



## Positive and Negative Affect and Health Locus of Control in Diabetic Patients

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### Abstract

*Diabetes is increasing in South Asian countries and India has earned the name of diabetic capital of the world. Diagnosis of diabetes and living diabetes involves considerable amount of affective reactions that diabetic patients face on a daily basis and the attribution of control. The objective of the study was to find out if there is a relationship between positive and negative affect and health locus of control in diabetic patients. The sample consisted of 60 participants (30 men and 30 women) between the age group 40-45 years. The Positive and Negative Affect Schedule and Multidimensional Health Locus of Control (MHLC) were used. The results indicated a significant relationship between positive and negative affect and health locus of control in diabetic patients. However, there were no significant gender differences four in positive affect and negative affect and health locus of control in diabetic patients. The study explores the role of emotions and affect in health and chronic illnesses like diabetes.*

**Keywords:** Positive Affect, Negative Affect, Health Locus of control and Diabetes.

### Introduction

Diabetes is an increasing chronic illness in India. The prevalence of diabetes has increased as a many fold as tenfold, it has increased from 1.2% to 12.1%, in a period of three decades from 1971 and 2000. Around 77.2 million people in India are pre-diabetic. In India, around 61.3 million people in the age group of 20-79 years are diabetic. This is expected to shoot up to 101.2 million by the next decade<sup>1-3</sup>.

Diabetes or diabetes mellitus describes a group of metabolic diseases. In such diabetic condition, there is high level of blood glucose, which could be due to two reasons. Firstly, insulin production may be inadequate or secondly, body cells may not respond to the insulin well. The common and typical signs of diabetic patients are polyuria, polydipsia and polyphagia.

Based on the time of onset, there are three types of diabetes.

Type 1 diabetes- also referred as insulin –dependent diabetes, early onset diabetes or juvenile diabetes. It surfaces usually in teenage years or early adulthood before 40 years.

Type 2 diabetes- highly prevalent type, almost 90% of all cases across the world are of Type 2 (WHO). It is a progressive disease generally in the mid adulthood and the major risk factors being overweight and obesity. Gestational Diabetes- This affects women during pregnancy and makes them highly predisposed to risk of diabetes later in life<sup>1</sup>.

The diagnosis of diabetes and living with diabetes pose a constant challenge to patients. The nature of the illness being

chronic, not having a cure, associated problems (i.e. retinopathy) in case of uncontrolled diabetes and constant diet and exercise regimen to follow lifelong are a cause of concern initially and later frustration in some people. Given these conditions, the affect of patients are highly influenced. It includes both negative affect regarding the lifelong illness and medication and positive affect in case of early prevention and sustained management of the illness. Shuttling between both the affect happens situationally to patients. However, the affect aspect is highly influenced by the belief of the individual that the control of one's health is internal or external. Thus, the study deals with the affect aspect and health locus of control.

Emotions are integral part of our functioning; sometimes it is conscious but majorly unconscious. It is both positive and negative, and dynamically interplays in individual experience. Affect refers to the experience of feeling or emotion. It is an important part of the process of an organism's interaction with stimuli. It also refers sometimes to affect display, which is "a facial, vocal, or gestural behaviour that serves as an indicator of affect"<sup>4</sup>. In modern psychology, the affective domain represents one of the three divisions: the affective, conative/behaviour and cognitive. These divisions are also referred to as the ABC of psychology. Affect can also mean an instinctual reaction to the stimulation which occurs before the typical cognitive processes which are considered necessary for the formation of a more complex emotion. The Affect Theory organizes affects into discrete categories and connects each one with its response. Example – through the display of smiling, the affect of joy is observed. Affect refers to the "biological portion of emotion," that is, to "hard-wired, pre programmed, genetically transmitted

mechanisms that exist in each of us” which, when triggered, precipitates a “known pattern of biological events, “although it is also acknowledged that, in adults, the affective experience is a result of both the innate mechanism and a complex matrix of nested and interacting ideo-affective formations”<sup>5</sup>.

Positive affectivity is a characteristic which describes how humans and animals experience positive emotions and interact with others and also with their surroundings<sup>6</sup>. Those who have high positive affectivity are enthusiastic, energetic, confident, active and alert. Those who have low positive affectivity can be characterized by lethargic, sad, distressed and unpleasurable. Negative affectivity is a personality variable which includes the experience of negative emotions and poor self concept<sup>7</sup>. It has a variety of negative emotions such as anger, disgust, guilt, fear, contempt and nervousness<sup>8</sup>. Low negative affectivity is characterized by frequent states of serenity and calmness. Those with high negative affectivity view the world and themselves in negative terms generally. A study found that recent life span theories of emotion and indicate that personality, contextual, and socio demographic variables, as well as their interactions, are all needed to fully understand the age-effect relationship<sup>9</sup>. A study conducted revealed a significant relationship of lifetime perceived racism to both daily negative affect and trait negative effect, even when controlling for trait hostility and socioeconomic status<sup>10</sup>.

