent sleep disorder, and up to one-third of the general population can experience insomnia symptoms at any point of time (1). Clinically, insomnia is characterized by the subjective complaint of one or more of the following symptoms: difficulties initiating and/or maintaining sleep; and/or early morning awakening despite adequate sleep opportunity. When symptoms are accompanied by significant daytime distress/dysfunction, it is further classified as insomnia disorder (2). Despite the prevalence of insomnia, the management remains suboptimal in practice and continues to pose a risk factor for other diseases (3, 4).

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Patients' propensity to delay medical care in favor of self-help (e.g., over-the-counter and complementary remedies) in part may contribute to the under-recognition and suboptimal management of insomnia (5). It is known that help-seeking for insomnia is mostly motivated by daytime functional deficits rather than the symptoms of sleeplessness *per se* (6-8). The growing body of qualitative research exploring experiences of patients' insomnia further illustrates how illness narratives are structured around psychosocial domains (e.g., workplace productivity) (9, 10). Furthermore, theoretical models of health behaviors such as the theory of planned behavior propose that an individuals' coping mechanisms stem from one's understanding and beliefs about the illness (11). The intricate relationship between sleep beliefs and the varied ways in which individuals might respond to their insomnia has previously been described by henry, rosenthal (12). The way

an individual initially responds to insomnia may depend largely on their socio-cultural understanding of sleep (13-15).

Sleep beliefs also have important implications for the pathophysiology and treatment of insomnia (16), with cognitive realignment forming an important basis for cognitive behavioral therapy for insomnia (CBT-I) (17). However, the current evidence and guidelines for CBT-I is established on the basis of clinical research conducted in the western developed world and does not necessarily accommodate for the different cultural nuances of sleep motifs. The high prevalence of insomnia in Iran (59%) Sepehrmanesh et al. (18) coupled with its unique socio-political situation represents an important cross-cultural perspective for understanding the insomnia experience. For example, alcohol for sleep promotion is commonly self-reported in epidemiological studies (5), but the prohibition of alcohol may unveil new insights underpinning its use (19). New cultural insights in sleep may help to further refine cognitive alignment strategies within the CBT-I repertoire (5). Therefore, the aim of this study was to explore the subjective insomnia experiences of our participants and to better understand their beliefs about insomnia and how they respond to insomnia.

Materials and Methods

Semi-structured interviews: The present study was descriptive and qualitative. Semi-structured interviews were conducted in Persian between December 2016 and March 2017 in the cities of Tehran, Ahvaz, and Abadan in Iran. Interviews were guided by a schedule of questions informed by established research on the subjective insomnia experience (12, 20). Questions focused on participants' sleep scheduling and routines, perceived causes of insomnia, their coping strategies and help-seeking behaviors and patterns. The interview guide was iteratively modified as participants brought new concepts for exploration in subsequent interviews. Table 1 outlines the interview questions and the accompanying probes. The nature of the study was first explained to interested participants. Participants were requested to sign a consent form prior the interview.

