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RESEARCH ARTICLE

Assessment of Positive Effects of Illness: Implications for an Integrative Approach of Bio-Psycho-Socio-Spiritual Model

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ABSTRACT

Approaches to treat and cope with chronic illness have drawn the attention towards the positive aspects of illness. Patients of chronic illness may likely to experience growth and changes in personal, social, and interactional life spheres. The present study examined the positive changes from the perspective of life philosophy and changes within self and in relationships with others. A sample of 85 patients of Myocardial Infarction comprising both genders and age ranging from 20-80 years were contacted from outdoor patient departments of different hospitals of Rawalpindi region of Pakistan. The findings demonstrated that patients do experience positive changes in different functional domains. Moreover, patients' experience of positive benefits seems irrespective of age, gender, education, marital status, income and duration of the illness. The findings further persuade the directions of future research towards developing common modalities for the psychosocial rehabilitation of patients with chronic illness. The study carries implications to integrate the positive approach of illness within the therapeutic paradigm of bio-psycho-socio-spiritual model.

INTRODUCTION

Experiencing an illness usually characterized with certain changes, e.g. changes in body appearance or on its function, sensory changes, uncomfortable physical manifestation, or changes in emotional status and in relationships. Besides these signals, it is also important to understand how patient interprets the source and causes of illness and how it affects his behavior, relationships with others, and subsequently the adaptive coping strategies. Literature supported that patients of chronic illness may experience both positive and negative effects of illness (Helgeson et al., 2006; Larner and Blow, 2011; Park and Helgeson, 2006; Smith et al., 2008). However, usually aversive effects of chronic illness are focused upon neglecting the attention to the potential benefits (Afrasiabifar et al., 2011). Based upon experience of illness reported by sick and recently recovered people, Sodergren and Hyland (2000) suggested that people experience positive consequences of illness more common than often realized.

Considering the chronic illness as the overall positive effect on quality of life (Manuck, 2000), can be traced back to the biopsychosocial model of health care. George Engel's (1977) biopsychosocial model considered patients' subjective experiences by responding simultaneously to the biological, psychological, and social dimensions of illness. An extension of this model resulted in inclusion of the spiritual domain (King, 2000; McKee and Chappel, 1992). Henceforth, the model further promoted the attention towards a holistic approach of health care by emphasizing the patients' beings-in-relationships and relational existence as reflected in their physical, psychological, social, and spiritual aspects of the life. Sulmasy (2002) suggested that illness disrupts the biological functioning of the human body system that in turn affects all the other relational aspects of a person.

With recognition of addressing the functional and relational domains of patients' lives; considerable attention has been given to the negative and also to the positive effects following the illness. Various authors had given attention to the positive aspects of the illness. For example, Meleis (2007) explained illness as inevitable human experience; if one learns to find

meaning in it then it became a growing experience. Lubkin and Larsen (as cited in Falvo, 2005) elaborated that that the term illness refers to individual's perception of their symptoms and how they and their families respond to these symptoms. Further, House (2008) mentioned that in process of illness and cure, it's significant to understand the "meaning" given to the experience of being ill.

Positive Effects of Illness among MI Patients

Myocardial Infarction (MI) or heart attack is the consequence of complete obstruction of blood supply to a part of heart muscles. This mostly occurs due to a blockage in any of the coronary arteries or their branches. The heart muscles are completely deprived from blood and oxygen supply which leads to its death (Chhajer, 2006). Statistics have shown that adults who are more than age 40 and commonly men are affected by myocardial infarction (Griffith, 2006). Myocardial infarction (MI) is a traumatic health event in most patients' lives and their families. Despite of the physical and psychological impairments associated with Myocardial Infarction; the positive outcomes following illness may not be ignored (Mashi, 2011). Researchers have realized that positive changes do occur as a result of victimization in general and chronic illness in particular.

