

A comparative study on knowledge of diabetic clients regarding diabetic complications in selected outpatient departments of private and government hospitals at Bangalore

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Citation this Article: Elgina Darilang Shabong, Dr. Syamala Reddy, “A comparative study on knowledge of diabetic clients regarding diabetic complications in selected outpatient departments of private and government hospitals at Bangalore”, IJMSIR- September - 2023, Vol – 8, Issue - 5, P. No. 136 – 148.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

The term diabetes mellitus describes a metabolic disorder of multiple etiologies characterized by chronic hyperglycemia resulting from defects in insulin secretion, insulin action or both. The effects of diabetes mellitus include long term damage, dysfunction and failure of various organs. Symptoms like thirst, polyuria, blurring of vision, and weight loss. In severe forms, ketoacidosis or a non ketotic hyperosmolar state may develop and lead to stupor, coma and, in absence of effective treatment, death may occur. In long term effect, specific complications of retinopathy with potential blindness, nephropathy that may leads to renal failure, neuropathy with risk of foot ulcers, amputation, and futures of autonomic dysfunction. People with diabetes are at increased risk of cardiovascular, peripheral vascular and cerebrovascular disease.

Objectives of the study

To assess the knowledge of diabetic clients regarding diabetic complications. To compare the knowledge of diabetic clients between Private and Government Hospitals regarding diabetic complications. To determine

the association between socio demographic variables and knowledge of diabetic clients regarding diabetic complications in Private and Government Hospitals.

Materials and methods

The study was performed in a selected Private and Government Hospitals Bangalore. A non - experimental research approach was selected to compare the knowledge of diabetic clients regarding diabetic complications in selected outpatient departments of private and government hospitals at Bangalore. The research design selected for the present study is a descriptive comparative research design. In this study the knowledge of diabetic clients regarding diabetic complications was assessed and described. The study was conducted at the outpatient department of Chinmaya Mission hospital, Indiranagar, Bangalore, and ESI government hospital, Indiranagar, Bangalore. The sample for the present study comprised of 100 diabetic clients whose age ranges between 20-60 years. The investigator selected 50 clients from the outpatient department of Chinmaya Mission hospital Indiranagar, Bangalore, and 50 clients from the Out Patient Department of ESI

Hospital, Indiranagar, Bangalore. The samples were selected by using convenient sampling technique.

A structured interview schedule was prepared to assess the knowledge of diabetic clients regarding diabetic complications. The interview schedules consist of two sections. Section I consisted of socio-demographic variables with 28 items such as age, gender, educational status, occupational status, income, religion, marital status, type of family, dietary pattern, domicile, age at the onset of diabetes, nature of treatment. Section II consists of knowledge of diabetic clients regarding diabetic complications. There were 30 items in the tool which is related to knowledge on diabetes mellitus and its complications.

Finding of the study

Findings regarding demographic variables

Majority of the diabetic clients, 52% were males, 48% were female gender. Majority of the diabetic clients, 68% belongs to joint family, 32% belongs to nuclear family, and none belongs to extended family. Majority 65% of them do the exercise in the duration of 20-30mts, 35% perform 30-60mts and none of them perform for >60mts. Majority of them, 79% do not consume alcohol and 21% consumed alcohol. Majority of them, 47% were in the treatment of oral hypoglycemic agent, 46% were in the treatment of Insulin, and 7% were in the treatment of Diet control. Majority of the duration of diabetic treatment, 39% belongs to 0-5years 38% belongs to 5-10yrs, 23% belongs to 10years and above. Majority of the diabetic clients, 55% of them received information about diabetic complications, 45% of them were not receive information about diabetic complications.

Findings regarding assessment of knowledge among diabetic clients' regarding Diabetic complications

On the statistical analysis it was found that the knowledge of diabetic clients regarding complications

have a mean difference between private hospital vs. government hospital. The government mean is 16 which is less than private hospital means and its value is 18.24. It indicated that diabetic clients from private hospital had more knowledge regarding diabetic complications than government hospital with a paired "t" value of 2.86, and the 'p' value is 0.03 which is < 0.05 is indicated that there is a significant knowledge score difference between private and government sector.

