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The Efficacy of Biopsychosocial-spiritual Model for Women with Polycystic Ovary Syndrome

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ABSTRACT

The research aimed to highlight the effectiveness of the biopsychosocial-Spiritual (BPSS) model and to understand the interactions among PCOS clients' physical, mental, social, and spiritual needs. Method: Randomization group design was used in this research. Purposive sampling was utilized to collect the data, and the sample size was determined with the help of G-power analysis. A total of 40 women with polycystic ovary syndrome, ranging in age from 18 to 35, participated in this study. Several gynecology departments of Lahore provided data. The experimental group was then given BPSS therapy, treatment was administered in group settings on participants and a homogenous setting was maintained for each session. The session was conducted 4 days per week. The control group received no psychological, social, or spiritual treatment. Results: In descriptive statistics, percentages and frequencies were computed, paired sample t-test were used in the study before and after the assessment of the biopsychosocial-spiritual model, and t-tests were used to compare the results of the control and experimental group. The results depict a significant difference ($p<.05$) between the control and experimental groups. Conclusion: The importance of employing a biopsychosocial-spiritual model was highlighted in the current study for controlling polycystic ovary syndrome patients' symptoms. Such a strategy would make it easier for these people to overcome obstacles in different areas of their lives. As a result, it would greatly enhance their general coping abilities and day-to-day functioning.

1. INTRODUCTION

A hormonal disorder known as a polycystic ovarian syndrome (PCOS) that frequently affects women during their reproductive years and is the primary factor that leads to oligo-anovulation and hyperandrogenism (Carmina et al., 2006) both of which have significant negative societal, economic, and psychological effects (Ehrmann, 2005). Polycystic ovarian syndrome is believed to be the most prevalent endocrine condition affecting women (PCOS) (Okoroh et al., 2013).

According to certain scientific evidence, the history of PCOS extends back to the 18th century, while Stein and Leventhal characterized it in 1935 (Szydlarska et al., 2017). However, it is thought that this disorder's genetically related features have existed for around 50,000 years (Azziz, 2016). Due to the understanding that patients with polycystic ovaries are more likely to develop metabolic syndromes, individuals are now well aware of this condition (Azziz et al., 2005). PCOS affects women of reproductive age of all races and ethnicities. A 3 to 10% incidence rate has been observed for PCOS in unidentified communities (Kauffman et al., 2002).

In the world, it affects 4% to 20% of viable women (Deswal et al., 2014). There were prevalence rates of 2.2%, 3%, and 4%, respectively, in Southern China, Persia, and the USA. The prevalence rate was determined to be between 5% and 10% in Beijing, Palestine, Brazil, Sri Lanka, the UK,

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Greece, and Spain. A higher prevalence was recorded in Australia, Turkey, and Denmark (15% –20%) (Deswal et al., 2014). Comparing South Asian women—particularly those from Pakistan—to the white population (20–25% in the UK), the prevalence of PCOS is substantially higher (52%) among the former group. (Roohi & Akram, 2015).

George L. Engel carry out a study for the adoption of a biopsychosocial approach thirty years ago, they highlighted the drawbacks of the traditional biological model (Engel, 1977). It was concluded that diseases must be studied in the context of the personal characteristics of a person, such as prenatal history, past medical history, weight, eating habits, temperature and weather of patient's city, and immunity (Engel, 1977; 1982).

As explained earlier health is not only the absence of any illness but there must be entire social, mental, and physical well-being. The spiritual domain was not included in this definition, which was adopted by WHO in 1948 after its founding. However, in 1999, the institution's 52nd Assembly suggested some constitutional revisions. It was suggested to WHO adds the spiritual domain to the explanation of health. The definition of health must be like "a state of complete spiritual, mental, social and physical well-being, it doesn't only the absence of any illness" (WHO, 1999).

Human health encompasses five dimensions: physical (biological), mental (psychological), emotional (emotional), social (social), and spiritual (spiritual) (Benning, 2015; Prawitasari, 2016; Hawkins et l., 2020). A biopsychosocial-spiritual framework gives a piece of complete information about the cure and health. As it explains health as a mutual effect of all four factors (mental state, physical health, social interaction, and level of spirituality) (Beng, 2004). Patients are thought of as beings in relationships, and disease is viewed as a disrupting force in biological relationships that can affect all other parts of the patient's relationship (Sulmasy, 2002).

