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Do not Disturb me I Want to Sleep: A Study Examining Gender, Insomnia and Prosocialness

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Abstract

The present study examined the influence of insomnia on prosocial behaviour and gender differences in prosocialness. The study comprised of 300 students gathered through convenience sampling technique via both online and in person data collection. The age range of the sample was between 18 to 25. Two validated scales the Adult Prosocialness Scale (Soldatos, et al., 2000) and Athens Insomnia Scale (Caprara et al., 2005) were applied on the sample. Results confirmed both the hypotheses with insomnia having significant negative impact on prosocialness and females scoring high on prosocial behaviour. The findings suggest that proper sleep hygiene should be propagated among the youth to improve their social relations.

Key words: Insomnia, prosocialness, gender

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INTRODUCTION

Sleep plays a fundamental role in our mental and emotional well-being, having disturbances in our sleep is linked to various types of psychological and behavioral problems (Alvaro, Roberts, & Harris, 2013). The factor of sleep i.e., when people don't sleep well, it can lower their patience, energy, and emotional balance, making it harder for them to enjoy life or connect with others in meaningful ways. They may start to feel that they are more irritated, less kind, and more distant from people that are around them (Guadagni, Burles, Ferrara, & Iaria, 2014). The current research adds to a growing body of knowledge that emphasizes the importance of sleep and social-emotional functioning in adult well-being (Nickel & Scullin, 2024). One more frequent problem related to sleep is insomnia that is increasingly common among adults and has been associated with numerous adverse effects on psychological well-being. For example, Baglioni et al. (2011) found that chronic insomnia significantly increases the risk of emotional dysregulation and interpersonal difficulties. Research indicates that poor sleep quality negatively impacts life satisfaction, as individuals with sleep disturbances often report lower emotional balance and more dissatisfaction with their daily lives (Hirshkowitz et al., 2015).

In today's technologically advanced and isolated individualistic societies, it is important to understand how sleep quality interacts with psychological and social functioning of individuals for its holistic impact on mental and physiological well-being. One such dimension is prosocial behaviour as sleep deprivation can impair our empathy, decision-making and the ability to regulate our emotions (Guadagni et al., 2014), which makes it harder for individuals to engage in social activities and maintain positive relationships.

Prosocial behavior includes actions like helping, sharing, and caring for others, is also closely related to our emotional well-being and social connections. Caprara et al. (2005) emphasized that adults who engage in more prosocial behaviors tend to have a stronger social support systems and having a better mental health. However, sleep deprivation has been found to reduce prosocial tendencies due to lower emotional responsiveness and empathy (Guadagni et al., 2014).

Dickinson and McElroy (2017) examined the effect of chronic sleep deprivation on morning time decisions related to social tasks. The subjects were randomly assigned to either an early morning or late evening experimental testing in which decision tasks were administered. Both sleep deprivation and suboptimal time-of-day reduced helping behaviour, trust, and trustworthiness. Likewise, Nickel and Scullin (2024) also found that deficient sleep changes one's emotional processing that leads to mood disturbances, reduction in gratitude, as well as reluctance withdrawal in helping, like donating in local charities or places of worship. Studler et al., (2024) used an EEG to measure the sleep while a normal night's sleep at the participants' homes. The participants played games related to an incentivized public goods game. Results of the whole-brain analyses indicated that a higher relative slow-wave activity (SWA, which indicates deep sleep) with a cluster of electrodes attached to the right temporoparietal junction (TPJ) was linked to enhanced helping decisions. Source localization and current source density analyses further support these findings. Their results indicate that both sleep duration, and especially appropriate deep sleep shown in the TPJ was positively linked to prosociality. As the TPJ is important for social cognitive tasks it may prove a dispositional indicator of social cognition ability, depicted in prosocial preferences. Their findings provide an emerging approach including the impact of brain functioning during sleep deprivation on prosocial behavior.

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Many researches have been conducted on gender differences related to social functioning including prosocial behaviour. For example, Eagly (2009) found differences in women and men emphasis while engaged in prosocial act. Females show more communal and relational aspects of prosocialness, whereas, males show more agentic and collectively oriented behaviours. The gender-based differences found in research carried out in diverse settings relate to common gender role beliefs. They stated that these beliefs are based on division of labor according to biosocial interaction of male and female physical attributes and the social structure in which they live. They also stated that the influence of gender roles on behavior is mediated by hormonal processes, social expectations, as well as individual dispositions. Van Lange (2018) found female soccer players relatively more inclined to help as compared to male players. Espinosa and Kovářík (2015) investigated social behavior in economic games. They found that social framing increased prosocial behavior in women but men were not affected. Additionally, increased thinking decreased prosocial behaviour in males but not females. Their study revealed that the social behavior of both genders is persuadable with each gender responding to different factors of the social context.

