

The Effectiveness of Support Group Program in Improving Self-Efficacy among Diabetic Support Group Members in Saudi Arabia

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ABSTRACT

Diabetes mellitus is one of the most prevalent chronic diseases that affect most of the population all over the world, this disease has many defective impacts on people's health self-confidence, and efficacy, so, establishing some supportive and educative programs to enhance diabetic patients' self-sufficiency is mandatory to give some of the positive impact on patients' health and self-esteem. This study aims to measure the self-efficacy level among Support group members diagnosed with type 2 diabetes in Saudi Arabia. Using an experimental study design on a group of diabetic patients to measure their self-efficacy level by conducting a pre- and post-questionnaire and recording their responses then analyzing them using Chi-square and paired t-test statistical programs. Findings showed that diabetes patients' perceptions of their abilities to manage their condition improved significantly after participation in the support group. Statistical analysis revealed that the experimental group's confidence in their capacity to manage their diabetes was much higher than the control group's. The study found that out of 370 diabetic patients (male and female) ranging in age from 30 to 50 years old, there is a statistically significant difference ($\leq 0.05 \alpha$) in the confidence level in managing the disease and the level of self-sufficiency development favoring the last group. It was noted that performing the support group to raise the diabetic patients' efficacy to deal with diabetes mellitus effectively is effective and valuable in raising diabetic patients' self-confidence and support. It is suggested that healthcare providers and institutions include support group programs in the usual treatment for diabetes patients, as these programs boost patients' confidence in their abilities and lead to better results.

Keywords: effectiveness; self-efficacy; diabetes; support group program; Saudi Arabia

INTRODUCTION

Type 2 Diabetes prevalence has been a walk to the city due to its impact on the human population in Saudi Arabia. The condition requires lifetime management, and home-based care and support groups play a vital role in maintaining the disease (Jain and Balasubramanian, 2019). The prevalence of type 2 diabetes is increasing worldwide, creating a major global health challenge. Type 2 diabetes is associated with serious complications that contribute to reduced quality of life and increased mortality (Taheri et al., 2020). Type 2 diabetes mellitus is one of the most prevalent noncommunicable diseases in India. The acute and chronic complications of diabetes impact the physical, mental, and social well-being of the patients, thereby placing a major burden on the health care system.

Adequate self-care practices among the patients will facilitate good glycemic control and prevent complications (Karthik et al., 2020). The increasing incidence of type 2 diabetes mellitus [T2DM] has resulted in extensive research into the characteristics of successful primary diabetes care. Even if self-management support and continuity are increasingly recognized as important, there is still a need for a deeper understanding of how patients' experiences of continuity of care coincide with their needs for self-management and/or self-management support (Husdal et al., 2021). Interventions that promote diabetes self-management education and support (DSMES) have proven effective at improving glycemic control

and encouraging lifestyle behaviors that can reduce the risk of diabetes complications and improve quality of life (Sinclair et al., 2020).

DM is generally associated with many short-term complications and long-term complications that allow a reduction in the client's physical ability to carry out activities and work (Puspasari & Farera, 2021). Chronic complications can affect the quality of life due to limitations in managing lifestyle, side effects, and a high treatment burden (Widayati, & Wardika, and Ridla, 2024). The emergence of low-quality-of-life problems in T2DM patients is also influenced by resilience. This resilience ability is related to how the effect of a person's adaptive mechanisms increases individual resilience (Kurdi et al., 2021). The lack of resilience in T2DM patients affects their overall quality of life (Yao et al., 2021). Resilience can affect patient self-efficacy and self-management processes in T2DM clients (Wang et al., 2022). There is a correlation between self-efficacy and coping mechanisms. The lower the self-efficacy, the less adaptive the coping mechanism (Kurniyawan et al., 2022). Multimorbid primary care patients with lower self-efficacy and a higher disease burden have a lower quality of life (Peters et al., 2019).

