

Psychological Impact of Diabetes Awareness and Improving Self-Management

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## Abstract

**Objective:** Research was conducted to identify if those with diabetes mellitus II (DM II) have better self-care management with or without education to maintain normal hemoglobin A1Cs (HbA1c). **Method:** Reviews of literature from nursing databases (CINAHL and ProQuest Central) with the terms “diabetes,” “HbA1c,” “qualitative” and “quantitative” were used. Literature supported how participants perceived DM II and how participants respond to self-management with and without health education.

**Results:** The literature search located 7 articles from CINAHL and 26 articles from ProQuest central. A total of 6 articles were selected that met our objective. Additional information was obtained from Centers of Disease Control 2016 (CDC, 2016).

**Conclusion:** All the articles concluded that there are psychological aspects that may affect optimum self-care management: How participants view support systems, self-identification with disease, and health professional roles in influencing self-management outcomes. Studies show that more needs to be researched on diet control, lifestyle changes, individual-focused education, and developing collaborative patient/healthcare professional relationships.

**Keywords:** diabetes, support systems, self-management, psychological, HbA1c

## **Psychological Impact of Diabetes Awareness and Improving Self-Management**

### Introduction

Every 5 minutes, two people die of diabetes-related causes and 14 adults are newly diagnosed (CDC, 2016). World Health Organization (WHO, 2015) predicts that diabetes will be the seventh leading cause of death by 2030 and 50% will die of cardiovascular disease. WHO estimates that 90% of diabetes is type II (WHO, 2015).

The purpose of this literature review is to identify issues that affect optimum self-help management. Age, disease progression, gender, geographic location and financial background were evaluated when selecting the articles to eliminate bias results. Participants were randomly assigned in each literature review.

Evaluation of individual perceptions identified barriers that lead to poor self-management. Increased health education has shown to lead to better HbA1c results literature outcomes. Raising awareness and knowledge of diabetes control and prevention should be considered as part of a public-health concern to promote better outcomes.

### Literature Review

*Gois, et al. (2012) are colleagues in the Psychiatry Department at the Santa Maria Hospital in Lisbon, Portugal. Their study was approved by the University Hospital Ethics Committee to integrate a screening protocol for detecting and treating depression and anxiety in patients with diabetes. All participants were 18–65 years old and the final sample included 121 adult patients with the mean age of 51.03. Data was collected by structured interviews asking questions about the participants' feelings of gains or losses*

*concerning diabetes. Self-screening questions were assessed concerning anxiety and depression and the participants' self-perception. Results show that 50.4% of the participants stated that they were diabetic and 49.6 % stated that they have diabetes. Fifteen percent of the participants stated that they had won something vs. 84.3 % who stated that they lost something. Depression was not found to be significant. "To have diabetes" had best diabetes psychological adjustments. Profits were seen with the young population with less depression due to a longer time having the disease and having more education. Older populations were seen to have more depression due to a shorter time with the onset of disease, less overall knowledge of the disease and worry about lifestyle changes. The researchers suggest "future investigation concerning those persons with diabetes who have profits with such a demanding and spreading disease" (Gois et al., 2012, p. s39).*

*Schafer et al. (2014) are colleagues of Primary Medical care at the University Medical Center Hamburg-Eppendorf and Kiel University in Germany. Their study was funded by the German Federal Ministry of Education and Research. Of the participants recruited, 30 in total, only 14 concluded the study. All participants were between the ages of 51 and 81 years old and a mean age of 73 years old. "Study participants were selected by their GPs in order to increase participation. Semi-structured face-to-face interviews were conducted with 14 patients. Interviews were audiotaped and transcribed verbatim. The sample size was determined by data saturation. Data were analyzed by qualitative content analysis. Categories were determined deductively and inductively" (Schafer et al.,2014, p. 1). Identified from the interviews were four types of barriers inhibiting participation in diabetes education.*