Keywords: Level of knowledge, demographic variables

- 1. Knowledge:** It is the awareness of the diabetic clients regarding diabetic complications.
- 2. Diabetic Clients:** Diabetic client is a person who is diagnosed to have diabetes mellitus attending diabetic Outpatient Department.
- 3. Diabetic Complication:** Acute or Chronic health problems like Hypoglycemia, Diabetic ketoacidosis, Hyperglycemia Hyperosmolar non ketotic syndrome, Macro vascular like cardiovascular disease, peripheral vascular disease and stroke. Micro vascular like Diabetic Neuropathy, Diabetic Nephropathy, Diabetic Retinopathy and foot disease.
- 4. Private Hospital:** Is an independent self-supported health care agency owned by any individual or organization, not by the Government.
- 5. Government hospital:** It is the health care agency by state control, exercise of political authority in directing people for the care of the sick person.

Demographic variables: The demographic variables are age, gender, religion, education, occupation, marital status, income, dietary pattern, exercise, habit of smoking, consumption of alcohol, age at the onset of diabetes, history of high blood pressure.

Introduction

Diabetes mellitus is a multifactorial systemic disease characterized by hyperglycemia and frequently

hyperlipidemia. The symptoms are caused by a decrease in the secretion of insulin. DM is frequently associated with problems of the micro vascular and macro vascular systems, neuropathic disorders and dermopathy lesions. By its very nature, diabetes mellitus can be delivered by self – care and self and administration of medication. No other disease demands so much of the client’s own self-knowledge and skills. Thus, the professional nurse has the challenge and responsibility to help client gain the knowledge and skill for self-management.

Diabetes mellitus has emerged as one of the world health problems and its prevalence is increasing at an alarming rate. Diabetes is a major public health problem all over the world. Diabetes mellitus is leading cause for mortality. Diabetes is an extremely common disease, affecting a diverse age range of people across the world. Those who are diagnosed with diabetes experience significant health concerns because the disease itself has proven to be the catalyst for other health problems.

Health statistics of diabetes 2007, revealed that there were 246 million diabetes clients’worldwide, in India 31.7 million with a prevalence of 4.2% in the general adult population, Diabetes was estimated to be responsible for 1009 deaths, 1157 lost their life due to complications, 2263 disability-adjusted life. The estimates for disease burden due to diabetes mellitus vary from 23 million in 2004 to 41 million in 2007, and 40.2 million diabetic clients were diagnosed in the year of 2008. In Karnataka state especially Bangalore 12.4 percentages of the population were found to be diabetes and by the year 2030 diabetes mellitus is expected to be 79.4 million in India. Diabetic complication is associated with long term damage to the body and it leads to the failure of the various organs and tissues.

Acute complications are hypoglycemia, DKA and hyperglycemic hyperosmolar non-ketotic syndrome. This

occurs suddenly and at any time. Chronic or long-term complications include micro vascular diseases such as diabetic retinopathy; diabetic nephropathy, diabetic neuropathy, foot and leg problems, and macro vascular disease are peripheral vascular disease, cerebro vascular disease or stroke.

Diabetes causes severe complications and damage vital organs in the body. 22.7% of diabetes population is affected with diabetic retinopathy, 7.4% undergo ophthalmic treatment, 5 - 44.2% develop diabetic neuropathy, 40% have complications related to diabetic nephropathy and the incidence is much higher in advanced age, 39% of diabetic clients develop foot ulcer, preceding 84% of lower extremity amputation with increasing the risk of deaths by 2 – 4% in diabetic clients with ulcer. 22.3% of cardiovascular disease is related to diabetes. The important aspect of the problem is that over 50 percentage of diabetic population suffers from the disease without knowing about it because of lack of knowledge regarding the signs and symptom of the disease.

The prevalence of the most common diabetes complications among people with type 2 diabetes indicate that the prevalence of microvascular complications—chronic kidney disease (defined as microalbuminuria), foot problems (defined as foot/toe amputation, foot lesion, or numbness), and eye damage (defined as being told that diabetes had affected the eyes or had retinopathy)—are much higher than the prevalence of macrovascular complications (heart attack, chest pain, coronary heart disease, congestive heart failure, and stroke) Complications can be either episodic (eg, foot ulcers or infections) that can be treated and recur numerous times or progressive (eg, nephropathy), which usually begin relatively mildly, but over time

result in further damage to the organ and greater loss of functionality that is generally irreversible.