Diabetes-related social support groups (SSG) such as diabetes self-management education intervention (DSME) have significantly assisted people living with Diabetes (Salah and Alwabsi, 2024). The SSG groups help the patients in various ways, such as drug adherence and the emotional well-being of the patients (Salah et al., 2021a). They assist patients in self-management practices (Blythe, 2021). The paper discusses the effectiveness of support group programs in improving self-efficacy among diabetic patients who participated in a support group program (Abdelhamid et al., 2019).

The effectiveness of supportive programs in enhancing self-efficacy among diabetic patients cannot be overstated (Mariee et al., 2024). These programs, ranging from diabetes support groups to structured self-management interventions (Abd-Ellah et al., 2021), play a pivotal role in empowering individuals to take control of their health and effectively manage their condition. Through education, peer support, and access to valuable resources, these programs instill confidence in patients, enabling them to make informed decisions about their dietary choices, medication adherence, and lifestyle modifications (Salah et al., 2024). As self-efficacy grows, so does a patient's belief in their ability to cope with the challenges posed by diabetes, leading to improved self-care practices and, ultimately, better health outcomes (Powers et al., 2020). This positive feedback loop of increased self-efficacy and improved diabetes management underscores the crucial role of supportive programs in the holistic care of diabetic patients (de Wit et al., 2020).

It has been noted that the SSGs are culturally relevant for maintaining self-management of type 2 diabetes in Saudi Arabia. Support groups are essential in controlling diabetes self-care behaviors, especially among ethnic groups that suffer from healthcare discrimination (Garcia-Molina et al., 2020). The groups effectively provide long-term management practices such as diabetes-related self-care activities and psychosocial functioning awareness to improve quality of life (Davis et al., 2022).

Support groups have various benefits steered to manage patients with type 2 diabetes, the notorious type of Diabetes (Salah et al., 2021). Patients are supposed to change their lifestyles, modify their diets, and drug adherence through the noble course of support groups such as SSG. Support groups improve physical health by managing the patients' mental health (Magko et al., 2020). Besides, support groups boost self-esteem and reduce isolation, making patients enjoy a full life as an inspiration to others (Amanat et al., 2020).

Support groups can be either online groups or in-person support. They are structured and competent in diabetes management skills such as monitoring blood glucose levels and planning for nutritional needs (Kanaley et al., 2022). Support groups for individuals dealing with diabetes come in various forms, catering to patients' diverse needs and preferences. These groups can be either conducted online, offering the convenience of virtual interactions, or held in person, facilitating face-to-face connections (Grech et al., 2023). Regardless of the format, these support groups share a common goal: to provide structured and competent guidance in diabetes management (Yang et al., 2019). With skilled facilitators and knowledgeable members, these groups create an environment where individuals can exchange experiences, learn practical skills, and access up-to-date information about diabetes. The structured nature of these groups ensures that discussions are focused, informative, and conducive to learning, enabling participants to enhance their understanding of the condition and acquire valuable tools for effective self-management (Karaveli et al., 2024).

According to GARCIA-MOLINA, Laura et al. (2020) focus on the efficiency of managing Diabetes; she stated that controlling blood sugar levels is an effective strategy. Doing so allows patients to consume low-calorie foods. Patients are guided to consume nutritious foods in the recommended proportions and keep non-nutritious foods. Some of the recommended food items include Low-fat dietary products, Legumes, Unsalted seeds and nuts, Avoiding tropical vegetable oil and switching to olive oils (Pienaar and Reid, 2021), Taking lean meat from turkey and chicken, Taking non-fried fish such as Lake trout and salmon-rich with omega-3fatty acids, Vegetables, and fruits, Whole grains, including whole-grain bread, brown rice, and oatmeal (Bilous et al., 2021). Besides, the support groups advise patients to reduce their consumption of saturated fat, salty foods, fatty and processed meals, sweet food additives, beverages, sugary foods,

and partially trans-fat and hydrogenated foods (von Storch et al., 2019). This research aims to measure the self-efficacy level among Support group members diagnosed with diabetes in 2022.

