

Stigma, Social Comparison, and Psychological Distress in Type 2 Diabetic Patients

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Individuals diagnosed with type 2 diabetes form a demographic characterized by an increased susceptibility to psychological distress arising from societal stigmatization and comparative evaluations with others. This study seeks to examine the impact of stigma in predicting psychological distress among type 2 diabetes patients, while also delving into the potential moderating effect of social comparison on this relationship. Employing a purposive sampling approach, data were gathered from a cohort of 100 individuals diagnosed with type 2 diabetes, aged between 30 and 55 years. The relevant variables stigma, social comparison, and psychological distress were assessed using the Type 2 Diabetes Stigma Assessment Scale (DASS-2), Iowa Netherland Comparison Orientation scale (INCOM), and Kessler Psychological Distress Scale (K10), respectively. Various statistical analyses, including the Pearson Product Moment Correlation coefficient, Linear Regression, and moderation analysis, were executed. The results unveiled a statistically significant positive correlation between perceived stigma, social comparison, and psychological distress ($r = .693-.793, p < .001$). Notably, an increased perception of stigma was linked to elevated levels of psychological distress. These findings contribute to a nuanced understanding of the psychological well-being of individuals grappling with type 2 diabetes, elucidating the additional challenges they confront in their daily lives which should be given consideration while developing treatment plan.

Keywords. Stigma, social comparison, psychological distress, type 2 diabetes, moderation

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Undeniably, individuals grappling with chronic illnesses find themselves part of a stigmatized cohort subjected to discrimination, defamation, and social stigmatization, presenting formidable obstacles in the domains of employment, interpersonal connections, and overall life constraints (Earnshaw & Quinn, 2012). Extensive research highlights the enduring connection between stigma, discrimination, and mental health issues, transcending historical periods, diverse societies, cultures, and even pre-dating the establishment of contemporary diagnostic frameworks. Recent investigations, such as those by Stangl et al. (2019), have delved into the nuanced impacts of stigmatization on mental well-being. Findings consistently reveal that the experience of stigma is a pivotal factor contributing to adverse mental health outcomes, manifesting itself in the form of reduced self-confidence and substantial influences on temperament and mood (Stangl et al., 2019).

In contemporary times, Diabetes mellitus stands out as one of the most prevalent chronic diseases globally, with its incidence steadily increasing (Khan et al., 2020). This disease impairs the body's ability to utilize food energy efficiently. Notably, Type 2 diabetes accounts for approximately 90% of all diabetes cases. The current prevalence of Type 2 diabetes mellitus in Pakistan is reported to be 11.77% (Meo et al., 2016). In the context of Type 2 diabetes, the pancreas generates insulin but either in insufficient quantities or with impaired functionality. Socially discernible aspects associated with diabetes encompass the administration of insulin injections, regulation of blood glucose levels, dietary restrictions, obesity, and fluctuations in blood glucose levels. These factors collectively contribute to the experience of diabetes-related stigma.

Individuals with diabetes, as revealed in studies exploring the psychosocial impacts of stigmatization (Schabert et al., 2013), articulate a range of emotions, including anxiety, shame, blame, remorse, worry, and diminished self-esteem. This highlights the significance of understanding the social dimensions of diabetes, shedding light on the intricate interplay between societal perceptions and the psychosocial well-being of individuals grappling with Type 2 diabetes.

A subjective study recommended that diabetes stigma can lead to negative mental outcomes as well as less fortunate clinical results. In this study people with diabetes were interviewed and results indicated that both culture and health experts stigmatized them (Lancet, 2018). When it comes to people with a chronic condition or impairment social comparison is also a significant factor in developing psychological distress. People who constantly compare themselves

with those who are better than themselves easily experience anxiety and develop stress quickly. Based on various contextual characteristics, social comparisons may have both positive and negative health consequences for patients. According to a study, a higher perception of stigma is related to growing negative social comparisons (Dagnan & Waring, 2004). Stigmatization and making comparison with others are significantly seen as prominent factors for exacerbating psychological problems in previous studies. Both variables have the potential to influence psychological and physical functioning and adherence to the treatment; therefore, there was a need to understand these factors in Type 2 diabetic patients of Pakistani society.

