BULLETIN OF STOMATOLOGY AND MAXILLOFACIAL SURGERY
Volume 21, Issue 7

DOI: 10.58240/1829006X-2025.21.7-277

ORIGINAL RESEARCH

INFLUENCE OF SELF-STIGMA ON SELF-CARE BEHAVIOUR AMONG SUBJECTS WITH DIABETES MELLITUS

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***Received:** Jul 10. 2025; **Accepted:** Aug 12, 2025; **Published:** Aug 17, 2025*

ABSTRACT

Background: The study aimed to evaluate the association between self-care behaviour and self-stigma among patients with diabetes mellitus. It also sought to determine the prevalence of self-care and self-stigma, and the correlation between the two.

Material and methods: The study was conducted at Iyyappa Hospital and Indian Diabetes Care, Chennai, Tamil Nadu. A total of 382 subjects with diabetes mellitus were initially recruited, out of which 343 participants met the selection criteria and were included in the study. Informed consent was obtained from all participants. Data collection involved a self-structured questionnaire that included socio-demographic details, medical history, and laboratory investigation reports. Assessment tools used were the Diabetes Self-Management Questionnaire and the Diabetes Self-Stigma Assessment Scale.

Results: Multiple linear regression analysis showed a strong overall significant relationship between self-stigma traits—such as being treated differently, being blamed or judged, and feeling stigmatized—and age, in both males and females. Further analysis revealed that the components of blame and judgment ($t = -3.983$, $p < .001$) and self-stigma ($t = -3.358$, $p < .001$) were statistically significant predictors for females but not for males.

Conclusion: Multiple linear regression analysis showed a strong overall significant relationship between self-stigma traits—such as being treated differently, being blamed or judged, and feeling stigmatized—and age, in both males and females. Further analysis revealed that the components of blame and judgment ($t = -3.983$, $p < .001$) and self-stigma ($t = -3.358$, $p < .001$) were statistically significant predictors for females but not for males.

Key Words: diabetes mellitus .self-care; self-stigma, prevalence.

INTRODUCTION

A significant public health concern in every country is diabetes mellitus. The number of people with diabetes mellitus has increased from 108 million in 1980 to 422 million in 2014 and 537 million in 2021[1]. In low- and middle-income nations compared to high-income nations, prevalence has been increasing more quickly[2]. Adults who were 18 years of age and older who had diabetes had an 8.5% prevalence in 2014. A total of 1.5 million deaths in 2019 were directly related to diabetes, and 48% of these deaths occurred in those under the age of 70. Diabetes contributed to an additional 460 000 renal disease deaths, and elevated blood glucose is responsible for 20% of cardiovascular fatalities[2]. Age-standardized diabetes mortality rates increased by 3% between 2000 and 2019.The death rate from diabetes climbed 13% in lower-middle-income nations[2]. However, between 2000 and 2019, there was a 22% global decline in the likelihood of dying between the ages of 30 and 70 from any of the four major non-communicable diseases

(cancer, chronic respiratory diseases, diabetes, or cardiovascular disorders)[2]. In South-East Asia, 84 million persons between the ages of 18 and 99 had diabetes in 2017, according to an IDF report. The prevalence of T2DM is the highest in Pakistan (26.7%) followed by India (8.3%), Bhutan (8.8%), Sri Lanka (9.8%), Bangladesh (12.5%), Maldives (6.7%), Afghanistan (8.7%) and Nepal (6.3%)[3].

Diabetes a silent killer, is also a global societal catastrophe due to its chronic nature causing devastating personal suffering, pushing families into poverty[4]. Diabetes is a significant contributor to renal failure, heart attacks, strokes, blindness, and lower limb amputation. Care for chronic diseases like diabetes poses challenges characterized by the need for sustained compliance to treatment, prevention or management of associated complications A multifaceted and thorough approach is necessary for diabetes management.

For timely management, the patient and the treating doctor must both actively participate. In order to effectively treat diabetes, self-care, a secondary level of preventive, is crucial[5].

