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Hope, Humor, and Helplessness: Understanding Psychological Predictors of Distress in Type 2 Diabetics

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Abstract The present empirical study investigates the contributions of psychological factors - Hope, Humor, and Learned Helplessness - in managing Diabetes Distress among patients with Type 2 Diabetes Mellitus in the Indian context. The sample of 100 participants aged 25–60 years was recruited using purposive sampling. Standardized scales, including the Adult Hope Scale, Coping Humor Scale, Learned Helplessness Scale, and Diabetes Distress Scale, were administered. Statistical analyses involved descriptive statistics, Pearson correlations, and regression analysis using SPSS. Results indicated significant correlations between Diabetes Distress and Hope ($r = –0.281$, $p < 0.01$), Humor ($r = –0.413$, $p < 0.01$), and Learned Helplessness ($r = 0.501$, $p < 0.01$). Regression analyses showed that Hope (7%), Humor (16.2%), and Learned Helplessness (24.4%) accounted for a significant amount of variance in Diabetes Distress, with Learned Helplessness emerging as the strongest predictor. The findings suggest that psychological variables can significantly influence diabetes distress and offer a pathway for developing psychological interventions in diabetes care. Implications include designing integrated psycho-educational programs targeting positive psychology constructs. The study highlights the necessity of incorporating emotional and psychological frameworks into chronic illness management to alleviate related distress, promote better management, enhance physical health outcomes, and improve overall quality of life.

Keywords Hope, Humor, Learned Helplessness, Diabetes Distress, Positive Psychology, Health Psychology, Lifestyle Disorders, Diabetes Management, Well-Being

1. Introduction

Diabetes is a chronic health condition affecting millions globally. Type 2 diabetes, in particular, is a major concern significantly impacting quality of life, morbidity, and mortality [1,2]. Type 2 diabetes, while primarily a physiological condition, frequently results in psychological challenges, manifesting as diabetes distress—a form of emotional burden stemming from self-care demands and disease management [3], and is a common comorbidity among individuals with Type 2 diabetes. Diabetes distress can lead to decreased adherence to treatment regimens, poor glycaemic control, increased risk of complications, adverse emotional well-being, and reduced self-care [3,4]. Thus, it becomes imperative to address and explore the psychological correlates of Diabetes management and diabetes distress.

A comprehensive review of the extant literature revealed a substantial evidence base of research examining various aspects of diabetes, including psychological perspectives. Encouragingly, a notable number of studies have investigated intervention-based evidence of psychological correlates in diverse illnesses, including diabetes. However, a discernible gap exists in the literature, as relatively few studies have been conducted with Indian populations. Furthermore, certain psychological correlates remain underexplored in relation to diabetes distress, underscoring the need for further research to elucidate the complex psychological dynamics associated with diabetes in diverse contexts.

One of the positive psychological attributes, Hope, has been identified as a potential protective factor against diabetes distress [5]. Studies have shown that hope can lead to improved glycaemic control, enhanced quality of life, increased adherence to treatment regimens and better self-care [6]. While lack of hope can make diabetic people more distressed when unable to maintain a healthy lifestyle and disease-related behavior [7], it can also lead to uncontrolled diabetes behaviour, blood sugar instability, depression and diabetes distress. [6,7,8]. Prevalence of hope is found to predict psychological well-being among diabetics [9]. Hope therapy and logotherapy were found to be effective in diabetics to increase hope and reduce depression or distress. Therefore, hope becomes a prominent variable to be investigated in relation to diabetes distress [7,10].

Humor, another positive psychological attribute, has also been linked to diabetes [11,12,13]. It can be used as a coping strategy to ease diabetes stressors and contribute to improved physical and mental health outcomes, better glycaemic control, and overall well-being. Positive humor is linked to good diabetes control, health and well-being [12]. However, there are only a handful of studies exploring the role of humor in decreasing diabetes distress, particularly in the Indian population. Also, the linkage has not been studied exclusively for Type 2 Diabetes patients.

In contrast to the protective role of hope and humor, learned helplessness represents a maladaptive psychological response characterized by feelings of powerlessness and hopelessness, which has been associated with negative mental health outcomes, including depression, stress and anxiety [14,15]. It contributes negatively to glycaemic control and diabetes self-management [15,16,17]. However, the contribution of learned helplessness in diabetes distress is yet to be researched, particularly in the Indian context.

