

## BETWEEN FEAR AND FAITH: A CORRELATIONAL STUDY OF DEATH ANXIETY, RELIGIOSITY, AND SLEEP DISTURBANCES IN CLINICAL POPULATION

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### ABSTRACT

*Background: Death anxiety, religiosity and sleep quality are empirical psychological constructs that play significant roles in patients' mental and physical health when they are confronted with a serious illness. The aim of this study was to explore the correlation between death anxiety, religiosity and sleep quality in a clinical sample. Design method: A cross-sectional survey design with purposive sampling was used and the respondents were 650 patients. Instruments used were the Death Anxiety Beliefs and Behaviors Scale (DABBS), the Religious Orientation Scale (IRO/ERO), and the Pittsburgh Sleep Quality Index (PSQI). The Pearson correlation was carried out. Results: Death anxiety was negatively and significantly related to religiosity ( $r = -.503, p < .001$ ) and was positively and significantly related to sleep quality disturbance ( $r = .132, p < .001$ ). Subscale analyses showed high internal consistency of the dimensions of death anxiety in regard to beliefs, behaviors and affect responses, and interesting differences among the religious orientations regarding these death anxiety dimensions in relation to sleep parameters. Discussion: Religiosity is a discernible protective factor in patients and higher death anxiety is a subtle sleep quality impairment. Spiritual assessment and Focused Sleep Intervention should be incorporated in the care of patients.*

**Keywords:** Death Anxiety, Religiosity, Sleep Quality, Patients, Intrinsic Religiosity, Extrinsic Religiosity

## 1. Introduction

The psychological challenge facing patients in clinical contexts called death anxiety, which refers to the feelings of concern and fear about death, is one of the most common and least talked about psychological experiences associated with death (Zhao et al., 2021). In particular, patients who are faced with a chronic or terminal illness are more susceptible to increased existential distress that can present as hyperarousal, sleep disturbances and spiritual questioning (Menzies et al., 2020). Therefore, knowledge of the interaction of psychological, spiritual, and behavioral variables within this population is important for clinical and theoretical purposes.

More broadly, religiosity, which refers to the level of holding, practising and internalizing religious beliefs and behaviours, has always been suggested as a coping mechanism when dealing with existential threat (Hajatnia et al., 2021). Empirical studies address the current views: having a religion connected to an intrinsic motivation (using religion for its own sake and not as means to a social or personal end) seems to be linked with decreased fear of death and decreased existential anxiety (Wilt et al., 2021; Davies et al., 2022). Extrinsic religious orientation, however, has shown less consistent links with psychological outcomes, and some suggest that it is levels and the intent of religious involvement that are significant, rather than frequency.

Another area of health which is receiving increased focus for psychological distress patient groups is the quality of sleep. Poor sleep is a characteristic symptom of anxiety disorders and has been found to both trigger and result from increased psychological arousal (Galehdar et al., 2020). Sleep architecture abnormalities, specifically

suggested by a high proportion of NREM (including REM) with sleep latency, hypomanic and hypomanic sleep stages, low sleep efficiency, and sleep-restricted wakefulness, exacerbate declines in the patients' physical condition and reduce psychological coping resources in patients with life-threatening diagnoses (Hn, 2020; Li et al., 2024). However, the nature of the relationship between death anxiety and sleep quality, and how the association between death anxiety and sleep quality may be mediated by religiosity remains an under-researched area.

To fill this present gap the authors aimed to explore the bivariate intercorrelations between death anxiety (affective and behavioral but also cognitive-belief), intrinsic and extrinsic religiosity and sleep quality (six subscales of PSQI) among subjects in a large clinical sample (N = 650). It aims to paint an intricate picture at composite scales and a clinically informative picture at subscale levels of the relationship between existential, spiritual, and sleep-related variables in patients. The findings have relevance for the design of psychosocial interventions aimed at the multi-dimensional suffering of the patient who is both physically ill and sentient and is experiencing existential threat.