Likewise, Abdullahi and Kumar (2016) found no significant difference between males and females on most of the aspects of prosocial behaviour dimensions, but only in perspective taking and mutual concern moral reasoning females took a lead indicating them as better in understanding others' mental state and more concerned about moral behaviour. These differences may suggest that females are socialized in a different way than males focusing more on care and concern for others as compared to males being encouraged to be rational decision makers (Eagly, 2009).

Rationale of the Study

In today's fast-paced world, many adults silently struggle with insomnia, often considering it as a minor inconvenience without realizing how deeply it affects their emotional and social lives. The present study aimed to explore how poor sleep affects the way we treat others, specifically our prosocial behaviour. Studies have shown that insomnia is linked to lower life satisfaction (Hirshkowitz et al., 2015), diminished prosocial behavior due to emotional exhaustion (Guadagni et al., 2014), and heightened loneliness (Cacioppo et al., 2010). By understanding how these factors are interrelated, including gender differences will help us understand how adults while balancing work, relationships, and personal challenges, tackle with sleep deprivation and how it affects their helping attitude. It will shed light on how sleep quality can shape our inner world and our connections with others which is crucial for promoting healthier, more fulfilling lives.

Objectives

1. To find out the influence of insomnia on prosocial attitude.
2. To investigate gender differences in prosocialness.

Hypotheses

1. Insomnia will have a negative impact on proscialness.
2. Females will score high on prosocialness as compared to males.

METHODOLOGY

Sample

The sample included 300 respondents with equal gender representation (150 males and 150 females). Through convenience sampling the participants were contacted in their

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respective departments from University of Peshawar. The participants' age range was between 18 and 25 years. In education, majority of the participants were from Bachelor's program (n= 214, 71.34%), 64 participants (21.33%) had Intermediate education, 18 participants (6%) had or were enrolled in MPhil program, and only 4 participants (1.33%) had Matric qualification. Regarding age, most participants were between 21–23 years old (185 participants, 61.67%), followed by 18–20 years (80 participants, 26.67%), and 24–25 years (35 participants, 11.66%) respectively. This data indicates that the sample largely consist of young adults with higher educational backgrounds. As the scales were in English language, more students from BS program were selected, expecting them to be well versed in English.

Instruments

Athens Insomnia Scale (AIS)

The Athens Insomnia Scale (AIS; Soldatos et al., 2000), is an 8-item self-report instrument used to measure insomnia symptoms according to the ICD-10 criteria. It measures the initiation of sleep, waking up during night or early morning, the total duration a person sleeps, and hindrances in routine tasks arising due to inadequate sleep. The statements has four options in Likert format ranging from 0 showing no problem in sleep to 3 indicating serious problem. A total score of more than 6 indicates clinical insomnia. AIS shows high Cronbach's alpha (a= 0.89) suggesting excellent reliability.

Adult Prosocialness Scale (APS)

The Adult Prosocialness Scale (Caprara et al., 2005) comprise of 16 self-reported statements measuring prosocial behaviors (helping, sharing, caring, and empathy). It is a 5-point Likert scale ranging from 1 to 5. The instrument indicates high reliability (Cronbach's alpha 0.85 - 0.91).

Procedure

Before distributing the questionnaires in both physical and online form, each participant was guided about the nature and purpose of the research. The researcher explained that the study was being conducted for academic purposes and that the participants' involvement was entirely voluntary. It was emphasized that they can choose not to participate or withdraw at any stage without any explanation or consequences. The verbal explanation also included assurance of anonymity and confidentiality, meaning that all information collected would be used only for this research. To make it more confidential we also removed the name section from our questionnaires. Participants were also encouraged to ask questions if they had any doubts or need any help. Once they had understood all the details, they proceeded to fill the questionnaires.

The data collection process was carried out via two methods: one physical and the other online. In the physical phase, printed copies of the questionnaire containing the two scales were distributed directly to participants in various departments of Peshawar university. Each participant completed the form in the presence of the researcher. The physical data collection was done ensuring that all questionnaires were filled out in a distraction free setting. In the online method, the same questionnaire were converted to a Google Form and the links of that forms were distributed through platforms such as WhatsApp and other social media. Participants were provided with brief instructions regarding the purpose, informed consent and filling of the forms. The sequence of online questionnaires was in the same sequence as in physical data collection method. The digital form included automated submission, which ensured that incomplete forms were not

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accepted. This mode helped in reaching participants studying in different departments at their convenience. The total duration for completing the questionnaire was approximately 15 to 20 minutes. Data from both sources were compiled and later transferred into statistical software (SPSS) for analysis

RESULTS

Table 1

Psychometric properties for APS and AIS

Scale	No of Items	*M*	*S.D*	Range	*α*
APS	16	59.94	11.24	32-80	.86
AIS	8	11.66	4.778	0-24	.70

Note: APS = *Adult Prosocialness Scale,* AIS = *Athens Insomnia Scale*, M= Mean, S.D= Standard Deviation and *α=Cronback Alpha*

The table 2 consist of the psychometric properties of the scales. The APS has 16 items having high reliability with a Cronbach's alpha value of .869. The AIS have 8 items, having a Cronbach's alpha value of .70 showing high reliability.

