



KNOWLEDGE ABOUT DIABETES MELLITUS AMONG PHYSIOTHERAPY STUDENTS: A SURVEY STUDY

Physiotherapy

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ABSTRACT

Introduction: As we know diabetes mellitus is common problem nowadays so Knowledge of diabetes mellitus and its risk factors are necessary for primary healthcare in order to prevent co-morbidities that increase the burden of the disease. The knowledge, training and awareness of physiotherapy students about diabetes is important because they will solve this public health problem in future. **Objective:** The objective of this work is to strengthen the knowledge about diabetes among physiotherapy students. **Material And Method:** In this survey study a total of 120 third year and final year physiotherapy students from Baba Mastnath University, Asthal Bohar, Haryana were included. The purpose of the study was explained to all participants. A 23-point "Brief Diabetes Knowledge Test " was completed in English. **Result And Conclusion:** In this survey study total 120 physiotherapy students from third and final year participated in which 89 (74.2%) students were with age of 19 to 22 years and 31 (25.8%) were of 23 to 26 years. Of the participants 45 (37.5%) were male, 75 (62.5%) were female. Data analysis shows that there was 6 (5%) students with low knowledge of diabetes mellitus, 52 (43.3%) with average knowledge of diabetes mellitus and 62 (51.7%) with high knowledge of diabetes mellitus. On applying chi-square test result shows that there was no significant difference of diabetic knowledge between both age groups students with p value 0.286 that is more than level of significance (>0.05). Results also show that there was no significant difference between male and female students with the p value 0.803 that is also more than level of significance (>0.05).

KEYWORDS

Diabetes Mellitus, Knowledge, Physiotherapy.

INTRODUCTION:

Diabetes is a group of metabolic diseases characterized by hyperglycemia due to abnormality in insulin secretion, action of insulin, or both.¹ It is a major non-communicable disease with increasing prevalence worldwide and will be the seventh most common disease worldwide by 2030 estimated the 2011 report of the WHO. Type 2 diabetes affects the most productive middle-aged, but has also begun to appear in younger age groups.²

The number of adults with diabetes worldwide will increase from 135 million in 1995 to 300 million in 2025.³ Diabetes has become a major economic challenge, taking 5-25% of the income of an average Indian family. A recent study shows that diabetes currently affects a staggering 10 to 15 percent of urban residents and 5 to 8 percent of rural residents.⁴

Several studies conducted in various parts of the world indicate that the public lacks awareness of various factors that are related to diabetes.⁵ The World Health Organization (WHO) and the United Nations (UN) have set global goals to improve treatment, reduce premature death due to diabetes, achieve universal health care and provide affordable essential medicines for all by 2030.⁶

For primary and secondary prevention strategies for DM, the most important factors are population education and information, stronger information systems for patients, caregivers and health professionals, and supportive environments for health promotion and disease prevention, sound public policy and implementation of structured practices, healthy lifestyle intervention programs.⁷

The level of awareness and knowledge about diabetes is considered an important factor to change the behavior of the population and increase the capacity of prevention and control programs. It is also considered a positive indicator of disease management and quality of life.

Increasing knowledge about the risk factors of diabetes for the entire target group will allow them to improve their attitudes and thus lead to positive changes in their habits, following a healthier lifestyle and behavior.⁸

The knowledge, training and awareness of medical students about diabetes is important because they will solve this important public health problem in the future.⁹ Health education has become an important part of medical care. Health professionals, such as physiotherapists, play an important role in diabetes awareness, disease prevention and health promotion.

Physiotherapists have a unique opportunity to educate patients on how to prevent risk factors such as obesity and inactivity, as well as improve functional capacity and reduce injuries in patients with diabetes.¹⁰ Several doctors, physicians, students and nurses showed inadequate knowledge about diabetes. In Haryana, no studies have been conducted on the knowledge of physical therapy students about diabetes mellitus. Therefore, the overall aim of this work was to strengthen the knowledge about diabetes among physiotherapy students.

MATERIAL AND METHOD:

In this survey study a total of 120 third year and final year physiotherapy students from Baba Mastnath University, Asthal Bohar, Haryana were included. Convenience sampling was used and almost all those approached agreed to participate.

The study was approved by the educational authorities and informed consent was obtained from all participants. The purpose of the study was explained to all participants.

A 23-point "Brief Diabetes Knowledge Test " was completed in English. This 23-item test represented general knowledge about diabetes. The first 14 items tested knowledge about non-insulin-dependent diabetes. People on insulin could receive all 24 items, with the first 14 questions about living with diabetes in general and the last 9 questions specifically about insulin treatment.