METHOD

Study design

An experimental study was conducted to measure the self-efficacy level by using pre- and post-questionnaire responses. An experimental study aims to determine the nature of the link between two variables—the dependent and the independent ones—by changing the former and then watching how it affects the latter. The main characteristic of this design is that the independent variable(s) are intentionally controlled and altered to determine their direct impact on the result.

Setting

This study was carried out in the Saudi Arabian provinces.

Samples

Purposive sampling was chosen in this study, with a total sample of 370 participants as a sample size who completed the diabetes Self-Efficacy questionnaire and were divided into two groups. The first group was the control group, including 185 participants; the second group was the experimental group, including 185 participants, and we used it twice before starting with a support group and after for the same members. The questionnaire was distributed to all support group members who were diagnosed with type 2 diabetes mellitus and belonged to primary health care centers in different regions in Saudi Arabia during the year 2022. In this study, all participants who attended or logged in to face-to-face or virtual support group meetings agreed to participate.

The study included Saudis aged 30-50 years, both males and females, and participants who approved the consent. The exclusion criteria included those with considerable communication difficulties, including severely impaired hearing or vision, severe neurocognitive disorder, or a mental condition leading to non-communication.

Ethical Considerations

This study followed the general ethics and best practice guidelines in data gathering. Ethical approval was obtained from the ethical committee at the Ministry of Health (IRB. 23-7 M). Informed consent was taken from participants after an explanation of the study. The information taken was kept confidential and will not be used for purposes other than the study. Those who refused to participate in the study were excluded. A transparent and moral procedure was used to get informed consent. Each participant was provided with an information sheet that detailed the study's goals, methods, potential hazards, and advantages. After the study team answers their questions, participants may provide their written agreement in person or online. This procedure safeguarded participants' privacy by ensuring they were adequately informed and willingly consented to participate.

Measurement tool

The study used demographic data that included age, sex, marital status, and education level. Data were collected using a predesigned electronic-based self-efficacy questionnaire. It was designed by Mohebi et al. (2018) and includes three domains: achieving diabetic patients' goals, the level of confidence in dealing with the disease, and the self-efficacy development domains. This questionnaire consists of 20 items that assess the participants' confidence in managing various aspects of their diabetes, such as medication adherence, diet management, and blood glucose monitoring. Each item is rated on a 5-point Likert scale ranging from 1 ("Not at all confident") to 5 ("Totally confident"). The overall score is determined by adding together all the items' scores; a score of 100 indicates excellent self-efficacy, while a score of 20 is considered minimal. The efficacy of the support group program will be assessed by analyzing the scores.

Data collection

After getting approval from the university and Ministry of Health to conduct the study, informed consent was obtained to fill the questionnaire and then the questionnaires were distributed among diabetic patients for six weeks, then the data was analyzed using appropriate statistical tests. To determine the effectiveness of the support group program in enhancing self-efficacy among the participants. The research team used both online platforms and in-person distribution at support group sessions to get a good sample size and reliable results. Timely completion was encouraged by sending follow-up reminders. Reliability analysis showed satisfactory results (Cronbach's alpha = 0.92). To test construct validity,

exploratory and confirmatory factor analyses were performed. Exploratory factor analysis (EFA) was used to determine the number of latent factors (initially) or the pattern of relationships between the common factors and the indicators (Al Hashmi, & Al Yazidi, and Al Omari, 2022).

Statistical analysis

The collected data underwent analysis using SPSS Statistics 21.0. All sociodemographic data were analyzed and presented using descriptive statistical analyses such as frequency, percentages, mean, and standard deviations. The chi-square test and t-test were utilized for categorical data.

RESULT

This experimental study was conducted to collect its findings and compare before and after through the two groups (the first and the last response to support group exposure).

