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THE IMPACT OF FEAR OF HYPOGLYCAEMIA ON DIABETES SELF-MANAGEMENT AMONG DIABETIC PATIENTS

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Abstract

This study investigated the impact of Fear of Hypoglycaemia on Diabetes Self-Management among Diabetic Patients. A quantitative research design was conducted using a a sample of N=100 adults among diabetic patients selected from a hospital in Multan. Standardized measures including the Hypoglycaemia Fear Survey-II (Worry) (Gonder-Frederick,2011) and Diabetes Self-Management Questionnaire (Schmitt, 2013) scale were administered for use with the local population, and Urdu versions of the scales were used to establish cultural and linguistic suitability. The findings shows that a significant positive relationship in fear of hypoglycaemia and diabetes self-management, shows a significant positive correlation (r=.28, p=<.05), indicating that managed fear acts as a motivational predictor for better treatment compliance. The findings shows that a statistically significant gender difference in fear of hypoglycaemia and diabetes self-management. Moreover, regression analysis shows that FOH was a significant predictor (negative) of diabetes self-management behaviors. These findings shows that the importance of psychological factors, notably fear-related responses, it can function as a proactive mechanism that improves disease management awareness. The study suggests that the gender-specific interventions and psychological screenings to help redirect hypoglycemic anxiety into proactive self-care behaviors.*

Keywords: Fear of Hypoglycemia, Diabetes Self-Management, Gender-Difference, Urdu Scales; HFS-II, DSMQ.

Chapter I
Introduction
Diabetes Mellitus

Diabetes Mellitus is a long-lasting metabolic disease that causes persistent hyperglycemia due to decreased insulin production and action. Millions of people worldwide are impacted by it, and it is linked to both short-term and long-term problems such as retinopathy, neuropathy, nephropathy, and cardiovascular disease. Lifelong self-care management, like as medication adherence, routine glucose monitoring, dietary modifications, and physical activity, are essential for effective diabetes control (American Diabetes Association [ADA]. According to recent epidemiological findings that the prevalence of diabetes has grown significantly in recent decades, positioning it as one of the foremost public health issues globally (International Diabetes Federation [IDF].

In low-and middle-income nations, such as Pakistan, the burden of diabetes is rising grow due to lifestyle changes, urbanization, and inadequate preventive care. The common signs are extreme thirst, constant urination, fatigue, and blurry vision. It is controlled using insulin, oral drugs, and lifestyle changes to protect harm to the heart, blood vessels, kidneys, and nervous system. Diabetes Mellitus is increasingly understood as a biopsychosocial condition, where psychological and emotional elements are essential determinants of treatment outcomes (Powers et al.,2020).

Fear Of Hypoglycaemia

One of the most prevalent and potentially harmful acute consequences of diabetes is hypoglycaemia, especially in patients receiving insulin or insulin-secretagogue therapy. A

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blood glucose level below 70mg/dL is clinically referred to as a hypoglycaemia. It can cause autonomic symptoms such as sweating, palpitations, trembling, and hunger, as well as neuroglycopenic symptoms like confusion, dizziness, blurred vision, seizures, and in extreme cases, loss of consciousness (ADA). In addition to posing hypoglyacemia episodes interfere with day-to-day activities and increase the chance of mishaps, hospital stays, and even death.

Fear of Hypoglycaemia (FOH) is a condition marked by ongoing concern, anxiety, and increased attention to blood glucose levels. FOH frequently arises from conditioning, in which avoidance behaviors intended to prevent future episodes are reinforced by previous severe or embarrassing hypoglycemic events (Anderbro et al., 2020). Patient's emotional health may be greatly affected by this fear, which may experience even in the lack of recent hypoglycemia episodes. It has been demonstrated that fear of hypoglycemia effect on health behaviors and diabetes-related decision-making. Patients' occurrences high levels of FOH may purposefully maintain higher levels of blood glucose, lower insulin dosage, excess intake of carbohydrates, or refrain from physical activity (Zhang.,2022).