Previous scholars and researchers have delved into the interplay between social comparison and similarities in psychopathology. Extensive documentation exists regarding the correlation between mental health diagnoses and diabetes outcomes, particularly in relation to depression (Egede & Dismuke, 2012). Furthermore, psychological distress is recognized as an independent risk factor for type 2 diabetes (Li et al., 2017). A study conducted in Pakistan emphasized the significance of emotional and interpersonal distress related to diabetes as key predictors of psychological stress among Type 2 diabetic patients (Sadiq & Batool, 2017). Another recent study investigated the impact of distress on self-management and self-esteem in diabetic patients in Pakistan. Findings revealed that diabetes-related distress significantly undermines both self-management efforts and self-esteem (Kaiser & Mehboob, 2020).

Further exploration uncovered that stigma represented a significant barrier to self-management among individuals with type 2 diabetes. This inquiry, situated in Pakistan and focusing on the rural middle-aged populace with type 2 diabetes, highlighted the prevalence of self-perceived stigma surrounding the condition (Ansari, Dixon, & Browning, 2014). Patients recounted experiences of diabetes being viewed as a self-inflicted affliction in Pakistani society, leading to reluctance in disclosing their condition due to associated stigma. Another study, conducted by Weatherspoon (2019), investigated the correlation between social comparison orientation and adjustment among adults with type 2 diabetes, revealing a noteworthy relationship between these variables.

While existing diabetes management guidelines primarily address physiological aspects, the psychological needs of patients have been largely overlooked. Previous research has lacked thorough examination of the psychological dimensions, including emotional

repercussions, stigmatization, and social comparison. This study aims to address this gap by providing targeted psychological care.

While numerous studies have explored psychosocial factors affecting individuals with diabetes globally, there remains a dearth of literature in indigenous contexts. Furthermore, existing literature has not comprehensively examined the combined influence of stigma, social comparison, and psychological distress in the context of type 2 diabetes. The objectives and hypothesis of the study are given below.

Objective of this study is to investigate the relationships among stigma, social comparison, and psychological distress in individuals with type 2 diabetes. It is hypothesized that psychological distress stemming from stigma and social comparison may exacerbate the maintenance of type 2 diabetes, with social comparison serving as a moderator. Additionally, the study aims to ascertain the predictive role of stigma in psychological distress. The findings are expected to enhance understanding of the psychological factors at play in type 2 diabetes, facilitating the development of targeted psychological interventions.

Method

The current study was carried out after seeking approval from the Ethics Review Committee of. The sample size was calculated via Gpower software with 95% confidence interval. Purposive sampling strategy was used to collect a sample of 100 type 2 diabetes patients with age range of 30-55 years. The study included participants who had been diagnosed with Type 2 Diabetes for a minimum of six months and were currently undergoing treatment. Additionally, individuals with at least an intermediate level of education were included in the study. Data was collected through Google Forms, which was sent to the target audience via email and other social applications. Data was also collected from different clinics of Lahore in the current research demographic form was used to collect sociodemographic information about the participant, such as age, education, gender, and family system which helped in the filtration of the sample for making it representative of the population. The Type 2 Diabetes Stigma Assessment Scale (DSAS-2) assessed the stigma associated with type 2 diabetes, both perceived and experienced (Browne et al., 2016). The scale contained 19 items which measured stigmatization related personal experiences and perception about general. People responded on a five-point Likert scale. There are subscales of Type 2 Diabetes Stigma Assessment Scale. (a) Treated

differently (b) Blame and judgment (c) Self-stigma. The DSAS-2 has high consistency and reliability with Cronbach's alpha .95.

The Social Comparison Orientation Scale also known as Iowa Netherland Comparison Orientation Measure (INCOM) was used in the study (Schneider et al., 2011). It captures core aspects of the self, the other, and the psychological connection between the two and analyses an individual's willingness to engage in social comparison. The INCOM scale's core instrument consists of 11 items. A five-point Likert scale was used to evaluate the responses. The scale has consistent Cronbach's alphas ranging from .78 to .85.