Table 2

Simple Linear Regression showing Insomnia as a Predictor of Prosocialness

Predictor	B	SE B	β	t	P
Constant	66.582	1.666		39.957	.000
APS	-.570	.132	-.242	-4.308	.000

Note. R^2 = .059, Adjusted R^2 = .055, F(1, 298) = 18.56, p = .001. APS = Adult Prosocialness Scale

For hypothesis 1, table 2 shows that insomnia significantly predicted prosocialness explaining 5.9% of variation (R^2 = 5.9). The negative beta coefficient (β = -.2.42) indicate one unit increase in insomnia decreases prosocialness .24.

Table 3

T-value showing significant differences between males and females on Prococialness

Variables	Males		Females		*t*(298)	*P*	Cohen's *d*
	M	*SD*	*M*	*SD*			
Adult Prosocialness Scale	58.61	11.267	61.26	11.095	2.050	.041	00.23

Table 3 indicates a comparison between males and females on proscioalness scale (t(289)=2.05, p<.05), with females showing significantly higher scores on procioalness than males (M=61.26 > M=58.61). Cohen's D (.23) indicate small effect size.

DISCUSSION

The present study aimed to investigate the influence of insomnia on prosocial behaviour viz a viz gender differences in prosocial attitude. Results of the study confirmed the first hypothesis insomnia having a significant (p<.001) negative impact on prosocialness (B=-.24), explaining 5.9 % of variation. Simon et al., (2022) have provided a proof for the impact of insomnia on sleep via three replicating studies. They demonstrated insomnia's influence on three levels, i.e., within a person, across individuals and among society. They found a loss of a night's sleep reduced person to person helping. Additionally, they found that FMRI recording indicate reduction in social cognition brain centers which

are associated with prosocial behaviors. They further found that consecutive night loss of sleep reduces day time helping. Lastly, at national level, one hour of lost sleep reduced altruistic acts like donations.

The importance of sleep can be realized through Zarco-Alpuente study (Zarco-Alpuente, Malonda-Vidal, & Samper-García, 2024) who applied sleep intervention and concluded that improvement in sleep hygiene even of a short duration can significantly reduce some aspects linked with antisocial behaviour, suggesting that interventions aiming at improvement in sleep hygiene could lead to positive influence on social interaction.

The results also proved the second research hypothesis depicting a significant difference among males and females on prosocialness with females scoring high than males (see table 3). The results of the present study are in line with earlier works, like Torstveit, Sütterlin, and Lugo (2016) indicated that gender differences may be the precursors of prosocial behavior, as females are more affected by guilt proneness on avoiding prosocial acts than males due to which they score high on it.

Carlo et al., (1996) examined the factors associated with prosocial moral reasoning among Brazilian and American children and adolescents. Their findings indicated females scored higher on self-reflective, internalized concerns, while less concerns about getting approval from others. In another study (Skoe, 2002) the association between sex, gender-role identity and moral thought and prosocial personality traits were investigated. A sample of 209 respondents evaluated the importance of real-life, care-related, justice-related, and mixed (both care- and justice-related) moral dilemmas. Results revealed that females and feminine individuals considered moral conflicts as more important than males or masculine individuals. On the mixed dilemmas, women were higher care reasoning, whereas men on justice reasoning. Additionally, females and individuals high in femininity indicated more empathic concern for other people. Masculine persons scored lower on personal distress, whereas androgynous persons reported more helpful behaviors than did all others.

Additionally, a Longitudinal Study (Mestre, et al., (2009) on women's empathic disposition was carried out on 505 male and female adolescents between 13 to 16 years of age. They answered scales assessing empathy in children and adolescents and the interpersonal reactivity. The results supported higher empathic concern among females than males at the same age level, with these differences even growing more with age.

Limitations and Suggestions

The present study employed a correlational cum cross sectional design which lacks the advantages of longitudinal and experimental studies. The literature already shows a biological mechanism underlying insomnia and prosocial behavior which future researches can incorporate along with situational studies to further build the confidence in the results. Including diverse age groups can also enhance the generalizability of the results.

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