Table 1. Interview guide

Main question	1. Please describe your typical sleep schedule and circumstances
Probing questions	What time do you usually go to sleep and wake up? Do you have any habit or routine before bed? Do you sleep easily? Do you sleep alone or sleep with your spouse or your children? Do other people sleep in your bedroom? Do you read, think or use electronic devices in your bed? What things disrupt your sleep during the night?
Main question	2. Please explain what will you do if you cannot sleep?
Probing questions	Have you ever had trouble sleeping? If yes: when was it? What do you think was its cause? What did you do? If not: what will you do if you have this problem? What is your last solution for insomnia? Why don't you do that at first? What are other's recommendations for insomnia? Do you know anyone who has experienced insomnia? What has she done for her insomnia? How much insomnia do you consider normal? Do you know any specific method for treating insomnia?
Main question	3. Please explain what do you think could be the causes of insomnia in general?
Probing questions	Which personal issues (thoughts, emotions)? Which social issues? Which health status (physical, mental)? What ideas people in Iran have about the causes of insomnia?
Main question	4. How do you get information about insomnia?
Probing questions	How much information are Iranian people given about insomnia and its management? In what way is this information provided? Do you trust this information? How would you seek information when you cannot sleep? To whom will you talk to?
Main question	5. What do you think about sleeping pills?
Probing questions	Have you ever taken sleeping pills? If you had trouble sleeping would you try them? If yes, why? If no, why not?
Main question	6. Where would you go for specialized insomnia treatment?
Probing questions	Do you think formal insomnia treatment is possible? Where would be the first place you go? What would you do if the treatment were not effective? Why don't you point to psychology/psychiatry/general practitioner (GP) clinic?
Main question	7. What would be the barriers or facilitators to visiting a specialist for your insomnia?
Probing questions	What factors or circumstances would facilitate your preference to seek such treatment? What would make it difficult? (Cost, access, treatment duration, mode of implementation, type of treatment, cultural aspects, help from family members)
Main question	8. Is there any other point you want to add?
Probing questions	Is there any point you want to add to topics discussed? Do you have any questions?

All interviews were conducted by the first author. Due to cultural reasons, in all interviews with female participants, a female research assistant accompanied him. Interview venues (i.e., workplace or home) were selected based on the participants' preference. All interviews were fully recorded and transcribed verbatim by the first author. Necessary quotations for this paper were translated by a certified translator. This study was approved by the Ethics Committee of Tarbiat Modares University, Iran.

Participants: A convenient sample of participants was recruited from workplaces (mostly various shops) or public places such as public parks. The sampling frame aimed to target participants from diverse spectra of social backgrounds representative of the heterogeneous help-seeking needs/sleep experiences of our participants. The inclusion criteria were age 18 years and more, with a self-reported history of insomnia symptoms (i.e., difficulty initiating sleep and/or maintaining sleep and/or early morning awakening) ≥ 3 times/week for at least 3 months. Importantly, the study required participants to have only engaged in self-help and/or primary care but have never consulted with a specialist for their insomnia. The rationale for the current sampling frame was to capture the beliefs and experiences of those from the general population, particularly those who do not identify themselves with clinically defined "insomnia" and tend to delay medical care. People who consult specialists for their insomnia are likely to represent a different patient population. Recruitment continued until thematic saturation was achieved where new interviews did not generate any additional thematic categories or concepts (21).

Analysis: The analysis was carried out using ATLAS-ti software (Scientific Software, Berlin, Germany) following the method of thematic analysis proposed by Braun and Clarke (22). Interview transcripts were read iteratively by the first and third author to identify emerging concepts and thematic codes pertinent to the research question. In the second stage, these codes were systematically applied to the relevant sections of the identified text in each interview transcript. For inter-rater reliability, a random selection of interview transcripts was cross-checked for consistency in coding. Overlapping coding categories were then further abstracted and clustered into preliminary candidate thematic categories. These candidate thematic categories were further examined to determine their relationship within the case and across case to describe the phenomenon of interest. In the final stage of the analysis, candidate thematic categories were then further abstracted into key themes. Any discrepancies in coding and/or thematic abstraction were discussed across three research meeting sessions until a consensus was reached.

Results

In total, 19 interviews were conducted either at the participant's workplace (n = 14) or their home (n = 5). Interviews lasted between 35 and 65 minutes (mean = 47 minutes and 21 seconds; standard deviation = 7.39). Participants' characteristics are shown in table 2.