Cardiovascular disease causes up to 65% of all deaths in people with diabetes.³¹ ischemic heart disease and stroke account for the greatest proportion of morbidity associated with diabetes. mortality rates due to heart disease are 2 to 4 times higher among people with diabetes compared with those without diabetes. People with diabetes also are 2 to 4 times more likely to develop stroke than people without diabetes. Peripheral vascular disease [PVD]), is caused by the narrowing of blood vessels that carry blood to the arms, legs, stomach, and kidneys. In people with diabetes, the risk for PAD is increased by age, duration of diabetes, and presence of neuropathy. Diabetic retinopathy is the most common microvascular complication among people with diabetes and results in more than 10,000 new cases of blindness per year. In addition, retinopathy is associated with prolonged hyperglycemia, it is slow to develop, and there is some evidence that it can begin to develop as early as 7 years before clinical diagnosis of type 2 diabetes. The age-adjusted prevalence of visual impairment decreased from 23.7 per 100 people with diabetes in 1997 to approximately 17.7 per 100 people with diabetes in 2005. The prevalence of visual impairment among people with diabetes increases with age.

In 2002, diabetes-related nephropathy accounted for 44% of new cases of end-stage renal disease (ERSD), and 153,730 people with ESRD due to diabetes had either received a kidney transplant or were on chronic dialysis treatment. Diabetic peripheral neuropathy (DPN) is a common complication estimated to affect 30% to 50% of individuals with diabetes. Diabetic peripheral neuropathy leads to a number of impairments and functional limitations. Nontraumatic lower-extremity amputations (LEAs) are a devastating complication of diabetes. As

many as 15% of people with diabetes will have such amputations during their lifetime. About 85% of all LEAs occurring in people who had diabetes for more than 30 months were preceded by a chronic, nonhealing foot ulcer. Peripheral vascular disease contributes to about half of all amputations in people with diabetes. Many foot ulcers might be prevented by regular foot inspections, access to foot care, and adequate footwear.

Control of Risk Factors to Reduce Complications

Across all of the diabetes-related complications described above, the 3 most significant risk factors are hyperglycaemia, high blood pressure, and hypercholesterolemia. It has been suggested that improvements in glycaemic control, blood pressure, and cholesterol level can reduce a person's risk for complications.

Burden to the Health Care System

In addition, a key factor in the development of diabetes complications is glycemic level people who experienced higher annual drift in Hb A_{1c} levels had even further increased costs. These economic estimates suggest that improving glycemic control and other known risk factors for diabetes, particularly those for cardiovascular disease among people with diabetes, will significantly affect long-term costs. Although the evidence is strong that Hb A_{1c} control and reduction can reduce a patient's risk for microvascular complications, the evidence is not so strong that glycemic control greatly reduces a person's risk for cardiovascular complications.

Diabetes is an important public health disorder. The disease is not only a problem for the individual but is also considered to have a major social impact on the society and family as well because of its complications, seriousness and cost. One of the greatest challenges faced by the modern world is diabetes mellitus. Diabetes is an “Iceberg” disease and the prevalence of diabetes mellitus

in adult was around 4% worldwide and over 143 million persons are affected. It is projected that the disease prevalence will be 5-4% by the year 2025 with global diabetic population reaching 300million, and 366 million people by the year 2030.

Materials and methods

A non - experimental research approach was selected to compare the knowledge of diabetic clients regarding diabetic complications in selected outpatient departments of private and government hospitals at Bangalore. The research design is a descriptive comparative research design.

Research Variables: In this study, Knowledge of diabetic clients regarding diabetic complications was considered to be the research variables. Demographic variables: The demographic variables are age, gender, religion, education, occupation, marital status, income, dietary pattern, exercise, habit of smoking, consumption of alcohol, age at the onset of diabetes, history of high blood pressure etc.

The study was conducted at the outpatient department of Chinmaya Mission hospital, Indiranagar, Bangalore, and ESI government hospital, Indiranagar, Bangalore. Karnataka. The target population under study consisted of all the diabetic clients. The sample for the present study comprised of 100 diabetic clients whose age ranges between 20-60 years. The samples were selected by using convenient sampling technique. 50 diabetic clients were chosen from Chinmaya Mission Hospital Indiranagar, Bangalore and 50 diabetic clients from ESI Hospital, Indiranagar, Bangalore, who were readily available and easily accessible at the time of data collection. Prior written permission was obtained from the concerned authority. Informed verbal consent was taken from the diabetic client regarding their willingness to participate in the study.

Sampling criteria

The following criteria were used to select the samples in the present study.

Inclusion criteria

Diabetic clients attending OPD in Private and Government Hospitals. Diabetic clients who are between 20 to 60 years of age. Diabetic clients who are willing to participate and are present at the time of study.

Exclusion criteria

Diabetic clients who had developed diabetic complications.

