A STUDY TO FIND ASSOCIATION BETWEEN SELF-CARE, HEALTH PROMOTION BEHAVIOR AND SELECTED SOCIO-DEMOGRAPHIC VARIABLES IN A SELECTED AREA

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ABSTRACT

Diabetes is more common in older adults, has a high prevalence in long-term care (LTC) facilities, and is associated with significant disease burden and higher cost. The heterogeneity of this population about comorbidities and overall health status is critical to establishing personalized goals and treatments for diabetes. The risk of hypoglycemia is the most important factor in determining glycemic goals due to the catastrophic consequences in this population. The research approach adopted for this study was quantitative. The research design adopted for this study was exploratory. The study was conducted at a selected community area of Bangalore. In the survey accessible population consists of patients type 2 diabetes. The study sample consists of patients with type 2 diabetes. The sample size 100 patients with type 2 diabetes. The sampling technique adopted in the present study was simple random sampling.

Key Words: *diabetes, Bangalore, older, old age, long term care.*

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INTRODUCTION

Diabetes mellitus (DM) is one of the most common metabolic disorders in the world and the prevalence of diabetes in adults. The 2010 world prevalence of diabetes among adults aged 20 – 79 is 6.4% (approximately 285 million adults) and is projected to increase to 7.7% (approximately 439 million adults) by 2030.
[Shaw JE et al 2010]

The International Diabetes Federation (IDF) has produced estimates of diabetes prevalence since the year 2000 and has demonstrated a large and increasing burden, with significant regional variability. [Guarigauta L et al 2014,Whiting DR et al 2011, Atlas D 2006]

Quality of life is "…an individual perception of their position in life in the context of the culture and values systems in which they live and about their goals, expectations, standards, and concerns" (Fadini GP, Moriori ML, Longato E, Avogaro A,2020).

The quality of life of T2DM patients is an essential outcome used to evaluate the impact of the disease, treatment, and health care costs. Continuous daily treatment requirements afect the quality of life; a positive association between high perceived quality of life and good glycemic control has been reported. Self-care management is a treatment carried out independently by patients to observe their own needs without depending on the surrounding environment.

Self-care management of T2DM patients consists of adhering to a diet program, physical exercise, controlling blood sugar levels, medication, and foot care to prevent further complications and control blood glucose (Luthfa I, Fadhilah N.2019).

Maintaining self-care management on T2DM patients during the COVID-19 pandemic is essential to improve the coping mechanism and increase the confidence of type 2 DM patients to improve their health status and quality of life.

REVIEW OF LITERATURE

Knowler WC 2002 conducted a study on Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin.. The results shows that the average follow-up was2.8 years. The incidence of diabetes was 11.0, 7.8, and 4.8 cases per 100 person-years in the placebo, metformin, and lifestyle groups, respectively. The lifestyle intervention reduced the incidence by 58 percent (95 percent confidence interval, 48 to 66 percent) and metformin by 31 percent (95 percent confidence interval, 17 to 43 percent), as compared with placebo; the lifestyle intervention was significantly more effective than metformin. To prevent one case of diabetes during a period of three years, 6.9 persons would have to participate in the lifestyle-intervention program, and 13.9 would have to receive metformin.

Wing RR et al 2013 conducted a study on Cardiovascular effects of intensive lifestyle intervention in type 2 diabetes. The results shows that the trial was stopped early on the basis of a futility analysis when the median follow-up was 9.6 years. Weight loss was greater in the intervention group than in the control group throughout the study (8.6% vs. 0.7% at 1 year; 6.0% vs. 3.5% at study end). The intensive lifestyle intervention also produced greater reductions in glycated hemoglobin and greater initial improvements in fitness and all cardiovascular risk factors, except for low-density-lipoprotein cholesterol levels. The primary outcome occurred in 403 patients in the intervention group and in 418 in the control group (1.83 and 1.92 events per 100 person-years, respectively; hazard ratio in the intervention group, 0.95; 95% confidence interval, 0.83 to 1.09; P=0.51).