## 2. Literature Review

### 2.5 Death Anxiety in Clinical Populations

The TMT concept of death anxiety is a psychological phenomenon that is caused by humans' knowledge of their eventual death coupled with psychological strategies that they develop in order to manage their awareness of their inevitable mortality (Kumari et al., 2020; Ali et al., 2021).

In a clinical context, this anxiety is differently intensified because illness itself is a reminder of death, removing symbolic 'buffers' such as social

roles, cultural narratives and future plans that generally help to buffer a person against existential anxiety (Menzies & Menzies, 2020).

The death anxiety has been shown to be higher in patients with cancer, end stage renal disease, and palliative care than in healthy controls in all studies (Anzai et al., 2021; Abbas et al., 2021).

Death anxiety can not be considered one-dimensional. There are some multidimensional models which distinguish the three types affective components (fear's emotional experience; Menzies et al., 2020), cognitive-belief components (death's cognitions and appraisals; Menzies et al., 2020), and behavioral components (avoidance-related or approach-related behaviors in response to death's situation; Menzies et al., 2020). To operationalise these three dimensions, The Death Anxiety Beliefs and Behaviors Scale (DABBS) was constructed, and has good psychometric properties in clinical samples (Menzies et al., 2020). Intercorrelations among the DABBS subscales as observed in the present data set – such as beliefs with behaviors,  $r = .82$ ; affect with beliefs,  $r = .78$  – are consistent with previous psychometric validation of the scale and suggest that although the subscales represent different factors, they have high common variance within each that indexes the ability to experience the construct of death anxiety.

## 2.2 Religiosity and Fear of Death

Religiosity and death anxiety have been a longstanding topic in psychological research. The results from meta-analytic studies indicate that more intrinsic religious orientation is associated with lower levels of death anxiety, but the evidence for death anxiety with regard to extrinsic orientation is inconclusive (Wilt et al., 2021; Aslam et al., 2024). In more recent investigations, mechanisms linking to this relationship have been identified, such as the experience of meaning-making, the perception of social support,

and belief in afterlife (Davies et al., 2022; Zhao et al., 2024).

In patients particularly, religiosity is found to be one of the key aspects of spiritual well-being and spiritual well-being is found to be predictive of lower death anxiety and greater acceptance towards end-of-life situation (Pandya et al., 2021; Davies et al., 2022). These findings are complemented by qualitative studies which illustrate that patients use prayer, ritual, community and theological frameworks to make sense of their sickness and existential distress (Nelson et al., 2021; Quevedo et al., 2024). The moderate to strong negative correlation between death anxiety and religiosity ( $r = -.503$ ) yielded in the current research is therefore in line with findings from a rich literature which documents the negative relationship between death salience and religious involvement.

## 2.3 Sleep Quality and Psychological Distress

Sleep disturbances are one of the most common symptom complaints among clinical populations, ranging from 30% to 60% of patients with chronic or terminal illness (Figueiredo et al., 2025; Saleem et al., 2020). There is well-documented bidirectional relationship between anxiety and sleep; anxiety arousal leads to an impairment in sleep onset and/or maintenance, and in turn sleep deprivation increases anxiety sensitivity and emotional reactivity (Galehdar et al., 2020; Khalili et al., 2024). Insomnia has been linked to intrusive and ruminative thoughts (Intrusive-access Thoughts) such as thoughts associated with death (Mortality-related thoughts) that likely contribute to maintaining hyperarousal states that are incompatible with sleep (Pyszczynski et al., 2021).

Conceptually the relationship between death worry and sleep quality is clear, but not much research exists that specifically connects the two.

Mortality salience is believed to trigger threat appraisal processes and trigger hypervigilant and

physiological arousal, which are prerequisites for insomnia (Anzai et al., 2021; Ilyas & Kausar, 2025). In a study conducted by Menzies et al. (2020), participants with high death anxiety experienced significantly higher scores for rumination in sleep as well as more sleep onset problems. Research studies also reported that there were notable links between existential distress and sleep disturbance in hospitalized patients (Hn, 2020 & Li et al., 2024). The present study seeks to join this growing data base by systematically examining correlations between DABBS subscales and individual PSQI components in order to determine specific dimensions of psychopathology associated with each dimension.

