

# Knowledge and Attitude toward Dietary Management and Exercise among Younger and Older Diabetic Patients

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## Abstract

Diabetes mellitus is a chronic metabolic disorder that requires continuous lifestyle management, particularly dietary control and regular physical activity. Knowledge and attitudes of patients toward these practices significantly influence their ability to manage the disease effectively. The present study examined differences in knowledge and attitudes toward dietary management and exercise among younger and older diabetic patients, and also compared male and female patients. A cross-sectional survey design was employed using a structured questionnaire. The sample consisted of 140 diabetic patients, including 70 younger and 70 older individuals, with equal representation of males and females. Independent sample t-tests were used to examine group differences. Results indicated that younger patients show significantly higher knowledge scores ( $M = 18.20$ ,  $SD = 3.50$ ) than older patients ( $M = 15.60$ ,  $SD = 3.80$ ;  $t_{(138)} = 4.21$ ,  $p < .01$ ). However, older patients showed more positive attitudes toward lifestyle management ( $M = 7.30$ ,  $SD = 1.70$ ) compared to younger patients ( $M = 6.40$ ,  $SD = 1.80$ ),  $t_{(138)} = 3.04$ ,  $p < .01$ . Gender comparison revealed that females had higher knowledge ( $M = 17.80$ ,  $SD = 3.40$ ) than males ( $M = 16.10$ ,  $SD = 3.70$ ),  $t_{(138)} = 2.83$ ,  $p < .05$ , and more favorable attitudes ( $M = 7.20$ ,  $SD = 1.60$ ) than males ( $M = 6.10$ ,  $SD = 1.90$ ,  $t_{(138)} = 3.70$ ,  $p < .01$ ). The findings emphasize the importance of demographic factors in diabetes self-management and highlight the need for targeted educational interventions.

**Keywords:** Diabetes mellitus, dietary management, exercise, knowledge, attitude

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## 1. Introduction

Diabetes mellitus has emerged as one of the most significant global health challenges of the twenty-first century. The disease is characterized by chronic hyperglycemia resulting from defects in insulin secretion, insulin action, or both (American Diabetes Association, 2023). According to the International Diabetes Federation, the global prevalence of diabetes continues to rise rapidly, with millions of individuals requiring lifelong treatment and lifestyle management (IDF, 2021).

Effective management of diabetes depends not only on medical treatment but also on patients' ability to maintain appropriate dietary habits and engage in regular physical activity. Research consistently shows that adherence to a balanced diet and exercise routine improves glycemic control, reduces complications, and enhances overall quality of life (Powers et al., 2020). However, successful self-management largely depends on the knowledge and attitudes of patients toward these lifestyle behaviors.

Knowledge regarding carbohydrate intake, portion control, and the importance of physical activity enables patients to make informed decisions about their daily routines. Several studies have demonstrated that individuals with higher diabetes-related knowledge tend to exhibit better treatment adherence and improved metabolic outcomes (Aljasem et al., 2001). At the same time, patients' attitudes toward dietary restrictions and physical exercise significantly

influence their motivation and willingness to follow recommended guidelines.

Demographic factors such as age and gender may also shape how individuals perceive and manage their illness. Younger patients often have greater access to health information through digital platforms, whereas older individuals may develop stronger attitudes toward disease management through long-term experience with the condition. Similarly, gender differences in health awareness and lifestyle practices have been observed in several studies, with women often demonstrating greater health consciousness and engagement in preventive behaviors (Nam et al., 2011). Understanding these differences is important for designing effective educational programs and behavioral interventions for diabetes management. Therefore, the present study aims to examine knowledge and attitudes toward dietary management and exercise among diabetic patients and to explore differences across age and gender groups.

## 2. Objectives of the Study

1. To examine knowledge regarding dietary management and exercise among diabetic patients.
2. To compare knowledge levels between younger and older diabetic patients.
3. To compare attitudes toward dietary management and exercise between younger and older patients.
4. To examine gender differences in knowledge and attitudes related to diabetes management.

**3. Hypotheses of the Study**

H<sub>01</sub>: There is no significant difference in knowledge regarding dietary management and exercise between younger and older diabetic patients.

H<sub>02</sub>: There is no significant difference in attitude towards dietary management and exercise between younger and older diabetic patients.

H<sub>03</sub>: There is no significant gender difference in knowledge regarding dietary management and exercise among diabetic patients.

H<sub>04</sub>: There is no significant gender difference in attitude towards dietary management and exercise among diabetic patients.

**4. Materials and Methods**

**4.1 Research Design**

A cross-sectional survey research design was used to investigate differences in knowledge and attitudes toward dietary management and exercise among diabetic patients.

**4.2 Participants**

The study included 140 diagnosed diabetic patients selected from healthcare facilities and community settings. The sample consisted of 70 younger patients and 70 older patients. In addition, equal numbers of male and female participants were included to examine gender differences.