In order to successfully manage their diabetes on their own, people with the condition or at risk for it engage in self-care behaviours. Self-care activities include maintaining a healthy weight, getting regular physical activity, checking blood sugar levels, taking medications as directed, learning problem-solving techniques, engaging in risk-reducing activities, and developing positive coping mechanisms. It has been discovered that all of these behaviours are positively connected with effective glycaemic management, postponing and reducing complications, and improving quality of life[6]. Due to the rise in diabetes-related medical costs, the growing prevalence of T2DM has a detrimental impact on the socioeconomic conditions of South Asians. Treatment of T2DM among South Asians faces hurdles due to inadequate disease awareness, delayed diagnosis, poor adherence to self-care practises, and use of dangerous alternative medications[7].

According to Riegel's theory, self-care behaviours may have an impact on actions meant to maintain both physiological and emotional stability (i.e., self-care maintenance), which makes it easier to notice particular signs and symptoms (i.e., self-care monitoring), and is intended to manage these once they appear (i.e., self-care management). Overall, self-care self-efficacy, which is the degree of confidence people have in their capacity to do proper self-care, and self-efficacy have an impact on self-care maintenance, monitoring, and management[8].Stigma is defined as a characteristic of a person that differs negatively from culturally defined norms, and stigmatization occurs when there is perception of a stigma that results in a punitive response. It represents their own negative beliefs, emotional reactions and behaviours toward themselves as a result of their illness and occurs when individuals internalize societal stereotypes, prejudicial attitude and discrimination associated with their illness by experiencing or perceiving stigma[9]. This type of stigma can be experienced internally and externally. **Internal stigma** is a belief that a person with diabetes has about themselves. It can include feelings of self-blame, shame, and guilt. **External stigma** is blame and judgment that comes from other people and society. It can include awkward or mean looks, rejection, exclusion, and difficulty maintaining relationships and friend[10].

Chronic disease-related stigma is a derogatory social judgement that causes unjustified rejection or exclusion. It has to do with the disease's outward manifestations or treatment. These characteristics, the sources of stigma (such as people, groups, and the media), and the psychological factors that contribute to stigma, such as fear, blame, or disgust, should all be taken into account when conceptualising stigma[9].

Feeling stigmatised can also negatively impact diabetes management since patients may be less inclined to utilise or adopt recommended treatments that are visible in public, such as insulin injections, insulin pumps, and self-monitoring blood glucose levels. Because they worry about criticism or blame, many diabetics choose not to fully disclose their condition to peers or medical experts. The way the diseases manifest and are treated differ between type 1 and type 2 diabetes[11].

Therefore, to the best of our knowledge, there was a lack of synthesis regarding the diabetes self-stigma in self-care behaviours in patients with DM. The study's findings will help to create a plan for bettering self-care practises in relation to eating habits, exercise, managing blood sugar, and knowing how to use a glucometer and administer insulin. As a result, it was important to assess how diabetes mellitus patients manage their diabetes and how their self- care behaviours relate to patient characteristics.

MATERIALS AND METHODS

Study design:

- Cross-sectional study

Study setting:

- This study was conducted in hospitals of Chennai, Tamilnadu**.**

Sample size:

- 343 diabetes subjects.

Study duration:

- 6 months.

Sampling technique:

- Purposive sampling.

Inclusion criteria:

- Adult age above18 years.
- Diabetes type 1 and type 2

- Subjects with diabetic Peripheral neuropathy
- Subjects diagnosed with diabetes not less than 6 months.
- Both males and females.

Exclusion criteria

- Gestational diabetes mellitus
- Subjects who were not willing to participate
- Hospitalized subjects
- Subjects with psychiatric disorder
- Subjects with other neurological conditions

Data collection tools:

- Height measuring scale
- Weight machine
- Self-structured socio-demographical questionnaire
- Diabetes self-management questionnaire
- Diabetes self-stigma assessment scale

Procedure

- This project was carried out in Iyyappa Hospital and Indian Diabetes care, Chennai, Tamilnadu for the subjects with Diabetes mellitus. A total of three eighty two subjects were recruited for the study. Based on the selection criteria, three forty three subjects were included in the study. The flow chart for the sample recruitment is given below. The informed consent form was obtained and the study was started with the general physical examination. The framed self-structured questionnaire containing Socio-demographical data's, history, lab investigation reports of diabetes mellitus were collected. Following this, the assessment was done using the Diabetes self- management questionnaire and Diabetes self-stigma assessment scale to determine the effect of self-stigma.
- Diabetes Self-Management Questionnaire (DSMQ-R) developed by Schmitt, et al., was used to measure the self- care behaviour of DM patients. It consists of 16 items and four section dietary control (DC), glucose management (GM), physical activity (PA) and physician contact. Self-care behaviours rating on a four point Likert scale.