Diabetes Self-Management

Diabetes self-management refers to as the everyday actions and choices made by people with diabetes to regulate their blood sugar and avoid both acute and long-term health issues. These actions generally involve consistently checking glucose levels, following recommended medication or insulin plans, eating a nutritious diet, staying physically active, and managing highs and lows in blood glucose fitting (Powers et al.,2020). As a foundation of diabetes care, successful self-management is closely linked to better blood sugar outcomes, decreased diabetes-related distress, and a lower risk of microvascular and macrovascular consequences (ADA).

However, psychological and emotional elements such as; stress, worry, fear, and coping skills also have an effect on diabetes self-management, making it more than just a behavioral strategy. Emotional reactions to diabetes-related experiences in particular, may interrupt self-care routines, resulting in maladaptive behaviors like as a skipping insulin, avoiding exercise, or consume excessively carbohydrates (Gonzalez et al.,2011;2021).

Chapter II

Literature Review

FOH has been recognized as an important psychological aspect affecting diabetes outcomes, including self-care activities. Hypoglyacemia, a negative outcome of diabetes therapeutic is high frequency and may become fatal especially in patients on insulin or insulin secretagogues. Repeated stress from hypoglyacemia or expecting it, frequently leads to chronic fear, anxiety and hyper-vigilance. Modern times investigating fear of hypoglycaemia indicates that it reaches beyond a rational safety concern to act as a psychological obstacle in the way for achieving optimal self-management of diabetes (Anderbo et al., 2020). Recent studies have shown a strong association between fear of hypoglycemia and maladaptive self-behavioral responses within diabetic patients. FOH was associated with poorer compliance to dietary advice lower physical activity, and intentional maintaining of high blood glucose levels. Patients with high fear scores would be more likely to interfere with insulin adjustments and exercise due to hypoglycaemia fears.

The successful management of diabetes need continuous attention to a complex range of set of self-care activities. Many individuals with diabetes report dissatisfaction with the demands of managing their condition and often experience anxiety, fears, and concerns about the possible appearance of difficult situation, irregular blood glucose levels, hypoglycemic events, and sensitivity of "diabetes emotional burnout" (Lawerence Fisher et al., 2015).

Diabetes distress (DD) refers to the emotional and behavioral challenges associated with diabetes and its management. Different from clinical depression, diabetes distress is linked to

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poor glycemic control and self-care behaviors, differentiating it from depression (Hessler et al., 2014; Fisher et al., 2015).

Diabetes self-management education and support (DSMES) address the holistic blend of clinical, educational, psychosocial, and behavioral dimension of care needed for daily self-management and offers the groundwork to help all people with diabetes manage their self-care with confidently and better health results (American Diabetes Association et al., Davis MJ et al., 2018; Margart A. Powers et al.,2020). Psychological factors including anxiety, emotional distress and maladaptive coping strategies serve as a negotiate in the connection between fear of hypoglycemia and self-management actions. It highlights that emotional distress related to diabetes increase fear responses, main to avoidance-based coping and less self-efficacy in managing the condition (Gonzalez et al.,2021). Emotional regulation difficulties have also been associating as an important predicator of FOH, recommend that individuals who try to manage negative emotions are more helpless to fear-driven self-management disturbance.

Gender differences in fear of hypoglycaemia have also been described in recent literature. Several studies specify that women tend to report higher levels of FOH compared to men, which may be assign to differences in emotional processing, caregiving roles, and health-related anxiety (Fisher et al.,2022). Female patients show greater fear-related behavioral changes, such as increased glucose monitoring and dietary limitation, while male patients were more likely to insufficiently fear symptoms. These results recommend that gender may moderate the association between FOH and diabetes self-management.

The integrated connection between fear of hypoglycaemia and diabetes self-management is more impact by clinical factors including duration of illness, previous severe hypoglycemic episodes, and level of diabetes, education, glucose monitoring level. Studies always show that patients with a history of severe hypoglycemic events intensify fear, which negatively effects their confidence in managing blood glucose levels (Holly O'Donnell et al.,2021). In contrast, structured diabetes self-care training programs became shown to reduce FOH by enhancing patient's knowledge, coping skills and ability to recognize and control over hypoglycemic episodes.

Rationale of the Study

Despite large-scale international research on fear of hypoglycaemia, data from the Pakistani context has not been fully addressed limited. Most limited studies highlight that clinical measure of diabetes management, with small focus on psychological factors like as fear of hypoglycaemia and their influence on diabetes self-management behaviors. Additionally, culturally particular factors including limited diabetes education, low health literacy, strong family involvement, and gender-based differences in health-seeking behaviors may specifically shape the incident and impact of fear of hypoglycemia among Pakistani patients.

