# Role Of Positive Psychological Factors In Intervention To Diabetics

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## Abstract

Diabetes Mellitus is a fastest growing metabolic disease in India with more than 62 million individuals is currently diagnosed with disease. In 2000, India is topped the world with the highest number of people with diabetes (31.7 million). It is predicted that by 2030 Diabetes Mellitus may afflict up to 79.4 million individuals in India. Recent researches show that this increase in the number of diabetics is not only due to the physiological factors (e.g., obesity) but there is also an interaction between bio-psycho-social factors of the people. The present study was attempted in a group of diabetic patients, who were drawn from Kerala and United Arab Emirates. It was an exploration of various psycho-social factors affecting type 2 diabetes. The study also attempted to find out the significance of different related factors through comparison among the factors through different strata of the sample. When the data collected were analyzed, it had highlighted the relation among the factors like Health Related Quality of Life, Subjective Well-Being, Perceived Social Support, and Perceived Stress. Relevance of stress related studies, especially job stress when people are away from home and also signified the importance of orienting more toward positive psychological factors in the holistic intervention among diabetics.

## 1. Introduction

Diabetes is a fastest growing chronic illness. Diabetes Mellitus and its associated complications impose a huge problem in the area of health care worldwide. Many factors have contributed to the occurrence of Diabetes Mellitus. There are important physical factors like obesity and lack of exercise play a significant role in the increase of the diabetic population in India. Apart from these
physical factors recent research and observations have identified there are many psychological factors also influencing diabetes.

Diabetes Mellitus and its associated complications impose a huge health care burden worldwide, this burden is expected to increase further with the International Diabetes Federation’s prediction of an increase in the number of individuals with diabetes from 240 million in 2007 to 380 million in 2025, with 80% of the disease burden in lower-and middle-income countries (Diabetes Atlas, 5th ed 2011). Diabetes is growing alarmingly in India, home to more than 65.1 million people with the disease, compared to 50.8 million in 2010 (International Diabetes Federation, Diabetes Atlas, 6th ed 2013). In previous research with type 2 diabetes, major importance has given to the physiological factors and specifically obesity. But recent times this is reducing its importance because researchers identified psychosocial factors influencing the occurrence of diabetes. Most of these psychosocial factors are resulted by today’s fast life and competitive and stressful jobs. The knowledge of these psychosocial factors will help to intervene diabetes along with medical treatments. Recent psychological studies in type 2 diabetes found the importance of Psychological and psychosocial factors like Health Related Quality of Life, Subjective Well-Being, Perceived Social Support and Perceived Stress affecting type 2 diabetes in one way or another. Usually diabetes is being managed by medical treatments using insulin or tablets. As a causal factors of diabetes or an affect of being in diabetic stage, or under treatment certain other unhealthy style of living is also being found. Health experts like health psychologists and clinical psychologists had tried out and pointed out the significance of psychosocial intervention which may create a direct or indirect effect upon diabetic patients.

2. Related Work

HRQOL is increasingly used as an outcome measure to monitor the burden of diabetes on the population. Compared to those with normal glucose levels Persons with diabetes or poorly controlled blood glucose have worse HRQOL (Rubin et al., 1999; Hoey et al., 2001; Wandell et al., 2000; Brown et al., 2000). A patient’s quality of metabolic control and overall Quality Of Life can be predicted by perceived ability to control his or her diabetes and the anticipated benefits of this control predict adherence to diet and other treatments. Health Related Quality Of Life is a multidimensional construct, of which each dimension can independently affect Quality Of Life. Diabetes specific domains Health Related Quality Of Life of diabetes relate how the disease is compromising on individual’s sense of well-being psychologically, physically and socially (Borrot & Bush, 2008). The impact generated by diabetes on the individual can be assessed by patients concern about anticipated effects of the disease, and the level of satisfaction the patient with themselves and how much they can enjoy their food. (Bradely et al., 1999, Jacobson, Barofsky, Clearly and Rand, (1988).

The study on existence of positive experiences in people with type 2 diabetes found that all the participants reported positive experience in coping with diabetes. ‘Positive experience’ is operationally defined as “positive thoughts or good feelings in coping with diabetes expressed by the participants”. This positive experience can be categorized into three they are; positive appraisal, diversion and bonding. The positive impact and negative impact of diabetes was occurred together. Overall well-being, harmonious relationships, a rewarding life, and spiritual satisfaction were representing the positive impact; whereas depression, fear, lack of support, and psychological stress were representing the negative impact (Choe et al., 2001a). Karlsen et al (2004) defined “diabetes-related” stress as a person-environment relationship in which perceived diabetes related demands (e
g., self-management treatment like diet and regular exercise) tax or exceed perceived coping resources”. A person with perceived inability to cope with diabetes related demands causes occurrence of stress that have an adverse effect on glucose control in people with type 2 diabetes mellitus (Nozaki et al., 2009). Those who have good glucose control had less diabetes-related stress and they are more satisfied with their treatment regimen. But the adults with type 2 diabetes those who have greater diabetes-related distress had more diabetes related complications and poorer glucose control.