*Schafer et al. (2014) study found the following barriers:*

- 1. Statements and behavior of the attending physician influence the patient's decisions about diabetes education.*
- 2. Both a good state of health related to diabetes and physical/psychosocial comorbidity can be reasons for nonparticipation.*
- 3. Manifold motivational factors were discussed. They ranged from giving low priority to diabetes to avoidance of implications of diabetes education as being confronted with illness narratives of others.*
- 4. Barriers also include aspects of the patient's knowledge and activity. (p. 1)*

*The researchers suggest future investigation is needed concerning patients who refrain from diabetes education due to their unwillingness to change their diet. "This is a paradoxical situation, because patients refusing lifestyle changes might be more willing to comply if they were better informed" (Schafer et al., 2014, p. 6). Also, "Some patients fail to see the necessity of education, e.g. because they do not experience themselves as ill or they feel they already know and do enough while from the medical point of view there might be still room for improvement. Until now there is no clear concept of how to deal with these barriers" (Schafer et al., 2014, p. 6). The conclusions drawn from this article state that physicians must be more proactive in encouraging patients to participate in diabetes education, and a more individualized approach instead of group education may be beneficial (Schafer et al., 2014, p. 6)*

*Partiprajak et al. (2011) conducted research funded by the Secretariat of the Senate in Thailand. Partiprajak, RN, PhD, Hanucharurnkul, RN, PhD, and Piaseu, RN, PhD are School of Nursing faculty of Medicine at Ramathibodi Hospital in Bangkok, Thailand. Brooten RN, PhD is a Professor from the College of Nursing and Health Science at Florida International University in Florida and Nityasuddhi, PhD is an Associate Professor in the Department of Biostatistics and faculty of Public Health at Mahidol University in Bangkok, Thailand. The aim of their research is to measure outcomes of advanced practice nurse (APN) nurse-led support groups in an effort to identify contributions and justify the use of APNs to the healthcare; and provide empirical evidence required for policy development (Partiprajak et al., 2011, p. 288). They compared the differences in the outcomes of diabetes care between patients with diabetes mellitus attending an APN-led support group and patients who did not. The sample of 100 participants were taken from 4,000 diabetics receiving care from a 640-bed tertiary-care hospital in southern Thailand. A total of 100 participants were selected consisting of 44 placed into the support group and 56 in the comparison group ranging in age from 44 to 80; 81% were above age 60 (Partiprajak, 2011, pp 291–292).*

*The study stated that descriptive statistics were used to analyze the participants' demographics. Results using the Chi-square and Fisher's exact test were used to compare differences between the two groups. Results showed the support group had significantly lower systolic blood pressure (SBP) and higher self-care abilities. There were no significant differences in the other laboratory results including their HgbA1c; however, when these nonsignificant outcomes were examined using clinically important*

*recommended goals for monitoring outcomes in clinical practice, a higher percentage of patients in the support group had values within or near normal limits than those in the comparison group (Partiprajak et al., 2011, p. 295).*

*Research concluded that there are documented differences in outcomes of diabetes care for patients attending an APN-led support group compared to patients who did not. The study also shows that the APN contributed to the improved outcomes of patients in the support group. By examining APN effectiveness, data can be obtained that can assist in documenting improved patient outcomes, reduction in preventable hospitalizations, and decreased healthcare expenditures (Partiprajak et al., 2011, p. 301).*

*Torres et al. (2014) conducted research sponsored by an educational grant from Lilly Diabetes, International Diabetes Federation (BRIDGES), the Research Foundation of Minas Gerais (FAPEMIG). Torres contributed to project design, execution of the research, and writing the article. Santos collaborated with the relevant critical review of its intellectual content and final approval of publication. Cordeiro participated in execution of the research and writing of the article (Torres et al., 2014, pp. 27–28).*

*This qualitative study was written in a realist method with real-life account of the culture being studied (Schmidt & Brown, 2015, p. 401). The study was conducted in four basic healthcare units with a diabetes education program in the city of Belo Horizonte, state of Minas Gerais, in southeastern Brazil. The objective of the study is to understand home visits as an educational healthcare strategy to orient patients with diabetes mellitus on self-care practices. These home visits were to patients with diabetes mellitus who did not attend the diabetes education program offered by the basic healthcare unit. A total of*