Table 1. Demographic Variables of Study Population

Variable	IG (N = 185)	CG (N = 185)	All (N = 370)
Age	Mean (+SD)		
	39.9 (6.3)	40.4 (6.04)	40.16 (6.17)
Gender			
	Male	40.3 (5.94)	39.59 (6.19)
	Female	40.4 (6.12)	40.54 (6.22)
Education level			
	Never/ primary	56 (6.14)	151 (6.4)
	Secondary/ tertiary	129 (6.01)	219 (6.04)
Marital status			
	Single	30 (6.077)	58 (6.24)
	Married	157 (6.27)	312 (6.15)

Part I: demographic characteristics

Baseline comparisons between the intervention and control groups showed that there were significant differences in Education level and marital status (Table 1). At baseline, the average age of the participants in this study was 40 years, where a majority were female, had not received any formal education or attended primary school, and married.

Part 2: The differences between groups regarding achieving diabetic patients' goals before and after conducting the support program

Among a total of 370 diabetic patients selected and tested, the findings revealed that there is a statistically significant difference at the level of significance ($p \leq 0.05 \alpha$) in the extent of the ability to achieve the goals of the study sample in favor of the last group due to the effectiveness of the support group program.

Based on the findings presented in the previous table, there is evidence of statistically significant differences between the mean scores of the initial and final groups in terms of their ability to achieve the goals of the study sample. These differences can be attributed to the effectiveness of the support group program to show that the significance level was 0.000, which is lower than the threshold of 0.05. The observed differences favored the final group, as indicated by an arithmetic mean value of 21.040, compared to 15.004 for the initial group.

Part 3: The differences between groups regarding the level of confidence in dealing with the disease before and after conducting the support program

The study's findings revealed a statistically significant difference at the significance level ($\leq 0.05 \alpha$) in the level of confidence in dealing with the disease among the study sample members in favor of the last group due to the effectiveness of the support group program.

The previous table reveals statistically significant differences in the mean scores between the first and last groups in terms of confidence levels in managing the disease within the study sample. These differences can be attributed to the effectiveness of the support group program and the level of significance (p-value) was found to be 0.000, which is lower than the predetermined threshold of 0.05. The observed differences favored the last group, with a mean score of 42.008, compared to the first group's mean score of 29.273. This indicates the effectiveness of the support group program in enhancing confidence levels in managing the disease

Table 2. Comparison Between Tested Group (First and Last) in the Ability to Achieve Goals

Group	Mean ± SD	T	p-Value
First	15.004 ± 2.004	-23.331	0.000
Last	21.040 ± 3.514		

Table 3. Comparison Between Tested Groups (First and Last) in Testing the Level of Confidence in Dealing with the Disease

Group	Mean ± SD	T	p-Value
First	6.136 ± 29.27	-20.348	0.000
Last	42.008 ± 8.625		

Table 4. Comparison Between Tested Groups (First and Last) in Testing the Level of Self-Efficacy Development

Group	Mean ± SD	T	p-Value
First	44.281 ± 7.295	-24.673	0.000
Last	63.047 ± 10.372		

Part 4: The differences between groups regarding the self-efficacy development

The study's findings revealed a statistically significant difference at the significance level ($p \leq 0.05$) in the level of self-efficacy development among the study sample in favor of the last group due to the effectiveness of the support group program.

Based on the findings presented in the previous Table, there is strong evidence to suggest significant variations in the average scores of the initial and final groups in terms of self-efficacy development among the participants in the study. These differences can be attributed to the impact of the support group program, as indicated by a statistically significant level of 0.05. Notably, the significance level was found to be 0.000, which is lower than 0.000. The results showed that the last group had higher scores, with a mean value of 63.047, compared to the first group, which had a mean value of 44.281, as shown in Figure 1. The findings indicate significant differences in the participants' ability to develop self-efficacy before and after participating in the group program. The evidence provided supports the validity of the third hypothesis in the study.



Figure 1. Comparison Between 2 Groups After and Before Program Intervention

DISCUSSION

Support programs are very beneficial in enhancing the self-efficacy of diabetes patients (Powers et al., 2020). This study aims to assess the level of self-efficacy among individuals diagnosed with diabetes who are members of a support group in 2022. The study compares the self-efficacy levels of the group before and after participating in support programs.