Thus, a comprehensive literature review reveals significant gaps in research on the role of hope, humor, and learned helplessness in diabetes distress. Therefore, this study aims to investigate the role of hope, humor, and learned helplessness in diabetes distress among individuals with Type 2 diabetes. By examining the relationships between these variables, this study seeks to enhance our understanding of the contribution of psychological factors in the development, maintenance and prevention of diabetes distress, and guide the development of interventions that improve physical health outcomes for individuals with Type 2 diabetes.

The study aims to highlight the psychological aspects associated with chronic illnesses and the contribution of psychological variables in maintaining and managing such chronic illnesses. Diabetes Mellitus Type 2, being one of the most common and debilitating diseases globally, needs to be understood and explored in association with various psychological variables affecting it. Review of literature revealed numerous potential psychological constructs which may affect diabetes and related distress, such as resilience, hope, spirituality, learned helplessness, optimism, humor, mindfulness, emotional dysregulation and others. However, three key variables - Hope, Humor, and Learned Helplessness - emerged as prominent factors with notable research gaps in association with diabetes distress. The direct relationships between these variables and diabetes distress remain unexplored. Moreover, the predictive utility of each variable has not been established, particularly within the Indian population, which can be useful for both psychological and medical domains. To fill the knowledge gaps, this study is designed to explore correlations among Hope, Humor, Learned Helplessness and Diabetes Distress. The study also aims to investigate the predictive utility of Hope, Humor, and Learned Helplessness for Diabetes Distress, in the Indian population. The study is significant to understand the contribution of these psychological variables to Diabetes Distress, and how they can be regulated to mitigate diabetes distress. It can serve as a base for the development of psychological interventions to alleviate diabetes distress. This study represents an interdisciplinary convergence of psychology and medicine, integrating insights from both fields to advance understandings of the complex interplay between psychological factors and medical outcomes.

2. Materials and Methods

2.1. Research Objectives

Research gaps suggest the need to explore the role of psychological variables in Type 2 Diabetes with the following objectives:

1. To study the relationship among Hope, Humor, Learned Helplessness and Diabetes Distress
2. To explore the interactive effects of Hope, Humor and Learned Helplessness with Diabetes Distress

2.2. Hypotheses

The research objectives directed the study hypotheses. These are as follows:

1. There is a relation among Hope, Humor, Learned Helplessness and Diabetes Distress
2. Hope predicts Diabetes Distress
3. Humor predicts Diabetes Distress
4. Learned Helplessness predicts Diabetes Distress

2.3. Sample

The study sample comprised 100 participants (N=100) with Type 2 diabetes, encompassing both male and female patients. The participants' ages spanned from 25 to 60 years. A purposive sampling technique was employed, wherein participants were recruited based on a predefined set of inclusion and exclusion criteria as follows:

- **Criteria of Inclusion**

1. Participants with at least 1 year history of Type 2 Diabetes Mellitus
2. Participants whose ages ranged from 25 to 60 years
3. Participants who were living with their families
4. Participants with a reading level of at least 8th grade

- **Criteria of Exclusion**

1. Participants with a history of any other mental and/or chronic physical illnesses
2. Participant with their organs removed or amputated
3. Pregnant Females
4. Participants living alone
5. Participants showing signs of significant distress in personal, professional or social life (E.g.: Divorce, Death)

2.4. Socio-Demographic and Clinical Factors of Participants

The socio-demographic characteristics of participants considered were age, gender, education, occupation, domicile, settlement type and family structure (Table 1). Participants of both genders (males and females) in the age range of 25 to 60, Indian domiciled, who studied at least till 8th class and are working in any sector, were included in the study. Their settlement type may be urban or rural, and family structure may be nuclear or joint. Participants living alone, far from families, were excluded to avoid confounding effects on distress.