The Kessler Psychological Distress Scale (K 10) is a simple measure of psychological distress developed by Kessler in 2002. This 10-item questionnaire was structured to offer a global measurement of emotional distress focused on questions about anxiety and depressive symptoms that a person might have encountered in the previous four weeks. A five-point Likert scale was used to evaluate the responses. The scale has high internal consistency with Cronbach's alpha .74.

Permission was taken from the institute and from the authors of the selected scales. Data was collected through Google Forms, which was sent to the target audience via email and other social applications. Data was also collected from different clinics of Lahore. A link to an informed consent form for target population and their volunteer participation was added to the online questionnaire form and written consent form was provided to the participants while conducting survey in person. Above mentioned scales were all used to collect data. Complete instructions were provided for each scale. The data was collected from 100 participants. After obtaining data from completed questionnaires, the findings were graded according to the scoring procedures specified for each scale. For statistical analysis, data were converted to the Statistical Package for Social Sciences (SPSS 25).

Results

Out of the total 100 subjects 42 (42%) were males and 58 (58%) were females, 67 (67%) were married and 33 (33%) were unmarried. The participants mainly belonged to middle socio-economic status with minimum 12 years of education and average age range of 42.5 years.

Pearson Product Moment Correlation was used to look at the relationship between the study variables i.e., stigma, social comparison and psychological distress. A two-tailed analysis revealed

that perception of stigma; social comparison and psychological distress are significantly positively correlated with one another (Table 1).

Table 1

Pearson Product Moment Correlation Analysis for Determining the Relationship Among Stigma, Social Comparison and Psychological Distress (N = 100)

Variables	M	SD	DSAS	INCOM
DSAS	53.32	12.35	-	
INCOM	18.17	3.82	.717**	-
K-10	26.44	8.42	.693**	.739**

Note. DSAS (Stigma), INCOM (Social Comparison), and K-10 (Psychological Distress) ** $p < .01$.

Simple linear regression analysis was carried out to see whether stigma predicts psychological distress. The data fulfilled all the assumptions of the test such as normality, linearity etc. Results showed that stigma is a significant predictor of psychological distress among type 2 diabetic patients ($B = .389$, $p < .01$) using 95% confidence interval (Table 2).

Table 2

Regression Analysis to Determine the Impact of Stigma on Psychological Distress Among T-Type 2 Diabetic Patients (N = 100)

Variables	B	β	SE	95% CI		t	p
				LL	UL		
Constant	6.85		2.22				
DSAS	.389	.693	.041	.31	.47	9.52	.000
R^2	.693						
ΔR^2	.481						

Note. DSAS (Stigma) ** $p < .001$.

Moderation analysis was carried out via Process model 1 by Andrew F. Hayes, to explore the moderating role of social comparison in the relationship between Stigma and psychological distress. Results revealed that social comparison does not moderate the relationship between stigma and psychological distress (Table 3).

Table 3
Moderation Analysis

Effect	Estimate	SE	95% CI		p
			LL	UL	
Fixed effects					
Intercept	.011	.007	-.0033	.0252	.12
DSAS	-.0413	.1591	-.3571	.2745	.79
INCOM	.3569	.350	-.3388	1.052	.31

Note. DSAS (*Stigma*), INCOM (*Social Comparison*), CI = *Confidence Interval*; LL = *Lower Limit*; UL = *Upper Limit*.

Discussion

The current investigation sought to examine the interplay between stigma, social comparison, and psychological distress among individuals diagnosed with Type 2 diabetes, with a particular focus on whether stigma serves as a predictor of psychological distress. Additionally, the study aimed to assess the moderating influence of social comparison on the association between stigma and psychological distress. The primary objective of the initial hypothesis was to ascertain the relationships among stigma, social comparison, and psychological distress. Results revealed significant associations among all variables, consistent with prior research findings as Petron (2012) also found significant positive correlation between stigmas, psychological distress and type 2 diabetes. The findings suggested that participants experienced heightened distress primarily attributable to perceived stigma rather than their medical condition. This interpretation aligns with Beck's cognitive theory, positing that individuals experiencing negative emotions may exhibit heightened sensitivity to negative external feedback, thus amplifying the impact of stigma-related experiences (Stangl et al., 2019).