**4.3 Inclusion Criteria**

Participants diagnosed with diabetes mellitus and willing to participate in the study were included. All participants were adults capable of responding to the questionnaire.

**4.4 Instrument**

Data were collected using a structured questionnaire designed to measure knowledge and attitudes regarding dietary management and regular exercise in diabetes. The questionnaire consisted of items assessing

awareness of dietary guidelines, the importance of physical activity, and attitudes toward lifestyle modification.

**4.5 Statistical Analysis**

Data were analyzed using descriptive statistics and independent sample t-tests to examine differences between age groups and gender groups. Mean scores and standard deviations were calculated for knowledge and attitude variables.

**5. Results**

Table 1 presents the comparison of mean knowledge and attitude scores between younger and older diabetic patients. The results indicate that younger patients (M = 18.20, SD = 3.50) obtained higher knowledge scores than older patients (M = 15.60, SD = 3.80). The obtained t-value (t = 4.21) is significant at the 0.01 level, suggesting that younger diabetic patients possess significantly greater knowledge regarding dietary management and exercise. This may be attributed to higher educational exposure, better access to digital health information, and increased awareness of lifestyle-related diseases among younger individuals. With regard to attitude, older patients (M = 7.30, SD = 1.70) scored higher than younger patients (M = 6.40, SD = 1.80). The t-value (t = 3.04) is also significant at the 0.01 level, indicating that older diabetic patients exhibit a more positive attitude toward dietary control and regular exercise. This suggests that although older individuals may have comparatively lower factual knowledge, they tend to adopt a more disciplined and serious approach toward disease management, possibly due to longer disease duration and experience with complications.

Overall, the findings imply that age influences both awareness and behavioral orientation in diabetes management: younger patients demonstrate higher knowledge, whereas older patients show more favorable attitudes toward lifestyle modification.

**Table 1: Mean Comparison of Knowledge and Attitude Scores between Younger and Older Diabetic Patients**

Variable	Group	N	Mean	SD	SED	t-value
Knowledge Score	Younger	70	18.20	3.50	0.62	4.21**
	Older	70	15.60	3.80		
Attitude Score	Younger	70	6.40	1.80	0.30	3.04**
	Older	70	7.30	1.70		

\* p < 0.05, \*\* p < 0.01

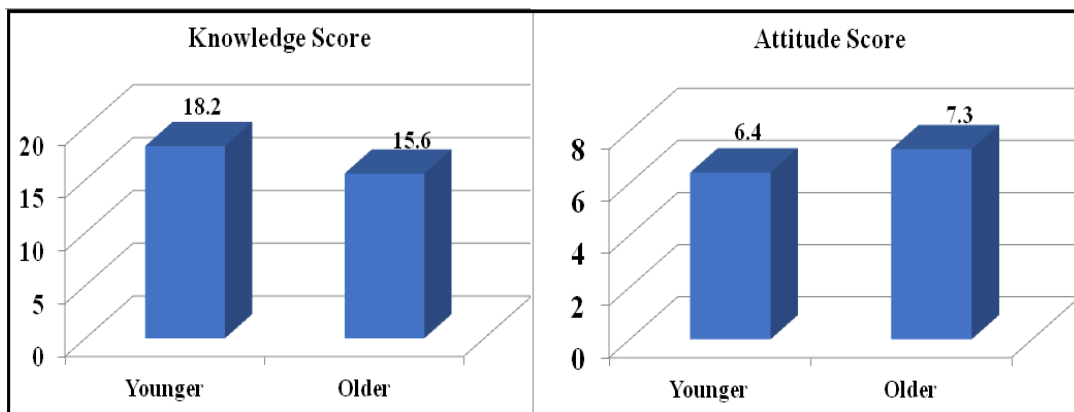


Figure-1: Bar Graph for difference in Knowledge and Attitude Scores between Younger and Older Diabetic Patients

Table 2 shows the gender-wise comparison of knowledge and attitude toward dietary management and exercise among diabetic patients. Female participants (M = 17.80, SD = 3.40) scored higher on knowledge than male participants (M = 16.10, SD = 3.70). The obtained t-value (t = 2.83) is significant at the 0.05 level, indicating that females have significantly better knowledge related to dietary regulation and physical activity in diabetes care. This may be due to greater involvement of women in meal planning, nutrition-related decisions, and health-care utilization within households. Similarly, for attitude

scores, females (M = 7.20, SD = 1.60) scored significantly higher than males (M = 6.10, SD = 1.90), with a t-value of 3.70 (p < 0.01). This finding suggests that female diabetic patients hold a more positive and health-oriented attitude toward lifestyle modification practices such as balanced diet and regular exercise. Thus, the results reveal that female patients are comparatively more aware and more positively inclined toward dietary management and physical activity than male patients, highlighting the need for targeted educational interventions for male diabetic patients.