Table 1. Descriptive Statistics for Independent Variables, i.e., Hope, Humor and Learned Helplessness, and Dependent Variable, i.e., Diabetes Distress (N=100)

Variables	Mean	S.D.	Skewness	Kurtosis
Hope	52.51	5.531	-1.365	3.227
Humor	19.32	5.268	-.362	-.964
Learned Helplessness	41.76	8.057	-.065	-.227
Diabetes Distress	27.99	7.922	.994	.573

Clinical criteria were set in consultation with both medical and psychological experts. Clinical factors taken into consideration included a diabetes diagnosis of at least 1 year and a routine checkup with doctors in less than 6 months. This ensures that the person has experienced various aspects of diabetes and is regularly monitored by a doctor for the prevalence of diabetes. Participants were asked about having other chronic illnesses, severe chronic complaints because of diabetes (retinopathy, diabetic foot, etc.), stress at home or work, and any anger issues, to rule out all the other sources of distress to avoid confounding. Participants' blood sugar and HbA1c were noted to ensure their diabetes status during recruitment. Participants with HbA1c ranging from 7-13 were included in the study, as below 7 is considered "pre-diabetic" and above 13 is considered "uncontrolled diabetes". Lastly, the exercise routine (Walking, Meditation, Yoga, Gymming and others) was taken into consideration, which is an important pillar of Diabetes Type 2 management.

2.5. Procedure

The research staff recruited patients from hospitals in consultation with the attending diabetologists / endocrinologists. Patients satisfying the predetermined eligibility criteria were briefed about the study in person by the research staff. An information leaflet about the study was also provided in printed form. Each participant provided written informed consent to enroll in the study and they had the right to withdraw from the research at any time without any consequences. Then, the English versions of the data collection tools were administered to participants to collect data. To ensure data integrity, survey questionnaires were administered in person, and participant confidentiality was meticulously maintained throughout the study duration and beyond. The study was critically reviewed and formally approved by the Institution's Ethics Committee, thereby ensuring compliance with established norms for research involving human subjects. The collected data were analyzed and interpreted using appropriate statistical methods.

2.6. Research Design

The present study employed a quantitative, cross-sectional, correlational design to investigate the predictive role of psychological variables—Hope, Humor, and Learned Helplessness—on Diabetes Distress in individuals with Type 2 Diabetes Mellitus (Figure 1).

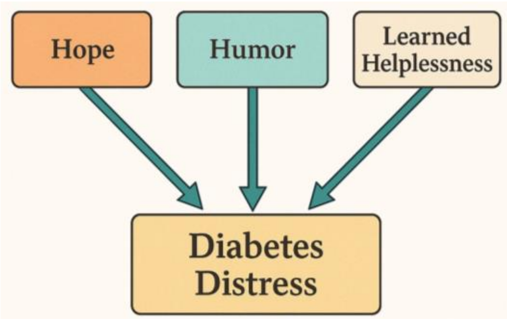

Figure 1. The conceptual research model illustrating the hypothesized relationships

2.7. Psychological Measures

The following psychological measures were used to assess the study variables - Hope, Humor, Learned Helplessness and Diabetes Distress.

- **Adult Hope Scale (AHS):** It is a 12-item scale given by Snyder et al. in 1991 [18] that measures the tendency of an individual to be hopeful for life outcomes and goal achievement. The responses are to be marked on a Likert scale of 8-point (1= Definitely False, 8= Definitely True). The scale comprises two subscales: (1) Agency, and (2) Pathways. The score range for this scale is 8 to 64, where 8–26 is Low, 27–45 is Moderate and 46–64 is High level of hope. Cronbach's alpha of the scale was 0.74 to 0.84 when it was developed. Construct and concurrent validity of the scale were established. The scale was chosen for this study due to its conceptually apt sub-scales, relevance to coping and psychological well-being, administration ease, and applicability to the adult population.
- **Coping Humor Scale (CHS):** The scale assesses the ability of an individual to utilize humor to deal with stressful situations in life. It was constructed by Martin and Lefcourt in 1983 [19]. The scale has 7 items to be answered on a Likert scale of 4-point ranging from "1= Strongly Disagree" to "4= Strongly Agree". The score range for this scale is 7 to 28, where 7–14 is Low, 15–21 is Moderate and 22–28 is High level of coping humor. Cronbach's alpha reliability of scale is 0.60 to 0.70 [20]. Concurrent validity was established for this scale. The scale was useful for this study as it assesses the coping aspect of humor, necessary for mitigating diabetes distress, with a feasible number of items.
- **Learned Helplessness Scale (LHS):** The scale is designed to assess an individual's perception of hopelessness and their belief that they cannot control their environment or outcomes. It is a self-report questionnaire with 20 items, given by Quinless and Nelson in 1988 [21]. The responses are to be marked on a Likert scale of 4-point ranging from 4= Strongly Agree to 1= Strongly Disagree. Cronbach's alpha was 0.85, which establishes internal consistency reliability. Concurrent validity of the scale was established. The score range for this scale is 20 to 80, where 20–40 is Low, 41–60 is Moderate, and 61–80 is High level of helplessness. This scale was taken for its ability to measure pure learned helplessness in the adult population.
- **Diabetes Distress Scale (DDS):** The scale is a tool for assessing diabetes-related emotional distress. It was designed by William H. Polonsky, along with their co-researchers [4]. It consists of 17 items which assess diabetes-related distress across four areas: physician-related distress, regimen-related distress, emotional burden, and diabetes-related interpersonal distress. The responses are to be marked on Likert-type scale of 6-point ranging from "1= Not a problem" to "6= A Very Serious Problem". The mean item score range for this total scale is 1 to 6, where 1–2 is Low, 3–4 is Moderate and 5–6 is High level of Diabetes Distress, where moderate and high levels are considered worthy of clinical attention. Cronbach's alpha (>0.80) and concurrent validity were established for the scale. It was found to be most applicable to the sample population for assessing general diabetes distress in both short and long-term of the disease.