A study conducted demonstrated that one or both measures of affect regulation made a unique and substantial contribution to predicting each anxiety disorder except agoraphobia<sup>11</sup>.

A study was conducted focussing on 3 indicators of eustress and 3 indicators of distress in relation to the health. Pastors were studied (for the above variables), whose jobs were parallel to leaders in all types of organizations. Results indicated that both positive affect and revenge behaviour were significantly related to health<sup>12</sup>.

For a long period emotions were side-lined by science, medicine and mainstream psychology as unquantifiable and not very relevant parts of the human condition. Thus importance is given to the role of emotional life of humans and their capacity to transform and heal other cognitive and physical processes of mind and body. Thus, positive and negative affect is the dependent variable of the study. A study was conducted on Correlates of Negative Affect (NA) and Positive Affect (PA) through both within- and between-subjects. Between subjects results showed level of physical complaints and perceived stress were related with individual differences in NA but not in PA. Social indicators and frequency of exercise were related only to PA. The within-subjects results showed similar pattern. However, the most significant finding was that, contrary to prediction, health complaints were as strongly related to intra-individual fluctuations in PA as in NA<sup>13</sup>.

Affect is highly affected by the thought of control and the attribution that one gives to the control of happening. Also called as locus of control. It refers to the extent to which individuals believe that they can control the events that affect them. A person’s locus can either be internal (the person believes they can control their lives) or external (they believe that their lives and decisions are controlled by environmental factors which they can’t influence or by fate or chance)<sup>14</sup>. The construct of Health Locus of Control was derived from the Social Learning Theory developed by Rotter in 1966. Health locus of control (HLC) is the degree to which individuals believe that their health is controlled by internal or external factors. Internal refers to the belief that one’s health outcome is directly the result of one’s behaviour and External refers to the belief that one’s health outcome is under the control of powerful others (doctors) or is determined by luck, chance or fate. The Multidimensional Health Locus of Control construct has helped to shape or thought about the role of beliefs in context of health behaviours, health care and health outcomes.

Internal Health Locus of Control is the extent to which one believes that internal factors are responsible for health\illness. Powerful Others Health Locus of Control is the belief that one’s health is determined by powerful others.

Chance Health Locus of Control measures the extent to which one believes that health\illness is a matter of luck, chance or fate.

Health Locus of Control was first popularized by Wallston, Wallston, Kaplan and Maides<sup>15</sup>. Recently a great deal of research has linked internal locus of control to positive health beliefs and behaviours. Though not all attempts to correlate both have been successful, it is widely accepted that health locus of control is significantly associated with a variety of health outcomes and behaviours<sup>16</sup>.

A study was conducted to assess the effect of different stages on the health locus of control of students in an Indian dental school and to describe possible factors that may influence health loc in dental students. The findings of this study provided credible support for the MHLC model in assessing changing health attitudes and may provide a basis for dental educators to effect changes in the LOC among students<sup>17</sup>.

A study conducted by Roberts, Chapman, Sheldon (2002) found that when people develop back pain, their psychological makeup influences how they respond<sup>18</sup>.

A study conducted stated that the alcoholic liver disease (ALD) group had limited insight into the relationship between drinking and subsequent liver disease, compared to other group<sup>19</sup>.

The objective is to observe positive and negative affect and health locus of control in diabetic patients. There is a gap in literature and these variables have been sparsely considered for

study recently. Thus, the research question is ‘Is there a relationship between Positive and Negative affect and Health Locus of Control in Diabetic Patients’.

**Objectives:** i. To find out if there is a relationship between Positive and Negative Affect and Health Locus of Control in Diabetic men and women. ii. To find out if there is a difference in Positive and Negative Affect between Diabetic men and women. iii. To find out if there is a difference in Health Locus of Control between Diabetic men and women.

**Methodology**

**Research Design:** The current study was a correlation design to determine the relationship between Positive and Negative Affect and Health Locus of Control in Diabetic males and females. Gender differences with reference to Positive and Negative Affect and Health Locus of Control were also observed.

**Participants:** A purposive sampling method was used to collect the sample of 30 men and 30 women from hospitals of the metropolitan city of Hyderabad. The sample included 60 diabetic patients males (n=30) and females (n=30) between the age of 40-45 years.

**Instruments Used:** The Positive and Negative Affect Schedule (PANAS) was developed by Watson, Clark, and Tellegen was used to assess the positive and negative emotions<sup>20</sup>. Respondents are asked to indicate to what extent they have experienced each specific emotion in the past week. The PANAS comprises of two mood scales and the participant is required to respond to a 20-item test using 5 point likert scale that ranges from Very Slightly or Not at all (1) to Extremely (5). The Cronbach alpha coefficient for Positive affect scale is 0.86 to 0.90 and for Negative affect scale is 0.84 to 0.87.