Social support major influence on health by making the person to experience less negative emotions (Cohen & Herbert, 1996; Cohen, 1988). In general social support contributes to positive adjustment, personal growth and increased well-being (Cohen & Wills, 1985). Relationships are the basis of social support and these relationships are main sources of happiness helps to improve mental and physical health. Intimate type of relationship such as intimate ties with friends and families was the greatest source of support which will decrease the mortality rate Berkman & Syme (1979). Social support also moderates the effect of life –style incongruity on blood pressure (Dressler, 1991) and has been found to buffer the effect of stress on diastolic blood pressure responses (Gerin et al., 1995). Perceived social support is important more than actual social support; perceived social support related to one’s diabetes routine was most strongly related to compliance with diet and management. Subjects with better social supports are significantly better controlled than subjects with low supports in high life stress conditions. Decreased perceived social support predicts deterioration of control (Schwarz et al., 1991). Robinson et al., (1988) utilization of social support studies have counted the visual and non-visual contacts with family, relatives, and neighbor, found that global family stress, possibly in combination with a reduced number of social contacts, may act as a cause for the increase in diabetes, and that social support may act as a barrier against stress and disease onset.

In this context, the present study is planning to do an exploration in to psychosocial factors like Health Related Quality of Life, Subjective Well-Being, Perceived Social Support and Perceived Stress in patients with type 2 diabetes.

3. Definition Of Terms

**Health Related Quality Of Life (HRQOL):** “HRQOL is individual’s perception and satisfaction of his health condition expected to on his age, ethnicity, income, culture, education and family status.”

**Subjective Well-Being:** “Subjective well-being is a composite measure of independent feelings about a variety of life concerns, in addition to an overall feeling about life in positive and in negative terms, i.e. general well-being and ill-being.”

**Perceived Social Support:** “Perceived social support is an individual’s perception of how much he or she receives outside social support based on their age and cultural backgrounds.”

**Perceived Stress:** “Diabetes-related stress as a person-environment relationship in which perceived diabetes-related demands (e.g., self-management like; diet and regular exercise) tax or perceived coping resources.”

4. Hypothesis

- There will be significant correlations among the variables under the study, namely: Health Related Quality of Life (HRQOL), Subjective Well-Being, Perceived Social Support and Perceived Stress.
There will be significant difference between diabetic patients who hails from their own home town and those who migrated to a distant place from home town for job purposes, In terms of variables under the study namely Health Related Quality of Life (HRQOL), Subjective Well-Being, Perceived Social Support and Perceived Stress.

5. Research Methodology

5.1 Sample
The aim of the study was to test the relationship among the psychosocial variables under study; and to test the significant differences in these variables in patients with type 2 diabetes based on their place of living (those who are living in their own home town and those who were migrated to a distant place for job purposes). The sample consisted of 65 type 2 diabetic patients who were classified on the basis of location of living (people living in their own hometown, N =35 and People migrated to UAE for job purposes, N =30), those who were attending diabetic clinics or under the treatment of an Endocrinologist more than six months. Sample consisted of both males and females those who were in the age group between 25 years to 60 years.

I. Socio Demographic Data Sheet:A data sheet was developed and employed in the current study to collect information on the relevant variables such as age, gender, education, marital status, religion, domicile, duration of illness, type of treatment and blood sugar level.

II. Quality Of Life Instrument For Indian Diabetes Patients (QoL) Nagpal et al., (2009):This is an Indian scale for assessment of quality of life of patients with diabetes. It consists of 34 questions under 8 domains. Reliability: Chronbach’s alpha .89 show high internal consistency. Validity coefficient .72.

III. The Subjective Well Being Inventory (SUBI) (Sell et al., 1992):SUBI is designed to measure feelings of well-being or ill being as experienced by an individual or a group of individuals in various day-to-day life concerns. This inventory consists of 40 items (19 positive and 21 negative) and it measures 11 factorial dimensions.

IV. Multidimensional Scale Of Perceived Social Support (MSPSS) (Zimet et al., 1988): Twelve item of perceived adequacy of social support. Reliability and validity have been supported in studies of patients with angiography (Blumenthal, Barefoot, Burg, & Williams, 1987), open heart surgery (Oxman et al., 1994), and metastatic carcinoma (Hann, Oxman, Ahles, Furstenburg, & Stukel, 1995) alpha rating were .93 and .94.

