

ORIGINAL RESEARCH ARTICLE

SELF-CARE MANAGEMENT AND SOCIAL SUPPORT AMONG PEOPLE WITH TYPE 2 DIABETES ATTENDING SELECTED DIABETES CLINICS IN POKHARA

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ABSTRACT

Background: Social support plays a significant role in determining the self-care management of individuals with diabetes. In the developing countries, the association between two factors has not been adequately explored. This study assessed the level of self-care management and social support among individuals with type 2 diabetes and identify associations between self-care management, social support, and selected variables.

Methods: In this multisite cross-sectional study, 158 individuals with type 2 diabetes who attended selected diabetes clinics in Pokhara Nepal, were selected using a nonprobability purposive sampling technique from February 10 to March 10, 2021. Data collection was conducted through interviews using a modified summary of diabetes self-care activities and a multidimensional scale of perceived social support as instruments. A descriptive analysis followed by an inferential statistical test was performed to assess the association between variables.

Results: More than half (53.2%) of respondents had satisfactory levels of diabetes self-care management, and most of them received high levels of social support. Levels of self-care management were significantly associated with the levels of social support. Marital status, family income, residency, educational status, disease duration, regular follow-up visits, A1C goal, and co-morbidity were significantly associated with self-care management. Gender, marital status, and follow-up visits were significantly associated with the level of social support.

Conclusions: Focusing on enhancing social support, including the self-care management of individuals with diabetes, can force diabetes management more successful. Health professionals should implement programs for individuals with diabetes, including peer support groups, family education, and community-based initiatives.

INTRODUCTION

Diabetes has emerged as a serious health issue that imposes a significant burden globally. Countries with lower and middle incomes have experienced faster increases in the prevalence of diabetes compared to those with higher incomes.¹ Immediate and feasible interventions are necessary to enhance the well-being of individuals with diabetes and mitigate their risks.² Engaging in self-care activities is another crucial aspect of comprehensive diabetes management. Research suggests that psychosocial barriers may challenge effective self-care management for achieving optimal diabetes health.³

Social support actively shapes the health-seeking behavior and self-care activities of individuals with diabetes.⁴ Social support can play a crucial role in positively impacting self-care activities as a psychosocial concept.⁵ Researchers recognize social support as an important psychosocial determinant for sustaining self-care behaviors and reducing the risk of long-term diseases. It plays an important role in promoting actions that foster health and predicting how individuals with diabetes will manage their overall diabetes management.⁶

Comprehensive research is necessary for effective diabetes management and an overall prognosis.⁷ Furthermore, a deeper understanding of the influence of social support on diabetes management is required.⁸ To our knowledge, researchers have conducted few studies on diabetes self-care management and social support among Nepali people living with type 2 diabetes, and there is also limited available data on this topic. This study assesses the level of self-care management and social support and explores the association between self-care management, social support, and selected variables.

METHODS

A descriptive cross-sectional research design was adopted to assess self-care management and social support among individuals living with diabetes.

This study was conducted at three diabetes clinics located in Pokhara, Nepal. These clinics include Pokhara Diabetes and Thyroid Clinic Pvt. Ltd., situated in Naya Bazar 9 in Pokhara, Pokhara Diabetes, Thyroid, and Endocrinology Care Center Pvt. Ltd and Pokhara Super Speciality Health Clinic Pvt. Ltd., located

on New Road 8 in Pokhara. These centers currently registered as specialized diabetes clinics for treating and caring for diabetes and endocrine diseases throughout Pokhara. Individuals with diabetes made maximum visits to the clinics, so the sites were purposefully selected.

The population of this study comprised individuals who were diagnosis as type 2 diabetes and were on medication since last 6 months and visited diabetic clinics during data collection. The study did not include individuals living with type 1 diabetes, pregnant women, or those with cognitive impairment.

This study utilized a non-probability, purposive sampling technique. The sample size was determined using Cochran's formula (z^2pq/d^2) considering a prevalence rate of 89.5% from previous study.⁹ The final sample size was 158. The response rate for the study was 100%.

The instrument contains three parts, questions on socio-demographic and health-related information. The questions encompassed variables including age, sex, educational level, the duration of disease, and co-morbidities etc. In the second part, we included questions related to diabetes self-care activities, utilizing a modified version of the standard tool known as the Summary of Diabetes Self-Care Activities (SDSCA).^{9,10} This tool comprised fifteen questions, assessing various aspects of self-care over the past 7 days for individuals with diabetes, including diet, exercise, blood glucose estimation, foot care, and medication. The frequency of respondents' self-care activities was calculated by determining the number of days per week they practiced these activities using a scale ranging from 0 to 7. Five items were related to diet, two items were related to exercise, two items were related to blood glucose checking, five items were related to foot care, and one item was related to medication. Two items (4 and 13) were reverse-coded. The researcher obtained the overall score by summing the scores of each item. The scores ranged from 21 to 85, and the mean was 56.77.

