

## Impact of Religiousness on Preoperative Anxiety in Patients Undergoing a Surgical Procedure at Bacha Khan Medical Complex Swabi, Pakistan

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### Abstract

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**Background:** Anxiety prior to surgery, a very common psychological experience for patients waiting for surgery, is associated with negative effects on both physiological status and recovery from surgery. Many individuals use religion as one way to cope with anxiety or stress. Therefore, this research sought to assess whether there is a relationship between religiosity and the amount of anxiety experienced by patients waiting for surgery.

**Methodology:** This was an analytical cross-sectional study that took place at the Bacha Khan Medical Complex (BKMC), located in Swabi, Pakistan. A total of 178 adult male Muslim patients who had never undergone surgery and were scheduled to undergo their first surgery, used consecutive sampling to form the sample group. Both the Muslim Daily Religiosity Assessment Scale (MUDRAS) and the Beck Anxiety Inventory (BAI) were used to collect data. Descriptive statistics and correlational statistical

analyses were completed using SPSS.

**Results:** The results indicated a statistically significant negative correlation between religiosity and the amount of anxiety experienced prior to surgery ( $p < 0.000$ ). The

average anxiety score was  $10.45 \pm 7.16$ . Approximately two-thirds of the participants ( $n = 117$ , 65.73%) reported high religiosity, and about 21% of the participants ( $n = 37$ , 20.79%) reported low religiosity. In addition, the study demonstrated that individuals who reported higher religiosity experienced significantly less anxiety than those who did not.

**Conclusion:** There is a statistically significant inverse correlation between religiosity and the amount of pre-surgical anxiety experienced by patients who are undergoing surgery. Thus, these findings provide evidence that religious beliefs/practices function as a protective factor and also as a non-pharmacologic means to help alleviate pre-surgical anxiety. As such, the findings of this study support the inclusion of religious counseling and spiritual support into standard perioperative care to improve overall health and possibly reduce the risk of complications during the recovery process from surgery.

## 1. Introduction

For many people religion can provide a means of making sense of things (a source of meaning) and provide comfort and help (particularly at stressful times e.g. when ill or undergoing an operation)[1]. Religion is often described by researchers as religiousness; this refers to the degree of involvement in regular rituals, beliefs and attitudes of faith. Many studies have demonstrated how religion can affect both our physical and mental well-being[2] [3]

Anxiety prior to surgery is a common psychological experience [4] where reported global prevalence rates range from 45-60%[5]. Anxiety rates are higher than average in developing and emerging countries[6]. Preoperative anxiety describes an anxious state of being concerned and worried about an upcoming procedure. It starts after an operation has been scheduled, and is usually at its worst when admitted into hospital [7]. The physiological response to anxiety results in an activation of the sympathetic nervous system (SNS), resulting in increased heart rate, elevated blood pressure, muscle tension and increased levels of corticosteroids produced [6, 8]. If left untreated these symptoms may cause delayed wound healing, increase the risk of post-operative infections, and create problems related to electrolyte imbalances, and may lead to longer hospital stays[9, 10].

Although literature has demonstrated that Spirituality/Religiousness can be related to positive Health Outcomes [11], it has been found that there are very few studies that investigate the association between Religiousness and preoperative anxiety in contemporary Perioperative Practice particularly in one culture such as Pakistan[12]. Prior investigations have provided inconsistent (mixed) or non-significant findings concerning the inverse correlation of interest[4, 11, 13]; therefore, an investigation using a valid instrument in a local context was necessary for providing culturally relevant data.

Preoperative anxiety is a major clinical concern in patients preparing for surgery at Bacha Khan Medical Complex, Swabi and to what degree religiousness functions as a protective measure against this anxiety has not been adequately assessed in this patient population.

This study also assessed the relationship between religiousness and levels of preoperative anxiety in patients who undergo surgery at Bacha Khan Medical Complex, Swabi, Pakistan.