Table 2. Participants' characteristics

Variable	n (%)
Gender	
Male	16 (84.21)
Female	3 (15.79)
Age (year)	
Mean ± SD	43.21 ± 15.01
Range	18-79
Marital status	
Single	3 (15.79)
Married	13 (68.42)
Divorced	2 (10.53)
Widowed	1 (5.26)
Educational level	
Elementary school	2 (10.53)
High school	12 (63.16)
Undergraduate	2 (10.53)
Master degree	3 (15.79)
Location of interview	
Participants' workplace	13 (68.42)
Participants' home	6 (31.58)
Insomnia at the time of Interview*	
Yes	3 (15.79)
No	16 (84.21)
History of insomnia*	
Yes	19 (100)

*Self-reported insomnia symptoms. SD: Standard deviation

Synthesis of the qualitative data revealed four emergent themes: (a) Underlying causes of insomnia (including two subthemes: Socioeconomic causes and mental vs. physical insomnia); (b) help-seeking barriers; (c) my coping strategies, and (d) good food - bad drugs (including two subthemes: good food and herbs, and bad drugs). Table 3 summarizes key findings of the four major themes and accompanying sub-themes, along with illustrative participant quotes. For reasons of confidentiality, each participant has been assigned a code based on their chronological interview order, followed by gender and age.

Table 3. Synthesis of thematic categories

Themes	Subthemes	Summary	Participant quotes
Theme 1: Underlying causes of insomnia	1-1: Socioeconomic causes	• Stresses related to social roles contributed to the development of insomnia • Economic issues perceived as driving the development of insomnia	"Because employment and work bring so much pressure on people, mentally and financially … these pressures cause insomnia" (P. 3, male, age: 30) "Those who, for example, has passed a (bad] cheque (without enough money in their account] …, they have a bill due for tomorrow. I've heard many times a person says "I didn't sleep last night thinking how I am going to cover the bills" (P. 13, male, age: 45) "Many people … keep their mind busy with material issues. They either try too much and put physical or psychological pressure on themselves … and they don't take time for their personal life or their rest." (P. 18, male, age: 61)
	1-2: Mental versus Physical Insomnia	• The nature of insomnia as either physical or mental should be determined.	"If insomnia is caused by a medical condition, psychology will not work, because it is physical. If it is psychological, therapy can help" (P. 9, male, age: 33) "If you don't have too many thoughts, you will sleep easily; anyone who thinks a lot will not sleep" (P. 5, male, age: 79) "If my insomnia goes on for too long … I'd go to the doctor. Maybe I have a disease or nutritional deficiency in my body … I want the doctor to prescribe me different tests, CT scans… I don't know … blood test to see if I have anemia or something" (P. 1, female, age: 25)
Theme 2: Help-Seeking Barriers		• consulting with a psychologist was seen socially undesirable • The high cost and inflexibility of CBT-I were perceived as key barriers that prevented treatment access.	"We consider it (sleeplessness) as a sign of power … We say … my family has more important issues and … consider it as a self-sacrifice" (P. 19, male, age: 31) "Unfortunately, in our culture, it is understood that if you go to therapy, you are a crazy person or have a mental problem… you have to hide it because people consider it as bad" (P. 10, male, age: 34) "Its costs should be such that everyone can afford it (CBT-I) ... more flexibility since most people work from morning to night, it should not disrupt their work" (P. 4, male, age: 30)
Theme 3: My Coping Strategies		• Participants implemented various strategies to cope with their insomnia • Insomnia management strategies were often grounded by a set of patient beliefs	"Talking to someone I trust… If I can communicate with you, for example, and consult with you, I will get peace of mind (and I will sleep)" (P. 12, male, age: 51) "When I cannot sleep, I try to use my time. For example, I get out of bed and (laughs) go to the kitchen and … do the chores. I make myself tired, and then I go to bed" (P. 8, female, age: 65) "At sleep time, you should say "O God I want to sleep, O God I want to sleep." You should say that so much that you fall asleep" (P. 11, male, age: 40)
Theme 4: Good Food – Bad Drugs	4-1: Good food and Herbs	• Proper nutrition and herbs prevent and treat insomnia • Natural products are preferred in the treatment of insomnia	"People always look for what to eat for calmer sleep at night. They want to eat something, a food that promotes sleep" (P. 1, female, age: 25) "Eating heavy meal causes insomnia itself … It's a bad habit we have … Iranian people eat their dinner at 11 and sleep at 12 (P. 10, male, age: 34) "I think the best way to resolve insomnia and sleeping more comfortably is drinking herbal teas. Whenever I can't sleep, my wife brews *gol gave zaban** and mixes other herbs with it and serves it for me" (P. 10, male, age: 34)
	4-2: Bad Drugs	• Doctors frequently prescribe sleeping pills • Sleeping pills do not address the underlying cause • Main concerns of taking sleeping pills: dependence, side effects and loss ability to sleep naturally	"Doctors just want to give you a pill so that you don't understand anything at all. They don't try to solve the underlying cause of your problem (P. 10, male, age: 34) "I am afraid of becoming addicted to sleeping pills or that my body gets used to them so that I can't sleep without them" (Participant No. 13) If I have to take them, I try to take few, and when I get well, I will stop taking them (Participant no. 15)