*25 home visits were conducted and were scheduled according to the patients' availability. The study included 18 women and seven men with a mean age of 63.7 years for both sexes. The mean duration of the disease was 15 years for men and 7.7 years for women. Of the patients, 52% had completed elementary school or less and 28% were illiterate (Torres, 2014, pp. 24–25).*

*According to the study, data collection occurred during the home visits. A conversation map was used to direct the educational teaching featuring sections with images and graphics on different subjects such as the patients' feelings about diabetes mellitus; the pathophysiology of the disease presenting the mechanisms of action of insulin in a playful manner; explanation of the difference between the acute and chronic complications of uncontrolled diabetes mellitus and illustration of the triad of self-care such as a healthy diet, physical exercise and proper use of medication. Different themes on the importance of self-care were presented and doubts were clarified (Torres et al, 2011, p-27).*

*Carrying out home visits was difficult due to demographic location, the absence of patients, housework obligations of housewives and the presence of many family members in the household that hindered interaction between the patient and healthcare professional. Difficulties related to individuals may also be cited: low degree of cognition, low education, the shaken emotional state of the individual due to personal problems, and nonacceptance of the disease (Torres et al, 2011, p-27).*

*Various reasons, including difficulty of mobility, frequently lead to poor adherence to self-care activities. In these cases, home visits have emerged as an educational healthcare strategy. The home visits strategy brings healthcare education to*



*patients with difficult access to basic healthcare service and is a tool that should be studied and worked with in order to increase its viability for healthcare services (Torres,2014, p.27).*

*Darner et al. (2012) conducted research supported by a grant from Sanofi Aventis as part of the Austrian Diabetes Initiative. Dorner, Stein, and Reider are from the Institute of Social Medicine, Center for Public Health, Medical University of Vienna, Rooseveltplatz. Dorner developed the idea of the manuscript and was responsible for data analysis contributing to the manuscript draft. Stein also contributed to drafting and writing the manuscript. Raider contributed to the interpretation of data and critically revising the manuscript. Lackenger is from Sportunion, Vienna, Austria, and contributed to the interpretation of data and critically revising the manuscript. Schindler and Ludvik are from the Department of Medicine III, Division of Endocrinology and Metabolism, Medical University of Vienna, Austria. Schindler contributed to drafting and writing the manuscript and Ludvik contributed to the interpretation of data and critically revising the manuscript (Darner et al, 2012, pp. 2038–2039). The aim of this research was to evaluate self-knowledge about diabetes mellitus (DM), to assess health knowledge, and to evaluate consequences of health knowledge and consequences of the disease (Dorner et al, 2012, p. 2032).*

*Although not clearly stated, the research method indicates that the research question is “How can increasing health information in populations with and without DM help to relieve misconceptions and underestimations of health consequences to improve management of the disease and increase public awareness?”*

*Most research regarding health knowledge and health literacy associated with diabetes mellitus has focused solely on patients with diagnosed and treated diabetes. Little is known about diabetes-related health knowledge in individuals without known diabetes. This population is, however, also important, because these individuals can be at high risk for diabetes or even suffer from undiagnosed diabetes (Dorner, et al., 2012, p. 2023).*

*Participants were selected from 30,000 panelists online and 20,000 panelists using traditional mail. Of these 50,000 panelists, 4,350 online panelists and 5,200 postal panelists were selected at random. The study was conducted using surveys from randomized participants by region and demographic location. All participants were at least 15 years of age. A response rate at the end of the study accounted for 42.1%. The survey assessed for influence of diabetes knowledge; the level of knowledge was used as the dependent variable and was dichotomized as feeling “very well informed” or “rather well informed” vs. “very badly informed” or “rather badly informed.” The variables “being affected by diabetes mellitus,” “having a family member with diabetes,” “living with a partner” and “educational level” (primary, secondary and tertiary education) were used as categorical variables, and household net income, city size, BMI and age were used simultaneously as metric variables in the model (Dorner, et al., 2012, p. 2033–2034). Coding, data reduction, and computer-assisted technology was used to compile and sort the data. Differences in age, gender, country of origin, and city size were calculated by using a logistic analysis and multivariate regression model (Dorner, et al., 2012, p. 2033). Results of the analysis indicated that increased knowledge helps to manage the disease efficiently and decreases limitations caused by the disease process.*