Description of the tool

A structured interview schedule was prepared to assess the knowledge of diabetic clients regarding diabetic complications. The interview schedules consist of two sections.

Section I: Demographic Data with 28 items such as age, gender, educational status, occupational status, income, religion, marital status, type of family, dietary pattern, domicile, age at the onset of diabetes, nature of treatment, etc. Section II: knowledge of diabetic clients regarding diabetic complications. There were 30 items in the tool which is related to knowledge on diabetes mellitus and its complications.

Scoring system

The respondents were instructed to place a tick mark against the most suitable answer. The items were multiple choice questions, entire question has three options in that, one was the correct answer and other two was the wrong answers. Each correct option carrying one score and wrong option carrying zero score. The maximum score was 30.

Content validity

Validity of the tool was established in consultation with the guide and experts. 10 experts belonging to renowned institutions for validation. The experts include 8 Nurse

Educators in Medical-Surgical Nursing Department, General physician and Biostatistician. The tool was submitted to Kannada professor for translation.

Pilot study

The pilot study was conducted in the outpatient department of VIMS Hospital, Marathalli, and HAL Hospital, Bangalore on 22nd to 28th July 2009. Permission for conducting the study was obtained from the Medical Director of both the hospitals. The investigator used a structured interview schedule to collect the data from the respondents. The study was conducted in a similar method as for the final collection. The investigator introduced herself to the respondents and explained the purpose of the study and gained confidentiality. Informed consent was obtained prior to the interview. The tool was administered to five participants from each setting using convenient sampling technique. The total number of samples selected for the pilot study was 10. The average duration for each sample taken was 40-45 minutes. The tool was found to be feasible and adequate. The collected data was analyzed by using descriptive and inferential statistics. The tool was found to be satisfactory in terms simplicity, clarity, feasibility and reliability. The reliability of the tool was found to be 0.69.

Reliability of the tool

To establish the reliability of the tool, it was administered to 10 subjects 5 from private hospital and 5 from government hospital. The reliability of the whole test was then estimated by Kuder Richardson formula. The reliability of tool was ($r=0.69$), so the tool was found to be highly reliable for the data collection.

Data collection process

The data collection was scheduled from 10th July 2009 to 9th August 2009. Prior to data collection, written permission was obtained from the Resident Medical

Officer of Chinmaya Mission Hospital and ESI Government Hospital, Bangalore. Using convenient sampling technique, a total of 100 diabetic clients, 50 clients from Chinmaya Mission Hospital and 50 clients from ESI hospital attending the OPD were selected. The subjects were interviewed with knowledge questionnaire. It took 40 minutes per subject to collect the data. Around three to four subjects were interviewed per day. The purpose of the study was explained to the respondent's and informed consent was obtained prior to the interview schedule. The clients co-operated well during interview process. The respondents were thanked for their kind participation in the study.

Plan for data analysis

Data were analyzed by using descriptive and inferential statistics. With experts' guidance the following plan was made. The data on sample characteristics were described in the form of frequencies, percentages, mean and standard deviation. The data has been presented in the form of graphical representation wherever it is applicable.

Testing the level of significance of hypothesis was done with the help of inferential statistics. Chi-square test was used to find the association between the level of knowledge and demographic variable. The level of significance is fixed at 0.5 to test the significance of difference. This level is often used as a standard for testing the difference.

Results and discussion

Among the diabetic clients 36% were between 30 – 40 years of age, 76% were between 40 – 50 years of age, 88% were between 50 – 60 years of age and none were in the age group between 20-30 years. Majority of the diabetic clients, 52% were males, 48% were female gender. Most of the diabetic clients with reference to education, 14% were illiterate, 26% were middle

school, 44% were high school, 64% were higher secondary school, and 52% were graduate and above. Maximum numbers of diabetic clients, 54% were home maker, 4% were coolie, 2% were farmer, 38% were government employee, 52% were private employee, 2% were unemployed, and 48% were self-employee. Among the diabetic clients, 18% had monthly family income below 3000, 48.2% had monthly family income between 3000-6000, 80% had monthly family income between 6000-9000, and 20% had monthly family income above 9000. Majority of the diabetic clients, 51% were Hindu, 20% were Christian, 28% were Muslim 1% were another category. Among the diabetic clients, 20% were single, 71% were married, none of them were separated, 1% was divorced, and 8% of them were widow and widower. Majority of the diabetic clients, 68% belongs to joint family, 32% belongs to nuclear family, and none belongs to extended family. Among the diabetic clients, 64% belongs to urban area, 36% belongs to rural area. Majority of the diabetic clients, 80% were non-vegetarian and 20% were vegetarian. 33% of them performed the exercise, and 67% do not perform the exercise. 50% do the walking exercise and 50% do the others exercise. Majority 65% of them do the exercise in the duration of 20-30mts, 35% perform 30-60mts and none of them perform for >60mts. Nearly 76% do not have the habit of smoking, and 24% have the habits of smoking. 66% represent the duration of smoking were between 0 - 5years, 34% were between 5 – 10years, and none of them were between 10 -15years. Majority of diabetic clients represent the number of beedi/ cigarette/ day. 66% were between 0-5 years, 32% were between 5-10years, and 2% were between 10-15 years. Majority of them, 79% do not consume alcohol and 21% consumed alcohol. 69% represent the duration of alcohol consumption were between 0 - 5 years, 31% were