A total of 370 diabetic patients were tested, and the results show a statistically significant difference ($p=0.000$) in self-efficacy levels before and after the support program. The findings indicate that the participants who completed the support program had higher self-efficacy levels compared to those who did not. These results are consistent with a study by Secco Caviccholi et al. (2019), which also showed significant improvements in self-care capacity and action, as well as glycated hemoglobin, glycemic variability, and diastolic blood pressure, after implementing an educational program ($p < 0.0\%$). The assessment of self-care was conducted using capacity and action measures both before to and during the intervention, followed by an examination of the impact on metabolic regulation. The Cronbach's alpha values, first recorded as 0.895 and subsequently as 0.938, demonstrate the importance of using participatory approaches in support programs to empower persons with diabetes in properly managing and monitoring their condition.

Managing diabetes is crucial for enhancing self-assurance and self-efficacy and addressing any psychological issues in diabetic patients (Bilous et al., 2021). In this study, the researchers examined the impact of a support group on confidence levels, comparing the participants' confidence levels before and after the program. The results revealed a significant statistical difference ($p=0.000$) between the two groups, indicating that self-confidence increased after participating in the support program. These findings align with a study conducted by Von Storch et al. (2019), which included 60 adults with Type 2 Diabetes Mellitus (T2DM) in the intervention group (mean age: 59.4 years) and 55 adults in the control group (mean age: 58.4 years). At the start of the support program in this trial, the intervention group received a tablet computer, a glucometer, and a step counter. The intervention resulted in a statistically significant decrease in HbA1c levels compared to the control group. Individuals diagnosed with Type 2 Diabetes Mellitus (T2DM) may experience positive outcomes by participating in support programs that use telemedicine-assisted self-management interventions. These initiatives can provide innovative opportunities for illness management and preventing future disease progression. Additional research and empirical examination are required to assess the feasibility and effectiveness of applying the suggested technique on a larger scale. Stephani et al. (2018) discovered a significant difference ($p=0.000$) in the tested group before and after implementing the support program. This difference indicated an increase in self-efficacy among the participants. This finding aligns with the study conducted by Yari et al. (2023), which examined a sample of 106 individuals diagnosed with type 2 diabetes who were referred to service providers. The research aimed to determine the most effective strategy for managing this specific ailment. The assessment of results in this research was conducted by using a pre-existing demographic questionnaire and the diabetes self-care questionnaire, which were used to measure the level of self-sufficiency. The results of this study suggest that various factors, such as the belief in positive outcomes, emotional adaptation, the ability to overcome challenges, and learning from others, greatly influence the adoption of self-care behaviors among individuals diagnosed with type 2 diabetes. Significant improvements have been seen in the augmentation of the variables by using tactics such as exposing patients to good experiences, giving positive feedback, expressing verbal support, and strengthening existing networks. The main goal is to provide emotional, informational, and instrumental support for patients, while also boosting the pace of improvement. To boost patients' self-efficacy and social support, several measures may be used, such as allowing resource access, permitting direct observation, and fostering knowledge acquisition from others' experiences. Engaging in seminars, courses, and training programs is advised to bolster these systems' durability. Our results agree with and support Bandura's theory that social cognition holds water. The foundations of social cognitive theory for behavior change are influential social encounters, self-efficacy, and observational learning (Ilmiani, & Wahdah, and Mubarak, 2021). People are more likely to incorporate new habits when they see others doing well and believe in their capacity to do the same, according to this theory. Participants in this study were able to see and learn from others in the support group program who had successfully managed their diabetes (Koutroubas, and Galanakis, 2022). Members of the support group could engage in vicarious learning by seeing how others in the group handled similar problems and ultimately found answers. Along with the group's support and shared experiences, participants' self-efficacy—confidence in their ability to properly manage their diabetes—was likely bolstered by this observational learning (Rumjaun, and Narod, 2020).