3. Results

The descriptive statistics for the study variables are summarized in Table 1, which includes the mean, standard deviation (S.D.), skewness, and kurtosis. The mean value serves as an indicator of the average score for each variable, with Hope registering a mean score of 52.51 (high level of hope), Humor 19.32 (moderate level of Coping Humor), Learned Helplessness 41.76 (towards a lower level), and Diabetes Distress 27.99 (low level). The standard deviation, a measure of dispersion, quantifies the degree of variability in the scores for each variable, with values of 5.531 for Hope, 5.268 for Humor, 8.057 for Learned Helplessness, and 7.922 for Diabetes Distress.

The skewness provides insight into the distributional symmetry of each variable relative to the normal distribution curve. The skewness value for Hope was -1.365, indicating a notable negative skewness. The skewness values for Humor (-0.362) and Learned Helplessness (-0.065) approximated normality, exhibiting minimal deviation from symmetry. The skewness value for Diabetes Distress was 0.994, suggesting a slight positive skewness. Conclusively, all skewness values fell within the range of -2 to +2, indicating a reasonable approximation to normality.

The kurtosis provides a measure of the distribution's shape, specifically its peakedness or flatness, relative to the normal distribution curve. The kurtosis value for Hope was 3.227, indicative of a leptokurtic distribution characterized by a pronounced peak. In contrast, the kurtosis values for Humor (-0.964) and Learned Helplessness (-0.227) suggested platykurtic distributions, marked by a flatter curve. The kurtosis value for Diabetes Distress was 0.573, indicating a leptokurtic distribution. The values ranging from -2 to +2 suggest close to a normal distribution.

The reliability analysis of the scales employed in this study is presented in Table 2, which displays the values of Cronbach's Alpha coefficients for each scale. The results indicate that the Cronbach's Alpha value for the Hope scale is 0.784, the Humor scale is 0.916, the Learned Helplessness scale is 0.896, and the Diabetes Distress scale is 0.806, which are all indicative of excellent reliability.

Table 2. Cronbach's Alpha calculated for Hope, Humor, Learned Helplessness and Diabetes Distress

Variables	Cronbach's Alpha
Hope	0.784
Humor	0.916
Learned Helplessness	0.896
Diabetes Distress	0.806

Table 3 represents the correlational analyses of the variables in the study, viz., Hope, Humor, Learned Helplessness and Diabetes Distress. Pearson's correlation was calculated. Correlational analysis indicates statistically significant relationships among all the variables in the study. The table shows a significant negative relationship of Diabetes Distress with Hope (r = -0.281; p<0.01) and Humor (r = -0.413; p<0.01), and a significant positive relationship with Learned Helplessness (r = 0.501; p<0.01). Next, there is a significant positive relationship between Hope and Humor (r = 0.336; p<0.01). Learned Helplessness has a significant negative relationship with Hope (r = -0.559; p<0.01) and Humor (r = -0.581; p<0.01). All relationships are significant at 99% confidence level in a two-tailed correlational analysis.

