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INVESTIGATION THE PSYCHOLOGICAL COPING STRATEGIES AND MOTIVATION IN DIABETIC PATIENTS: A QUANTITATIVE ANALYSIS

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Abstract

Diabetes is a chronic and complex health condition that poses significant physical and psychological challenges, including the constant need to regulate diet, medication adherence, and blood glucose levels. The present study aimed to examine the effectiveness of psychological coping skills training in enhancing motivation and emotional well-being among individuals with diabetes. A key contribution of this research lies in addressing a methodological gap by employing a true experimental design incorporating both pre-test assessments and a control group. The study involved 60 participants aged 18–65 diagnosed with either type 1 or type 2 diabetes, who were randomly assigned to either an intervention (experimental) group or a usual care (control) group. Measures of quality of life, motivation, and coping abilities were administered before and after the intervention using standardized instruments, including the Coping Scale (Hamby et al., 2015). A total of sixty participants were enrolled in the study, equally divided by gender, with a mean age of 50.55 years (SD = 9.40). The Coping Scale demonstrated excellent internal consistency (α = .84) and a mean score of 39.11 (SD = 2.60). While the distribution exhibited slight negative skewness (-0.33) and minor deviation from normality (kurtosis = 0.39), it provided a reliable measure of coping skills. Independent samples t-tests revealed pre-intervention scores for either the control (Pre_C) or experimental (Pre_E) groups ($p > .05$). Post-intervention analyses similarly showed males had marginally higher mean scores in the control post-test (Post_C: M = 38.93) compared to females (M = 37.87), whereas females exhibited a slightly higher mean score in the experimental post-test (Post_E: M = 40.00) relative to males (M = 39.67). Small effect sizes indicated negligible gender influence on intervention outcomes, with females in the experimental group showing a marginally greater benefit. Notably, paired-sample t-tests demonstrated significant improvements in coping skills within the experimental group, with mean scores increasing from 37.77 (SD = 2.11) at pre-test to 39.83 (SD = 2.24)

at post-test, t (59) = -7.39, p < .001, and a large effect size (d = -1.35). In contrast, the control group experienced a slight, non-significant decrease in mean scores from 39.10 (SD = 2.98) pre-test to 38.40 (SD = 2.77) post-test, t (59) = 2.76, p = .11, with a small effect size (d = 0.29). Collectively, these results provide robust evidence that the coping-based intervention significantly enhances coping skills, irrespective of gender.

INTRODUCTION

Living with a lifelong condition such as diabetes often presents significant physical and emotional challenges. Its day-to-day management requires continuous monitoring of diet, exercise, medication adherence, and blood glucose levels effectively demanding around the clock attention. This ongoing effort can become exhausting and frustrating, especially when outcomes seem unsatisfactory despite consistent routines. Accepting the condition as a permanent part of life can be emotionally overwhelming, often accompanied by intense fear, anxiety, and frustration. Over time, individuals may gradually integrate the disease into their self-concept, recognizing that acceptance does not equate to giving up. Instead, it reflects a shift towards self-empowerment and control. Developing emotional resilience is central to managing diabetes effectively (Meriç et al., 2017; Arifin et al., 2020). From early stages of development, individuals are taught that adapting to emotional stress is part of psychological well-being. This has been supported by empirical research, which shows that those who adopt constructive coping strategies experience better psychological outcomes. Key coping methods include:

Mindfulness and Meditation:
Mindfulness refers to conscious awareness of the present moment. Regular practice of mindfulness based interventions has been shown to significantly reduce stress and enhance emotional regulation (Cheng et al., 2020; Owen, 2014).

Physical Activity:
Engaging in regular physical activity strengthens not only the body but also mental resilience. Incorporating exercises such as walking into daily life contributes to improved emotional stability (Egan & Dinneen, 2019; Arifin et al., 2020).

Social Support:
Access to supportive networks family, friends, or peer groups reduces isolation and enhances emotional and practical coping. A well-structured support system contributes positively to emotional well-being (Sirois et al., 2015; Meriç et al., 2017).

Proactive Information-Seeking:
Becoming informed about diabetes empowers individuals. An increased understanding of the condition correlates with improved treatment adherence and quality of life (Felton & Revenson, 1984; Arifin et al., 2020).

Self-Care Practices: Essential self-care behaviors include following dietary recommendations, timely medication, and glucose monitoring. Building consistent habits fosters a sense of personal control over health. These are evidence-based strategies that enhance day-to-day functioning (Whittemore & Dixon, 2008; Collins et al., 2009).