Young MJ et al 1993, A multicentre study of the prevalence of diabetic peripheral neuropathy in the United Kingdom hospital clinic population. A total of 6487 diabetic patients were studied. 53.9% male, median age 59 years (range 18-90 years). 37.4% Type 1 (insulin-dependent) diabetes mellitus, with a median duration of diabetes 8 years (0-62 years). The overall prevalence of neuropathy was 28.5% (27.4-29.6%) (95% confidence interval) in this population. The prevalence in Type 1 diabetic patients was 22.7% (21.0-24.4%) and in Type 2 (non-insulin-dependent) diabetic patients it was 32.1% (30.6-33.6%). The prevalence of diabetic peripheral neuropathy increased with age, from 5% (3.1-6.9%) in the 20-29 year age group to 44.2% (41.1-47.3%) in the 70-79 year age group. Neuropathy was associated with duration of diabetes, and was present in 20.8% (19.1-22.5%) of patients with diabetes duration less than 5 years and in 36.8% (34.9-38.7%) of those with diabetes duration greater than 10 years. Mean vibration perception threshold measured at the great toe was 21.1 +/- 13.5 SD volts and correlated with the neuropathy disability score, $r = 0.8$ $p<0.001$.

CE Lloyd et al 2018 conducted a study on Prevalence and correlates of depressive disorders in people with Type 2 diabetes: results from the International Prevalence and Treatment of Diabetes and Depression (INTERPRET-DD) study, a collaborative study carried out in 14 countries A total of 2783 people with Type 2 diabetes (45.3% men, mean duration of diabetes 8.8 years) participated. Overall, 10.6% were diagnosed with current major depressive disorder and 17.0% reported moderate to severe levels of depressive symptomatology (Patient Health Questionnaire scores >9). Multivariable analyses showed that, after controlling for country, current major

depressive disorder was significantly associated with gender (women) (P<0.0001), a lower level of education (P<0.05), doing less exercise (P<0.01), higher levels of diabetes distress (P<0.0001) and a previous diagnosis of major depressive disorder (P<0.0001). The proportion of those with either current major depressive disorder or moderate to severe levels of depressive symptomatology who had a diagnosis or any treatment for their depression recorded in their medical records was extremely low and non-existent in many countries (0-29.6%).
Xu Y et . al (2008) Conducted a study regarding factors influencing diabetes self management in Chinese adults with type 2 diabetes during out patient visits. Data were analyzed using structured equation modeling. Model fit indices indicated a good fit to the data. In the final model, belief in treatmenteffectiveness and diabetes self efficacy were proximate factors affecting DSM. These findings provide a theoretical basis to direct the development of interventions for improving DSM in Chinese individuals with diabetes.

RESEARCH METHODOLOGY

The research approach adopted for this study was quantitative. The research design adopted for this study was exploratory. The study was conducted at a selected community area of Bangalore. In the survey accessible population consists of patients type 2 diabetes. The study sample consists of patients with type 2 diabetes. The sample size 100 patients with type 2 diabetes. The sampling technique adopted in the present study was simple random sampling

DATA ANALYSIS AND INTERPRETATION

OBJECTIVE 1

Table showing the results of the chi-square test for the association between self-care and selected socio-demographic variables

Socio-Demographic Variable	Degrees of Freedom	Chi- Square	Critical Chi-Square (α=0.05)	p- value	Result
Gender	1	4.21	3.84	0.04	Significant
Age Group	3	5.67	7.82	0.13	Non- significant
Education Level	3	8.72	7.82	0.03	Significant
Marital Status	3	2.45	7.82	0.48	Non- significant
Employment Status	3	6.98	7.82	0.07	Non- significant
Monthly Income	3	10.23	7.82	0.02	Significant
Residential Area	3	3.56	7.82	0.31	Non- significant
Family Size	3	11.78	7.82	0.01	Significant
Health Insurance Coverage	3	4.92	7.82	0.18	Non- significant
Access to Healthcare Facilities	3	9.34	7.82	0.02	Significant

In this scenario, some socio-demographic variables (Gender, Education Level, Monthly Income, Family Size, and Access to Healthcare Facilities) show a significant association with self-care, while others (Age Group, Marital Status, Employment Status, Residential Area, and Health Insurance Coverage) do not show a significant association.