The physical well-being and mental health interaction, as well as the extra-personal connection of the patient with his environment and society, are the focus of this holistic approach to patient care. The biopsychosocial-spiritual framework is now very common, especially where any disease is severe (Chochinov & Cann, 2005; Sheehan, 2005; Woll et al., 2008).

2. LITERATURE REVIEW

An extension of the biopsychosocial model that incorporates patients' spiritual needs as part of a framework for research and clinical practice. A review of the literature and philosophical investigation were used. Patients' needs should be met as a whole person by the health professionals. People can be seen as creatures in relationships, and disease can be seen as a breakdown in biological relationships that impacts all of a person's other relational facets. Health would be effective when doctors' focus on mental, social, religious, and physical factors involved in the life of a person (Sulmasy, 2002).

The first study's goal was to determine whether the biopsychosocial-spiritual model of addiction applied to a community of addicts receiving treatment in Jordan, an Islamic nation. A sample of 25 males in addiction treatment was interviewed in person utilizing a semi-structured qualitative study approach. A cohort of in-patients at a treatment facility in Amman, Jordan, who had previously taken part in a quantitative survey was used to create the sample. To make sure a variety of traits were included, a purposeful sample was chosen. Verbatim quotes were used to illustrate themes in a thematic analysis of the transcripts of the interviews. The biopsychosocial-spiritual model of addiction was used to map the themes. According to this study, a variety of social, spiritual, and physical health variables are linked to addiction. There were unpleasant physical withdrawal effects as well as psychological symptoms like worry and suicidal thoughts. Marriage and family relationships broke down, people lost their jobs, got involved in crime, and neglected their religious obligations, which led to social isolation (Ghaferi, Bond & Matheson, 2016).

A study was to evaluate the efficiency of a biopsychosocial-spiritual model in the treatment of diabetes patient symptoms. A 38-year-old woman with diabetes reported having periods of melancholy and exhaustion, less social contact, trouble falling asleep, feeling irritated, and having excruciating joint pain. She was evaluated using the Siddique Shah Depression scale in a semi-structured interview, receiving a subjective rating of 293.83 (F06.31) for depression related to diabetes. Throughout the intervention plan's implementation phase, the participant and researcher met for a total of 11 sessions. After doing a post-assessment, it became clear that her overall symptoms had improved by 33% based on the comparison of her pre- and post-assessment ratings on the Siddique Shah Depression Scale. The effectiveness of a biopsychosocial-spiritual therapeutic method for treating diabetes symptoms is highlighted by the current study (Arooj, Khalid, 2020).

The previous research supported the bio-psychosocial-spiritual approach to therapy and care as a theoretical viewpoint. According to the study, a measuring model might serve as a helpful assessment tool for creating therapeutic interventions to foster positive change in the lives of those who are unwell. The study's findings strongly urge the creation of treatment procedures that take advantage of the good things that come from being ill. It is strongly urged that health professionals at all levels approach patient care from a holistic standpoint while acknowledging the flaws in the current health care system and policies (Maqsood, Jabeen, Khatoon, 2013).

Rationale

Polycystic ovarian syndrome (PCOS) is a complex disorder characterised by high levels of testosterone, irregular menstruation, and/or water sacs on one or both ovaries (Umland, 2011). It has been found that PCOS is the most frequent endocrine disorder among American women of reproductive age, affecting 5 to 10% of females between the ages of 18 and 44. Compared to women of Western Caucasian descent (20% to 25%), Pakistani women in the UK had a higher prevalence of PCOS (52%) (Akram (2015).

The current study will highlight the efficacy of a biopsychosocial-spiritual approach for controlling symptoms related to PCOS and assist clinicians in better understanding the causes of their patient's problems. The biopsychosocial-spiritual model helps primary care physicians to better understand the biological, psychological, social, and spiritual interactions among biological and psychological disorders to strengthen the clinician-patient relationship. There is less literature, as far as I am aware.

Objective

- The goal of the research is to highlight the effectiveness of the biopsychosocial-spiritual model.
- To understand the interactions among PCOS clients' physical, mental, social, and spiritual needs.
- The biopsychosocial-spiritual model can be used by psychologists and trained healthcare providers to better understand the link between physical and mental elements in diseases and to enhance the quality of the relationship between patients and healthcare providers.

Hypothesis

H1: There is more likely to be a significant difference between pre and post-assessment of the psychological symptoms of women with polycystic ovary syndrome.

