ORIGINAL ARTICLE

Spiritual Intelligence, Self-Management Skills, Depression and Anxiety in Patients with Tuberculosis

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ABSTRACT

Objective: The present study aimed to examine the relationship between spiritual intelligence, self-management skills, depression, and anxiety in patients with tuberculosis.

Study Design: Correlational survey research design was used.

Place and Duration of the Study: This study was conducted in Pakistan and data was collected from Government TB Hospital Sargodha, from year December 1, 2019, to September 2020.

Materials and Methods: Participants comprised Tuberculosis patients (*N*= 113) both in and outpatients of Government TB, Hospital Sargodha. Four self-report measures including Spiritual Intelligence Self-Report Inventory,[1] The Self-Control and Self-Management Skills Scale,[2] Hamilton Depression Rating Scale,[3] and Hamilton Anxiety Rating Scale[4] were used for data collection. Both descriptive and inferential statistics were employed for the analyses of data.

Results: The results of Pearson product-moment correlation revealed that spiritual intelligence has a significant positive correlation with self-management skills ($r = .42$, $p < .001$) and a significant negative relationship with depression ($r = -.25$, $p < .01$) and anxiety ($r = -.27$, $p < .01$); self-management has a momentous negative relationship with depression ($r = -.59$, $p < .001$) and anxiety ($r = -.38$, $p < .001$). Depression has a significant positive association with anxiety ($r = .73$, $p < .001$). Hierarchical Regression analysis showed that self-management clarified 14 % variance in anxiety with $F(1, 111) = 18.51$, $p < .001$; and self-management clarified 35 % variance in depression with $F(1, 111) = 60.21$, $p < .001$.

Conclusion: The outcomes of the present study revealed that there is an important negative association between spiritual intelligence, depression, and anxiety. It was also revealed that there is a substantial positive relationship between spiritual intelligence and self-management skills in the present population of patients with tuberculosis.

Key Words: *Anxiety, Depression, Spiritual Intelligence, Self-Management Skills.*

Introduction

Tuberculosis is a chronic transferable illness.[5] In the individuals that are affected with TB there is a greater tendency to have psychological problems such as mood, addiction, depression, and anxiety disorders. The World Health Survey which was directed at 48 LMICs, concluded that there is a greater comorbidity between depression and TB.[6] The Individuals that are affected with psychological disorders such as depression are at greater risk to face the negative outcome of TB as compared to those who don't have depressive symptoms.[7] A lot of research that used psychological measures for checking mental health found that by taking the treatment of TB there will be a lower risk of developing psychological disorders. It was observed that treating TB at the very initial stage of the disease will increase the probability of developing good mental health.[8]

TB patients face a lot of mental and physical distress that results in poor outcomes of the disease.[9] The studies showed that there is a strange occurrence of depression and anxiety in patients with Tuberculosis in comparison to the general population which is about 3 to 17 percent and 7 to 82.3 percent correspondingly.[10] The occurrence of anxiety and depression comprehends an adverse impact on an

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individual self-care, value of life, and health care cost, etc.[11] A study used the global mental health assessment tool primary care version (GMHAT/PC) and stated that TB patients ached from psychological disorders for example stress, anxiety, depression, hypochondriasis and obsessive-compulsive disorder (OCD).[12] Although it has been stated that there is an association between psychological disorders and chronic illness pain but most of the research on this association has been done only in the Western populace. There is very less amount of knowledge about their relationship in the non-Western states.[13] In Pakistan very little research has been done on these variables in this combination of variables and with this population. The research on these variables in Pakistan has been done from a different perspective, research was done to discover the factors that are related to anxiety and depression.[14] A study was done to dig out the occurrence of depressive disorder in chronic illness patients.[15] The rationale for conducting a study on the association between Spiritual Intelligence (SI), self-management skills, depression, and anxiety in patients with Tuberculosis (TB) lies in the potential benefits it can provide to TB patients. TB is a chronic infectious disease that not only affects physical health but also has a significant impact on mental well-being. Depression and anxiety are common comorbidities among TB patients, further exacerbating their overall health and quality of life. Conducting a study on the association between SI, self-management skills, depression, and anxiety in TB patients can provide valuable insights into the interplay of these variables and their impact on the mental health outcomes of individuals with TB. The findings of this study can inform the development of targeted interventions, comprehensive care models, and support strategies that address the unique needs of TB patients, leading to improved treatment adherence, better mental health outcomes, and enhanced overall well-being.