Moreover, individuals with negative self-perceptions are more likely to recall and internalize negative stigma experiences, exacerbating psychological risks (Hertel, 2004). This reciprocal relationship underscores the vulnerability of individuals experiencing negative affect to the detrimental effects of stigma and social comparison. In our societal context, individuals diagnosed with diabetes demonstrate heightened concern regarding the social and occupational ramifications of their condition. The proliferation of Type 2 diabetes resembles an epidemic, attributed largely to sedentary lifestyles prevalent not only in our country but also globally. Factors such as insufficient physical activity, consumption of high-calorie

diets, engagement in binge eating and drinking, along with various risk factors like obesity, family history of diabetes, and hypertension contribute significantly to the escalating rates of diabetes. In Pakistan, the prevalence of diabetes is notably high, ranging between 12 to 16.89 percent (Aamir et al., 2019). Within the realm of chronic diseases, social comparisons assume particular importance, as patients often grapple with heightened levels of fear and health-related anxiety, thereby increasing the likelihood of engaging in social comparisons. Furthermore, individuals with diabetes frequently encounter stigmatization within our society. One prevalent stigma associated with diabetes is the misconception that individuals with diabetes have excessively consumed sugary foods. Stigma related to insulin injections, apprehension regarding public medication intake, and the act of monitoring blood glucose levels in the presence of others contribute to distress among patients. Individuals diagnosed with diabetes engage in comparative assessments with others, a behavior that often precipitates psychological distress. For instance, they commonly juxtapose themselves with individuals deemed healthier. Notably, a significant proportion of diabetic patients within the Pakistani populace belong to the middle-class socioeconomic stratum, prompting comparisons with their wealthier counterparts who enjoy superior healthcare provisions. This unfavorable comparison may evoke feelings of anxiety and disillusionment, thereby inducing distress that impairs daily functioning and, in severe cases, precipitates mental anguish. Moreover, the challenges faced by our nation's healthcare system in enhancing internal monitoring and human resources exacerbate these stressors. Within our cultural milieu, gatherings often elicit perceptions of stigma among individuals grappling with chronic illnesses such as heart disease, hypertension, or diabetes, further fueling comparative assessments against healthy counterparts. Prolonged exposure to these stressors may culminate in severe psychiatric ailments.

The second hypothesis posited that stigma serves as a predictor of psychological distress. Results confirmed this hypothesis, these results garnered support within Pakistani society, with previous analyses corroborating its validity. A study conducted among the Pakistani population revealed that individuals with diabetes hesitated to disclose their condition due to the associated stigma, viewing diabetes as a self-inflicted ailment that induces emotional distress (Ansari et al., 2014). Moreover, patients perceived diseases like diabetes as socially inappropriate within South Asian cultures (Kumar et al., 2016). Additionally, research indicated high rates of depression (58%) and anxiety (45%) among individuals with type 2 diabetes in Pakistan

(Madhu, 2018). Another study on medication adherence beliefs among South Asian cardiovascular and diabetes patients highlighted stigma and lack of social support as critical factors influencing healthcare outcomes. Participants reported feeling stigmatized by both societal norms and healthcare professionals (Lancet, 2018), underscoring the detrimental effects of diabetes-related stigma on mental well-being and clinical outcomes.

In our societal context, individuals often engage in comparisons with others based on various factors such as socio-economic status, health status, and education level. Similarly, individuals diagnosed with type 2 diabetes utilize factors like health status, lifestyle, severity of the condition, and access to treatment facilities for comparative assessments. Negative social comparisons among diabetic patients are linked to heightened psychological distress, further emphasizing the impact of social dynamics on mental health outcomes.