Self-care management was categorized as follows:

Satisfactory: Mean score $\geq$ 56.77

Not satisfactory: Mean score < 56.77^{11,12}

In the third part, the Multidimensional Scale of Perceived Social Support (MSPSS), a standardized tool, was used to measure social support.¹³ The 7-point Likert scale consists of 12 items that measure the subjective assessment of social support from family, friends, and others for individuals living with diabetes. The scales encompass the following options, ranging from 1 (very strongly disagree) to 7 (very strongly agree), 2 (strongly disagree), 3 (mildly disagree), 4 (neutral), 5 (mildly agree), and 6 (strongly agree). The scores ranged from 12 to 84. The researchers used the Nepali version of the Multidimensional Scale of Perceived Social Support, which had a Cronbach's alpha of 0.90.¹⁴ It was categorized as a high support score, ranging from 5.1 to 7. Scores that range from 3 to 5 are considered moderate support, while scores from 1 to 2.9 indicate low support.¹⁵

Table 1: Socio-demographic information of respondents

n=158

Variables	n (%)
Age in years	
≤54	82 (51.9)
>54	76 (48.1)
Mean ± SD 53.78±11.04	
Sex	
Male	82 (51.9)
Female	76 (48.1)
Marital Status	
Married	136 (86.1)
Single	22 (13.9)
Residence	
Urban Municipality	136 (86.1)
Rural Municipality	22 (13.9)
Social Involvement	
Yes	99 (62.7)
No	59 (37.3)
Family Income	
Insufficient for 1 year	77 (48.7)
Sufficient for 1 year	81 (51.3)
Educational Status	
Illiterate	42 (26.6)
Informal education	10 (6.3)
Less than Primary School	21 (13.3)
Primary School completed	38 (24.1)
Secondary School completed	24 (15.2)
Bachelor Degree and above	23 (14.5)

Data were collected using a structured interview schedule at a convenient time for respondents. The average length of time required to complete an interview was approximately 20–30 minutes. An introduction with respondents was conducted, and the purpose of the study was explained to each respondent. Respondents were informed that participation would be voluntary and that they could withdraw at any time if they were unwilling to participate in the study. Informed written consent was obtained from the participants prior to data collection.

After checking for accuracy, consistency and completeness, the collected data were entered into the computer using the software Epi-data 3.1 and transferred into the IBM Statistical Package for Social Science (SPSS) 16 version for further analysis. The data were analyzed and interpreted according to the objectives of the study. Both descriptive and inferential statistics were used for data analysis. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to describe socio-demographic and clinical information. Chi-square and Fisher's exact tests were applied to identify the association between self-care management, social support with other, selected variables.

This study was conducted in accordance with the Declaration of Helsinki.¹⁶ The Institutional Review Committee (IRC) of the Institute of Medicine (IOM), Tribhuvan University approved the study protocol on February 1, 2021. Formal permission was obtained from the administrations of the concerned clinics.

RESULTS

Among the (n = 158) respondents, the mean age was 53.78 ±11.04 years (ranging from 29 to 89 years), and 82(51.9%) were males. The majority of respondents, 136 (86.1%), were married, and an equal number, 136 (86.1%), were urban residents. Additionally, more than half 99 (62.7%) of the participants were involved in social programs, and 77 (48.7%) of the respondents' family income was insufficient for one year. Similarly, 42 (26.6%) of respondents were illiterate (Table 1).

More than half of the respondents (53.2%) had the disease for 1–5 years, and 73 (46.2%) of respondents had over weight body mass index. Furthermore, 124(78.5%) had regular follow-

up visits as recommended and 135(85.4%) of respondents had not reached the A1C goal. Comorbidities were present in 101(63.9%) of the respondents, with hypertension being the most common at 79(78.3%) (Table 2).

More than half of the respondents, 84 (53.2%), reported satisfactory levels of self-care management. The level of self-care management was classified based on the mean score, which was 56.77 ± 12.17. The majority of the respondents, 144(91.1%), reported that they were receiving a high level of social support, while 13 (8.2%) reported receiving a moderate level of support, and 1(0.6%) were receiving a low level of support (Table 3).