H2: There would be a significant difference in post-test scores between the control and experimental group.

3. METHODOLOGY

Randomization design had been used in this research. The present study was conducted to find out the pre and post-effectiveness of the Biopsychosocial-spiritual model for women with PCOS. In the current study, Purposive sampling had been used to draw samples. The participants in this study were 40 women (N=40), and the sample size was drawn with the help of G-power analysis. The age range of women was 18 to 35 who had been diagnosed with polycystic ovary syndrome. Data were collected from several gynecology departments.

In this study, 50 PCOS-diagnosed women ages 18 to 35 participated. Utilizing a purposive sample technique, participants were chosen. All participants were then told the study's objectives, and their informed consent was acquired. Then, the subjects were divided into two separate groups of 25 each, and each group member received a paper with a number between 1 and 2. Women who received a number 1 were put in the intervention group, while those who received a number 2 were put in the control group. A total of 10 participants did not participate in the post-test, which resulted in the participants being reduced to 40 subjects.

The experimental group was then given BPSS therapy, treatment was administered in group settings on participants and a homogenous setting was maintained for each session. The research session was 4 days per week. The control group received no psychological, social, or spiritual treatment. Only married women were allowed to participate, not have any child, and a minimum F.A. degree, per the inclusion requirements. Inability to collaborate, pregnancy, mental or neurological illnesses, the use of any psychiatric medications, having gone through any traumatic experiences like losing a close member, employment in the medical sciences or psychology, and education in such fields were all criteria for exclusion.

Different elements make the general research information form; demographic information (age, education, birth order, family composition) PCOS information (duration, type of PCOS, type of treatment, duration of treatment) psychological (feelings towards the illness), social (relationship with spouse and family members) and spiritual information (relation with God).

The Medication Adherence Questionnaire and the Drug Attitude Inventory are combined into a 10-item self-reported evaluation called the Medication Adherence Rating Scale (MARS) by Thompson, Kulkarni, and Sergejew (2000). A MARS Cronbach's alpha of 0.75 was obtained from the MARS reliability study. A higher rating denotes improved adherence. The total score is between zero and ten.

The Depression, Anxiety, and Stress (DASS-21) by (Lovibond, & Lovibond, 1995). Scale was used to assess the psychological problems associated with PCOS. There are seven items on each of the three DASS-21 scales, which are then divided into subscales with similar content. The scores for depression, anxiety, and stress are obtained by adding the values for the pertinent factors. The DASS-21's reliability was proved by the depressed, anxiety, and stress subscales' respective Cronbach's alpha values of 0.81, 0.89, and 0.78.

A 12-item scale measuring perceptions of social support. The original ISEL measure has been condensed into this version (40 items; Cohen & Hoberman, 1983). Three subscales this questionnaire looks at three different facets of perceived social support. Four items, each on a four-point scale ranging from "Definitely True" to "Definitely False," are used to evaluate each dimension. In the ISEL, test-retest reliability and internal consistency

(Cronbach's alpha: .89) were found to be quite good (ICC 0.686). The Spirituality Scale (SS), a tool created by Delaney, 2003, aims to evaluate the manifestations of the human spiritual dimension in adult populations. The tool is a 23-item a questionnaire with a Likert-style scoring system. The overall SS has a Cronbach's alpha coefficient of .94. The three subscales had coefficients ranging from .81 to .94.

Results

Table 1 shows the frequency and percentage of PCOS clients according to age, type of marriage, socioeconomic status, birth order, and family system. The mean and standard deviation of age was (M=27.62, SD=5.27). Cousin marriage and out-of-family marriage are not equal in strength. Frequency of cousin marriage (f=13, 32.5%) and out-of-family (f=27, 67.5%). Clients from the middle class (f=27, 67.5%) are greater than clients from the upper class (f=6. 15.0%) and lower class (f=7, 17.5%). Table 1 also shows the frequency of birth order shows that youngers are greater (f=14, 35.0%) as compared to elders (f=10, 25.0%),

middle (f=13. 32.5%), and only child (f=3, 7.5%). In the family system, the nuclear system is greater (f=21, 67.5%) as compared to the joint family system (f=19, 32.5%).