Scale ranging from 0= does not apply to me and 3= apply to me very much. High score indicate high level of self-care behaviours. The DSAS 2 has 19 items scored on a 5-point Likert-type response scale (strongly agree–strongly disagree). The score of this scale ranges from 19 to 95 points, where a higher score indicates a higher level of stigma.

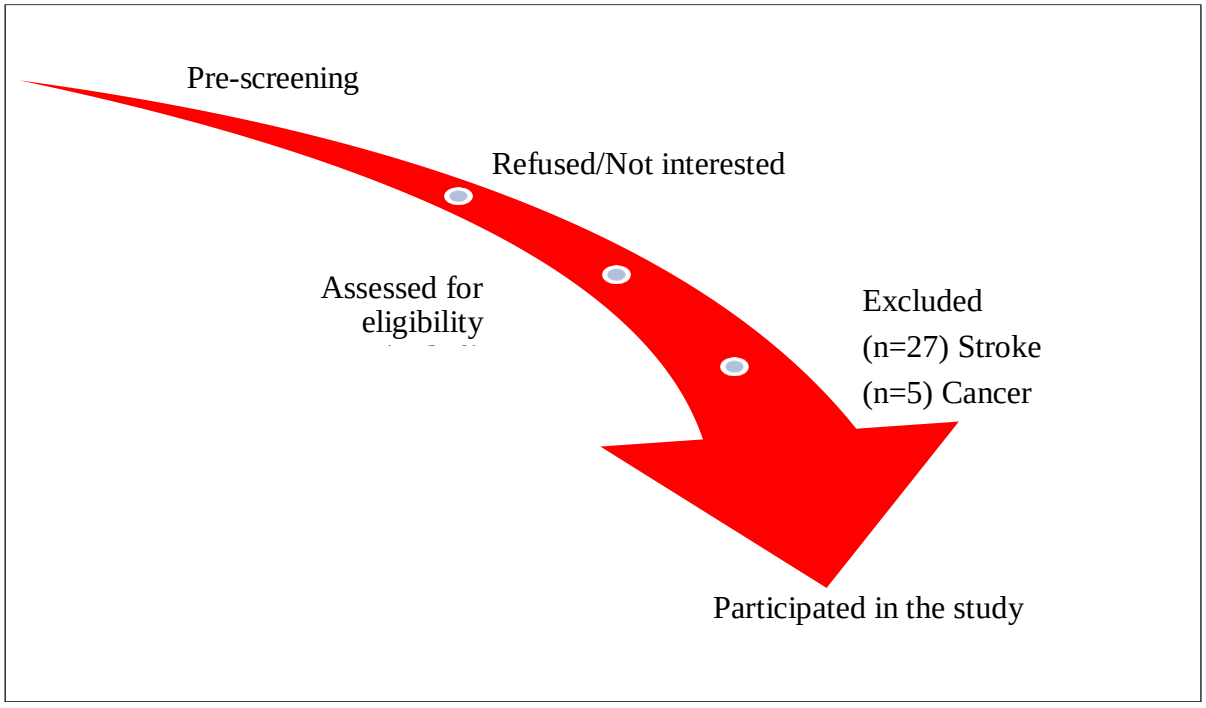

Figure 1. Sample Recruitment

Data analysis and Result

Multiple regression analysis was a statistical evaluation tool used in the study for measuring the impacts of variables and relationship between the outcome measures.

Females

TS vs. Components Female

TS = 4.65875 + 0.0677024 blame and judgement - 0.0882898 self-stigma

Results of the multiple linear regression indicated that there was a weak collective significant effect between the Treated differently, blame and judgement, self-stigma and TS , (F(2, 179) = 4.91, p = .008, R2 = 0.05, R2adj = 0.04).

The individual predictors were examined further and indicated that Treated differently (t = 2.282, p = .024) and blame and judgement (t = -3.056, p = .003) were significant predictors in the model, and was non-significant predictor in the model.