Motivation plays a key role in diabetes management. It is often rooted in personal goals improving health, avoiding complications, or enhancing life quality. A positive outlook can transform the experience of diabetes into a manageable aspect of everyday life. Some patients even describe the illness as a form of guidance a companion offering daily reminders for healthy living (Meriç et al., 2017; Arifin et al., 2020). Despite the complex nature of diabetes, many patients maintain hope and engage in simplified, proactive management. They cultivate positive relationships with healthcare providers, and such an empowered mindset helps reduce the psychological burden often associated with the disease (Meriç et al., 2017; Büssing et al., 2010).

Significance of the Study:
The present study addresses a critical methodological gap often overlooked in previous research on chronic illness management, the lack of pre-testing. Incorporating a pre- and post-test experimental design strengthens the reliability of findings and ensures the intervention's true impact can be accurately measured (Li et al., 2019). This research aims to assess the effectiveness of psychological coping skills training in enhancing motivation among individuals recently diagnosed with diabetes. Participants was being randomly assigned to either an experimental group receiving structured coping interventions or a control group receiving a placebo activity. By analyzing changes in motivation across both groups, the study was providing empirical evidence on the utility of psychological support in managing chronic illnesses. The findings are anticipated to contribute both theoretically by enriching the literature on psychological resilience and practically, by informing evidence-based mental health interventions within healthcare systems.

Methodology

Purpose

The primary objective of this research was to evaluate the impact of psychological coping skills training on enhancing motivation among individuals diagnosed with either type 1 or type 2 diabetes. Additionally, the study aimed to assess the intervention's influence on emotional well-being and overall quality of life. To achieve these objectives, an empirical design was implemented, allowing for systematic investigation of the psychological outcomes associated with the intervention.

Study Design:
A true experimental design using a pre-test and post-test control group format was employed to evaluate the effectiveness of a psychological intervention among individuals with diabetes. A total sample of 60 participants was randomly assigned to either the experimental group (n = 30) or the control group (n = 30). The experimental group received structured psychological support sessions aimed at enhancing emotional well-being in the context of living with diabetes. These weekly sessions, conducted over a period of six weeks, each lasting approximately one hour, focused on promoting calmness, reducing anxiety, encouraging positive thinking, and fostering illness acceptance. In contrast, the control group received standard diabetes management without any additional psychological support. This design enabled both within-group and between-group comparisons, offering a comprehensive assessment of the intervention's efficacy.

Measures:
The Coping Scale (Hamby, Grych, & Banyard, 2015): The Coping Scale is a self-report tool developed to assess how individuals respond to stress and adversity using cognitive, emotional, and behavioral strategies. It includes 13 items that capture adaptive coping behaviors, rated on a 4-point Likert scale from "1 = Not true about me" to "4 = Mostly true about me." The scale does not have distinct subscales but covers a broad range of coping responses, making it suitable for general use in resilience and trauma research. It has demonstrated strong internal consistency (Cronbach's alpha = .88 to .91) and has shown good construct validity through significant correlations with related psychological constructs such as subjective well-being, anger management, and posttraumatic growth. Designed for use in community and trauma-exposed populations, the scale provides a reliable and valid assessment of coping strategies (Hamby, Grych, & Banyard, 2015).

Procedure:
The present research aims to investigate the effectiveness of psychological interventions in enhancing motivation among individuals living with diabetes. A total of 60 volunteers was be recruited and randomly assigned to either a control group (n = 30) or an experimental group (n = 30). Participants in the control group was receive standard diabetes management with no psychological support, serving as a baseline for comparative analysis. In contrast, the experimental group was receiving a structured psychological care intervention designed to improve motivation by focusing on coping skills development. This intervention was address both the emotional and practical challenges commonly associated with diabetes. Motivation levels was being measured at two time points: a pre-test conducted prior to the intervention to establish a baseline, and a post-test

administered after the intervention to assess any changes in motivation, both within the experimental group and in comparison to the control group.