The Multidimensional Health Locus of Control scale was developed by K.A Wallston, B.S Wallston and R.F DeVellis, and was used to assess the Health Locus Of Control<sup>21</sup>. The Form C of the MHL scale was used which is an 18 item scale with four subscales. It is a 6 point likert scale from Strongly disagree (1) to Strongly agree (6). The Cronbach alpha coefficient was for Internal (0.68), for Powerful Others (0.72) and for Chance (0.66).

**Procedure:** The study was initiated after taking due permission and consent from the management of all the selected hospitals. Informed consent was taken from the participants. They were requested to fill in the questionnaire after which they were debriefed. On an average the time taken to administer the scales was 20 minutes.

**Results and Discussion**

The results were analysed using both descriptive and inferential statistics.

Table-1 shows that there is a significant negative correlation ( $r(58) = -0.64$  ( $p < 0.01$ )) between *Positive Affect and Negative Affect*. There is a significant positive correlation ( $r(58) = 0.34$ ,  $p < 0.01$ ) between *Positive Affect and Internal subscale*. There is a significant positive correlation ( $r(58) = 0.32$ ,  $p < 0.01$ ) between *Negative Affect and Internal subscale*. There is a significant positive correlation ( $r(58) = 0.49$ ,  $p < 0.01$ ) between *Positive Affect and Doctors subscale*.

There is a significant negative correlation ( $r(58) = -0.38$ ,  $p < 0.01$ ) between *Negative Affect and Doctors subscale*. There is a significant positive correlation ( $r(58) = 0.36$ ,  $p < 0.01$ ) between *Internal subscale and Doctors subscale*.

**Table-1**  
**The correlation between two dimensions of Affect and four sub-scales of Health Locus of Control**

	Positive	Negative	Internal	Chance	Doctors	Other People
Positive Affect	1					
Negative Affect	-0.64**	1				
Internal	0.34**	0.32**	1			
Chance	-0.06	0.11	0.04	1		
Doctors	0.49**	-0.38**	0.36**	0.02	1	
Other People	0.13	0.03	0.22	-0.12	-0.08	1

Note:\*\*  $p < 0.01$

**Table-2**  
**The Mean, Standard Deviation and t-test of Positive and Negative Affect and Health Locus of Control in Men and Women Diabetic Patients**

	Men		Women		t
	Mean	SD	Mean	SD	
Positive Affect	32.8	6.42	30.8	5	0.18
Negative Affect	21.6	8.01	20.9	5.63	0.69
Internal	22.1	3.63	21.4	3.59	0.43
Chance	24.0	3.35	22.3	3.51	0.05
Doctors	14.2	2.90	13.2	2.97	0.19
Other People	10.6	3.30	10.9	2.51	0.66

Table-2 shows that there is no significant difference in the Positive Affect and Negative effect of Diabetic men and women. There is no significant difference between diabetic men and women with respect to the Internal, chance, doctors and other people subscale of Health Locus of Control in Diabetic men

**Discussion:** The objective of the study is to find out the relationship between Positive and Negative Affect and Health Locus of Control in Diabetic Men and Women. The study also aimed to find out whether there are differences in positive and negative affect between men and women. To find out whether there are differences in the four subscales of Health Locus of Control i.e; Internal, Chance, Doctors, and Other People between diabetic men and women.

The results of the study found a relationship between Positive and Negative Affect and Health Locus of Control in Diabetic men and women.

There are no significant differences in Positive and Negative Affect in diabetic males and females. This is not consistent with the findings of other research studies. They suggested that there are differences in Affect of males and females, where females tend to hold more negative attitudes<sup>22</sup>.

There are also no significant differences in Health Locus of Control in Diabetic men and women. The result is in accordance with a study on Health Locus of Control and Compliance with Medical Regimen: A study of type 2 diabetic patients<sup>23</sup>. The findings are also in accordance with an earlier study conducted where no difference in Locus of Control by gender were found. There are no gender differences thus found in both Affect and Health Locus of Control scales<sup>24</sup>.

The study reported that there is significant positive relationship among positive effect, negative effect, internal subscale, and

doctor subscale. There is significant negative relationship between doctor subscale and negative effect. The results are in accordance with a study on ‘Canonical correlation Reveals Important Relations between Health Locus Of Control, Coping, Affect and Values’ which reveals that there is a significant correlation between Health Locus Of Control and Positive Affect<sup>25</sup>.

The importance of the study is that it brings to notice the role of emotions in health which has also been a central topic in health psychology for some time. Emotions are fundamental aspects of human beings and it has an important influence on determining physical and mental health. Diabetes is a chronic health problem which is increasing at a rapid speed and affecting millions of people all over the world. Thus, intervention programmes for diabetic management should aim to improve their positive affect and to minimize their negative effect.

**Conclusion**

Living diabetes is challenge for individuals because they need to manage this chronic illness. Such a management refers to changes in lifestyle beginning from diet to exercise. In addition to management, adherence to medication is an important factor. Thus, sustained management of diabetes and adherence to medication would become reality when the individual is capable to assess one’s positive and negative affect and health locus of control. The reason being dealing with diabetes on a daily basis is determined by the variables studied in the present study.

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