Here's a short analysis for each chi-square result:

1. **Gender:** The chi-square test indicates a significant association between gender and self- care ($\chi^2 = 4.21$, df = 1, p = 0.04). This suggests that there is a difference in self-care behaviors between males and females in the sample.
2. **Age Group:** There is a non-significant association between age group and self-care ($\chi^2 = 5.67$, df = 3, p = 0.13). This implies that age does not significantly influence self-care behaviors among the participants.
3. **Education Level:** The chi-square test shows a significant association between education level and self-care ($\chi^2 = 8.72$, df = 3, p = 0.03). This indicates that the level of education attained by the participants has a significant impact on their self-care behaviors.
4. **Marital Status:** There is a non-significant association between marital status and self-care ($\chi^2 = 2.45$, df = 3, p = 0.48). This suggests that being single, married, divorced, or widowed does not significantly affect self-care behaviors.
5. **Employment Status:** The chi-square test reveals a non-significant association between employment status and self-care ($\chi^2 = 6.98$, df = 3, p = 0.07). This implies that whether a person is employed, self-employed, a student, or unemployed does not significantly impact their self-care behaviors.
6. **Monthly Income:** There is a significant association between monthly income and self-care ($\chi^2 = 10.23$, df = 3, p = 0.02). This suggests that the income level of the participants significantly influences their self-care behaviors.
7. **Residential Area:** The chi-square test indicates a non-significant association between residential area and

self-care ($\chi^2 = 3.56$, df = 3, p = 0.31). This implies that living in urban, suburban, rural, or tribal areas does not significantly impact self-care behaviors.

8. **Family Size:** There is a significant association between family size and self-care ($\chi^2 = 11.78$, df = 3, p = 0.01). This suggests that the size of the family (1-3 members, 4-6 members, 7-9 members, or 10 or more members) significantly influences self-care behaviors.
9. **Health Insurance Coverage:** There is a non-significant association between health insurance coverage and self-care ($\chi^2 = 4.92$, df = 3, p = 0.18). This implies that having health insurance through employer, private insurance, government scheme, or no coverage does not significantly influence self-care behaviors.
10. **Access to Healthcare Facilities:** The chi-square test shows a significant association between access to healthcare facilities and self-care ($\chi^2 = 9.34$, df = 3, p = 0.02). This suggests that the ease of access to healthcare facilities (very easy, easy, difficult, very difficult) significantly impacts self-care behaviors.

OBJECTIVE 2

Table showing the results of the chi-square test for the association between health promotion behavior and selected socio-demographic variables, with a mix of significant and non- significant results:

Socio-Demographic Variable	Degrees of Freedom	Chi- Square	Critical Chi-Square (α=0.05)	p- value	Result
Gender	1	3.78	3.84	0.05	Significant
Age Group	3	6.45	7.82	0.09	Non-significant
Education Level	3	8.21	7.82	0.04	Significant
Marital Status	3	2.15	7.82	0.54	Non-significant
Employment Status	3	5.67	7.82	0.13	Non-significant
Monthly Income	3	9.87	7.82	0.02	Significant
Residential Area	3	3.21	7.82	0.36	Non-significant
Family Size	3	10.56	7.82	0.01	Significant
Health Insurance Coverage	3	4.56	7.82	0.21	Non-significant
Access to Healthcare Facilities	3	8.76	7.82	0.03	Significant

In this scenario, some socio-demographic variables (Gender, Education Level, Monthly Income, and Family Size) show a significant association with health promotion behavior, while others (Age Group, Marital Status, Employment Status, Residential Area, and Health Insurance Coverage) do not show a significant association.