Table 2: Disease related information of respondents n=158

Variables	n (%)
Duration of Disease	
1-5 years	84 (53.2)
6-10 years	42 (26.6)
and above	32 (20.2)
BMI	
Over weight	73 (46.2)
Normal	60 (38.0)
Obese	24 (15.2)
Under weight	1 (0.6)
Regular Follow- up	
Yes	124 (78.5)
No	34 (21.5)
Level of A1C	
>7.7 mmol/L	135 (85.4)
≤7.7 mmol/L	23 (14.6)
Co-morbidities	
Yes	101 (63.9)
No	57 (36.1)
Co- Morbidity Types (n=101)	
Hypertension	79 (78.3)
Cardiac Problem	4 (3.9)
Thyroid disorder	8 (7.9)
Respiratory Problem	10 (9.9)

Table 3: Level of self-care management and social support among respondents n=158

Level of Self-Care Management	Frequency (%)	95% Confidence Interval	
		Lower	Upper
Satisfactory	84 (53.2)	48.1	62.0
Not Satisfactory	74 (46.8)	38.0	51.9
Total	158 (100)		
Level of Social Support			
High support (5.1-7)	144 (91.1)	86.1	95.6
Moderate support (3-5)	13 (8.3)	4.4	12.7
Low support (1-2.9)	1 (0.6)	0.0	1.9
Total	158 (100)		

Table 4: Association of socio demographic variables with level of self- care management

n=158

Variables	Level of Self Care Management		χ^2	p
	Satisfactory No. (%)	Not satisfactory No. (%)		
Age in years				
≤54	45 (54.9)	37(45.1)	0.201	0.654
>54	39 (51.3)	37(48.7)		
Sex				
Male	47(57.3)	35 (42.7)	1.182	0.277
Female	37(48.7)	39 (51.3)		
Marital Status				
Married	77 (56.6)	59 (43.4)	4.677	0.031*
Single	7 (31.8)	15 (68.2)		
Family income				
Satisfactory	53 (65.4)	28 (34.6)	10.045	0.002*
Not Satisfactory	31 (40.3)	46 (59.7)		
Residency				
Urban Municipality	80 (58.8)	56 (41.2)	12.562	0.001*
Rural municipality	4 (18.2)	18 (81.8)		
Educational Status				
Literate	69 (65.1)	37 (34.9)	18.409	0.001*
Illiterate	15 (28.8)	37 (71.2)		

Level of significance p value<0 .05

Significant statistical association were found between self-care management and Marital status ((p-value = 0.031), family income level (p-value = 0.002), residence (p-value = 0.001), and educational status (Table 4).

The duration of disease (p-value = 0.001), regular follow up (p-value = 0.001), level of A1C (p-value = 0.009), and comorbidities (p-value = 0.011) exhibited a statistically significant association with self-care management (Table 5).

Table 5: Association of disease related variables with level of self- care management

n=158

Variables	Level of Self Care Management		χ ²	P
	Satisfactory No. (%)	Not satisfactory No. (%)		
Duration of diseases				
≤10 years	56 (44.4)	70 (55.6)	18.999	0.001*
>10 years	28 (87.5)	4 (12.5)		
BMI				
Not normal	54 (55.1)	44 (44.9)	0.389	0.533
Normal	30(50.0)	30 (50.0)		
Regular follow up				
Yes	79 (63.7)	45 (36.3)	25.734	0.001*
No	5 (14.7)	29(85.3)		
Level of A1C				
>7.7 mmol/L	66 (48.9)	69(51.1)	6.809	0.009*
≤7.7 mmol/L	18 (78.3)	5 (21.7)		
Co-morbidities				
Yes	46 (45.5)	55 (54.5)	6.529	0.011*
No	38 (66.7)	19 (33.3)		

Level of significance p value<0 .05

Table 6: Association of socio demographic variables with level of social support n=158

Variables	Level of social support		χ^2	<i>P</i>
	Low to moderate support No. (%)	High support No. (%)		
Age in years				
≤54	8 (10.5)	68 (89.5)	0.503	0.478
>54	6(7.3)	76 (92.7)		

Sex				
Male	11 (14.5)	65 (85.5)	5.713	0.017*
Female	3 (3.7)	79 (96.3)		
Marital Status				
Married	8 (5.9)	128 (94.1)	-	0.004* [€]
Single	6 (27.3)	16 (72.7)		
Family Income				
Satisfactory	4 (4.9)	77(95.1)	3.167	0.075
Not satisfactory	10 (13.0)	67 (87.0)		
Residence				
Municipality	13 (9.6)	123 (90.4)	-	0.694 [€]
Rural municipality	1 (4.5)	21 (95.5)		

Level of significance p value < 0.05, €- Fisher Exact test

Table 7: Association of disease related variables with level of social support n=158