Results

Table 1

Descriptive Statistics of Demographic variables (N=60)

Variable	*n*	*%*	*M*	*SD*
Age			50.55	9.40
Gender				
Male	30	50		
Female	30	50		

Note. **n**=Frequency, %=percentage, M=mean, *SD*=standard deviation

Table 1 shows the descriptive statistics for demographic variables of the 60 participants. The average age was 50.55 years with a standard deviation of 9.40. The sample was evenly split by gender, with 30 males and 30 females, each representing 50% of the participants

Table 2

Descriptive Statics and reliability analysis of study Measure (N=60)

Scale	*k*	M	*SD*	*Range*	*α*	*Skew.*	*Kurt.*
CS	13	39.11	2.60	33-46	.84	-.33	.39

Note. CS=Coping Scale, k = number of items, *α* =Reliability, Skew. = Skewness, Kurt. = Kurtosis

Table 2 presents descriptive statistics, including mean, standard deviation, range, number of items, and alpha reliability coefficients for each scale. For example, the Coping Scale (CS) with 13 items (k = 13) has a mean (M) score of 39.11, a standard deviation (SD) of 2.60, and a score range from 33 to 46. The internal consistency (α) for the CS scale was .84, indicating good reliability. The skewness value of -0.33 suggests a slight left skew, while the kurtosis value of 0.39 indicates a distribution close to normal.

Table 3

Independent Samples t-test Results Comparing on gender before administering Intervention

	Male		Female				
Variable	M	*SD*	M	*SD*	*t(60)*	*p*	*d*
Pre _C	39.73	2.98	38.47	2.94	1.16	.25	-.42
Pre _E	37.60	2.32	37.93	1.94	-.42	.67	-.15

Note. M=Means, *SD*= Standard Deviation, *p*= Significance

Table 3 presents the results of independent samples t-tests comparing males and females on pre-intervention scores for two variables, Pre_C and Pre_E. The results indicate that males had slightly higher mean scores on Pre_C (M = 39.73, SD = 2.98) than females (M = 38.47, SD = 2.94), t (60) = 1.16, p = .25, with a small to medium effect size in the negative direction (Cohen's d = -0.42). For Pre_E, females had marginally higher mean scores (M = 37.93, SD = 1.94) compared to males (M = 37.60, SD = 2.32),

Table 4
Independent Samples t-test Results Comparing on gender after administering Intervention

	Male		Female				
Variable	M	*SD*	M	*SD*	*t*(60)	*p*	*d*
Post _C	38.93	2.85	37.87	2.66	-1.05	.30	.35
Post _E	39.67	1.98	40.00	2.53	-.40	.69	-.14

Note. M=Means, *SD*= Standard Deviation, *p*= Significance

The results following the intervention indicated differences between males and females on both the Post_C and Post_E variables, with p-values greater than -1.05. Specifically, males exhibited a slightly higher mean score on Post_C (M = 38.93, SD = 2.85) compared to females (M = 37.87, SD = 2.66), while females showed a slightly higher mean score on Post_E (M = 40.00, SD = 2.53) than males (M = 39.67, SD = 1.98). The effect sizes were small in magnitude for both comparisons suggesting minimal gender differences in intervention effects. Notably, in the Post_E group, females demonstrated a marginally greater effect of the intervention compared to males.

Table 5
Paired Sample t-test of (N = 60)

	Pre		Post					
Variable	M	*SD*	M	*SD*	*t*(60)	*p*	*r*	*d*
Experimental	37.77	2.11	39.83	2.24	-7.39	.00	.75	-1.35
Control	39.10	2.98	38.40	2.77	2.76	.11	.66	.29

Note. M=Means, *SD*= Standard Deviation, *CL*= Confidence Interval, *p*= Significance, *r*

Correlation

The paired sample t-test results in Table 5 indicate a significant difference in the experimental group's scores from pre- to post-intervention. Specifically, the experimental group's mean increased from 37.77 (SD = 2.11) to 39.83 (SD = 2.24), with a large, statistically significant t-value of -7.39 ($p < .001$), a strong correlation (r = .75), and a very large effect size (d = -1.35). This clearly shows that the intervention had a substantial positive effect in the experimental group. In contrast, the control group's mean decreased slightly from 39.10 (SD = 2.98) to 38.40 (SD = 2.77), with a t-value of 2.76, (p = .11). The correlation (r = .66) and effect size (d = .29) suggest only a small, non-significant effect. The intervention produced a significant improvement in the experimental group's scores, while no significant change was observed in the control group.