However, insufficient data is available about gender-based differences in fear of hypoglycemia and self-care tasks. The lack of context-specific research using standardized measures of fear of hypoglycemia and diabetes self-care highlights the need for a systematic analysis to inform culturally appropriate, psychosocially evidence-based diabetes care interventions in Pakistan.

Significance of the Study

This study is significant as it examines fear of hypoglycaemia as a key psychological factor impact on diabetes self-management among diabetic patients. Whereas effective self-management is crucial for optimal glycemic control, emotional obstacles including fear of hypoglycaemia may negatively effect adherence to medication, dietary and physical activities, and blood glucose monitoring. In the Pakistani context, where research has primarily focused on biomedical outcomes, this study supplies valuable context-specific data by highlighting the

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role of psychosocial effect in diabetes management. This evidence may assist healthcare professionals in recognizing fear-related barriers to self-management and support the development of targeted, culturally appropriate and psychologically literate interventions to enhance diabetes outcomes.

Objectives of the Study

1. To examine the effect of fear of hypoglycaemia on diabetes self-care behaviors among diabetic patients.
2. To investigate the association between fear of hypoglycaemia and diabetes self-management.
3. To examine and compare the levels of fear of hypoglycaemia and diabetes self-management among male and female patients.

Hypothesis

1. Fear of hypoglycaemia is negatively effects on diabetes self-management behaviors in diabetic patients.
2. There is a significant positive association between fear of hypoglycaemia and diabetes self-management.
3. Male and female diabetic patients differ significantly in fear of hypoglycaemia and its influence on self-management behaviors.

Chapter III

Method

The present study aimed to investigate "the impact of fear of hypoglycaemia on diabetes self-management among diabetic patients". The study involved two main variables: Fear of Hypoglycaemia (Independent Variable) and Diabetes Self-Management (Dependent Variable). Gender was considered as a grouping variable to explore possible differences between male and female participants.

Research Design

A quantitative, cross-sectional research design was employed to examine the impact and relationship between Fear of Hypoglycaemia and Diabetes Self-Management among a participant at a single point in time. The study followed a correlational research framework utilizing standardized self-report measures to collect data from participants.

Sample

The sample size was consisting of N=100 adult diabetic patients, both males and females, aged 18 years and above.

Sampling Technique

Participants were selected through a purposive sampling technique from outpatients' diabetic clinics and hospital in Multan Pakistan (Nishtar Medical Hospital Multan).

Inclusion criteria

Participants both gender (males & females) aged 18 years and above diagnosed with diabetes for at least one year, who can ability to understand Urdu and provide informed consent were included in this study.

Exclusion criteria

Individuals diagnosed with any other types of diabetes like gestational diabetes, or these having severe psychiatric or cognitive impairments, were excluded from the study.

Instrument

Fear of Hypoglycaemia

The Hypoglycaemia Fear Survey-II Worry was developed by (Gonder-Frederick in 2011), to assess the severity and frequency of fear related to hypoglycemic episodes. It consisted of 18 items, rated on a 5-point Likert scale varying from 0 (never), to 4 (always), A cumulative score or mean score is calculated, with higher scores indicating greater fear. The

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HFS-W subscale has showed a high internal reliability (Cronbach's alpha >.85) and validity in adult diabetic patients. The Urdu translation scale was used in this study.

Diabetes Self-Management Questionnaire

The Diabetes Self-Management Questionnaire was developed by (Schmitt et al., in 2013), was utilized to examine the diabetes self-management behaviors across four subscales, and 8 items are reverse coded items: Glucose Management (GM), Dietary Control (DC), Physical Activity (PA), and Healthcare Use (HU). It comprises of 16 items, assessed on a 4-point Likert scale from 0 (does not apply) to 3 (applies very much). A cumulative score or mean score is calculated, with higher scores shows that better diabetes self-management behaviors. The scale has indicated that good reliability (Cronbach's alpha>.80) in prior studies. The Urdu translation scale was used in this study.