Materials and Methods

A correlational survey research design was followed and employed a self-reported survey method for data collection. The sample of the present study consisted of tuberculosis patients ($N= 113$). Data were collected from the patients of tuberculosis from Government TB, Hospital Sargodha only. Data consisted of both males ($n= 61$) and females ($n= 52$). The individuals with Tuberculosis who were admitted to the hospital as well as those who came into the outpatient department were included. The individuals in the first and second stages of Tuberculosis were also included in the study. The patients who were having another physical disease along with Tuberculosis were not included in the study. As well as the individuals who were diagnosed with psychological disorders were not included in the study. After approval of the Board of Studies (BOS) of Riphah Institute of Clinical and Professional Psychology, Riphah International University, Lahore Campus, Pakistan (RICPP19/02K20/0238, 19 February 2020) present study was carried out. All ethical standards of APA were followed during the study. The enclosure and barring ethics were acknowledged by the researcher during the study. All the participants were ensured that their privacy will be maintained throughout the study and that the data collected from them will be used only for the study. The participants were provided with the free hand to leave the research at any time if they want without any penalty. All the participants were informed about the purpose of the study. An informed consent and approval form was taken from the participants before getting the data from participants. The participants were asked to fill out the demographic sheet and the four scales that were being used in the study. On average it took 20 to 25 minutes to fill all these scales. The data was normally distributed so parametric tests were chosen for the analyses. Pearson product-moment correlational analysis was used for the assessment of the relationship between variables as all the variables were continuous in nature. Hierarchical regression analysis was employed for prediction. All the collected data were analyzed by using SPSS version 21.

Results

The analysis of Pearson Product Moment Correlation indicated that Spiritual Intelligence has a positive association with self-management skills and a negative relationship with depression and anxiety. Hierarchical Regression Analysis revealed that spiritual intelligence and self-management skills negatively predicted depression and anxiety. Table 1 showed the frequency and percentage of the

participants in the study. Table 2 revealed the Psychometric Properties such as reliability, standard deviation, mean, Skewness and kurtosis, etc. of the variables under study. Table 3 revealed that spiritual intelligence has a positive and noteworthy association with self-management skills ($r = .42$, $p < .001$) and a noteworthy negative relationship with depression ($r = -.25$, $p < .01$) and anxiety ($r = -.27$, $p < .01$). The findings also indicate that self-management has a significant negative relationship with depression ($r = -.59$, $p < .001$) and anxiety ($r = -.38$, $p < .001$). Depression has a noteworthy positive relationship with anxiety ($r = .73$, $p < .001$). Table 4 showed that self-management clarified a 14 % variance in anxiety with $F(1, 111) = 18.51$, $p < .001$. Table 5 showed that self-management clarified 35 % variance in depression with $F(1, 111) = 60.21$, $p < .001$.

Discussion

The objectives of this research were to examine the relationship between spiritual intelligence, self-management skills, depression, and anxiety.