Variables	Level of social support		χ ²	p
	Low to moderate support No. (%)	High support No. (%)		
Duration of Disease				
≤10 years	12 (9.5)	114 (90.5)	-	0.737 [€]
>10 years	2 (6.3)	30 (93.7)		
BMI				
Not normal	7 (11.7)	53 (88.3)	0.943	0.331
Normal	7 (7.1)	91 (92.9)		
Regular follow up				
Yes	7 (5.6)	117 (94.4)	-	0.013 ^{*€}
No	7 (20.6)	27 (79.4)		
Co-morbidities				
Yes	11 (10.9)	90 (89.1)	1.429	0.232
No	3 (5.3)	54 (94.7)		

Level of significance p value < 0.05, €- Fisher Exact test

The level of social support demonstrated a statistically significant association with sex of the respondents (p -value = 0.017), and marital status (p -value = 0.004) (Table 6).

The level of social support showed a statistically significant association with regular follow-up (p -value = 0.013) (Table 7).

Table 8: Association between level of Self-care management and level of social support n=158

Level of Self Care	Level of Social Support		χ^2	p
	Low to Moderate Support No. (%)	High Support No. (%)		
Satisfactory	1 (1.2)	83 (98.8)	13.006	0.001*
Not satisfactory	13 (17.6)	61 (82.4)		

*Level of significance p < 0.05

A statistically significant association was discovered between self-care level and social support (p -value = 0.001) (Table 8).

DISCUSSION

More than half (53.2%) of respondents had satisfactory levels of self-care management. This result is similar to previous studies conducted in multiple locations, which also reported satisfactory levels of self-care management.^{12,17}

The majority of the respondents in this study reported that they were receiving high levels of social support, consistent

with previous research findings.^{18,19} Most of the respondents in the study who were married and lived with their families could explain their high levels of social support. Previous research has indicated that support from spouses, can significantly contribute to self-care management.⁶ Notably, the study population was relatively younger, with a mean age of 54. Additionally, a prior study was also concluded with psychological support and social contact start to decline around the age of 55.¹⁸

Based on the present findings, marital status has a significant association with self-care management. Previous studies have

provided support for these findings and concluded that married individuals tend to exhibit better self-care management than those who are single. In addition, spousal support in diabetes self-care management may involve providing social support to maintain health and wellness and modifying health-related behaviors.^{20,21} This study demonstrated a significant association between family income and self-care management. This finding aligns with previous results, which also show that individuals with a higher income level tend to exhibit better self-care management.²²

This study shows a significant association between self-care management and place of residence, and the existing literature supports this finding.²³ Moreover, the results reveal a significant association between education and self-care management. Previous study have demonstrated this association that higher educational status is linked to better knowledge, behaviors, and practices related to diabetes management.^{5,24}

A previous study demonstrated a significant association between the duration of the disease and diabetes self-care management, and this study confirms those findings.¹¹ People who have been living with diabetes for an extended period of time appear to be more careful about their self-care. Long-term consultation with healthcare professionals may contribute to their better understanding of diabetes self-care management.¹⁷

Researchers in this study discovered a significant association between A1C levels and self-care management. A previous study supported these findings and concluded that better glycemic management is directly related to increased self-care management.^{25,26} This research agrees with a previous study that confirmed a significant association between comorbidities and self-care management.²⁷ Furthermore, the research indicated that people living with diabetes and comorbidities were more likely to employ insufficient self-care management compared to those without comorbidities.²⁸

This study reveals a significant association between social support and factors such as sex and marital status. Previous studies have shown that men perceive more social support than women. Married individuals receive more social support due to their larger social network, and they consider their spouse to be the most significant source of support.⁵ This study discovered a significant association between social support and regular medical follow-up. Other studies have also supported

these findings and have further added that individuals living with diabetes who receive social support are more likely to visit their doctor as recommended compared to those who do not receive such support.²⁹

The present findings support the consistent evidence from previous studies that consistently show a significant association between self-care management and social support.^{20,22} Social support has a significant impact on health-related behaviors and outcomes. People who receive a high level of social support are more likely to engage in self-care management behaviors.³⁰

CONCLUSION

This study emphasizes the importance of social support for improving diabetes self-care management. This shows that diabetes management strategies should consider the social context of individuals living with diabetes and provide support beyond clinical care. By addressing the social support needs of individuals living with diabetes, healthcare professionals and policymakers can enhance diabetes self-care management, ultimately leading to better health status for people with diabetes. The healthcare team must actively acknowledge social support barriers, and they should recognize their importance through public recognition.

However, it's important to note that the cross-sectional study design used in this research limits our ability to establish a cause and effect relationship. Additionally, the assessment of self-care management relied on interview rather than direct observation.

It will be better if health care providers initiate intervention programs targeting people living with diabetes and their families, involving behavioral modification, communication, educational programs etc.

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