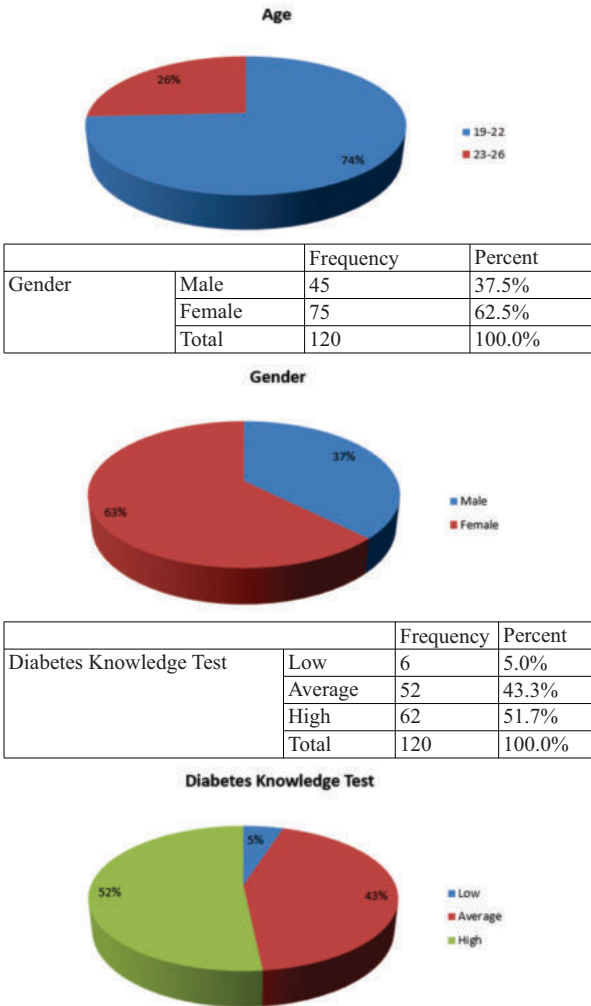
This is an established test developed by the Michigan Diabetes Research Training Center. Data was analyzed by applying chi-square test to see the difference between age and genders of student by using SPSS 20.

RESULT:

A total of 120 physiotherapy students of third year and final year participated in this study in which 89 (74.2%) students were with age of 19 to 22 years and 31 (25.8%) were of 23 to 26 years. Of the participants 45 (37.5%) were male, and 75 (62.5%) were female.

Analysis of data shows that there was 6 (5%) students with low knowledge of diabetes mellitus, 52 (43.3%) with average knowledge of diabetes mellitus and 62 (51.7%) with high knowledge of diabetes mellitus.

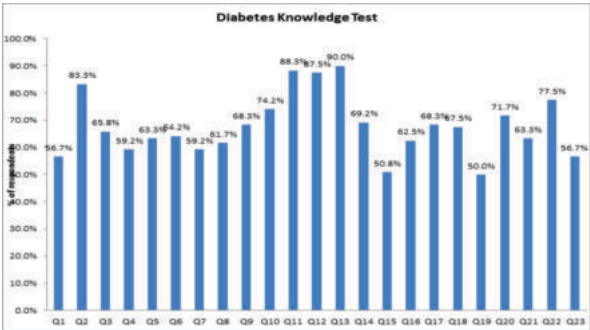
Age	Frequency		Percent
	19-22	89	74.2%
	23-26	31	25.8%
Total		120	100.0%



From all participants 56.7% knows about the diabetes diet, 83.3% know that baked potato is rich in carbohydrates, 65.8% know that out of low fat milk, orange juice, corn, honey, low fat milk is highest in fat, 59.2% students have knowledge of free food, 63.3% have knowledge of glycosylated hemoglobin test, 64.2% knows about the best method for testing blood glucose, 59.2% have knowledge of effect of unsweetened fruit juice on blood glucose, 61.7% know that what should not be used to treat low blood glucose level, 68.3% students knows that for a person in good control what effect does exercise have on blood glucose, 74.2% knows that infection is likely to an increase in blood glucose, 88.3% know about the best way to take care of feet, 87.5% students have knowledge that eating food lower in fat decreases risk for heart disease, 90% know that nerve disease causes tingling and numbness, 69.2% knows that lung problems are not usually associated with diabetes, 50.8% knows the signs of ketoacidosis, 62.5% students have knowledge that if someone is sick with flu what changes should be make, 68.3% know that after taking intermediate acting insulin after how much time insulin reaction occurs, 67.5% knows that if someone realize just before lunch that they forget to take insulin before breakfast what should be done at that time, 50% students knows that if there is beginning of any insulin reaction what should be done, 71.7% knows that too much insulin may cause low blood glucose level, 63.3% know that what happen with blood glucose if someone take morning insulin but skip breakfast , 77.5% have knowledge that not enough insulin may cause high blood glucose level and 56.7% students knows that heavy exercises may most likely to cause an insulin reaction.