*Gol gav zaban or *Echium amoenum* is an important medicinal herb in Iran that is used for its sedative effects

Theme 1: Underlying causes of insomnia

This theme relates to the participants' understanding of insomnia as a condition which has multiple underlying causes.

Subtheme: Socioeconomic causes: Eleven participants attributed various aspects of the socioeconomic situation in Iran as the primary cause of insomnia and stated that their working and living conditions do not provide adequate sleep opportunity. Stresses related to social roles (e.g., occupational or educational pressures) also contributed to the development of insomnia. However, economic issues such as the turbulent financial situation of Iran were perceived as a key factor driving the development of insomnia. Individuals commented on the overwhelming stress that comes from long working hours out of a necessity to cope with financial instability, rendering individuals too fatigued to pursue other psychosocial aspirations. The increasing use of technology around bedtime and during periods of sleeplessness was also considered an important factor for perpetuating of insomnia.

Subtheme: Mental versus physical insomnia: A number of participants clearly distinguished between two types of insomnia: Mental and physical insomnia. They reported that one of the reasons for insomnia is "mental overload" through experiencing interpersonal and workplace conflicts. For example, balancing competing demands on a busy day often caused stress. Participants associated various emotions with their insomnia such as anxiety, guilt, fear, sadness, and anger as the causes of insomnia. These internal conflicts became the source of rumination at night, making it difficult to fall asleep at night, affecting daytime function the following day. The cause of insomnia was only attributed to a physical underlying factor if participants' usual sleep promoting methods (Theme 3) failed to resolve their insomnia.

This served as an important cue for individuals to seek further medical examination to understand their sleep. Participants made references to other medical/physical conditions (e.g., brain tumors, anemia, nutrient deficiencies, and high blood pressure) that could contribute to insomnia. In fact, a small subset of participants perceived insomnia as a physical problem rather than psychological one.

Theme 2: Help-seeking barriers

Although all participants noted the experience of insomnia at some point in their lives, a common initial response was just "tossing and turning" in bed to attempt to sleep. Three participants stated that seeking formal medical treatment for insomnia required the courage and motivation that they do not have. As a result, medical treatment was not considered until insomnia becomes severe or chronic enough. Another subset of participants did not think about seeking help simply because insomnia was not something they perceived to be immediately threatening their health.

When asked about their perceptions of undertaking psychotherapy (i.e., CBT-I) for insomnia, participant responses were generally negative, highlighting various reasons that ranged from personal to more pragmatic logistic issues. Consulting with a psychologist was seen as socially undesirable. Many feared others in the community would perceive them as mentally ill or "crazy". The attached stigma to psychotherapy meant individuals felt the need to hide any interactions with a psychologist if they were to hypothetically receive treatment. Participants also highlighted logistic reasons that would preclude their access to treatment. The lack of information about CBT-I and facilities offering CBT-I was considered an important barrier to treatment access. There was a perceived need for facilities to have greater flexibility in opening hours that would allow treatment to fit into hectic work schedules. The high cost of CBT-I was another barrier that prevented treatment access. Importantly, participants expressed a level of mistrust toward specialists in general noting that "experts" placed too much focus on their financial gains rather than establishing a genuine rapport with the patient.