In literature, various labels are being used referring to the positive effects of illness e.g. posttraumatic growth (Tanriverd et al., 2012; Karanci et al., 2012); positive psychological states (Lyubomirsky et al., 2005; Pressman and Cohen, 2005); benefit finding (Affleck and Tennen, 1996); finding meaning (Folkman, 1997); positive changes (Collins et al., 1990); and adversarial growth (Sodergren and Hyland, 2000). Authors have attempted to explain the construct through different dimensions e.g., restructuring and reappraisal of life, spiritual gains, self-improvement and improved relationships with others (Sodergren and Hyland, 2000; Joseph and Linley, 2006); changes in self, life philosophy, and in relationships (Bellizzi and Blank, 2006; McBride et al., 2009); social support, sense of control over illness course, life meaning, and better coping (Park et al., 2008); changes in views of the world, future plans, and priorities (Collins et al., 1990); seeking health care, lifestyle changes, and enhanced care (Norekvål et al., 2008); goal oriented changes (Siegel and Schrimshaw, 2000); and strengthening religious beliefs (Park, 2012; Siegel and Schrimshaw, 2000).

Empirical studies have provided support to the experience of positive effects of illness (Hassani et al., 2009). According to Petrie et al. (1999), approximately 60% of patients following a myocardial infarction have reported positive changes irrespective to illness severity of which the most common reported changes were healthy lifestyle change (68%). Pre and post assessment data suggested that positive change in life-style does appear and persist after 2 to 4 years (Laerum et al, 1991). Overprotected patients reported less emotional distress, higher self-esteem, and less emotional reliance on others compared with patients as receiving inadequate support (Riegel and Dracup, 1992).

In process of adaptation to illness, myocardial infarction patients have reported different adaptation strategies including struggle for health and ignoring the illness (Brink, 2009). Manuck (2000) mentioned that men reporting positive benefits from their myocardial infarction 7 weeks later had decreased morbidity 8 years later. With regard to demographic differences, Petrie et al., (1999) reported no significant gender differences. Yamakawa and Makimoto (2008) identified positive experiences among diabetes patients but these changes were regardless of factors like duration of illness and its resulting complications.

Studies conducted in context of Pakistan have looked into the negative outcomes of illness by associating it to depression and anxiety. There are few studies looking into the risk factors of heart disease e.g. disease risk perception and possible influences of the personality factors. The paucity of research in the domain of positive outcomes of illness highlighted the need to further extend the research. Therefore, the present study was based on the rationale that mostly people associate the illness with negative connotation; however, illness may also brought positive changes in persons' lives that are usually under noticed. Incorporating the positive effects in treatment model may demonstrate effectiveness while managing the chronically ill patients.

MATERIALS AND METHODS

Participants

Using purposive sampling technique, patients of one-time heart attack suffering were contacted within specialized cardiology hospitals and different general hospitals of Rawalpindi, Pakistan. Patients diagnosed with other diseases e.g. cancer, AIDS, cognitive impairment, chronic diabetes mellitus, and any other psychiatric disorders are not included in the study.

Instrument

Based upon Sodergren and Hyland (2000) approach, Mcbride et al. (2009) introduced the revised version of Silver Lining Questionnaire (SLQ) comprises three subscales: enhanced relationships, changes in self, and changes in life philosophy. The measure assessed changes in life philosophy as finding new appreciation, renegotiating what really matters in life, coupled with changes in spiritual beliefs; changes in self reflected an enhanced sense of personal resilience, wisdom, and strength with greater awareness of personal vulnerability and limitations; and enhanced relationships explained people value their friends and

family with an increased compassion and altruism towards others.

The total score on SLQ reflected the general adversarial growth following the illness. It comprises 38 items with five response categories, reflecting the extent to which people believe their illness has had a positive benefit. Using binary scoring system, responses against strongly agree or agree are scored as 1 (one). All other scores are scored as 0 (zero). Items related to life philosophy are 1, 2, 3, 4, and 5. Changes in self include items 6, 7, 8, 9, and 13. Enhanced relationships include items 10, 11, 12, 14, 15, and 16.

Translation of Silver Lining Questionnaire and Face Validity

To use the instrument in our culture, instrument translation was carried out. The translation procedure involved the input of 6 experts (bilinguals) at various stages of translation. Initially the scales were given to three subject experts for Urdu translation. These Urdu translations were then given to three other individuals who translated back the items into English. These back translations were then compared to the original items. In case where there was more than one identical translation and items that matched to the conceptual meaning of the original item, were included. The final version of the Urdu version was further evaluated through face validity procedure. There was no item as identified inappropriate to use in our culture.