Age vs. components female AGE = 80.915037 - 0.458509 Treated differently - 0.527777 blame and judgement - 0.43119 self-stigma

Results of the multiple linear regression indicated that there was a strong collective significant effect between the Treated differently, blame and judgement, self-stigma , and AGE , (F(3, 178) = 42.82, p < .001, R2 = 0.42, R2adj = 0.41).

The individual predictors were examined further and indicated that Treated differently (t = - 3.234, p = .001) and blame and judgement (t = -3.983, p < .001) and self-stigma (t = -3.358, p < .001) were significant predictors in the model.

Males

Age vs. components male

AGE = 80.545558 - 0.66103 blame and judgement - 0.66133 self-stigma

Results of the multiple linear regression indicated that there was a strong collective significant effect between the Treated differently , blame and judgement , self-stigma , and AGE , (F(2, 158) = 67.25, p < .001, R2 = 0.46, R2adj = 0.45).

The individual predictors were examined further and indicated that Treated differently (t = - 4.65, p < .001) and blame and judgement (t = -4.593, p < .001) were significant predictors in the model, and was non-significant predictor in the model.

TS vs components male

Total Score = 5.193939 - 0.0555434 Treated differently

Results of the multiple linear regression indicated that there was a very weak collective non- significant effect between the Treated differently, blame and judgement, self-stigma , and Total Score, (F(1, 159) = 3.71, p = .056, R2 = 0.02, R2adj = 0.02).

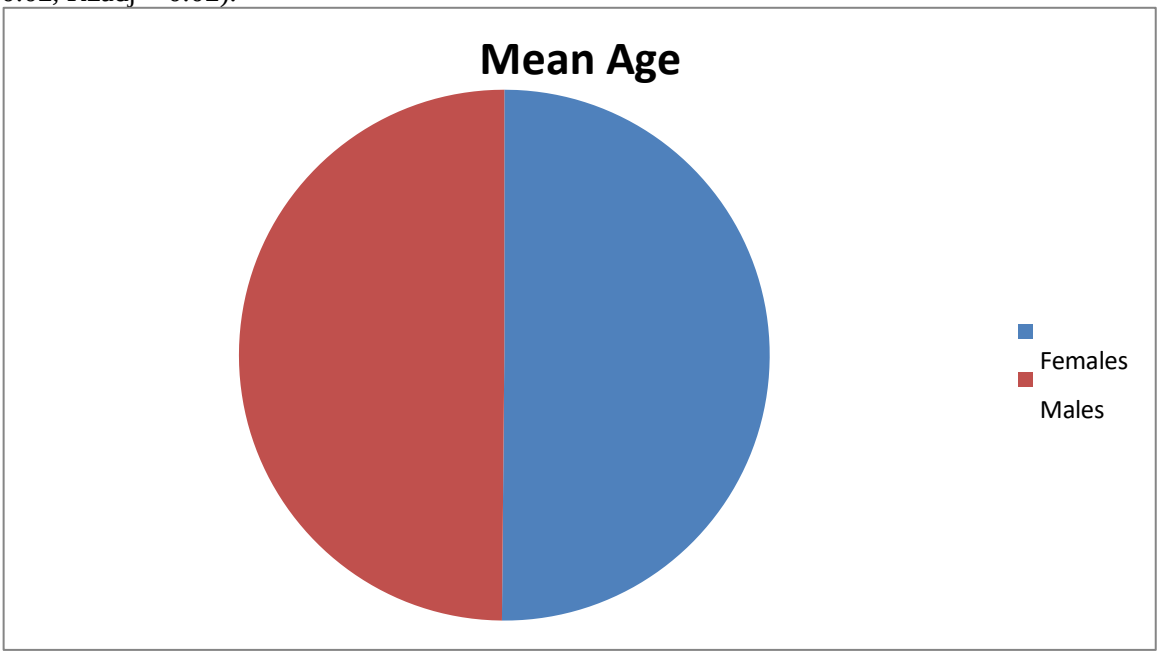

Figure 2 Population distribution

DISCUSSION

The results of the current study assist us in understanding the risk factors for type II diabetes. The study emphasises the part self-stigma plays in managing self-care. In line with our prediction, we discovered that self-stigma was substantially linked with self-care but not with the component of DSMQ & DSAS-2 that is handled differently. Diabetic-specific distress was higher among participants who said they had received different treatment as a result of having the disease, but they also reported better diabetic self-management and self-efficacy. This conclusion may be explained by the fact that those who are more self-assured in their ability to control their diabetes take more steps to do so. The stigma associated with diabetes has been somewhat correlated with the component of blame and judgement.