Study results are supported by another theory of an explanation and predictor of health behaviors, the Health Belief Model focuses on people's attitudes and beliefs. The person may use the Health Belief Model (HBM) to learn more about how diabetic patients assess their risk of complications, the gravity of their disease, the benefit of being active in a support group, and the challenges they have while trying to manage their illness (Tehrani et al., 2022). The intervention's capacity to reinforce participants' convictions in the group's benefits is enhanced when it addresses these components via the support group program, which in turn improves participants' self-efficacy in diabetes management. The support group may also provide action signals, such as reminders or encouraging remarks, in line with the health belief model (HBM) paradigm (Khosravizadeh et al., 2020).

The implication of the study

Both healthcare practice and education stand to benefit greatly from this study's conclusions. Patients with diabetes may benefit substantially from improved self-efficacy, disease management, and general health when support group activities are integrated into routine treatment. Findings from the research highlight the need to include training in support group facilitation as part of the medical and nursing school curriculum. Healthcare providers of the future may be better prepared to use this intervention in clinical settings if schools teach their students how to manage and assist such groups. The impact of diabetes support groups on patients' perceptions of their abilities and their health outcomes over the long run could be the subject of future studies. More research on what makes support group programs work to boost self-efficacy would be helpful.

Limitations and strengths of the study

This study's experimental design is its strongest point as it permits a direct evaluation of the link between the intervention in the support group (the independent variable) and the participants' levels of self-efficacy (the dependent variable). Strengthening the study's internal validity, the researchers used a pre- and post-questionnaire to measure participants' self-efficacy levels before and after the intervention. The use of purposive sampling to choose participants is another asset; this method guarantees that the sample accurately reflects the Saudi Arabian diabetes community. Notwithstanding these merits, the research does include several caveats. The use of self-reported data has the potential drawback of introducing bias since people may exaggerate or understate their self-efficacy. If this is the case, the results may not be as reliable. Furthermore, while the cultural relevance of the research is enhanced by its location in Saudi Arabia, the results may not apply to other cultural or healthcare contexts due to this limitation. The research may have missed a potential subset of diabetics who would benefit from support group therapies as it did not include those with severe neurocognitive issues or those who had trouble communicating.

CONCLUSION

Patients with diabetes need ongoing encouragement and self-assurance to manage the challenges posed by their chronic illness. According to the results of this research, diabetic patients' self-confidence and support are much enhanced when they participate in support groups designed to help them cope with diabetes mellitus. When it comes to chronic conditions, these programs represent the gold standard for helping people cope. Initiatives like this bring individuals with diabetes together in a community where they may share experiences, learn from one another's mistakes and triumphs, and generally become active in their healthcare. The findings suggest that including support group activities in routine therapy for diabetes is an excellent strategy to enhance patient outcomes. This study highlights the relevance of healthcare providers' capacity to facilitate these groups, which is critical for the comprehensive management of long-term conditions like diabetes and has implications for nursing practice. The results of this research, taken as a whole, suggest that support groups may be a useful tool for improving diabetes care in Saudi Arabia. So, it is recommended to conduct support programs as part of patients' treatment and education programs in all healthcare settings, in addition, to performing all support programs to raise diabetic patients' self-efficacy.

Performing these programs on a wider range of participants and for other chronic disorders is also recommended. Larger sample sizes in other regions and under some healthcare professionals' investigations to measure other parameters that may affect the diseases' status are also needed in further studies. This may result in the establishment of tailored educational programs for nurses, teaching them how to conduct support groups, educate their patients continuously, and console them emotionally. These results have important implications for healthcare policy, as they may persuade healthcare providers to include support group programs in their standard chronic disease management practices. This would have a positive effect on patient outcomes, disease management, and healthcare expenditures related to poorly controlled diabetes. It is suggested that healthcare providers and institutions include support group programs in the usual treatment for diabetes patients, as these programs boost patients' confidence in their abilities and lead to better results. Healthcare providers should acquire the necessary skills to successfully lead support group interventions by completing training in group facilitation. Diabetes sufferers should have their support group programs tailored to their age, culture, and illness severity, among other things. It is crucial to continuously evaluate these programs and make adjustments depending on patient input and results.

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