As shown in Table 2 an independent-sample t-test was conducted to compare the scores of pre and post-medication adherence, DASS, ISEL, and Spirituality in the control and experimental group. The results suggested that there were significant differences in MARS, DASS, ISEL, and Spirituality scores between both the control and experimental groups. As the value of Levene's test of equality of variances (F=1.12; P=.29) is greater than P=.05 so, the assumption is thus fulfilled. Furthermore, the results indicate that there is a significant effect of biological interventions on the symptoms of PCOS women (t=.18.56(38); p=.000 <0.05). Moreover, the table also illustrates the adherence of PCOS women towards medication in the experiment group (M=18.55, SD=.94) is greater than the adherence of the control group (M=11.85; SD=1.30).

Furthermore, the results indicate that there is a significant effect of psychological interventions on the symptoms of PCOS women (t=-19.97(38); p=.000 <0.05). Moreover, the table also illustrates the psychological symptoms of PCOS women resolved after the therapy as their mean in the experiment group (M=8.10, SD=.2.90) is smaller than the mean of the control group (M=31.80; SD=4.44). The results also indicate that there is a significant effect of social interventions on the symptoms of PCOS women (t=17.59(38); p=.000 <0.05). Moreover, the table also illustrates the social connections of PCOS women improved after the therapy as their mean in the experiment group (M=37.30, SD=1.52) is greater than the mean of the control group (M=21.10; SD=3.82).

The results also depict that there is a significant effect of spiritual interventions on the symptoms of PCOS women (t=5.07(38); p=.000 <0.05). Moreover, the table also illustrates the spiritual beliefs of PCOS women improved after the therapy as their mean in the experiment group (M=121.20, SD=3.23) is greater than the mean of the control group (M=107.05; SD=12.05). So after the results, we can conclude that the model of Biopsychosocial-spiritual was significantly effective for the symptoms of PCOS in the experimental group as compared to the control group.

As shown in the Table 3 revealed the mean comparison of women with PCOS before and after the interventions of the biopsychosocial-spiritual model. Findings indicated a significant mean difference in biological interventions with t (19) =--2.54, P <.02. Results show the mean scores on biological before the interventions (M= 17.52, SD= 1.05) subsequently increase after the interventions (M= 20.05, SD= 4.88). The value of Cohen's d was 0.71 (>0.50) which indicates a small effect size. Findings also indicated a significant mean difference in psychological interventions with t (19) =13.40, P <.000. Results show the mean scores on psychological before the interventions (M= 31.70, SD= .6.31) subsequently decrease after the interventions (M =8.60, SD= 3.78). The value of Cohen's d was 4.4 (>0.80) which indicates a large effect size. Findings also revealed a significant mean difference in social interventions with t (19) =-6.44, P <.000. Results show the mean scores on social before the interventions (M= 29.7, SD= 4.92) subsequently increase after the interventions (M= 37.30, SD= 1.52). The value of Cohen's d was 4.76 (>0.80) which indicates a large effect size. Table also shows the mean scores on spirituality before the interventions (M= 101.6, SD= 7.96) subsequently increase after the interventions (M =11.8, SD= -6.44). The value of Cohen's d was 2.1 (>0.80) which indicates a large effect size. Findings indicated a significant mean difference in spiritual interventions with t (19) =-6.44, P <.000.

Figure 1 shows the Biopsychosocial-Spiritual Model's effectiveness is shown in the Figure both before and after the therapies. The pre-ratings for all domains are shown in orange, while the post-intervention ratings are shown in yellow. The PCOS women in the figure were not experiencing any differences in their biological symptoms, but following the intervention, they did. After the intervention, the PCOS's psychological symptoms, which included depression, anxiety, and stress, decreased become reduced. Moreover, PCOS causes people to become less social, but after interventions, they began to socialize again, and their spiritual beliefs also grew stronger.

Figure 2 depicts the conception of the study. As shown in the figure, a sample study was randomly divided into an experimental and a control group. Pre-assessment is given to both groups, but only the experimental group receives BPSS interventions. Both groups receive the post-intervention assessment.

Discussion

The study's goal was to find out whether the biopsychosocial-spiritual approach to addressing PCOS clients' problems was helpful. The study's findings showed that this strategy is successful in reducing a patient's overall symptoms, and they were consistent with results from prior research in which a sample of people with serious illnesses underwent similar biopsychosocial-spiritual treatment (Maqsood, Jabeen, & Khatoon, 2013).