Procedure

Formal permission from hospitals' management was secured. Patients were approached within the premises of hospitals for obtaining the informed consent. It took almost eight weeks to collect the data. It was one to one way of data collection and approximately 20 minutes with an individual were spent.

RESULTS

Description of the sample

The sample comprised male (67.1%) and female (32.9%) patients with age range of 20-80 of which 56.5% falls under age group of 40-60. Of the 47.1% of the sample is of high school education with 78.8% of married individuals. The duration of illness ranges from one year up to 8 years and 52.9 of the sample was having diagnosis history of one year. The income level of the participants falls from low income up to moderate level with 45.9% of sample falls under low incomes group.

Psychometric consideration and levels of positive effects following Illness

Data was analyzed using SPSS 13.0 (Statistical Package for the Social Sciences). Following table 1 presents the descriptive detail of the data.

Reliability analysis indicated high magnitude of Cronbach's alpha coefficient on total scores of general adversarial growth, i.e., 0.91 indicating the internal consistency of the items. Comparing with English version of SLQ-16, Schroevers et al. (2004) has reported the high Cronbach's alpha coefficient (0.97) for the total scores. Another study by Sodergren et al.

Table 1: Means, standard deviations, Cronbach's Alpha Reliability Coefficients, Skewness and Correlation Coefficients on Scores of Silver Lining Questionnaire (*N* = 85)

Scale	Mean	S.D.	Cronbach's Alpha	Skewness	No. of items	*r*
Changes in life philosophy	3.96	1.50	.795	-1.13	5	.896
Changes in self	3.67	1.65	.799	-1.03	5	.903
Enhanced relationships	4.54	1.87	.825	-1.08	6	.931
Adversarial Growth	12.18	4.578	.910	-1.13	16	-----

Table 2: Frequencies of Yes & No Responses and Percentages of Contributory Responses on Positive Effects/Adversarial Growth (*N* = 85)

Scale Items	Yes	No	Percentage
I appreciate life more because of my illness.	67	18	78.8%
My illness gave me a new start in life.	68	17	80.0%
My illness has made me live life to its fullest.	63	22	74.1%
My illness made me think about the true purpose of life.	64	21	75.3%
My religious/spiritual beliefs deepened because of my illness.	75	10	88.2%
My illness gave me more confidence.	60	25	70.6%
My illness made me a more determined person.	63	22	74.1%
My illness made me more aware of my strengths.	63	22	74.1%
I can face whatever is around the corner because of my illness.	67	18	78.8%
My illness strengthened my relationships with others.	66	19	77.6%
Because of my illness I have more to offer other people.	59	26	69.4%
My illness made me more at ease with others.	60	25	70.6%
My illness taught me how to stand up for myself.	59	26	69.4%
My illness made me less judgmental of others.	68	17	80.0%
People can be more open with me since my illness.	61	24	71.8%
Other people appreciate me more because of my illness.	72	13	84.7%

Table 3: Mean and Standard Deviation Comparisons for Responses on Items of Positive Effects of Illness (*N* = 85)

Scale Items	Mean	S.D
I appreciate life more because of my illness.	.79	.41
My illness gave me a new start in life.	.80	.40
My illness has made me live life to its fullest.	.74	.44
My illness made me think about the true purpose of life.	.75	.43
My religious/spiritual beliefs deepened because of my illness.	.88	.32
My illness gave me more confidence.	.71	.46
My illness made me a more determined person.	.74	.44
My illness made me more aware of my strengths.	.74	.44
I can face whatever is around the corner because of my illness.	.79	.41
My illness strengthened my relationships with others.	.78	.42
Because of my illness I have more to offer other people.	.69	.46
My illness made me more at ease with others.	.71	.46
My illness taught me how to stand up for myself.	.69	.46
My illness made me less judgmental of others.	.80	.40
People can be more open with me since my illness.	.72	.45
Other people appreciate me more because of my illness.	.85	.36