Discussion

This study critically evaluated the efficacy of psychological coping skills training in enhancing motivational levels and fostering emotional adaptability among individuals diagnosed with diabetes, utilizing a robust experimental design. The findings revealed statistically and clinically significant improvements in the experimental group's motivation and coping capacities post-intervention, underscoring the utility of targeted psychological strategies in mitigating the stress responses commonly associated with chronic illness. The sample was demographically balanced, featuring near-equal gender representation and a predominance of middle-aged adults, thereby providing a representative lens into coping behaviors among this clinical population. The reliability of the coping scale employed in the assessment was substantiated by a high Cronbach's alpha coefficient

of 0.84, indicating excellent internal consistency and measurement precision. The presence of large effect sizes further reinforced the practical significance of the intervention outcomes. Collectively, these results advocate for the integration of structured psychological interventions into standard diabetes care protocols. Notably, elements such as emotional resilience, proactive coping strategies, mindfulness practices, social support mechanisms, and psychoeducational awareness emerged as pivotal determinants of improved psychological functioning and quality of life. These findings are congruent with the biopsychosocial model, illuminating the intricate interplay between biological, psychological, and sociocultural variables in chronic disease management and patient well-being. The study by (Rezaei, Fathi, and Moradi 2018) examined the effectiveness of Coping Skills Training (CST) on psychological well-being among adolescents with type 1 diabetes. This randomized controlled trial found that CST significantly reduced levels of depression, anxiety, and stress, while also enhancing self-efficacy. These findings are directly relevant to the current study, Strength and Adaptation: Investigating the Motivational and Coping Mechanisms of Diabetes Patients as both focus on understanding how individuals with diabetes manage psychological challenges through coping strategies. The evidence from this trial supports the idea that strengthening coping mechanisms can improve emotional regulation and self-confidence in diabetes self-management. Thus, it reinforces the importance of assessing both motivational and coping mechanisms in diabetic populations as vital components of psychological resilience and adaptation. (Edraki et al., 2018)

Conclusion

Psychological coping skills training has been shown to significantly enhance both motivation and overall quality of life among individuals living with diabetes. These coping strategies exert a dual impact: not only do they mitigate emotional distress, but they also promote greater adherence to self-management regimens, thereby fostering a more constructive and empowered outlook toward illness management. The implementation of such psychological interventions is therefore imperative in diabetes care, as it ensures the comprehensive treatment of both emotional well-being and health-related behavioral compliance. Moreover, this study contributes meaningfully to the existing body of literature by addressing a notable methodological gap through the inclusion of both a pre-test and a control group. This design strengthens the empirical validity of the findings and provides more compelling evidence regarding the efficacy of psychological coping interventions in chronic disease management, specifically in the context of diabetes.

Implications of the current research

- It is imperative that healthcare practitioners integrate psychological coping skills training alongside standard medical interventions for individuals with diabetes, thereby facilitating a more holistic and patient-centered approach to care.
- Psychological preparedness and emotional adaptation have emerged as pivotal determinants in improving clinical outcomes for diabetic patients, particularly when specific psychological interventions are employed.
- The biopsychosocial model serves as a foundational framework for structuring comprehensive diabetes management programs, emphasizing the dynamic interplay between biological, psychological, and social dimensions of health.
- Incorporating psychological principles into medical training can enhance patient-provider communication and foster greater empathy, thereby equipping healthcare professionals with the necessary competencies to address the emotional and cognitive needs of patients more effectively.

Limitations

- The generalizability of the study findings is constrained by the sample size which may limit statistical power and external validity.
- The participant group comprised primarily middle-aged adults, thereby restricting the applicability of the results to younger or older individuals with diabetes who may exhibit

different coping mechanisms or intervention responsiveness.

- Cultural factors specific to the sample may have influenced emotional coping styles, potentially limiting the cross-cultural applicability of the findings. Caution is advised when attempting to implement these results in diverse sociocultural contexts.
- The intervention spanned a relatively short duration of six weeks, which impedes the ability to assess the medium- or long-term sustainability of psychological improvements in diabetes management.
- The absence of any psychological placebo intervention for the control group introduces potential bias and makes it difficult to account for the placebo effect, which could have influenced outcome differentials between groups.

Future studies suggestions

- Future studies should aim to include a more diverse sample, encompassing children, older adults, and individuals from various cultural backgrounds to enhance the generalizability and cultural sensitivity of findings.
- Extended duration study designs are recommended to evaluate the long-term sustainability and retention of coping skills and psychological outcomes over time.
- Comparative analyses of different psychological intervention modalities such as mindfulness-based approaches versus cognitive-behavioral training would provide valuable insights into the relative efficacy of these methods for diabetes patients.
- Further research should explore feasible strategies for integrating psychological coping skills training into routine diabetes care protocols, ensuring comprehensive and accessible patient support.
- The potential of digital and remote intervention platforms to deliver psychological support to a broader population of diabetes patients warrants systematic investigation, especially in underserved or remote settings.

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