*Women rated their knowledge about DM higher than men, although 20.5% of men and 17.7% of women with DM rated their level of knowledge as “rather bad” or “very bad.” Age was associated with an increased chance of being well informed about DM in both genders. People diagnosed with diabetes rated their disease knowledge higher than people without DM (Dorner, et al., 2012, p. 2034).*

*Total populations that linked impaired wound healing and eye disease was 65.5% in men and 78.6% in women. Stroke and atherosclerosis was much lower, at 39.6% in men and 15.3 % in women. Participants that felt better informed about DM correctly knew that DM can lead to various diseases (Dorner, et al., 2012, p.2035).*

*As far as restrictions in daily life, a majority identified that DM influenced their diet more than sports. Participants who felt more informed indicated fewer restrictions on daily activities and better quality of life than those who felt uninformed. More men indicated that information can be obtained from doctor consults and the internet. Women indicate that information can be obtained from a pharmacy, newspapers, magazines, folders, support groups, and brochures (Dorner, et al., 2012, p. 2035).*

*The study concluded that a lack of knowledge about DM is associated with greater misconceptions about restrictions due to the disease and with greater underestimations of disease consequences. Greater knowledge about DM was seen by personal DM status, family members, more highly educated individuals, in large city size and older age. Despite emerging sources of information, doctors should be aware of their role not only in DM management, but also in DM prevention (Dorner, et al., 2012, p. 2037).*

*The author suggests that further research could include studies regarding an increase in DM knowledge and health literacy in general populations on the risk of developing DM. Large proportions of patients and nondiabetic individuals do not feel fully informed. Health knowledge needs to be improved in order to facilitate a sufficient health literacy, which in turn would lead to improved metabolic control of DM and improve prevention in nondiabetic population (Dorner, et al., 2012, p.2038.*

*Murphy et al. (2011) conducted a study funded by the Health Research Board (HRB) in Ireland and an educational grant from Nova Nordisk (Murphy et al., 2011, p. 1290). Murphy, MSc, PhD, RN, BA, RNT, Casey, BA, MA, PhD, RN, and Dinneen, MD, MSc, FRCPI, FACP are faculty at National University of Ireland. Lawton, BA, PhD and Senior Researcher for Population Health Science, School of Clinical Science and Community Health at the University of Edinburgh Medical School in Edinburgh. Brown, RN, National Care Advisor, Diabetes in UK in Belfast, Ireland (Murphy et al., 2011, p. 1282). Murphy et al. (2011) created the study design, data collection, and analysis. Casey, Murphy, Lawton, and Brown prepared the manuscript (Murphy et al., 2011, p. 1290).*

*Populations are showing a continuous increase in diabetes every decade. Health education and information evaluated in literature correlates to decreased HbA1c levels, decreased diabetic-related emergencies, reduced hospitalization and better lifestyle management as positive outcomes with health education and information related to disease management. The aim of this study was to understand the experience of participants in the dose adjustment for normal eating (DAFNE) program and to identify factors that influence participants' implementation of the self-management guidelines. The method used started as purposeful sampling and eventually merged to theoretical rational sampling. This was a grounded theory*

*with a concurrent comparative method applied. Forty participants from five DAFNE programs around Ireland were selected with equal distribution. The study reached completion in 24 months. Only participants that finished the program were selected. The idea was to gather information about and general insight into members' perceptions of healthcare. Data came from direct interviews with their consent. Questions were geared to understanding experiences of the DAFNE program, type of support offered, and the extent of information that could be used in everyday life. These questions led to other questions within the same topic. It was intended to have an open-ended dialog (Murphy et al., 2011, p.1283-1285).*