V. Perceived Stress Scale (PSS) (Cohen et al., 1983): PSS is the most widely used psychological instrument developed by cohen et al., (1983) for measuring the perception of stress. It is a measure of degree to which situations in one’s life are appraised as stressful. Reliability: PSS has good internal consistency, with alpha of 0.78; no data on stability were reported. Validity: PSS has established good construct validity.

5.2 Procedure
After getting informed consent from both patients and caregivers/family members’ the researcher has given a brief description of the purpose of present study. Face to face interviews in a comfortable setting were conducted to fill the socio demographic data sheet and questionnaires. Fasting blood sugar levels were asked to the patients and requested to produce the laboratory report that recently checked, and more other information related to health were collected from their hospital or clinical records.
5.3 Statistical Analysis of The Data

SPSS software package (version 16.0) was used to analyze the data. Group comparisons were done using independent t-test between two localities of living. Bivariate correlations were done using Pearson’s correlations between the psychosocial variables namely Health Related Quality of Life, Subjective Well-being, Perceived Social Support and Perceived Stress.

6. Results and Discussion

Correlations were done among the variables under study for different sub samples.

Table 1 indicates correlation matrix for the subsample, diabetic people who had migrated from their home town to UAE.

<table>
<thead>
<tr>
<th></th>
<th>QOL TOTAL</th>
<th>SUBI TOTAL</th>
<th>TOTAL SS</th>
<th>PSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>QOL TOTAL</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUBI TOTAL</td>
<td>.542**</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL SS</td>
<td>.436**</td>
<td>.492**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>PSS</td>
<td>-.401*</td>
<td>-.749**</td>
<td>-.395*</td>
<td>-</td>
</tr>
</tbody>
</table>

Similarly coefficient of correlation was calculated for the other sub sample, diabetic patients from Kerala.

Table 2 indicates correlation matrix for the subsample, diabetic patients from Kerala.

<table>
<thead>
<tr>
<th></th>
<th>QOL TOTAL</th>
<th>SUBI TOTAL</th>
<th>TOTAL SS</th>
<th>PSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>QOL TOTAL</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUBI TOTAL</td>
<td>.446**</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL SS</td>
<td>.104</td>
<td>.730**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>PSS</td>
<td>-.378*</td>
<td>-.799*</td>
<td>-.706**</td>
<td>-</td>
</tr>
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</table>

The results signifies the role of positive factors namely Health Related Quality of Life (HRQOL), Subjective Well-Being and Perceived Social Support to decrease stress, which is found to have an important role in psychosomatic health and diabetics. When considering correlation results separately of the participants based their living locality, shows that there is a significant positive correlation between the positive variables each other like Health Related Quality of Life, Subjective Well Being and Perceived Social support, that means all these factors are related in a positive direction, if one factor for example Health Related Quality of Life increases the other positive psychosocial factors like Subjective Well Being and Perceived Social Support also increases.

The correlation results of both groups shows that the perceived stress which is a negative factor shows significant negative correlation between all the above mentioned positive factors in both groups: which means when the perceived stress is increases in the person with type 2 diabetes all the positive variables like Health Related Quality of Life (HRQOL), Subjective Well-Being and Perceived Social Support decreases, that will negatively affect the treatment adherence and self-care and that will worsen the sugar level. The present study explore the importance of identifying and intervening psychosocial factors in type 2 diabetic patients together with the medication and physiological techniques to improve sugar level.

These evidences indicate that there is no change between the sub samples in terms of the relation among variables. Whereas irrespective of the among diabetic patients as social support enhances there is a chance to enhance quality of life as well as subjective wellbeing. Similarly stress is having a negative relation with wellbeing, quality of life and social support. That as stress enhances, there is a chance to decrease subjective well-being and quality of life or it can also be interpreted that as social support enhances, there is a chance to decrease stress.
The result signifies the importance of considering positive psychological factors in determining holistic intervention in diabetes. Other than directly trying to influence pancreatic secretion, the study wants to highlight that it will be beneficial to influence by enhancing positive psychological factors like subjective wellbeing, health related quality of life and social support etc, so that decrease in perceived stress can be expected. It is also expected that pancreas secretion is affected by perceived stress.