#### **2.4 Religiosity, Sleep, and Integrative Models**

The relationships between religion-death anxiety and anxiety-sleep are covered in separate literatures, whereas models that explore all three of these variables continue to be somewhat sparse. There is some evidence that meditation, prayer, and religious attendance (especially when done in a group) can produce relaxation responses which can help sleep quality (Rathore et al., 2023; Shoaib & Kausar, 2025). But there could be interactions between these pathway and sociodemographic factors, illness severity, and the amount of existential rumination in the religious content itself (Hajatnia et al., 2021; Parveen et al., 2025). Among this sample, however, sleep quality was not found to be directly related to religiosity ( $r = -.045$ ), which suggests that there are more subtle pathways for the effects of religiosity to buffer death anxiety, and that future mediation and moderation analyses is warranted.

#### **2.6 Objectives of the Study**

- To examine the bivariate relationships among composite scores of death anxiety, religiosity, and sleep quality in a large clinical sample of patients with chronic or serious illness.

- To investigate subscale-level associations between dimensions of death anxiety (Affect, Beliefs, Behaviors), types of religious orientation (Intrinsic vs. Extrinsic), and specific components of sleep quality (e.g., sleep latency, daytime dysfunction) to identify nuanced patterns of association.

- To determine the strength and direction of the relationship between death anxiety and religiosity, and between death anxiety and sleep disturbance.

#### **2.7 Hypotheses**

H1: Death anxiety will likely to be a significantly correlated with religiosity.

H2: Death anxiety will likely to be a significantly correlated with sleep quality disturbance.

H3: Religiosity will likely to predict no significant direct correlation with overall sleep quality.

### **3. Methodology**

#### **3.1 Research Design**

A cross-sectional survey research design was employed to measure the relationships among death anxiety, religiosity, and sleep quality in patients with chronic illnesses (diabetes and heart problems). The target population comprised patients from hospitals, clinics, and community centers across Gujrat, Gujranwala, Lahore, Jhelum and Sialkot, with an age range of 25–60 years. The final sample consisted of  $N = 650$  patients, including 325 with diabetes and 325 with heart problems (378 males, 272 females). Purposive sampling technique was used to select participants based on their specific relevance to the study criteria, ensuring inclusion of individuals with substantive illness experience pertinent to the primary constructs under investigation.

#### **3.2 Measures**

Death Anxiety Beliefs and Behaviors Scale (DABBS): The DABBS is a multidimensional self-report scale assessing three components of death

anxiety: Affect (emotional fear responses), Beliefs (cognitions about death and dying), and Behaviors (avoidance or confrontation of death-related stimuli; Menzies et al., 2020). Higher scores indicate greater death anxiety. Religious Orientation Scale (ROS):

- Religiosity was assessed using measures of Intrinsic Religious Orientation (IRO) and Extrinsic Religious Orientation (ERO), derived from Allport and Ross's (1967) foundational framework. The IRO captures internalized, faith-as-an-end-in-itself religiosity, while the ERO captures utilitarian, social, or comfort-seeking religious motivations.

**Pittsburgh Sleep Quality Index (PSQI):** Sleep quality was assessed using the PSQI, a widely validated measure of sleep over the past month (Buysse et al., 1989). The PSQI yields a global score and seven subscale scores: Subjective Sleep Quality (SSQ), Sleep Latency (SL), Sleep Duration (SD), Habitual Sleep Efficiency (HSE), Sleep Disturbances (SD), Use of Sleeping Medication (UOSM), and Daytime Dysfunction (DD). Higher scores indicate worse sleep quality.