This study aimed to evaluate the levels of religiosity surgical patients utilizing the MUDRAS scale, to assess their degree of preoperative anxiety, utilizing the BAI scale and to determine the relationship between the levels of religiosity and the degree of preoperative anxiety in this population.

## 2. Methodology

This analytical cross-sectional study was designed to investigate the association between the religiosity and preoperative anxiety, measured at one point in time. The research was conducted within the surgical departments of the Bacha Khan Medical Complex (BKMC) Swabi Khyber Pukhtunkhwa, Pakistan. BKMC is a tertiary care center and, therefore, provides a good representation of patients who undergo general surgical procedures in the regional area.

The target population comprised patients admitted to the surgical departments for an elective surgical procedure. The sample size was calculated using the WHO formula, assuming a 95% confidence level, a 5% margin of error, and an anticipated population proportion of 50%, resulting in a required sample size of 178 participants. **Consecutive sampling** was used to recruit participants until the required sample size was achieved.

Strict criteria were applied to ensure a homogenous sample and minimize confounding variables. Only adult Muslim male patients with no mental health history who were about to go through a surgical procedure for first time in life.

Ethical approval was obtained from the research committee at the Khyber Medical University Institute of Health Sciences, Swabi. Prior to data collection, all participants were provided with a detailed explanation of the study's objectives and procedures. **Informed consent** was obtained through a signed consent form. Participants were assured of their **autonomy**, including the right to withdraw from the study at any point without any negative impact on their medical treatment or care. Confidentiality and anonymity were maintained throughout the study.

Two standardized and validated instruments were used for data collection namely: **Muslim Daily Religiosity Assessment Scale (MUDRAS) for quantification of religiousness and Beck Anxiety Inventory (BAI)** for measurement of preoperative anxiety.

## 3. Results

Data collected from the questionnaires were entered and analyzed using the **SPSS 27** software. First descriptive statistics for all variables and then Pearson correlation for relationship between MUDRAS score and BAI score. The mean age of the participants was years (Mean SD). The majority of the patients were married (69.66%) and had a primary level of education (30.34%).

The religiousness of the participants, as measured by the MUDRAS scale, showed a high prevalence of religious engagement:

| Religiousness Level | Frequency ( ) <i>n</i> | Percentage (%) |
|---------------------|------------------------|----------------|
| Low                 | 37                     | 20.79          |
| Moderate            | 24                     | 13.48          |
| High                | 117                    | 65.73          |
| <b>Total</b>        | <b>178</b>             | <b>100.00</b>  |

The overall mean score for anxiety symptoms, as measured by the BAI, was:

|                         |      |       |
|-------------------------|------|-------|
| Numbness                | 2.25 | 0.888 |
| Feeling hot             | 1.90 | 0.900 |
| Wobbliness in legs      | 2.06 | 0.919 |
| Unable to relax         | 1.94 | 1.029 |
| Fear of worst Happening | 2.01 | 0.945 |
| Dizziness               | 2.01 | 0.949 |
| Heart pounding          | 1.93 | 0.936 |

|                         |      |       |
|-------------------------|------|-------|
| Unsteady                | 2.07 | 0.939 |
| Afraid                  | 2.11 | 1.071 |
| Nervous                 | 2.04 | 0.996 |
| Feeling of choking      | 1.89 | 0.917 |
| Hands trembling         | 1.96 | 0.910 |
| Shaky                   | 1.98 | 1.017 |
| Fear of losing control  | 1.97 | 0.938 |
| Difficulty in breathing | 1.87 | 0.929 |
| Fear of dying           | 1.88 | 0.934 |
| Scared                  | 2.05 | 0.946 |
| Indigestion             | 1.90 | 0.821 |
| Faint                   | 2.03 | 1.015 |
| Face flushed            | 2.14 | 0.949 |
| Hot / cold sweats       | 2.07 | 0.972 |

The primary finding of the study was the correlation between the two main variables:

| Correlation                            | (Pearson's Coefficient) <i>r</i> | -value <i>p</i> |
|----------------------------------------|----------------------------------|-----------------|
| Religiousness vs. Preoperative Anxiety | -0.281                           | 0.000           |

The Pearson's correlation coefficient (*r*) of **-0.281** indicates a **weak to moderate negative (inverse) correlation** between religiousness and preoperative anxiety. The -value of **0.000** confirms that this inverse relationship is **statistically significant**. This means that as the level of religiousness increases, the level of preoperative anxiety tends to decrease.