To determine whether an obese client's self-management and self-efficacy are being impacted, enough sensitization is required. Additionally, middle-aged males had a much higher prevalence of diabetes-related negative effects on self-stigma. One factor that affected both genders' levels of self-efficacy was the duration of diabetes mellitus. The study's findings point up the need of looking at a variety of diabetes stigma factors, including people's views of stigma in relation to health treatment as well as assessments of perceived life events. Future research may also shed more light on the possibility that type 1 diabetes has a bigger effect on self-stigma.

Females

- Blame and Judgement: The positive significant association between blame and judgement and TS suggests that females who experience higher levels of blame and judgement may have higher TS scores. This implies that societal blame and judgement towards individuals with diabetes may contribute toincreased distress or negative emotional experiences, which could impact their overall TS.

- Self-Stigma: The negative significant association between self-stigma and TS suggests that females with higher levels of self-stigma may have lower TS scores. Self-stigma refers to internalized negative beliefs or feelings of shame associated with having diabetes. This association implies that females who internalize negative attitudes towards themselves due to diabetes may experience increased distress or lower overall well-being, reflected in lower TS scores.

- Age: The significant predictors of age, including Treated differently, blame and judgement, and self-stigma, indicate that these factors may influence the age of females with diabetes. It suggests that females who experience being treated differently, higher levels of blame and judgement, or higher self-stigma may have younger ages. This could potentially be linked to the psychological impact of these factors, influencing the perception or experience of aging in females with diabetes.

Males

- Blame and Judgement: The negative significant association between blame and judgement and age suggests that males who experience higher levels of blame and judgement may have younger ages. This implies that societal blame and judgement towards males with diabetes may be associated with psychological distress or negative perceptions of aging, contributing to a sense of being younger than their actual age.

- Self-Stigma: Similar to blame and judgement, the negative significant association between self-stigma and age suggests that males with higher levels of self-stigma may have younger ages. This implies that internalized negative beliefs or feelings of shame associated with diabetes may also impact males' perceptions of aging, contributing to a sense of being younger than their chronological age.

- TS vs. Components: The non-significant association between Treated differently and TS in males indicates that, in the given data, being treated differently did not significantly influence the TS scores of males with diabetes. Other factors or components may play a more prominent role in determining the overall TS in males.

For females, higher levels of blame and judgement were positively associated with self -care, suggesting that societal blame and judgement may contribute to increased distress. Conversely, higher levels of self-stigma were negatively associated with TS, indicating that internalized negative beliefs about oneself due to diabetes may lead to lower overall well- being. Additionally, factors such as being treated differently, blame and judgement and self- stigma were found to have significant associations with age in females, suggesting that they may influence the perception or experience of aging in females with diabetes.

In males, higher levels of blame and judgement and self-stigma were associated with younger ages, indicating that societal attitudes and internalized negative beliefs may impact their perception of aging. However, in the regression model for TS vs. Components, being treated differently did not show a significant association with TS in males. Overall, these findings suggest that psychological factors such as blame and judgement and

self-stigma may play a role in the well-being and age perception of individuals with diabetes.

CONCLUSION

This study revealed a substantial relationship between self-stigma and self-care practises. In order to enhance patients' mental health and Quality of life, more experts must focus on this issue, and it is crucial to promptly remove stigma and unfavourable feelings. The development of support programmes for people from socioeconomically disadvantaged categories as well as strategies to improve self-care practises are also imperative.

DECLARATIONS

Acknowledgments

We thank everyone who supported and contributed to this study.

Funding

This research did not receive any specific grant or financial support from funding agencies in the public, commercial, or not-for-profit sectors.

Competing Interests:

The authors have no competing interests to declare.

Ethical Approval:

The study was approved by the appropriate ethics committee and conducted according to relevant guidelines and regulations.

Informed Constens

Not applicable.

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