Table 4: Relationship between Socio-Demographics and Positive Effects of Illness

Characteristics	Positive Effects (*N* = 85)			
	N	%	Chi square	*p*
Age				
20-40 years	10	11.8	25.289	> 0.05
40-60 years	48	56.5		
60-80 years	27	31.8		
Gender				
Male	57	67.1	15.318	> 0.05
Female	28	32.9		
Education				
Illiterate	27	31.8	32.590	> 0.05
High School	40	47.1		
Graduate & Post Graduates	18	21.2		
Marital Status				
Married	67	78.8	25.032	> 0.05
Unmarried	6	7.1		
Divorced	1	1.2		
Widower	11	12.9		
Duration of Illness				
Up to one year	45	52.9	30.673	> 0.05
Above 1-3	25	29.4		
Above 3-8	15	17.6		
Income				
No defined source	16	37.1	39.164	> 0.05
Low income group	39	25.7		
Moderate income group	21	25.7		
High Moderate group	9	11.4		

(2002) also reported quite high alpha coefficient i.e. 0.93. Inter-scale correlations between total scores on SLQ and its subscales are quiet high reflecting a good estimate of construct validity of the measure. Comparing inter-scale correlations, McBride et al., (2008) reported somewhat closer correlation coefficients of 0.86, 0.88 and 0.90 for subscales respectively. Using binary scoring, the maximum score on the total SLQ-16 (general adversarial growth) is 16. The obtained score range on present sample is 4-16. The current sample has shown 75% of the maximum score on general adversarial growth.

The table 2 demonstrated percentages of responses on each item reflecting the extent of contributory responses towards the adversarial growth.

Looking at the pattern of percentages of responses, the descriptive analysis demonstrated that patients reported high orientation towards the experience of positive effects (see Table 3).

Relationship of Patients' Demographic Profile with Positive Effects following Illness

The study looked into the possible differences in experience of positive effects of illness on basis of patients' age, gender, marital status, education, duration of the illness, and income level. For comparisons, sample was divided into different sub groups as per frequencies of the responses. The chi-square test yielded non-significant associations between patients' sub groups and the reporting of the positive effects.

DISCUSSION

Despite of the growing evidence in support of the bio-psycho-socio-spiritual model, the efforts to structure its dimensions and functional status are needed to develop (Katerndahl and Oyiriaru, 2007). The present study addressed the positive effects of illness as an integrative approach within the bio-psycho-socio-spiritual model of treatment and care. The measurement model of Mcbride et al., (2009) views positive life changes or adversarial growth following illness through changes in life philosophy, enhanced relationships, and changes within self. These dimensions seem to correspond closely to the propositions of bio-psycho-socio-spiritual model and accounts well in guiding the clinical approach through knowledge of the patients' needs. Kucukkaya (2010) suggested that knowing the nature of the positive effects of illness is the first step towards helping patients in increased understanding, better adaptation, and enhanced coping skills.

Positive attitude towards illness is an important psychological factor for coping with life stresses and are used only when there is a major threat of life (Agarwal et al., 1995). Empirical evidences supported the argument that the effects of the life threatening diseases explained patients' coping mechanism in form of the positive effects in different life domains (Linley and Joseph, 2004; Frazier et al., 2001). It is interesting to mention that the sample of MI patients in Pakistan

has reported high scores on general adversarial growth and also on its sub-dimensions. Reporting high scores probably may be taken as a stance to consider the cultural based variation in responses to respond differently to healthier aspects of illness. The positive changes following the illness result from a cognitive process out of which the patients try to find a positive meaning in their illness. This process will result in positive changes in the self, relations, and life's philosophy (Tedeschi and Calhoun, 1996).

The appreciating of life and health is also another positive impact the participants has expressed. The life-threatening nature of myocardial infarction makes some to reorder their goals and expectations. It was noted that myocardial infarction brings about sudden changes in health; it changes the individual's perspective about self and about life. Affliction with chronic diseases makes people to prioritize their goals and expectations so they can reach satisfaction in life (Svedlund et al., 2001). This response is explainable through th,e phenomenon of 'Response Shift' as they try to reach a satisfactory level of life quality through change in their goals, values and expectations, though they suffer from the limitations imposed on them due to their illness (Carver and Scheier, 2000).

On other way, this further pointed out and anticipated well about the effectiveness of incorporating the positive effects of illness in treatment and care model. Despite of the element of subjectivity in evaluating the spiritual domain of one's life; assessing patients' reported change in their satisfaction towards spiritual life may prove worth considering. This in turn encourages health practitioners about the success in responding to patients' need through reflecting on patients' life philosophy and spiritual thoughts, nature and quality of relationships, and self evaluations. Expectation of recovery in MI patients is, in itself, suggestive of good coping because MI results in many uncertainties about one's survival and prevention of second infarction (Krantz, 1980).