Demographic Sheet

A self-developed sheet was used to collect sociodemographic information such as gender, age, marital status, educational level, duration of diabetes, treatment, blood sugar monitoring, smoking status, duration of exercise, experience of fear of hypoglycemia etc.

Procedure

After obtaining ethical approval, permission was secured from the relevant hospital administration. Participants were notified about the aim of the study and were guaranteed of confidentiality. Written informed consent was obtained from all participants previous data collection. The questionnaire was administered individually, and participants were requested to complete them honestly. The completion of the questionnaire took estimated 20-25 minutes.

Data Analysis

Data were analyzed using IBM SPSS. Descriptive Statistics were used to summarize demographic variables. Regression analysis was performed to examine the impact of fear of hypoglycemia on diabetes self-management. Pearson Correlation was used to measure the relationship between variables, whereas independent sample t-test was utilized to analyze gender differences. Statistical significance was confirmed at p<.05.

Chapter IV

Results

Table 1

Independent Samples t-test for Impact of Fear of Hypoglycaemia on Diabetes Self-Management among Diabetic Patients (N=100)

	Females *(n=72)*		Males *(n=28)*					95% CI		
Variables	*M*	*SD*	*M*	*SD*	*df*	*t*	*p*	*LL*	*UL*	*Cohen's d*
1. Fear of Hypoglycaemia	32.49	5.08	34.5	5.29	98	1.82	0.036	-.18	4.3	0.39
2. Diabetes Self-Management	23.28	3.06	24.8	3.08	98	2.30	0.01	.22	2.9	0.49

Note. Statistically significant p<.05

Table one showed that Males indicated a higher mean score (M=34.5, SD=5.29) compared to females (M=32.49, SD=5.08). The *p*-value is 0.036, which is less than the standard alpha level of 0.05. There is a statistically significant differences between genders. Males in this sample experience a significantly higher fear of hypoglycaemia than females. The effect size (Cohen's d= 0.39) shows that this is a small-to medium effect. The males again scored higher (M=24.8, SD=3.08) than females (M=23.28, SD=3.06). The *p*-value is 0.01, which is highly significant. There is a statistically significant differences in how genders mange their

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diabetes. In this group males indicated that better self-management behaviors than females. The degree of effect size (Cohen's d= 0.49) is almost a moderate effect, shows a more evident differences between the groups.

Table 2

Correlation Coefficients for Impact of Fear of Hypoglycaemia on Diabetes Self-Management among Diabetic Patients (N=100)

Variables	*M*	*SD*	Fear of Hypoglycaemia	Diabetes Self-Management
1. Fear of Hypoglycaemia	32.49	7.8	--	.28*
2. Diabetes Self-Management	23.28	5.7	.28*	--

Note. * P<.05

Table 3 showed that a Pearson correlation was calculated to shows the association between Fear of Hypoglycaemia and Diabetes Self-Management in a sample of 100 Diabetic Patients (N=100). The results shown that the statistically significant positive relationship between fear of hypoglycaemia and diabetes self-care (r=.28*, p<.05). This results that as the level of fear regarding hypoglycaemia increases, patients tend to engage more actively in diabetes self-management behaviors. The findings indicate that a moderate level of fear may serve as a motivational factor for patients to adhere more strictly to their treatment and monitoring daily activities.

Table 3

Multiple Regression Analysis for Impact of Fear of Hypoglycaemia on Diabetes Self-Management among Diabetic Patients. (N=100)

					95% CI	
Variables	*B*	*SE*	*t*	*p*	*UL*	*LL*
Constant	30.480	4.284	7.114	.000	22.083	38.877
1. Fear of Hypoglycaemia	-.300	.082	-2.0	0.05	-.290	-.0317

Note. *p<.05 Statistically significant

The Multiple Regression analysis shows that Fear of Hypoglycaemia is a significant predicator of Diabetes Self-Management among the sampled patients (N=100). The Unstandardized regression coefficient (*B=-.300)* shown as a negative relationship, indicating that as a patient's fear of hypoglycaemia increases, their diabetes self-management scores tend to decrease. With a t-value of -2.0 and a *p*- value of 0.05, the model reaches the boundary for statistically significance. Moreover, the 95% Confidence Interval (CI) ranges from -0.290 to -0.0317; because this interval does not include zero, it confirms that fear of hypoglycaemia has a statistically reliable negative impact on the self-management behaviors of the patients.