Diabetic individuals encounter a spectrum of adverse emotions including fear, shame, blame, and humiliation, contributing to heightened levels of anxiety and diminished self-esteem. These emotional burdens frequently precipitate depressive symptoms and elevate the susceptibility to various psychological maladies. An exploration of patient narratives revealed instances of perceived disdain from bystanders during insulin administration in public settings, instances of workplace discrimination, as well as limitations in travel and social interactions attributed to the stigma associated with diabetes. Consequently, individuals with diabetes often perceive themselves as less compatible with their peers in professional environments, experiencing diminished vitality and engagement, which in turn exacerbates feelings of social marginalization and mental anguish. Particularly among younger demographics such as students, the experience of diabetes-related stigma engenders a profound sense of shame and alienation, perpetuating a cycle of distress and social disconnection. Moreover, societal norms, particularly in younger age cohorts, dictate that individuals with diabetes may encounter barriers to marriage, instigating heightened levels of anxiety, depression, and related psychological issues. The pervasive sense of stigma associated with diabetes significantly impedes effective disease management, as individuals may resist disclosing their condition to colleagues and healthcare providers, fearing judgment and ostracism. This phenomenon is corroborated by recent research conducted in Pakistan, which demonstrates a negative association between diabetes-related stress and both self-management behaviors and self-esteem among affected individuals (Kaiser & Mehboob, 2020).

The third hypothesis aimed to assess whether social comparison serves as a moderating factor in the association between stigma and psychological distress. Contrary to expectations, the analysis indicated no evidence of a moderating effect of social comparison on the relationship between these variables. This finding aligns with a previous investigation by Paterson (2012), which similarly found no moderating influence of social comparison on the relationship between stigma and self-esteem. Consequently, it appears that social comparison and stigma operate distinctively in their impact on distress. It is plausible to posit that both stigma and social comparison contribute uniquely to various manifestations of psychological distress, thus explaining the lack of moderation observed in the relationship between stigma and distress by social comparison.

Limitations and Future Suggestions

The global impact of the coronavirus pandemic has been felt across health, political, and social systems worldwide (Uludag, 2022). The research was conducted during Covid-19, a pandemic that may contribute as an additional stress factor for diabetes patients. During the pandemic COVID-19 people are confined to their homes, unable to visit friends, work differently or not, supplies have been interrupted, health arrangements altered or paused, international travel has practically stopped. People with diabetes are worried that they would get the right food, insulin or other supplies, have access to their regular service rather than comparing themselves with others and indulging in stigmatization.

In addition, the sample size was relatively limited according to size and diversity due to time and other constraints in future researchers can take a larger sample from all major cities of Pakistan to assess the relationship between these variables. Finally, the inability to detect moderating effects would not rule out the possibility that social comparison is a moderating factor and therefore more study is warranted.

Conclusion

The study aimed to investigate the interplay between Stigma, Social Comparison, and Psychological Distress among individuals diagnosed with type 2 diabetes. The findings demonstrated a statistically significant positive correlation among all aforementioned variables. Moreover, stigma emerged as a significant predictor of

psychological distress within this population. However, contrary to expectations, social comparison did not moderate the relationship between stigma and psychological distress. These results underscore the importance of comprehending the roles of stigma and social comparison in shaping the psychological well-being of individuals living with type 2 diabetes. The study highlights how the nature and outcomes of social interactions experienced by individuals with type 2 diabetes profoundly impact their psychological welfare.

Significance of the Study

The study underscored the critical relevance of stigma and social comparison in shaping the psychological well-being of individuals coping with chronic physical illnesses within society. It illuminated several notable challenges faced by those living with type 2 diabetes, further highlighting the intricacies of their experiences. Specifically, stigma emerged as a robust predictor of psychological distress, with heightened stigma perceptions correlating with increased pessimism and greater manifestation of distress symptoms. The study posited that individuals with a more negative perception of stigma may exhibit heightened vulnerability in social contexts, thereby fostering a greater sense of pessimism. The studies also acknowledged the multifaceted impact of societal roles and interpersonal dynamics on the communication patterns, physical well-being, and self-perception of individuals with type 2 diabetes.

This study has implications for mental health professionals as well as social worker and policy makers. Mental health professionals should also focus on the social and psychological factors affecting conditions such as type 2 diabetes and consider them while developing treatment plans. Additionally, social workers and policy makers should develop strategy to reduce stigmatization related to illnesses such as Diabetes, heart conditions, eating and other mental health disorders in order to bring positive societal change.

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