Theme 3: My coping strategies

Participants implemented various strategies to cope with their insomnia symptoms such as napping or removing afternoon naps, sleeping whenever or wherever they can, watching television and using smartphones before sleep and/or in bed. Strategies were mostly informed through conversing with family and friends and searching on the internet. In fact, insomnia management strategies were often grounded by a set of patient beliefs. For example, the belief that physical exhaustion caused sleepiness corresponded with strategies which cause tiredness (e.g., exercising, doing heavy work, and going for walks late at night).

Some participants suggested removing afternoon naps as a solution for insomnia. Using electronic devices such as computers, smartphones,

video games, and watching TV were commonly reported among participants. Some participants reported that they get out of bed during periods of insomnia to engage in another activity (e.g., doing housework, studying, writing, or solving crossword puzzles). Relaxation was another common method used to calm the mind and reduce worrying thoughts that perpetuate insomnia. Relaxation was often induced through catharsis, conversation with others, recitation of prayers, and trying not to think about anything.

Theme 4: Good food - bad drugs

In this theme, participants emphasized the importance of proper nutrition as the foundation of obtaining quality sleep to avoid the need for sleep medications.

Subtheme: Good food and herbs: Eating and drinking were considered as both a way to prevent and treat insomnia and participants considered improving their diet and eating patterns as a starting point for addressing their insomnia. Participants described some foods, especially dairy products, as hypnotic. In general, most of the participants had a positive view toward herbal medicines, because not only they were perceived as safer and more natural but also they were considered as good for health. The most commonly used herbal medications among our participants included: gol gav zaban (*Echium amoenum*) tea, bidmeshk (*Salix aegyptiaca*) extract, shahtareh (*Fumaria parviflora*) extract, koohi (*Hypericum perfratum*) herbal tea, and tool (*Tilia cordata*) leaf.

Subtheme: Bad drugs: Participants, in general, had a negative attitude toward self-medication either through over-the-counter or prescription medicines for insomnia. Medication use for insomnia was typically reserved for emergency situations when insomnia symptoms persist despite implementing strategies or when important work is scheduled for the next day. A certain level of skepticism was also expressed about the use of sleeping pills, noting that they do not treat the underlying problem and can worsen/disrupt natural sleep patterns. Many were reluctant to use sleeping pills, which stemmed from the fear of becoming addicted/reliant on medication to promote sleep and to avoid potential unpleasant side effects. In fact, not using any medications for sleep was perceived to be an honorable trait among participants.

Discussion

The current study sought to capture the subjective experiences of insomnia within a sample of Iranian community, specifically looking at the relationship between the perceived causes and corresponding responses to insomnia. Collection of the qualitative data provided new insight into understanding the cultural beliefs and sleep routines about insomnia. Findings reveal the potential implications of these unique socio-cultural beliefs about sleep/insomnia for the treatment of insomnia.

Help-seeking

Participants in our study presented several reasons that prevented them from seeking medical care such as the lack of facilities and adequate treatment providers, mistrust to the specialists, and lack of knowledge about treatment options. These help-seeking barriers are similar to those expressed in the United Kingdom (23). Given the role that therapist alliance plays in the treatment outcomes of CBT-I (24), strategies for building patient rapport could be an important facilitator for improving patient access to CBT-I in our study sample. Participant concerns' around the logistical barriers to treatment access and directly interacting with a psychologist also make a compelling case implementing abbreviated CBT-I within a "stepped-care" framework. The advantage is two-pronged: first, lowered tiered interventions tend to have a stronger focus on the physiological/behavioral aspects. Second, abbreviated CBT-I can be effectively implemented away from conventional healthcare venues such as community centers (25) and the workplace (26) - both of which may appeal to the socio-cultural nuances in Iran.

While social stigma attached to insomnia and isolation is often reported in the literature (10, 12, 23), our sample consisting of 84 % men may unveil an important dimension on gender and sleep. Socio-cultural norms in Iran discourage men from complaining about "minor" problems (27) like insomnia. This is not dissimilar to the findings reported by Meadows et al. (28) where men see the need fulfill core social functions such as the "father", "worker", or "husband" despite sleep disturbances. Given these cultural parallels in gender roles, perhaps targeted insomnia interventions for men (29) warrants further research in Iran.