Humans can be thought of as being made up of a mind, body, and soul. This structure and the total environment are dynamically interconnected. The maximum level of health and well-being manifests when all the elements are in balance and harmony. Human health is the state of being in five dimensions: psychological, emotional, social, and spiritual as well as physical (biological) (Hawkins, McPhee, & Brown, 2019).

The new model of BPSS supports the engagement of people from numerous or broader systems in practice (such as family, community/religious organizations, and other medical or mental health experts) and goes beyond a single recognized patient. Additionally, it emphasizes how important spirituality is to health and medical care differences in pre and post-ratings after the interventions (Hodgson, Lamson, & Reese, 2007).

The Biopsychosocial-Spiritual model (BPSS) is a comprehensive model of assessment for family health experiences, despite not being created explicitly to address healthcare access and utilization. It is possible for psychologists and physicians to work together holistically when they have a deeper understanding of the model's fundamentals (Veronica, 2015).

The BPSS holistic approach to patient care emphasizes

the interaction of a person with other people as well as the interactions of body and mind. The biopsychosocial-spiritual model is frequently employed in clinical settings, particularly when caring for patients who are terminally ill (Chochinov & Cann, 2005; Sheehan, 2005).

Healthcare teams can take a number of steps to efficiently handle the biopsychosocial and spiritual requirements of critically ill COVID-19 patients. The majority of end-of-life requirements will be successfully met by the specialists using the holistic biopsychosocial and spiritual model. An empirical study carried out at a medical facility in New York City caring for COVID-19 patients revealed that the presence of palliative care teams dramatically enhanced end-of-life care. The team providing palliative care encouraged patient autonomy, making it easier to understand and put advanced directives into action (Galbadage, Peterson, Wang, & Gunasekera, 2020).

The biopsychosocial-spiritual approach is not an inadvertent "dualism" where a "soul" lives in a body. Rather, this idea holds that an individual's biological, psychological, social, and spiritual components are all distinct parts of that individual and are inseparable from one another. Each element can interact with and influence other aspects of the person, and the history and illness of an individual can have different consequences on each component (Sulmasy, 2002).

Regarding the contextual and individual assessment and treatment of substance use disorders, the biopsychosocial-spiritual paradigm is acknowledged as the gold standard at this time (Juhnke & Hagedorn, 2006; Scoles, 2009; Wallace, 1993). Health care providers should treat patients like whole individuals. To give fully holistic care, one must consider the physical, mental, social, and spiritual components of a patient's existence in relation to others (Sulmasy, 2002).

Furthermore, the discipline of counselling and mental health therapy (CMFT) has evolved to more fully recognise the ways in which relationships, mental, physical, and biological health are shaped by interactions with others, psychology, and spirituality (McDaniel, Hepworth, 2012). The BPS and BPS-S models are now considered as frameworks for health in several health-related professions, including medicine, addiction studies, CMFT, psychology, and social work (Frankel et al., 2003).

BPS-S framework to describe their classification of pertinent clinical factors. The biological domain was used to categorise the customers' past medical history, current health, and health-related behaviours (such as eating, sleeping, exercising, and substance use). Personality, mood, mental health problems, hopefulness, and stressors were among the psychological factors. They classified the social domain to include relationships with family, friends, and coworkers as well as more general social experiences including community ties, the sociopolitical environment, and culture. Spiritual practices, meaning-making, social connection, awe and wonder, and centering or mindfulness techniques were the categories used to categorise the spiritual realm (Taylor, 2016).

Limitations and Suggestions

It is important to acknowledge and list some of this study's limitations. This study had a number of limitations which are discussed as fellows. The sample of the present study was polycystic ovary syndrome. It is possible that results may be different when the population is changed. The results may be different in the case of other disease management. Understanding the spiritual components of patient care and how to take spirituality into account in research and practice both require a lot of work. The study relied on self-report questionnaires, which could raise concerns about subjectivity and bias. There may therefore be a need for additional studies using longitudinal approaches and larger sample numbers. The sample of the present study is relatively small as the whole sample is drawn from Lahore. To increase the external validity the sample should be larger. The analysis carried out in this study was limited. There are many factors that can intervene in the relationship between studied variables. Research should be done to explore those factors.