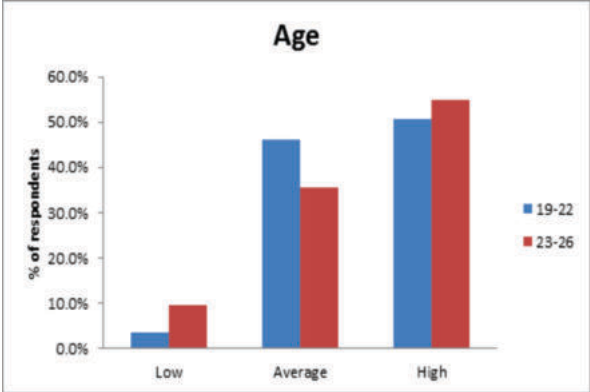
Analysis	Frequency	Percent
Q1	68	56.7%
Q2	100	83.3%
Q3	79	65.8%
Q4	71	59.2%
Q5	76	63.3%

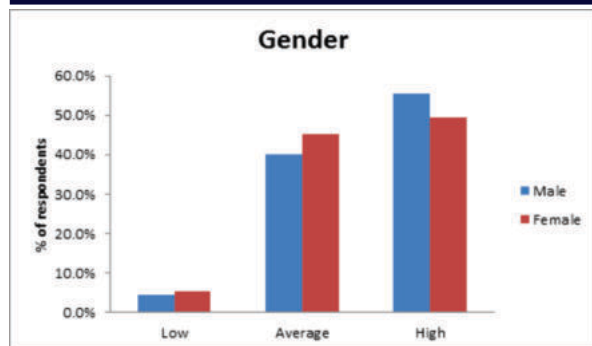
Q6	77	64.2%
Q7	71	59.2%
Q8	74	61.7%
Q9	82	68.3%
Q10	89	74.2%
Q11	106	88.3%
Q12	105	87.5%
Q13	108	90.0%
Q14	83	69.2%
Q15	61	50.8%
Q16	75	62.5%
Q17	82	68.3%
Q18	81	67.5%
Q19	60	50.0%
Q20	86	71.7%
Q21	76	63.3%
Q22	93	77.5%
Q23	68	56.7%
Total	120	100.0%



On applying chi- square test result shows that there was no significant difference of diabetic knowledge between both the age groups students with p value 0.286 that is more than level of significance (< 0.05). Results also show that there was no significant difference between male and female students with the p value 0.803 that is also more than level of significance (< 0.05). so statistically there is no significant difference of diabetes knowledge between both the age groups and both genders.

		Diabetes Knowledge Test								Chi-Square	P-value
		Low		Average		High		Total			
Gender	19-22	3	3.4%	41	46.1%	45	50.6%	89	100.0%	2.505	0.286
	23-26	3	9.7%	11	35.5%	17	54.8%	31	100.0%		
	Male	2	4.4%	18	40.0%	25	55.6%	45	100.0%	.440	0.803
	Female	4	5.3%	34	45.3%	37	49.3%	75	100.0%		
	Total	6	5.0%	52	43.3%	62	51.7%	120	100.0%		





DISCUSSION:

Diabetes mellitus (DM) is one of the fastest growing public health problems of the 21st century. In India, there will be approximately 79.4 million cases of diabetes by 2030.¹¹ It is generally accepted in the medical literature that diabetes cannot be prevented if the general public, especially those at risk, do not know how to take care of themselves.¹² It is a chronic disease, which requires ongoing medical care and patient self-care training to avoid complications.¹³ Health professionals, such as physiotherapists, play an important role in diabetes awareness, disease prevention and health promotion. Physical therapists have a unique opportunity to educate patients on how to prevent risk factors such as obesity and inactivity, as well as improve functional capacity and reduce the likelihood of physical injury in patients with diabetes.⁹

This study was conducted among university students to find out how much they know about DM. If information is lacking, action can be taken and these results can be used to implement an appropriate information, education and communication campaign to help plan a public health program. In this survey study total of 120 physiotherapy students from third year and final year participated in which 89 (74.2%) students were with age of 19 to 22 years and 31 (25.8%) were of 23 to 26 years. Of the participants 45 (37.5%) were male, and 75 (62.5%) were female. Analysis of data shows that there was 6 (5%) students with low knowledge of diabetes mellitus, 52 (43.3%) with average knowledge of diabetes mellitus and 62 (51.7%) with high knowledge of diabetes mellitus. On applying chi-square test result shows that there was no significant difference of diabetic knowledge between both the age groups students with p value 0.286 that is more than level of significance (>0.05). Results also show that there was no significant difference between male and female students with the p value 0.803 that is also more than level of significance (>0.05). So statistically there is no significant difference of diabetes knowledge between both the age groups and both genders.