Chapter V

Discussion

The present study investigated the impact of fear of hypoglycaemia on diabetes self-management among diabetic patients. The analysis showed that a statistically significant positive association between fear of hypoglycaemia and diabetes self-management, with a correlation of r=.28*, p<.05. This positive correlation shows that fear does not required act as a barrier; instead, it may function as a proactive or motivational mechanism. Patients who experience higher levels of concern among hypoglycaemic episodes tend to be more attentive

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in monitoring their blood glucose levels and compliance to dietary constraints to avoid such complications. Recent literature aid that this "functional fear" approach, indicating that a managed level of health-related anxiety can promote better adherence to treatment plans in chronic diseases (Smith et al.,2025).

FOH is a significantly predictor of DSM (B=-.300, p=0.05), shows that psychological fear accounts for a meaningful part of the variance in daily management behaviors. Whereas fear is often viewed negatively, these results indicate that it serves as a behavioral catalyst for proactive health activities. Patients with intensify fear may advisedly maintain higher blood glucose levels to avoid hypoglycemic episodes, which agreement effective disease management (Mesa Diaz et al., 2025). These findings support the view that fear of hypoglycemia is not only a psychological problem but also a behavioral causal factor of diabetes care.

Gender differences were also identified, with males' patients describing higher levels of fear of hypoglycemia compared to females. The greatest HFS-II Worry scores arised in the equal items in women and men, but the maximum gender differences in average scores showed across a variety of other items, some of which were related to social esteem (Gjerlow, Ellen; Nielsen, Erik W et al.,2014). This finding is consistent with existing literature indicate that men tend to experience greater diabetes-related emotional distress and worry, which may increase vulnerability to fear-based self-management difficulties. Such differences highlight the importance of examine gender-specific psychological needs when designing diabetes education and intervention programs.

Overall, the findings highlight that fear of hypoglycaemia plays a significant psychological role in diabetes self-management. Whereas moderate fear may increase compliance, excessive fear may require psychological interventions. Integrating emotional assessment and fear management strategies into diabetic care may improve treatment outcomes.

Conclusion

The present study indicate that fear of hypoglycaemia plays a significant role in diabetes self-management among diabetic patients. Gender differences were observed, shows that variations in fear levels across males and females. A significant positive association was established between FOH and DSM behaviors, thus regression analysis confirmed that fear is a significant predictor (negative) of self-management behaviors. These findings showed that the importance of considering psychological factors, specific fear, when planning interventions and promote for diabetic patients. Combine emotional and behavioral assessments can increase adherence and improve overall diabetes control.

Limitations

There were some limitations in this study. The cross-sectional plan limited conclusions about causality, preventing results about the direction of association between fear of hypoglycemia and diabetes self-management. Data were collected from a hospital, which may limit the generalizability of the findings to healthcare settings, urban and rural populations. Furthermore, reliance on self-reported questionnaire could introduce reporting bias, as participants may have over-or under-reported their behaviors and fear levels.

Recommendations

1. Future studies should evaluate multi-center samples and longitudinal designs to better understand the dynamics of fear and self-management.
2. Healthcare providers should integrate psychological screening and interventions into daily practices in diabetes care to reduce fear and improve adherence.
3. Culturally sensitive diabetes education programs should be applied in Pakistan, addressing both psychological and behavioral elements of self-management.

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4. Cognitive-behavioral and emotional regulation interventions can be specific to improve self-management actions.

References

American Diabetes Association. (2011). Standards of medical care in diabetes—2011. *Diabetes care*, *34*(Supplement_1), S11-S61. DOI: 102337/dc11-S011.

Anderbro, T., Amsberg, S., Adamson, U., Bolinder, J., Lins, P. E., Wredling, R., ... & Johansson, U. B. (2010). Fear of hypo glycaemia in adults with Type 1 diabetes. *Diabetic Medicine*, *27*(10), 1151-1158. DOI: 10.1111/j.1464-5491.2010.03078. x.