Based upon sample responses of the present study, the item-wise analysis provided the meaningful assessment about thought patterns as a mean for identifying the helpful beliefs needed to promote and develop among patients. For example, quite high percentage of agreed upon responses (78.8%) to item 9 "I can face whatever is around the corner because of my illness" represents interesting dynamics of changes within self. Expectancy of desirable outcomes has adaptive consequences of coping in terms of compliance to treatment regimen, change of unhealthy habits, and active involvement in recovery (Scheier et al., 1986; Peterson, 1988). Critically evaluating the underline theme of the item, the sense of self control on life circumstances tends to enhance patients' self-efficacy. Any further intervention model could be more effective by incorporating the element of enhanced self-efficacy or perceived control in patients' lives.

Examining item 5 "my religious/spiritual beliefs deepened because of my illness", patients reported a high percentage (88.2%) of positive responses. This reflects that spiritual beliefs represent an important sub-dimension under 'life philosophy'. For assessing patients' satisfaction towards life, spiritual domain may nevertheless be ignored. The importance of spiritual domain was further evident through high endorsement (75.3%) to item 4 "my illness made me think about the true purpose". The item relates to the domain of 'life philosophy' and reflects that evaluating one's being in this world conditions should grounded within the spiritual domain as proposed by various authors (Park, 2012; Siegel and Schrimshaw, 2000). Addressing the existential view of life in designing the intervention protocols of health care seems highly desirable to address patients' need from a holistic perspective. This supports the theoretical stance of the present study that biological, psychological, social, and spiritual dimensions of health are needed to address in care, promotion, and treatment of chronic illness. Furthermore, high responses (80%) to item 2 of the life philosophy "my illness gave me a new start in life", had given support to the spiritual aspects of one's life. A new start in life fosters to look into different life spheres; this in turn includes into the spiritual domain as well.

On the dimension of enhanced relationships, item 16 "other people appreciate me more because of my illness reported as mostly endorsed (84.7%) by the patients. This seems to support the aforesaid argument of integrating the element of 'enhanced self-efficacy' in therapeutic interventions. High contributory responses (80%) to item 14 "my illness made me less judgmental of others", reflects the values that one should have in maintain the healthy social relationships. This interplay of social and spiritual domain helped to conclude that biological, psychological, social, and spiritual domains act as distinct as well as reciprocals influences. High mean scores on the dimension of enhanced relationships provided support to incorporate the family-centered approach in interventions for myocardial patients (Salminen-Tuomaala et al., 2012).

Investigating the differences in positive effects as a function of patients' demographic profile reveled similarity with the previous findings. Particularly for MI patients, non significant differences were found with regard to gender, education, and in experiencing positive effects among MI patients (Peteri et al., 1999). Kucukkaya (2010) also found no relationship between age, time interval after diagnosis, type of treatment, and the positive change following the illness among women cancer patients. There is considerable support that

positive changes as reported by the patients were irrespective of their education, age, duration of illness, and marital status (Smith et al., 2008). The present study also added that experiencing the adversarial growth might not influenced by age, education, income, and the illness duration. This in turn supports the development of universal services as treatment interventions applicable to the broader community. However, the variations in experience of positive changes within the domain of enhanced relationships necessitate that intervention and treatment models should consider the socio-cultural factors unique to a particular culture.

Illness perceptions tend to provide both an initial target for change and a way of evaluating the effectiveness of the intervention, as we know that these beliefs are related to later recovery of behavioral change in different functional areas (Petrie et al., 1996; Weinman et al., 2001). The current findings contributed in supporting the theoretical stance of the bio-psycho-socio-spiritual approach in treatment and care. The study suggested that measurement model of McBribe et al., (2009) may prove a useful assessment tool in developing the therapeutic interventions to cultivate the positive growth in the lives of people with illness. The study results strongly recommend the development of therapeutic interventions by incorporating the positive effects of illness. Acknowledging the gaps in health care system and policy strongly advocates the concern that health professionals at different levels should address the treatment of patients from a holistic perspective.

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