*Comparing of data was evaluated continuously while other data was being collected. Axial coding was used to join concepts together. Concepts were broken down into factors. Four criteria needed to be satisfied: Each category needed to be credible, purposeful, confirmed, and useful. An indexing software package facilitated data coding and retrieval. All members of the research team had to agree on selections and transcripts in order to be considered valid. All participants had to complete the DAFNE program and be willing to share valuable insights (Murphy et al., 2011, p. 1285–1286).*

*Results: The major strength of this study indicated that one key category was “being in control.” Factors that link to this category were knowledge, motivation, support, relationship shift, and empowerment. Limitations to this study were that the education program was the first structured group in Ireland and results could not compare satisfaction or motivation to the general diabetic populations outside the DAFNE program (Murphy et al., 2011, p.1286-1288). The populations in this study completed the program and more likely found benefit in the newly found information. Not mentioned is the number of people in Ireland who have little interest in optimizing their diabetes-management care. “Why go to a support meeting if I can just give*

*myself more insulin, eat a donut, and lounge out on the couch?” The DAFNE participants mentioned choices. They look at food as a value. “Do I want to skip the insulin injection by resisting the donut?” “Will my numbers (HbA1c) be normal if I take my insulin as it is intended?” “Will my quality of life improve if I don’t live a sedentary lifestyle?” (Murphy et al., 2011, p. 1286-1288).*

*The author states that all participants described relationships that they had with health professionals prior to DAFNE as paternalistic and judgmental. They suggested that the prior system lacked continuity and that interactions with health professionals were often focused on being scolded. They looked at healthcare professionals as people in white coats who look at your chart and then they take out the big bat and give you a few slaps (Murphy et al., 2011, p. 1287). Health professionals require person-centered qualities and associated skills that enable the collaborative relationship. These qualities and skills will also help health professionals adopt an empowering approach when working with people with diabetes. By acknowledging that the person has valuable experience and important expertise regarding their chronic condition, health professionals can help the person develop their internal resources so that ultimately the person feels in control and is empowered (Murphy et al., 2011, p. 1289–1290).*

## Conclusion

Research provided insight to psychological components that affect optimal self-care management of diabetes mellitus. How participants view support systems, self-identification, and the health professional roles in influencing self-management outcomes were evaluated. Diabetes mellitus is continuously increasing every decade and more needs to be done to educate the public

about prevention strategies. Healthcare professionals need to be aware that developing a non-judgmental cohesive provider/client relationship is pertinent to empowering a plan of care that suits both individuals.

It was identified that people with early-onset DM had more knowledge about the disease. People with late-onset DM may have less knowledge about the disease and find that it is more of a threat to their quality of life. Many people go undiagnosed until there is a problem that requires medical attention. Diabetes mellitus can be viewed as any other debilitating disease, and people may have to undergo stages of grief for self-identification. Denial, anger, sadness, bargaining, and acceptance are obstacles that need to be addressed before a true self-care management plan can be implemented. Learning that you are a person with DM and not “I am a diabetic” is a way to recognize self.

Support groups are a great way to learn self-care strategies. Learning the pathophysiology about the disease can help prevent misconceptions and underestimations of consequences of poor self-management leading to better adherence. Support groups build a foundation of knowledge that people can use to make choices concerning self-care.

### Discussion

Building a cohesive provider/client relationship is necessary for optimal self-care outcomes. The focus should be non-judgmental and aimed at empowerment and motivation. Showing empathy and supporting client experiences or expertise can be beneficial for self-care strategies. More needs to be researched about self-care outcomes for home-care clients that may have debilitating factors preventing them from obtaining information in support-group settings. Tools should be developed to monitor outcomes in the home-care setting to develop strategies for optimal self-care such as nutrition and activity levels. More research should be evaluated

concerning people in communities outside the support-group settings to evaluate people's perceptions of healthcare and how they view disease progression. Optimizing self-care strategies and informing the public about diabetes prevention can lead to decreased hospitalizations, decreased health expenditures, and healthier populations. Diabetes-prevention strategies should be a focus of public health worldwide to bring down the current trends.

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