### 3.3 Procedure, Statistical Analysis, and Ethical Considerations

Permission to use the study scales was obtained from the original authors, including specific

## 3. Results

### 4.1 Pearson Correlation Results

**Table 4.1:** *Descriptive Statistics and Pearson Correlation Analysis of Death Anxiety, Religiosity and Sleep Quality among Patients (N=650)*

Variables	<i>N</i>	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>
1. Death Anxiety	650	51.46	15.59	-	-.503**	.132**
2. Religiosity	650	10.62	2.42		-	-0.45
3. Sleep Quality	650	47.91	8.13			-

*Note:* SD= Standard Deviation, M=Mean \*\*Correlation is significant at the 0.01 level.

Religiosity and death anxiety were negatively correlated with one another and were large ( $r = -.503$ ,  $p < .001$ ) such that the more highly people

approval for Urdu translation of the Death Anxiety Beliefs and Behaviors Scale (DABBS; Menzies et al., 2020). The Lexicon Equivalence Method was employed for Urdu translation, with the scale independently translated by five experts.

Following approval from the Heads of University and hospital, clinic, and community center administrators, patients were informed about the research purpose and objectives. Data were collected from both hospitalized and outpatient department (OPD) patients after obtaining written informed consent, with confidentiality assured and participants informed of their right to withdraw at any time. On average, 15–20 minutes were required to complete the questionnaire. Statistical Package for Social Sciences (SPSS-24) was used for all analyses, Pearson product-moment correlation to examine bivariate relationships among death anxiety, religiosity, and sleep quality.

were religious, the lower their death anxiety was. There was a slight ( $r = .132$ ,  $p < .001$ ) positive, but statistically significant, correlation between death

anxiety and sleep quality. No significant or even strong correlation between measures of religiosity and sleep quality was observed ( $r = -.045, p > .05$ ).

**Table 4.2:** *Pearson Correlation Analysis for Subscales of Death Anxiety, Religiosity and Sleep Quality among Patients (N=650)*

Variables	1	2	3	4	5	6	7	8	9	10	11	12
DABBS (Affect)	-	.78**	.65**	-.44**	-.51**	-.17**	.11**	-.005	-.029	.019	.066	.085*
DABBS (Beliefs)		-	.82**	-.36**	-.46**	-.095*	.15**	-.020	-.019	.12**	.082*	.063
DABBS (Behaviors)			-	-.32**	-.44**	-.028	.16**	.091*	-.012	.12**	.11**	.025
IRO				-	.51**	.091*	-.08*	-.094*	-.033	.052	.022	-.028
ERO					-	.070	-.034	-.067	.037	-.084*	.012	-.052
SSQ						-	.14**	.041	.018	-.028	.069	.045
SL							-	.27**	-.091*	.21**	.19**	-.16**
SD								-	.068	-.026	.006	-.18**
HSP									-	-.029	-.17**	-.19**
SD										-	-.004	-.17**
UOSM											-	.097*
DD												-

*Note:* DABBS= Death Anxiety Belief and Behavior Scale, IRO= Intrinsic Religiosity Orientation, ERO= Extrinsic Religiosity Orientation, SSQ= Subjective Sleep Quality, SL= Sleep Latency, SD=Sleep Duration, HSE=Habitual Sleep Efficiency, SD=Sleep Disturbances, UOSM= Use of Sleeping Medication, DD= daytime dysfunction

\*\*Correlation is significant at the 0.01 level ( $p < 0.01$ ), \*Correlation is significant at the 0.05 level ( $p < 0.05$ ).

The subscales from the DABBS showed good inter-correlations between each other, with the highest correlation between Behaviors and Beliefs ( $r = .82, p < .01$ ), with Affect and Beliefs ( $r = .78, p < .01$ ) and Affect and Behaviors ( $r = .65, p < .01$ ). The results confirm the convergent validity and internal consistency of DABBS instrument.

Intrinsic Religious Orientation (IRO) showed significant negative correlation with Affect ( $r = -.44, p < .01$ ), beliefs ( $r = -.36, p < .01$ ) and behaviors ( $r = -.32, p < .01$ ). The extrinsic Religious Orientation (ERO) also had significant negative correlations with both the DABBS-Affect ( $r = -.51, p < .01$ ) and

with the DABBS-Beliefs ( $r = -.46, p < .01$ ). Notably, IRO and ERO were also positively intercorrelated ( $r = .51, p < .01$ ) indicating that those who were high on one dimension of religiosity were also high on the other dimension.