Table 2: Mean Comparison of Knowledge and Attitude Scores between Male and Female Diabetic Patients

Variable	Group	N	Mean	SD	SED	t-value
Knowledge Score	Male	70	16.10	3.70	0.60	2.83*
	Female	70	17.80	3.40		
Attitude Score	Male	70	6.10	1.90	0.30	3.70**
	Female	70	7.20	1.60		

\* p < 0.05, \*\* p < 0.01

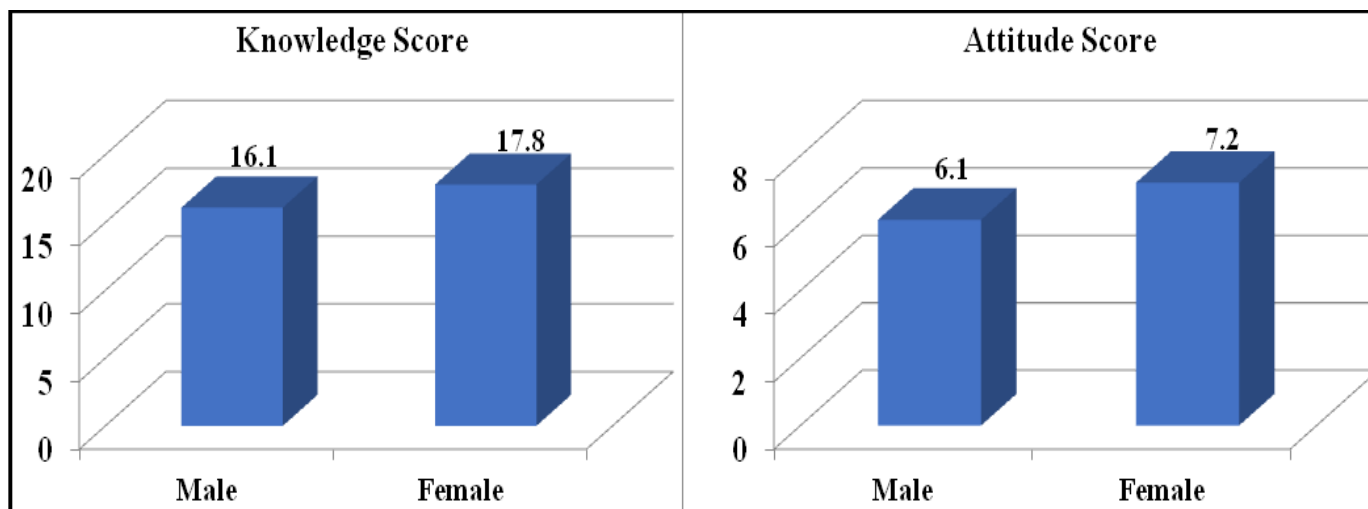


Figure-2: Bar Graph for Gender difference in Knowledge and Attitude Scores among Diabetic Patients

The analysis revealed significant differences between younger and older diabetic patients in both knowledge and attitudes toward lifestyle management. Younger patients demonstrated higher knowledge regarding

dietary management and exercise, whereas older patients exhibited more positive attitudes toward adopting these practices.

Gender comparisons indicated that female patients showed significantly higher knowledge and more favorable attitudes toward diabetes self-management compared to male patients.

### 6. Discussion

The findings of the present study emphasize the important role of demographic characteristics in diabetes self-management. Younger patients demonstrated greater knowledge regarding dietary and exercise practices, which may be attributed to their increased access to health information through the internet and digital health platforms.

However, older patients exhibited more positive attitudes toward lifestyle modification. This finding may reflect their longer experience with the disease and greater awareness of the consequences of poor glycemic control. Similar observations have been reported in previous research indicating that older individuals often develop stronger behavioral commitment toward disease management after prolonged exposure to health complications (Powers et al., 2020).

The results also revealed significant gender differences. Female patients demonstrated higher knowledge and more positive attitudes toward diabetes management compared to male patients. Previous studies suggest that women tend to be more engaged in health-related behaviors and preventive practices, which may explain their higher awareness levels (Nam et al., 2011).

These findings highlight the importance of designing targeted educational interventions for different demographic groups. Health education programs should particularly focus on improving lifestyle awareness among older patients and male patients to ensure better diabetes control.

### 7. Conclusion

The present study demonstrates that knowledge and attitudes toward dietary management and exercise among diabetic patients vary according to age and gender. While younger individuals tend to possess greater knowledge, older patients often exhibit stronger attitudes toward lifestyle modification. Similarly, female patients appear to have better awareness and more positive attitudes toward diabetes self-management. These findings suggest that educational programs should be tailored to specific demographic groups in order to improve diabetes management and reduce the risk of complications.

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