Table 3. Correlational Analyses of Hope (IV), Humor (IV), Learned Helplessness (IV) and Diabetes Distress (DV)

	Hope	**Humor**	**Learned Helplessness**	**Diabetes Distress**
Hope	1	.336**	-.559**	-.281**
Humor	-	1	-.581**	-.413**
Learned Helplessness	-	-	1	.501**
Diabetes Distress	-	-	-	1

Note: **= significant at p < 0.01 (two-tailed)

3.1. Regression Analysis

The presence of significant correlations among the study variables provided a rationale for conducting regression analysis to explore the predictive relations between the independent variables (Hope, Humor, and Learned Helplessness) and the dependent variable (Diabetes Distress). This analytical approach enabled an investigation into the extent to which the independent variables could predict variations in Diabetes Distress.

Table 4. Regression analysis predicting Diabetes Distress from Hope

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	49.131	7.330		6.702	.000
Hope	-0.403	0.139	- 0.281	- 2.900	.005

DV: Diabetes Distress

(NOTE: Fit for Model R2 = 0.079; Adjusted R2 = 0.070; F (1,98) = 8.409, p>0.01)

Table 4 indicates that Hope explains 7% of the variance in Diabetes Distress. It emerged as a significant predictor of Diabetes Distress, with a standardized beta coefficient (β) of -0.281 and a p-value of less than 0.01.

Table 5 indicates that Humor explains 16.2% of the variance in Diabetes Distress. It emerged as a significant predictor of Diabetes Distress, with a standardized beta coefficient (β) of -0.413 and a p-value of less than 0.01.

Table 5. Regression analysis predicting Diabetes Distress from Humor

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	39.990	2.769		14.441	.000
Humor	-.621	.138	-.413	-4.490	.000

DV: Diabetes Distress

(NOTE: Fit for Model R^2 = 0.171; Adjusted R^2 = 0.162; F (1,98) = 20.16, p<0.01)

Table 6 indicates that Learned Helplessness explains 24.4% of the variance in Diabetes Distress. It emerged as a significant predictor of Diabetes Distress, with a standardized beta coefficient (β) of 0.501 and a p-value of less than 0.01.

Table 6. Regression analysis predicting Diabetes Distress from Learned Helplessness

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	7.405	3.654		2.026	.045
Learned Helplessness	.493	.086	.501	5.736	.000

DV: Diabetes Distress

(NOTE: Fit for Model R^2 = 0.251; Adjusted R^2 = 0.244; F (1,98) = 32.899, p<0.01)

4. Discussion

Descriptives statistics were calculated for each variable (Table 1), and good reliability was established for all scales with Cronbach's alpha values above 0.8 (Table 2). Initial bivariate analyses (Table 3) revealed significant relationships among the variables: diabetes distress was negatively correlated with hope and humor, and positively correlated with learned helplessness. These associations provided the rationale for regression analyses to explore the unique predictive contributions of each variable to diabetes distress.

- **Hope & Diabetes Distress**

As shown in Table 4, hope significantly predicted lower levels of diabetes distress (β = –0.281, p < .01), accounting for 7% of the variance. This finding can be explained with the Theory of Hope by Snyder et al. [22], which conceptualizes Hope as comprising two components:

agency – the motivational drive to initiate and maintain goal-directed behaviour, and pathways - the perceived capability of individuals to generate paths toward those goals. Individuals with good levels of hope feel more competent in adhering to the complex diabetes care routines, thus mitigating the psychological burden. Previous researches also support the exposition. For instance, Alipour et al. [23] found that higher levels of hope were associated with better psychological functioning and lower distress among patients with Type 2 diabetes. Similarly, Schiavon et al. [24] conducted a systematic review concluding that hope plays a significant role in enhancing emotional well-being and coping in chronic illness. These findings reinforce the protective influence of hope in managing the psychological demands of diabetes and reducing diabetes distress.

- **Humor & Diabetes Distress**

Humor also emerged as a significant predictor of lower levels of diabetes distress ($\beta = -0.343$, $p < .01$), explaining 16.2% of the variance (Table 5). This supports previous findings that humor acts as a protective coping strategy which regulates emotions and manages stress, contributing to greater psychological resilience and improved mental health outcomes. It is a cognitive-affective mechanism that facilitates reappraisal of stressful situations, promotes emotional detachment, and enables adaptive problem-focused coping. In the context of chronic illness like diabetes, humor can lessen perceived stress, improve interpersonal interactions, and protect against stress, depression and anxiety. Martin and Lefcourt [25] first developed the theoretical basis for coping humor, highlighting its role in stress buffering. More recent research by Sliter et al. [26] identified that individuals who adopt humor as a coping strategy reported lesser emotional exhaustion and greater psychological well-being. Samson and Gross [27] also identified humor as a regulatory tool that aids in emotion modulation during adversity. In the context of diabetes, McCreaddie and Payne [28] found that patients used humor to normalize their condition, enhance communication with healthcare providers, and alleviate emotional burden. Together, these studies reinforce the idea that humor may act as a useful strategy to mitigate the emotional demands of multifaceted stressors associated with diabetes, including treatment demands, complications, and long-term uncertainty.