The subscale which showed the widest pattern of correlations was Sleep Latency (SL), which significantly correlated positively with DABBS-Affect ( $r = .11, p < .01$ ), DABBS-Beliefs ( $r = .15, p < .01$ ), and DABBS-Behaviors ( $r = .16, p < .01$ ), suggesting that increased death anxiety on all three subscales was correlated with increased difficulty initiating sleep. Sleep Duration (SD) was

significantly correlated with Sleep Latency ( $r = .27$ ,  $p < .01$ ). Use of Sleeping Medication ( $r = -.17$ ,  $p < .01$ ) and Daytime Dysfunction ( $r = -.19$ ,  $p < .01$ ) were negatively correlated with Habitual Sleep Efficiency (HSE).

### Discussion

The relationships between death anxiety, religiosity and sleep quality were examined in a clinical sample of 650 patients and some theoretically interesting and clinically important findings emerged. The results overall support a protective effect of religiosity against death anxiety, suggest specific death anxiety-sleep linkages at the subscale level and shed light on the independence of religiosity from direct effects on sleep quality within this population.

As in a rich body of literature, a large negative correlation was found between composite death anxiety and religiosity ( $r = -.502$ ,  $p < .001$ ) in agreement with their existential buffering role of religion (Wilt et al., 2021; Aslam et al., 2024). This effect size also indicates that there is a meaningful amount of variance in death anxiety scores that can be explained by religiosity (about 25%). The subscale analyses also showed some additional level of detail: IRO and ERO both had significant negative correlations with all three dimensions of the DABBS, though they were highest for DABBS-Affect and ERO ( $r = -.51$ ), indicating that it is the emotional fear component of death anxiety that is most strongly muted by extrinsic religious involvement. But while the theoretical literature tends to suggest that intrinsic religiosity is more psychologically adaptive form of religious involvement (Shoib & Kausar, 2025; Parveen et al., 2025), this is a somewhat unexpected discovery. A possible explanation is that extrinsic religiosity, the coping through the social aspects of religion (social support, comfort, belonging to communities) can more effectively help decrease the affective

dimension of death fear, which is more emotionally experienced (Davies et al., 2022; Saleem et al., 2020).

Although it was expected that IRO and ERO might be orthogonal—which is suggested in some of the theory—there was so much positive intercorrelation that it was not the case in this sample ( $r = .51$ ,  $p < .01$ ). This is in line with those findings in the context of Muslim-majority and collectivist cultures wherein public expression of religious belief and private introspection can intersect and strengthen each other (Khalili et al., 2024; Zhao et al., 2024). The population in this study consisted of persons with a high illness burden, thus possessing the capacity to utilize both internal and social religious resources, concurrently, to manage existential threat.

The significant, albeit modest, positive correlation between death anxiety and sleep quality ( $r = .132$ ,  $p < .001$ ) suggests that there was interesting evidence of modest increases in sleep disruption at higher levels of death anxiety. The magnitude of the effect is small for conventional purposes, but it is statistically significant when examining large samples, and consistent with the cognitive arousal perspective of insomnia, where self-repetitive cognitions (including thoughts about mortality) generate hyperarousal and inhibit sleep onset and maintenance (Ilyas & Kausar, 2025).

Sleep Latency (difficulty falling asleep) is most consistently positively associated with death anxiety dimensions (DABBS-Affect  $r = .11$ , DABBS-Beliefs  $r = .15$ , DABBS-Behaviors  $r = .16$ ), indicating that ruminative, intrusive death-related thoughts have the most disruptive effect on sleep onset. This is consistent with previous work that showed that cognitively stimulating sleep experiences, especially those that specifically address existential concerns, increase SRL in clinical and community samples (Menzies et al., 2020; Ali et al., 2021). Since Sleep

Duration and Habitual Sleep Efficiency did not seem to strongly correlate with subscales of DABBS, it is possible that death anxiety can better be understood as impacting on the induction of sleep, but not its architecture once initiated.