Fisher, L., Polonsky, W. H., Hessler, D. M., Masharani, U., Blumer, I., Peters, A. L., ... & Bowyer, V. (2015). Understanding the sources of diabetes distress in adults with type 1 diabetes. *Journal of Diabetes and its Complications*, *29*(4), 572-577. DOI: 10.1016/j.jdiacomp.2015.01.012.

Gonzalez, J. S., Fisher, L., & Polonsky, W. H. (2011). Depression in diabetes: have we been missing something important? *Diabetes care*, *34*(1), 236-239. DOI: 10.2337/dc10-1970

Genitsaridi, I., Salpea, P., Salim, A., Sajjadi, S. F., Tomic, D., James, S., ... & Magliano, D. J. (2026). of the IDF Diabetes Atlas: global, regional, and national diabetes prevalence estimates for 2024 and projections for 2050. *The Lancet Diabetes & Endocrinology*, *14*(2), 149-156. DOI: 10.1016/S2213-8587(25)00352-3

Gjerløw, E., Bjørgaas, M. R., Nielsen, E. W., Olsen, S. E., & Åsvold, B. O. (2014). Fear of hypoglycemia in women and men with type 1 diabetes. *Nursing research*, *63*(2), 143-149.

Holly O'Donnell, MD, Linda Gonder-Frederick, & Kimberly A. Driscoll. (2021). Psychometric properties of the hypoglycemia fear survey in a clinical sample of adolescents with type 1 Diabetes and their caregivers. *Journal of pediatric psychology, 47(2),*195-205. DOI: 10.1093/jpepsy/jsab082.

Hessler, D. M., Fisher, L., (2014). Understanding the sources of diabetes distress in adults with type 1 diabetes. *Journal of Diabetes and its Complications*, *29*(4), 572-577.

International Diabetes Federation. (2023). *IDF diabetes atlas (10th ed)*. Brussels, Belgium: IDF.

Li, S., Li, Y., Zhang, L., Bi, Y., Zou, Y., Liu, L., ... & Zhang, Y. (2022). Impact of fear of hypo glycaemia on self-management in patients with type 2 diabetes mellitus: structural equation modelling. *Acta diabetologica*, *59*(5), 641-650. DOI: 10.1007/s00592-021-01839-y

Lawrence Fisher, William H. Polonsky, Danielle M. Hessler & Vickey Bowyer. (2015). Understanding the sources of Diabetes Distress in Adults with Type 1 Diabetes. *J Diabetes Complications,29(4)*: 572-577.

Mesa Díaz, Á. M., Belmonte Lomas, S., Rodríguez de Vera Gómez, P., Llanes González, M. V., Mateo Rodríguez, C., Hidalgo Sotelo, L., & Martínez Brocca, M. A. (2025). Fear of hypoglycemia is linked to poorer glycemic control and reduced quality of life in adults with type 1 diabetes. *Frontiers in Endocrinology*, *16*, 1563410. DOI: 10.3389/fendo.2025.1563410.

Powers, M. A., Bardsley, J. K., Cypress, M., Funnell, M. M., Harms, D., Hess-Fischl, A., ... & Uelmen, S. (2020). Diabetes self-management education and support in adults with type 2 diabetes: a consensus report of the American Diabetes Association, the Association of Diabetes Care & Education Specialists, the Academy of Nutrition and Dietetics, the American Academy of Family Physicians, the American Academy of PAs, the American Association of Nurse Practitioners, and the American Pharmacists

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CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR

Association. *Journal of the American Pharmacists Association*, *60*(6), e1-e18. DOI: 10.1016/j.japh.2020.04.018.

Smith Lorraine, Tyla McNamara, & Jones, Mellissa Oxlade. (2025). Psychosocial experiences of adolescents with type 2 diabetes: a systematic review and meta-synthesis. *Canadian Journal of Diabetes. DOI: 10.1016/j.jcjd.2025.02.012*

William H. Polonsky, Lawrence Fisher, Umesh Masharani. (1999). Understanding the sources of Diabetes Distress in Adults with Type 1 Diabetes. *J Diabetes Complications,29(4)*: 572-577.

Zhang, L., Bi, Y., Zou, Y., & Wang, Y. (2022). Impact of fear of hypoglycemia on self-management in patients with type 2 diabetes mellitus. *Acta Diabetologica, 58(11),* 1481–1489. DOI: 10.1007/s00592-021-01839-y.