Implications

Clinically speaking, this analysis recommends that future health intervention programs and research emphasize the holistic interplay between these four domains as opposed to treating them as distinct facets of the human or environment. The present study has significant implications for educational, personal, social, biological, and mental health issues. Furthermore, education, researchers, and health care providers can get benefits and insight from the present study dealing with polycystic ovary syndrome. The present study can assist clinicians in better understanding the causes of their patient's problems

The relationship between these domains and the impact of social and spiritual influences on health must be acknowledged by those in the fields of medicine and mental health. In order to comprehend the systemic nature of health and how these factors will affect treatment options and subsequent adherence to treatment, the role of spirituality and social factors should also be considered in addition to physical and psychological factors.

The major implication of the present study is that different seminars and workshops should be conducted in order to provide information on all these most important factors. They will be able to turn their life towards betterment.

4. CONCLUSION

The importance of employing a biopsychosocial-spiritual therapeutic strategy was highlighted in the current study for controlling polycystic ovary syndrome patients' symptoms. Such a strategy would make it easier for these people to overcome obstacles in different areas of their lives. As a result, it would greatly enhance their general coping abilities and day-to-day functioning. There are many different and complex factors that contribute to our health issues. Although there are other influences than biological ones, they play a part. Other important aspects include social and spiritual ones. Every human being is different. We can all enhance our well-being by viewing the

biopsychosocial-spiritual model as four beneficial elements for mental, physical, social, and spiritual health, even though some people may be predisposed to health issues more than others. A human being is a relational creature on all levels, including physiologically, psychologically, socially, and transcendentally. The patient is an individual. Only a biopsychosocial-spiritual model can be good to treat people in a holistic manner since illness shatters all of the connection components that make the patient a human person.

Conflict interests

The authors has declared that no competing interests exist.

References

Akram M, Roohi N. Endocrine correlates of polycystic ovary syndrome in Pakistani women. J Coll Physicians Surg Pak. 2015;25: 22–26. pmid:25604364

Azziz R, Marin C, Hoq L, Badamgarav E, Song P. Health care-related economic burden of the polycystic ovary syndrome during the reproductive life span. *J Clin Endocrinol Metab* 2005; **90:** 4650–58.

Azziz R. Introduction: Determinants of polycystic ovary syndrome. Fertility and sterility. 2016 Jul 1;106(1):4-5.

Beng, K. S. (2004). The last hours and days of life: a biopsychosocial-spiritual model of care. *Asia Pacific Family Med.* 4, 1–3.

Benning T. Limitations of the biopsychosocial model in psychiatry. Adv Med Educ Pract. 2015;347.

Carmina E, Rosato F, Janni A, Rizzo M, Longo RA. Extensive clinical experience: relative prevalence of different androgen excess disorders in 950 women referred because of clinical hyperandrogenism. *J Clin Endocrinol Metab* 2006; **91:** 2–6.

Chochinov, H. M., and Cann, B. J. (2005). Interventions to enhance the spiritual aspects of dying. *J. Palliat Med.* 8(Suppl. 1), S103–S115.

doi: 10.1089/jpm.2005.8.s-103

Deswal R, Dang A, Nanda S. Prevalence of poly cystic ovary syndrome (PCOS) in North Indian women. Indian. J Health Well Being. 2014;5:742–4.

Ehrmann DA. Polycystic ovary syndrome. *N Engl J Med* 2005; **352:** 1223–36.

Engel GL: The biopsychosocial model and medical education: who are to be teachers? N Engl J Med 1982;306:802–805

Engel GL: The need for a new medical model: a challenge for biomedicine. Science 1977; 196:129–136

Frankel, R. M., Quill, T., & Mc Daniel, S. (Eds.). (2003). The Biopsychosocial Approach: Past, present, Future. University of Rochester press.

Galbadage, Thushara; Peterson, Brent M.; Wang, David C.; Wang, Jeffrey S.; Gunasekera, Richard S. (2020). *Biopsychosocial and Spiritual Implications of Patients With COVID-19 Dying in Isolation. Frontiers in Psychology, 11(), 588623–*.

doi:10.3389/fpsyg.2020.588623

Ghaferi, Hamad Al; Bond, Christine; Matheson, Catriona (2016). *Does the biopsychosocial-spiritual model of addiction apply in an Islamic context? A qualitative study of Jordanian addicts in treatment. Drug and Alcohol Dependence, (), S0376871616310286–*.

doi:10.1016/j.drugalcdep.2016.11.019.