Results showed no correlation between composite religiosity and sleep quality ( $r = -.045$ ,  $p > .05$ ) suggesting that this level of sleep in this sample does not translate into measurable benefits of sleep for religiosity per se. The result is an interesting null one and may be informative.

The direct association between religiosity and sleep does not appear at the composite scale level, or may be mediated by factors not measured by the PSQI, and indirectly mediated by decreasing depression and death anxiety. Specific religious practices that can be investigated (such as prayer before sleep, mindfulness practice, liturgy) may show more specific links between religious practices and sleep parameters than more broad measures of religious orientation (Abbas et al., 2021). Because mediation analysis was not conducted, future studies should explore this issue to determine whether the impact of religiosity on sleep is completely or partially mediated by decreases in death anxiety.

The high intercorrelations among the DABBS subscales (Beliefs-Behaviors  $r = .82$ , Affect-Beliefs  $r = .78$ , Affect-Behaviors  $r = .65$ ) are presented and confirm the internal consistency and convergent validity of the scale in this clinical patient sample, extending the previously reported psychometric data to a new patient population and cultural context. Collectively, the results indicate that death anxiety, as conceptualized as a multidimensional construct, functions in a highly integrated manner, amongst the affective, cognitive and behavioral components of death anxiety, supporting and reinforcing one another. With this in mind there are implications for the design of interventions; an

intervention to one dimension of death anxiety (e.g., cognitively restructuring one's death-related belief system) could have beneficial treatment cascading effects (as expressed on other dimensions of anxiety).

#### **4. Conclusion**

The present study elucidated that death anxiety was significantly and negatively related to religiosity in a large clinical patient sample and clearly showed that both intrinsic and extrinsic religious orientations led to a decrease in death fear in affective, cognitive, and behavioral levels. Fear of death had, in turn, a modest, but statistically significant positive correlation with sleep quality impairment, specifically sleep onset latency. The results of this study did not reflect a direct significant relationship between the religiosity and the quality of sleep, but rather indicated that a protective effect of religiosity may occur primarily by reducing existential distress instead of through sleep-promoting processes.

These results corroborate the significance of incorporating spiritual evaluation into treatment communication with patients with life-threatening illness. Religious resources and the use of psychosocial interventions that both support and consolidate these resources could help to alleviate existential suffering, which in turn may be beneficial for sleep. The high intra-scale reliabilities of the DABBS sub-scales also support the instrument's use as a multi-dimensional assessment instrument for clinical research.

#### **5. Recommendations and Limitations**

Patients' religious and spiritual orientations would be best explored as part of a comprehensive psychological evaluation and combined with chaplaincy services and spiritually-integrated psychotherapy to reduce death anxiety (Davies et al, 2022). Acceptance and commitment therapy (ACT) principles should guide the treatment of death-

related rumination as a specific maintenance factor to treat sleep-onset insomnia, especially in clinical populations, where cognitive-behavioral therapy (CBT-I) for insomnia should be used (Menzies & Menzies, 2020; Hn, 2020). Future studies should test causal sequencing in longitudinal studies and in experimental studies, and the use of RCTs could explore the effects of spiritually-integrated interventions, with replication across different cultural, religious and diagnostic groups needed to assess generalizability.

Nevertheless there were some limitations in interpreting the present results: the cross-sectional design does not allow any causal conclusions; the specific measures used for self-report data created shared-method variance that might obscure differences; the sample was purposive, which means that generalizations to other groups are limited; no attempt was made to control all important third variables; specific religious practices, such as prayer frequency and attendance, were not assessed; and the cultural and religious background of the sample was limited. These limitations should be addressed in future research with prospective designs, multimethod assessments, and good specification of the religious/cultural environment in which the participants live.

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