CONCLUSION:

As we know diabetes mellitus is common problem nowadays so Knowledge of diabetes mellitus and its risk factors are necessary for primary healthcare in order to prevent co-morbidities that can increase the burden of the disease. The study concluded that there was 6 (5%) physiotherapy students with low, 52 (43.3%) with average and 62 (51.7%) with high knowledge of diabetes mellitus, some areas are still lacking. The lack of basic knowledge could influence the effectiveness of patient education and therefore have dangerous consequences for the patient diagnosed with diabetes mellitus. Physiotherapy curriculum should include a sound knowledge of diabetes and its management, as well as population-based health promotion programs for people with diabetes (prevention of potential complications) and health promotion activities to raise awareness among healthy people (prevention of the disease).

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REFERENCES:

1. Adeghate E, Schattner P, Dunn E. An update on the etiology and epidemiology of diabetes mellitus. *Annals of the New York academy of sciences*. 2006 Nov;1084(1):1-29.
2. Xu Y, Zhang D, Liu K, Guo Y, Yang Y. Self-reported knowledge on diabetes and its related factors among Chinese college students: a cross-sectional study. *BMJ open*. 2016 Sep 1;6(9):e011963.
3. Al-Mahrooqi B, Al-Hadhrani R, Al-Amri A, Al-Tamimi S, Al-Shidhani A, Al-Lawati H,

- Al-Ismaili A, Al-Hooti K, Al-Ghafri T. Self-reported knowledge of diabetes among high school students in Al-Amerat and Quriyat, Muscat Governorate, Oman. *Sultan Qaboos University Medical Journal*. 2013 Aug;13(3):392.
4. Holla R, Prabhu S, Shetty S, Deshpande S, Hegde S, Soujanya BS, Raj H, Kundapur R. Awareness about diabetes among adolescents of Mangalore, South India. *Journal of Health and Allied Sciences NU*. 2014 Jun;4(02):118-20.
5. Okoh BA, Jaja T. Knowledge and awareness of diabetes among adolescents in Port Harcourt, Nigeria. *African Journal of Diabetes Medicine Vol*. 2014 Nov 1;22(2).
6. Mohsen F, Safieh H, Shibani M, Ismail H, Alzabibi MA, Armashi H, Sawaf B. Assessing diabetes mellitus knowledge among Syrian medical students: A cross-sectional study. *Heliyon*. 2021 Sep 1;7(9):e08079.
7. Dos Santos PF, Dos Santos PR, Ferrari GS, Fonseca GA, Ferrari CK. Knowledge of diabetes mellitus: does gender make a difference?. *Osong public health and research perspectives*. 2014 Aug 1;5(4):199-203.
8. Khamaiseh A, Alshloul M. Diabetes knowledge among health Sciences students in Saudi Arabia and Jordan. *Jordan Medical Journal*. 2019 Mar 24;53(1).
9. Singh H, Thangaraju P, Kumar S, Aravindan U, Balasubramanian H, Selvan T. Knowledge and awareness of diabetes and diabetic ketoacidosis (DKA) among medical students in a tertiary teaching hospital: An observational study. *Journal of clinical and diagnostic research: JCDR*. 2014 Apr;8(4):HC04.
10. Steyl T. Undergraduate physiotherapy students' knowledge of Diabetes Mellitus: Implications for education. *South African Journal of Physiotherapy*. 2011 Jan 6;67(3):9-14.
11. Kumar L, Mittal R, Bhalla A, Kumar A, Madan H, Pandhi K, Garg Y, Singh K, Jain A, Rana S, Rana III S. Knowledge and Awareness About Diabetes Mellitus Among Urban and Rural Population Attending a Tertiary Care Hospital in Haryana. *Cureus*. 2023 Apr 30;15(4).
12. Kaloti AS, Kadian J, Garg A, Garg R, Garg V. A study of the knowledge of diabetes mellitus in the patients of diabetes mellitus in Karnal, Haryana. *Age*.;56:12-34.
13. Alebiosu OC. Knowledge of diabetes and hypertension care among health care workers in southwest Nigeria. *Postgraduate medicine*. 2009 Jan 1;121(1):173-7.