Table I: Demographic Data of Participants (N = 113)

Demographic variables	F	%
Gender		
Men	61	54
Women	52	46
Age		
Adulthood	46	40.7
Late adolescence	67	59.3
Marital Status		
Married	82	72.6
Unmarried	18	15.9
Separated	4	3.5
Widow	9	8
Stage of Tuberculosis		
1st stage	101	89.4
2nd stage	12	10.6
Type of treatment		
At home with medication	102	90.3
Admitted in hospital	11	9.7
Smoking		
Smoker	18	15.9
Non-smoker	75	66.4
Quit smoking due to illness	20	17.7

Table II: Psychometric Properties of the Study Variable (N= 113)

						Range			
Variables	Items	N	M	SD	A	Potential	Actual	Skewness	Kurtosis
Spiritual Intelligence	24	113	36.78	11.38	.93	0-96	0-77	-.42	.19
Self-management skills	16	113	35.00	25.67	.65	0-80	0-68	.21	-1.22
Depression	17	113	22.27	14.58	.92	0-68	2-37	-.13	-.89
Anxiety	14	113	30.29	13.84	.88	0-56	1-56	1.32	1.59

Table III: Pearson Correlation between Spiritual Intelligence, Self-Management Skills, Depression and Anxiety (N= 113)

Variables	1	2	3	4
Spiritual Intelligence	--	.42***	-.25**	-.27**
Self-management skills	--	--	-.59***	-.38***
Depression	--	--	--	.73***
Anxiety	--	--	--	--

Different hypotheses were made based on previous literature. After data collection and data analysis, significant results were obtained, and all hypotheses were accepted. Preliminary analysis also shows all assumptions of data normality and reliability of all scales were adequate to carry out inferential statistics. The results of Pearson product-moment

Table IV: Hierarchical Regression Results for Anxiety (N= 113)

Variables	B	95% CI		SE. B	B	R^2	ΔR^2
		LL	UL				
Step 1						.14	.14***
Constant	47.24***	39.04	55.44	4.14			
Self-management	-.48***	-.71	-.26	.11	-.38***		
Step 2						.16	.02
Constant	47.55***	39.38	55.74	4.13			
Self-management	-.41***	-.65	-.17	.12	-.32**		
Spiritual intelligence	-.08	-.19	.03	.06	-.14		

Note. ***$p < .001$; CI = confidence interval

correlation revealed that spiritual intelligence has a significant positive correlation with self-management skills ($r = .42$, $p < .001$) and a significant negative relationship with depression ($r = -.25$, $p < .01$) and anxiety ($r = -.27$, $p < .01$); self-management

Table V: Hierarchical Regression Results for Depression (N= 113)

Variables	B	95% CI		SE.B	B	R^2	ΔR^2
		LL	UL				
Step 1						.35	.35***
Constant	47.50***	40.73	54.27	3.41			
Self-management	-.72***	-.90	-.54	.09	-.60***		
Step 2						.35	.01
Constant	47.52***	40.70	54.32	3.44			
Self-management	-.71***	-.92	-.52	.10	-.59**		
Spiritual intelligence	-.003	-.09	.08	.05	-.01		

Note. ***$p < .001$; CI = confidence interval

has a momentous negative relationship with depression (r = -.59, p < .001) and anxiety (r = -.38, p < .001). Depression has a significant positive association with anxiety (r = .73, p < .001). Research not only in Pakistan but around the world supported the present study results. for example, research was done to check the connection between spiritual intelligence, burnout, and mental health. It was an applied and descriptive correlational study. Standardized questionnaires of spiritual intelligence and mental health-related issues were used to collect the data. The Pearson Product Moment correlation analysis was applied to check the hypothesis. The results indicated a positive connection between spiritual intelligence and mental health and a negative and significant association was found between depression and spiritual intelligence.[16] Another research was conducted in Lahore, Pakistan to check out the association between stress and religious spiritual well-being, depression, and anxiety among the students at the university. It was a descriptive and analytical study. The sample of this study comprised 138 university students. By using the random sampling technique data was collected. For the analysis of results ANOVA, Independent sample t-test, regression, and Pearson Product moment correlation analysis were used. The outcomes of the study indicated that Religious spiritual well-being was negatively related to stress, anxiety, and depression.[17]