#### 4. Discussion

This research shows that there is substantial proof that religious beliefs can act as a protective mechanism from being anxious before a surgical procedure. This can be inferred by looking at the negative association between religion and anxiety which is supported by a large body of literature on how many people believe that practicing their spirituality and/or religion helps them cope with fear and stress without using medication [4].

People in this sample who reported higher levels of religious activity (such as praying every day, or seeing a spiritual advisor) reported lower levels of anxiety. These behaviors may help patients because of what they have learned about their faith including the idea that death is inevitable, trusting in a higher power, and believing that suffering is for a reason; all of these ideas may reduce fears related to the unknown nature of a surgical procedure. In addition, religiousness can create positive thinking patterns and help people manage emotions and provide a basis for understanding the meaning behind a serious event like undergoing surgery [14].

In terms of previous studies, our data confirm those of Kalkhorani and Karimolaihi [15], but the only difference is that we were able to show a statistically significant relationship due to our focus on a single, homogeneous culture sample. Moreover, the fact that 65.73% of participants reported having high levels of religiousness demonstrates the important role religion plays in managing anxiety in this particular cultural setting.

Our findings are completely in accordance to findings of meta-analysis by Salari et al[16]. their study concluded that listening to recitation of Quran improve the anxiety

level of patients not just those who are about to undergo minor surgeries but those of major surgeries also. Another similar study by TD Saputro et al [17] concluded that recitation of Quran by patients waiting for surgery decrease the pre-operative anxiety significantly. These both studies further solidify our findings.

A qualitative study by Watanachai et al [18] targeted the patients with breast cancer, waiting for surgery. The preoperative anxiety level of all them were noted to be high. It was concluded that one of the best way to reduce this anxiety was to motivate spirituality of patients. These findings lies in complete accordance to our findings.

A study by Sri Retna et al [19] studied impact of religiousness in terms of five time daily prayers in patients waiting for surgery. It was concluded that five time prayer significantly reduced the level of pre-operative in these patients. This conclusion is supported by our study.

PC da Costa et al [20] studied impact of religiousness in patients about to undergo Cardio-vascular surgeries, in terms of coping with pre-operative anxiety. This study concluded that patient with positive attitude towards spirituality, God or religion had significantly lower pre-operative anxiety compared to others. This study is in complete alignment with our study.

These findings suggest that health professionals need to recognize and support the religious and spiritual needs of their patients during the time surrounding their operation. Small actions such as providing a place for prayer, allowing patients to use religious materials or facilitating counseling, can be cost-effective ways to aid in the reduction of anxiety and possibly lead to increased patient compliance and improved recovery after surgery.

### **Limitations and Future Research:**

A primary drawback of the current study is its use of a cross-sectional design that limits the ability to determine causation. Additionally, the current study's sampling frame only included adult male Muslim patients undergoing their first general surgery, thus limiting the applicability of the results to female patients, non-Muslim patients, and those undergoing repeat or specialty surgeries. In future studies employing longitudinal designs to establish causation, and by including more representative samples will provide the opportunity to explore the specific mechanisms (i.e. religion-specific practices, religious community-based social support) through which religion reduces anxiety.

### **5. Conclusion:**

The present study showed a statistically significant negative correlation between religiosity and anxiety in male surgical patients at Bacha Khan Medical Complex, Swabi, Pakistan. The data supports that religiosity can act as a significant protective mechanism, providing an important psychological resource for patients experiencing the stress associated with surgery. Therefore, we suggest that formalized spiritual/religious support be integrated into the standard of care for surgical patients to utilize the non-pharmacologic potential of religiosity to reduce anxiety, and improve patient satisfaction and clinical outcomes.

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