Hawkins JM, McPhee DP, Brown CC. Incorporating Biopsychosocial-Spiritual Resources in Emotionally Focused Couple Therapy. Contemp Fam Ther [Internet]. 2020;42(3):217–27. Available from:

https://doi.org/10.1007/s10591-019-09523-8

Hawkins JM, McPhee DP, Brown CC. Incorporating Biopsychosocial-Spiritual Resources in Emotionally Focused Couple Therapy. Contemp Fam Ther [Internet]. 2020;42(3):217–27. Available from:

https://doi.org/10.1007/s10591-019-09523-8

Hodgson, J., Lamson, A. L., & Reese, L. (2007). The Biopsychosocial-Spiritual Interview method. In D. Linville & K. M. Hertlein (Eds.), *The therapist's notebook for family health care: Homework, handouts, and activities for individuals, couples, and families coping with illness, loss, and disability* (pp. 3–12). Haworth Press.

Juhnke, G. A. & Hagedorn, W. B. (2006). Counseling addicted families: An integrated assessment and treatment model. New York, NY: Routledge

Kauffman, R.P.; Baker, V.M.; Dimarino, P.; Gimpel, T.; Castracane, V.D. Polycystic ovarian syndrome and insulin resistance in white and Mexican American women: A comparison of two distinct populations. Am. J. Obstet. Gynecol. 2002, 187, 1362–1369.

Khalid A, & Arooj M. A clinical study on the effectiveness of biopsychosocial-spiritual treatment approach for diabetic patients. 2020 Jan;70(1):171-173.

doi: 10.5455/JPMA.11281.

Maqsood A, Jabeen T, Khatoon H. Assessment of Positive Effects of Illness: Implications for an Integrative Approach of Bio-PsychoSocio-Spiritual Model. Pak j life soc Sci 2013;11:139?146.

Maqsood A, Jabeen T, Khatoon H. Assessment of Positive Effects of Illness: Implications for an Integrative Approach of Bio-PsychoSocio-Spiritual Model. Pak j life soc Sci 2013;11:139?146.

McDaniel, S. H., Doherty, W. J., & Hepworth, J. (2012). Medical family therapy and integrated care (2nd ed.). Washington, DC: American Psychological Association.

Okoroh, E.M.; Hooper, W.C.; Atrash, H.K.; Yusuf, H.R.; Boulet, S.L. Prevalence of polycystic ovary syndrome among the privately insured, United States, 2003–2008. Obstet. Gynecol. 2013, 207, 299.e1–299.e7.

Prawitasari JE. Psikoneuroimunologi: Penelitian Antar Disiplin Psikologi, Neurologi, Dan Imunologi. Bul Psikol. 2016;5(2):14–25.

Prawitasari JE. Psikoneuroimunologi: Penelitian Antar Disiplin Psikologi, Neurologi, Dan Imunologi. Bul Psikol. 2016;5(2):14–25.

Scoles, P. (2009). Addiction & recovery (3rd ed.). Mason, OH: Cengage Learning.

Sheehan, M. N. (2005). Spirituality and the care of people with life-threatening illnesses. *Techniques Regional Anesthesia Pain Manage.* 9, 109–113.

doi: 10.1053/j.trap.2005.06.002

Sulmasy, D. P. (2002). A biopsychosocial-spiritual model for the care of patients at the end of life. *Gerontologist* 3, 24–33.

doi: 10.1093/geront/42.suppl_3.24

Szydlarska D, Machaj M, Jakimiuk A. History of discovery of polycystic ovary syndrome. Advances in Clinical and Experimental Medicine. 2017 May 1;26(3):555-8.

Taylor, Lou Ella V.; Stotts, Nancy A.; Humphreys, Janice; Treadwell, Marsha J.; Miaskowski, Christine (2013). *A Biopsychosocial-Spiritual Model of Chronic Pain in Adults with Sickle Cell Disease. Pain Management Nursing, 14(4), 287–301*.

doi:10.1016/j.pmn.2011.06.003

Umland EM, Weinstein LC, Buchanan EM. Menstruation-related disorders. In: DiPiro JT, Talbert RL, Yee GC, et al., editors. *Pharmacotherapy: A Pathophysiologic Approach*. 8th ed. New York: McGraw-Hill; 2011. p. 1393

Wallace, J. (1993). Modern disease models of alcoholism and other chemical dependencies: The new biopsychosocial models. Drugs and Society, 8(1), 69-87.