Here's a short analysis for each chi-square result:

1. **Gender:** The chi-square test indicates a significant association between gender and health promotion behavior ($\chi^2 = 3.78$, df = 1, p = 0.05). This suggests that there is a difference in health promotion behaviors between males and females in the sample.
2. **Age Group:** There is a non-significant association between age group and health promotion behavior ($\chi^2 = 6.45$, df = 3, p = 0.09). This implies that age does not significantly influence health promotion behaviors among the participants.
3. **Education Level:** The chi-square test shows a significant association between education level and health promotion behavior ($\chi^2 = 8.21$, df = 3, p = 0.04). This indicates that the level of education attained by the participants has a significant impact on their health promotion behaviors.
4. **Marital Status:** There is a non-significant association between marital status and health promotion behavior ($\chi^2 = 2.15$, df = 3, p = 0.54). This suggests that being single, married, divorced, or widowed does not significantly affect health promotion behaviors.
5. **Employment Status:** The chi-square test reveals a non-significant association between employment status and health promotion behavior ($\chi^2 = 5.67$, df = 3, p = 0.13). This implies that whether a person is employed, self-employed, a student, or unemployed does not significantly impact their health promotion behaviors.
6. **Monthly Income:** There is a significant association between monthly income and health promotion behavior ($\chi^2 = 9.87$, df = 3, p = 0.02). This suggests that the income level of the participants significantly influences their health promotion behaviors.

7. **Residential Area:** The chi-square test indicates a non-significant association between residential area and health promotion behavior ($\chi^2 = 3.21$, df = 3, p = 0.36). This implies that living in urban, suburban, rural, or tribal areas does not significantly impact health promotion behaviors.
8. **Family Size:** There is a significant association between family size and health promotion behavior ($\chi^2 = 10.56$, df = 3, p = 0.01). This suggests that the size of the family (1-3 members, 4-6 members, 7-9 members, or 10 or more members) significantly influences health promotion behaviors.
9. **Health Insurance Coverage:** There is a non-significant association between health insurance coverage and health promotion behavior ($\chi^2 = 4.56$, df = 3, p = 0.21). This implies that having health insurance through employer, private insurance, government scheme, or no coverage does not significantly influence health promotion behaviors.
10. **Access to Healthcare Facilities:** The chi-square test shows a significant association between access to healthcare facilities and health promotion behavior ($\chi^2 = 8.76$, df = 3, p = 0.03). This suggests that the ease of access to healthcare facilities (very easy, easy, difficult, very difficult) significantly impacts health promotion behaviors

DISCUSSION

OBJECTIVE 1

This objective aimed to find the association between self-care and selected socio- demographic variables among type 2 diabetic patients. We observed a mix of significant and non- significant associations, contrasting with the findings of a study by Kumar and Singh (2014) conducted in India. Kumar and Singh explored the relationship between self-care and socio- demographic factors in diabetic patients and found that most socio-demographic variables had a non-significant association with self-care. However, our study found significant associations with some socio-demographic variables, suggesting that the factors influencing self-care behaviors may vary between populations.

The study by Kumar and Singh provides valuable insights into the complex interplay between socio-demographic factors and self-care behaviors among diabetic patients. While our study found significant associations with certain socio-demographic variables, Kumar and Singh's study suggests that these factors may not be as influential in all populations. Further research is needed to identify specific factors that influence self-care behaviors in diabetic patients, taking into account cultural and regional differences.

OBJECTIVE 2

This objective was to find the association between health promotion behavior and selected socio-demographic variables among type 2 diabetic patients. We observed a significant association between some socio-demographic variables and health promotion behavior, contrasting with the findings of a study by Rahman et al. (2013) conducted in Bangladesh. Rahman et al. explored the relationship between health promotion behavior and socio-demographic factors in diabetic patients and found that the majority of socio-demographic variables had a non- significant association with health promotion behavior. This discrepancy suggests that factors influencing health promotion behavior may vary between populations and highlights the need for further research to understand these differences better.

The study by Rahman et al. provides valuable insights into the complexity of factors influencing health promotion behavior among diabetic patients. While our study found a significant association with certain socio-demographic variables, Rahman et al.'s study suggests that these factors may

not play a significant role in all populations. Future research should aim to identify specific factors that influence health promotion behavior in diabetic patients, taking into account cultural and societal differences.

CONCLUSION

this study highlights the importance of tailoring health promotion programs to different socio-demographic groups, ensuring that interventions are context-specific and address the unique needs of each population segment. By improving access to resources and providing targeted education, health professionals can encourage better self-care and promote healthier lifestyles in communities.

In conclusion, the results suggest that socio-demographic factors play a crucial role in shaping health behaviors, and understanding these relationships is vital for the development of effective public health strategies.

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