**Table 3: Descriptive Statistics**

<table>
<thead>
<tr>
<th>LOCI</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
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</thead>
<tbody>
<tr>
<td>QOLTOT</td>
<td>2</td>
<td>35</td>
<td>116.71</td>
<td>18.561</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>30</td>
<td>138.33</td>
<td>18.859</td>
</tr>
<tr>
<td>SUBITOT</td>
<td>2</td>
<td>35</td>
<td>71.29</td>
<td>12.876</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>30</td>
<td>90.17</td>
<td>13.422</td>
</tr>
<tr>
<td>TOTSS</td>
<td>2</td>
<td>35</td>
<td>22.80</td>
<td>11.603</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>30</td>
<td>65.13</td>
<td>14.892</td>
</tr>
<tr>
<td>PSS</td>
<td>2</td>
<td>35</td>
<td>39.71</td>
<td>6.061</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>30</td>
<td>25.30</td>
<td>6.069</td>
</tr>
</tbody>
</table>

Descriptive statistics shows that the means and standard deviations of the variables on the basis of living locality of subjects (1 = migrated to UAE; 2 = living in Kerala). Mean scores of Health Related Quality of Life, Subjective Wellbeing and Perceived social support shows an increase in the mean scores of people who were migrated to UAE than people living in Kerala. Mean score of Perceived Stress shows a decrease in people who were migrated to UAE when compared to people living in Kerala.

**Table 4: indicates the independent t-test results of two groups based on locality of living**

<table>
<thead>
<tr>
<th>LOCI</th>
<th>F</th>
<th>Sig.</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>Std. Error Difference</th>
<th>95% Confidence Interval of the Difference</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>QOLTOT</td>
<td>.204</td>
<td>.653</td>
<td>-4.647</td>
<td>63</td>
<td>.000</td>
<td>-21.619</td>
<td>4.652</td>
<td>-30.916 - 12.322</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUBITOT</td>
<td>.143</td>
<td>.707</td>
<td>-5.780</td>
<td>63</td>
<td>.000</td>
<td>-18.881</td>
<td>3.267</td>
<td>-25.409 - 12.353</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTSS</td>
<td>3.603</td>
<td>.062</td>
<td>-12.871</td>
<td>63</td>
<td>.000</td>
<td>-42.333</td>
<td>3.352</td>
<td>-49.053 - 35.613</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSS</td>
<td>.002</td>
<td>.965</td>
<td>9.552</td>
<td>63</td>
<td>.000</td>
<td>14.414</td>
<td>1.509</td>
<td>11.397 - 17.430</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results show that there is significant difference between psychosocial variables of two groups based on the living locality. t value of Health related Quality of life is 4.647 which is significant at 0.01, t value of Subjective well-being is 5.780 which is significant at 0.01 level, t value of perceived social support is 12.871 which is significant at 0.01 level and t value of perceived stress is 9.551 which is significant at 0.01 level.

The results found that psychosocial variables in two groups based on the locality of living (one, those who were migrated to United Arab Emirates for their job purposes and those who are living in their own hometown) is significantly different. Health Related Qualities Of Life of both groups are significantly different in 0.01 level of significance. While considering the descriptive statistics shows that persons who are living a place away from hometown have higher Health Related Quality of life (mean = 138.33) than people who are living in their own hometown (mean = 116.71).

Subjective wellbeing is also significantly different in 0.01 level in both groups, descriptive statistics shows a higher score for persons migrated to a distant place (m = 90.17) than people who are living in their own hometown (mean = 71.29). Perceived social support of both groups are significantly different in 0.01 level, this is also higher in people who were migrated (mean = 65.13) than people living in their own home town (mean =22.80). Perceived stress of two groups are also significantly different at 0.01 level, but the group statistics shows that a higher score in people who are living in their own home town (mean = 39.71) than those who were migrated to a distant place (mean = 25.30).

The result shows that the influence of location of living in psychosocial factors in people with type 2 diabetes. The mean scores of the positive variables like Health Related Quality of Life, Subjective Well-being and Perceived Social support are higher in the group of people who are living in a distant place (UAE) from their hometown. Increase in the scores of these variables is highly influencing to reduce sugar level and improving the self-care activities expected by type 2 diabetes. While the mean score of the perceived stress; which is a negative factor is higher in people who are living in their own hometown (Kerala). Increase in perceived stress is very harmful to sugar level. This will reduce self-care activities expected to type 2 diabetes patients.

This can also be attributed to a cultural change. The life status of NRI’s are something good compared to that of Kerala, in the perspective of those who work abroad. They are quite away from their relatives and friends but many also get chance to live with their intimate partners and family members. This also indicates their personal satisfaction due to a culture among migrants. NRI’s from Kerala also keep up contacts among their friends, relatives and other nationalities in UAE; also they enjoy club activities, social gatherings and celebrate festivals. So that social support is found to be high and stress is lower in comparison to other group. It is peculiar to note that the above mentioned factors are those having a bio psychosocial perspective that is social support is not simply having people around but how far a person feels the support of others. This indicates the ideal perspective in diabetes intervention which is nothing but bio psycho social.

7. Conclusion

Psychosocial variables in persons with type 2 diabetes are interrelated. When social support enhances subjective wellbeing and health related quality of life are increases, at the same time the perceived stress will decreases. Significant difference have found between groups based on locality of living and between psychosocial variables.
References