- **Learned Helplessness & Diabetes Distress**

Learned helplessness demonstrated the strongest predictive effect on diabetes distress ($\beta = -0.501$, $p < .01$), accounting for 24.4% of the variance (Table 6). Seligman [29] asserted that repeated instances of uncontrollable and unfavourable events lead to a cognitive belief where individuals perceive themselves as incompetent and their actions as ineffective in influencing life outcomes. This results in demotivation, passivity, and psychological withdrawal. In the context of diabetes, diabetics who feel that their self-management efforts yield little or no results may develop this maladaptive belief, leading to reduced adherence, disinterest in diabetes management, emotional disengagement, and heightened distress. Empirical evidence from the literature supports this view. Fisher et al. [8] found that perceived lack of control and emotional burnout significantly predict diabetes distress, particularly among those who need to comply with complex treatment regimens. Likewise, DeWit et al. [30] identified that individuals with feelings of helplessness exhibited poorer glycaemic control and elevated depressive symptoms. Additionally, a study by Iversen et al. [31] reported that learned helplessness is negatively associated with self-care behaviour and psychological resilience in chronic illnesses. Conversely, individuals with lower levels of helplessness tend to display greater self-efficacy and emotional regulation—key factors in maintaining diabetes management and mitigating diabetes-related distress.

These findings have important theoretical and practical implications. Incorporating hope-enhancing and humor-based interventions into diabetes care may help reduce distress and improve psychological well-being. Interventions targeting learned helplessness—such as cognitive-behavioural or empowerment-based approaches—can promote a sense of control and better engagement. Integrating mental health support within diabetes care can foster a more holistic approach, potentially enhancing both psychological resilience and treatment adherence.

4.1. Limitations

1. The study's cross-sectional design limits the ability to draw causal inferences about the relationships among study variables.
2. The reliance on self-report measures may introduce biases and limit the accuracy of the findings.
3. The study's sample may lack diversity in terms of age, socioeconomic status, or cultural background, which may limit the applicability of the findings to diverse populations.
4. The study did not include longitudinal follow-up, which would have provided insight into the temporal relationships among the variables.
5. Other potential confounding variables were not accounted for in the study, such as social support or other coping strategies, which may have influenced the relationships between hope, humor, learned helplessness, and diabetes distress.
6. The study tools required 8th grade level of reading and writing in English, which limits the generalization of results to other populations.

Measures are taken to mitigate them, such as in-person administration and the use of standard instructions.

4.2. Suggestions

1. Longitudinal studies should be conducted to examine the temporal relationships among hope, humor, learned helplessness, and diabetes distress.
2. Future research should investigate the effectiveness of hope-enhancing interventions in reducing diabetes distress and improving glycaemic control, especially in the Indian context.
3. Studies should explore the role of humor in diabetes management, including its potential benefits and limitations.
4. Research should examine the impact of learned helplessness on diabetes-related outcomes, including adherence to treatment regimens and quality of life.
5. Future researches are encouraged to explore other psychological attributes associated with diabetic distress.
6. Future studies should investigate the relationship between hope, humor, learned helplessness, and diabetes distress in diverse populations, including individuals with Type 1 diabetes and other chronic illnesses.
7. Future researches should explore the potential benefits of integrating psychological interventions into routine diabetes care, and their impact on various health outcomes and overall well-being.

5. Conclusions

Conclusively, the present study emphasizes the psychological underpinnings of diabetes distress by identifying hope and humor as protective factors and learned helplessness as a risk factor among individuals with Type 2 diabetes mellitus. The findings support the integration of psychosocial components into diabetes care and underscore the importance of mental health screening and support in chronic illness management. Promoting psychological well-being can not only alleviate emotional distress but also enhance physical health outcomes and overall quality of life.

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Conflict of Interests

The authors declare that there were no conflicts of interest relevant to this article's content.

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