Cause and response

According to the theory of planned behavior 30, the intentions for human behaviors (like a response to insomnia) is informed by three independent factors: attitudes, subjective norm, and

perceived behavioral control (PBC). Thus, different attitudes about the causes of insomnia informed different coping strategies for insomnia. For example, when participants believed physical exhaustion induce sleepiness, they engaged in exercise or physically demanding work to promote sleep. Most of the strategies used were similar to those addressed by participants in previous studies (20) except for not using alcohol. Participants who attributed insomnia to the socioeconomic situations felt helpless toward it and did nothing for their insomnia because these situations were perceived as out of their control. In other words, they were with lower levels of PBC. Participants also commented on the duality between psychology and spirituality in relation to the etiology of insomnia and resonate closely with Islamic ideology of body and mind (31, 32). These underlying beliefs about insomnia may have an important influence on patients' initial response to sleep disturbances and their expectations from specialists.

Consistent with previous research, cognitive arousal, stress, and emotions from psychosocial domains were considered as the major causes of insomnia (33, 34). Our participants' negative view toward sleeping pills is also similar to previous findings in other countries (23, 35, 36). They preferred herbs to "chemical" drugs because they were perceived as more natural, safer, better for health, having fewer adverse side effects, and having a lower risk for dependence or addiction. These results are similar to those of previous research (37-39). In general, it has been shown that insomnia patients prefer non-pharmacological therapies to treat insomnia (40, 41).

Due to these similarities with regard to perceived cognitive causes of insomnia and the negative view toward pharmaceutical treatments in line with Western countries, CBT-I can be the treatment of choice for insomnia treatment in Iran. However, cultural-specific beliefs and practices need to be considered when adapting treatment to an Iranian community. For example, in the psychoeducation session of CBT-I, special emphasis can be put on modifying cultural-specific maladaptive sleep behaviors (e.g., afternoon sleep, irregular sleep/wake schedule, and drinking tea at night). Treatment acceptability, especially among more religious patients, could increase by incorporating Islamic practices (42) and conceptualizations (43) into the CBT-I in a similar way that mindfulness is increasingly used as an adjunct therapeutic component (44).

A key strength of this study was the heterogeneous sampling frame, capturing a broad spectrum of illness and help-seeking experiences. However, study limitations must also be noted. Data were only collected from three major cities in Iran, and thus findings may not accurately represent the experiences of those from rural regions of the country. Our participants may also be more interested in sleep compared to the general population, posing a limitation to the transferability of the findings to the broader Iranian community. In addition, this study relied on patient self-report of their insomnia history and did not collect measures to gauge their current sleep/insomnia status. However, the focus of this study was to gain an understanding of the subjective insomnia experience and cultural sleep practices rather than gauging insomnia severity *per se*. Contrary to most insomnia studies, our sample had a much larger proportion of male participants. This could be explained by the cultural norm for Iranian women to be less forthcoming with their opinions in the presence of a member of the opposite sex (45). Future studies conducted in Iran, both exploratory and intervention-based, may need to account for the gender of research personnel in direct contact with participants. Despite some cultural differences, our findings parallel with most studies conducted in western patient populations.

Conclusion

The current study captured the subjective insomnia experiences. In addition to the logistic barriers, this study highlights the socio-cultural factors which underpin participants' beliefs about the causes of insomnia (i.e., psychological/spiritual duality), their initial response to insomnia and subsequent help-seeking patterns. Importantly, many of these culturally and religiously informed responses to sleep serves as important therapeutic targets for cognitive realignment and behavioral modifications. Our findings also provide important practical considerations when conducting research in similar patient subpopulations such as the gender of the treatment provider and other research personnel. Given the worldwide prevalence of insomnia, the cultural transferability of CBT-I represent a key step toward developing a unifying set of CBT-I guidelines.

Conflict of Interests

Authors have no conflict of interests.

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