doi: 10.1300/J023v08n01_03

WHO (World Health Organization). Fifty-Second World Health Assembly. 7 April 1999. Available online: **http://apps.who.int/gb/archive/pdf_files/WHA52/ew24.pdf (accessed on 1 October 2017)**

Woll, M. L., Hinshaw, D. B., and Pawlik, T. M. (2008). Spirituality and religion in the care of surgical oncology patients with life-threatening or advanced illnesses. *Ann. Surg. Oncol.* 15, 3048–3057.

doi: 10.1245/s10434-008-0130-9

Table 1

Table-I Frequency and Percentage of Demographics Characteristics of the Participants

Demographic Variables	M(SD)	f (%)
Groups		
Experimental		20(50)
Control		20(50)
Type of marriage		
Cousin marriage		13(32.5)
Out-of-family		27(67.5)
Socioeconomic status		
Upper class		6(15.0)
Middle class		27(67.5)
Lower class		7(17.5)
Birth Order		
Elder		10(25.0)
Middle		13(32.5)
Younger		14(35.0)
Only Child		3(7.5)
Family System		
Joint		19(32.5)
Nuclear		21(67.5)
Age	27.62(5.27)	

Table 2

Independent Sample t-test for the comparison of the Biopsychossocial-spiritual model between the controlled and experimental group (N=40)

	Control		Experimental		95% CI			Cphen'sd
Variables	M	SD	M	SD	t(38)	P	LL	UL	
MARS PRE	13.00	1.21	12.95	1.09	.13	.89	-.69	.79	.04
MARS POST	18.55	.94	11.85	1.30	18.56	.000	5.96	7.43	5.90
DASS PRE	31.20	5.92	32.80	5.87	-.85	.39	-5.37	2.17	.27
DASS POST	8.10	2.90	31.80	4.44	-19.9	.000	-26.11	-21.28	6.32
ISEL PRE	18.45	2.21	21.90	4.13	-3.18	.004	-5.67	-1.23	1.04
ISEL POST	37.30	1.52	21.10	3.82	-17.5	.000	14.30	18.09	5.57
SS PRE	100.15	3.57	103.85	4.61	-2.83	.007	-6.34	-1.05	.89
SS POST	121.20	3.23	107.05	12.05	5.07	.000.	8.36	19.94	1.60

***P< .000, *p<0.05

Table 3

Paired sample t-test for Mean comparison of experimental group women with PCOS before and after interventions of the Biopsychosocial-spiritual model

	Pre		Post				
Variables	M	SD	M	SD	t(19)	P	Cohen's d
Biological	17.52	1.05	20.05	4.88	-2.54	.02	0.71
Psychological	31.70	.631	8.60	3.78	13.40	.000	4.44
Social	29.7	4.92	37.30	1.51	-6.44	.000	4.76
Spirituality	101.6	7.96	11.8	-6.44	-5.45	.33	2.19

Figure 1

Pre and post-rating of Biological, Psychological, Social, and Spiritual Domain

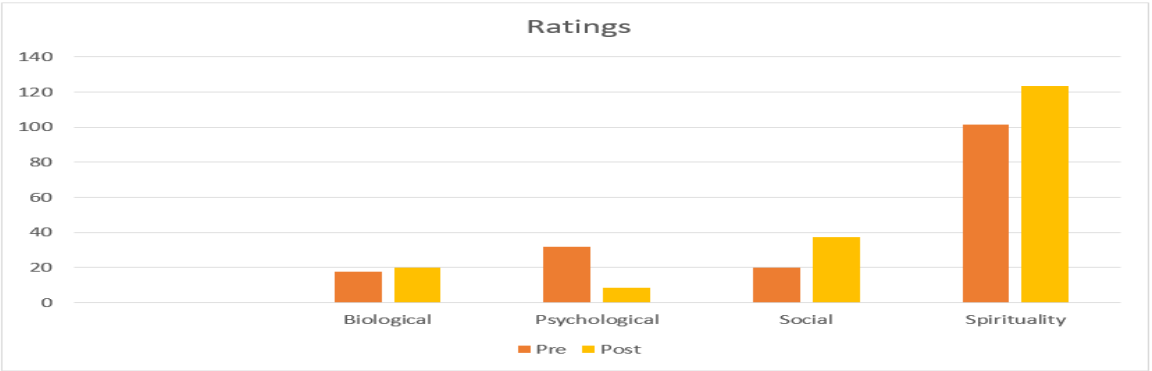

Figure 2

Conceptual framework of the study.