Likewise, research was done to check the association between spiritual status and the level of anxiety in patients who were suffering from Pulmonary Tuberculosis. This research was an investigative observational study in which a cross-sectional method was used. Spirituality was taken as the independent variable whereas anxiety was taken as the dependent variable. The sample of the study consisted of 55 patients with pulmonary tuberculosis. The sample was approached by using a simple random sampling technique. The findings of the research indicated that most of the patients have a normal level of anxiety, but they have a high level of spiritual outcomes. Thus, the consequences of the study indicated that an increased level of spiritual experience helps reduce anxiety.[18] The results of a study indicated that the practice of spiritual intelligence reduced stress, grief, and depression in youths. So, by the outcomes of this research, it could be determined that low levels of spiritual intelligence are related to stress and emotional overburden.[19]

The findings of the present research showed after Hierarchical Regression analysis that self-management clarified 14 % variance in anxiety and self-management clarified 35 % variance in depression. Self-management skills are negative predictors of depression and anxiety. Researchers conducted experimental research and results indicated that in the experimental group, the spiritual intelligence intervention decreased depression, anxiety, phobia, interpersonal sensitivity, aggression, and paranoid ideation in comparison to the control group. Thus, the outcomes of the research indicated that the training of spiritual intelligence is capable to reduce psychosomatic adversities and to increase the level of psychological health among students at higher secondary school.[20]

Furthermore, another research finding showed a positive and noteworthy association between spiritual intelligence and general health. So, on the results of this study, it was concluded that by improving the level of spiritual intelligence the general health of the nursing students will be good. It was also concluded that the promotion of spiritual intelligence increases the mental health along with physical health of the students of nursing.[21]

Similarly, other research findings were the same as the present study results. Researchers investigated the connection between spiritual intelligence and emotional well-being in teachers at primary schools. The research design of descriptive correlation was used in the research. By using the general health

questionnaire (GHQ) and spiritual intelligence self-report inventory 24 (SISRI-24) the data was collected. The regression and Pearson coefficient correlation analysis were used for analyzing the outcomes of the study. The outcomes of the research determined that the increased level of spiritual intelligence will lead to good mental health in teachers.[22]

A study was done to find out the influence of spirituality in the self-management of long-lasting illnesses in white and older Africans. This was a qualitative study, and the data was collected by using in-depth interviews with 88 people who were 65 years or older than 65 years. To conclude the outcomes of the research thematic content analysis was used. The outcomes of the present research indicated that there were cultural alterations in the usage of spirituality in the self-management of long-lasting illnesses. Results also showed that instead of these racial alterations spirituality was also an essential part of an individual's health and was significantly and positively related to self-management skills and the well-being of chronically ill patients[23].

Above mentioned literature shows that a plethora of research both national and international supported the present study results.

Conclusion

The outcomes of the present study revealed that spiritual intelligence has an inverse relationship with depression and anxiety. It was also revealed that there is a substantial positive relationship between spiritual intelligence and self-management skills in the present population of patients with tuberculosis. High levels of spiritual intelligence in patients show fewer symptoms of depression and anxiety among them. The self-management skills of the patients were also influenced by their level of spiritual intelligence and showed a positive relationship.

Implications

This study will help individuals to understand how their spiritual intelligence influences their general, mental, and physical health. This study will help individuals to realize that by developing a greater level of spiritual intelligence they can cope with their diseases easily and quickly. So, this study will give awareness to them that they could use interventions for developing spiritual intelligence to cope with their illness effectively. This study will help psychologists and other healthcare providers to develop spiritual intelligence among patients to enable them to cope with their illnesses effectively. This study will also provide awareness to the people how their lower level of spiritual intelligence will lead them toward developing mental illnesses such as depression and anxiety. And to also make them that how the level of spiritual intelligence will affect their self-management skills.

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DATA SHARING STATMENT

The data that support the findings of this study are available from the corresponding author upon request.

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