between 5 – 10years, and none of them were between 10-15years. Among the frequency of alcohol 69% of them were between <3times/month, 31% of them were between 3-5times/month, and none of them were more than 5times/month. Among the age at the onset of diabetes, 22% were between 20-30 years, 60 % were between 30-40years, 14% were between 40-50years, and 4% were between 50-60years. Among the duration of illness 25% of them were between 0 - 5 years, 60% were between 5–10yrs, and 15% of them were between 10years and above. Majority of them, 47% were in the treatment of oral hypoglycemic agent, 46% were in the treatment of Insulin, and 7% were in the treatment of Diet control. Majority of the duration of diabetic treatment, 39% belongs to 0-5years 38% belongs to 5–10yrs, and 23% belongs to 10years and above. Among the duration of high blood pressure, 48% of them belongs to < 5 years, 27% of them belong to 5 – 10years, and 25% of them belong to >10 years. Majority of the diabetic clients, 55% of them received information about diabetic complications, 45% of them were not receive information about diabetic complications. Maximum number of 33% received information from the health Personnel, 6% received from television, 6% received from Radio, 13% received from newspaper, 5% received from magazine, 2% received from Website, 16% received from friends, and 19% received from relatives.

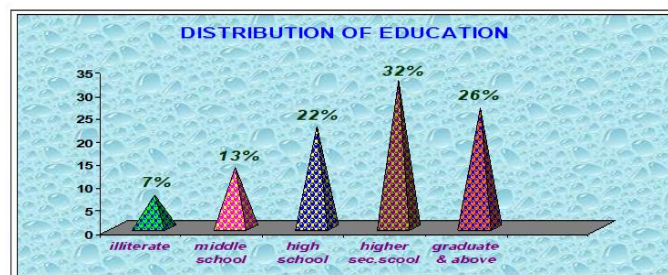


Fig 1: This figure denotes distribution of respondents according to education of diabetic clients, in that, 7(14%) were illiterate, 13(26%) were middle school 22(44%)

were high school 32(64%) were higher secondary school and 26(52%) was undergraduate and above.

Table 1: Distribution of respondents according to domicile.

n = 100

Sn.	Domicile	Private Hospital		Govt hospital		Percentage distribution	
		N	%	N	%	N	%
1	Urban	15	30	49	98	64	64
2	Rural	35	70	1	2	36	36
	Total	50	100	50	100	100	100

Table 1- represent the distribution of respondent according to domicile and reveals that 64% of them were from urban area, 36% of them were from rural area.

Table 2: Distribution on duration of diabetic treatment. n = 100

Sn.	Duration of diabetic treatment	Private hospital		Govt. Hospital		Percentage Distribution	
		N	%	N	%	N	%
1	0 – 5yrs	19	38	20	40	39	39
2	5 – 10yrs	18	36	20	40	38	38
3	10 and above	13	26	10	20	23	23
	Total	50	100	50	100	100	100

Table 2 - represent the duration of diabetic treatment by the respondents, and reveals that 39% belongs to 0-5years,38% belongs to 5–10yrs, and 23% belongs to 10years and complications.

Table 3: distribution according to the family history of diabetic. N= 100

Sn.	Family history of diabetic	Private Hospital		Govt. Hospital		Percentage Distribution	
		N	%	N	%	N	%
1	Yes	41	82	20	40	61	61
2	No	9	18	30	60	39	39
	Total	50	100	50	100	100	100

This table denotes the distribution of respondents according to the family history of diabetes. Out of 100 respondents 61% of them had the family history of diabetes and 39% of them had no family history of diabetes.

Table 4: Distribution on information receive on diabetic complication n=100

Sn.	Information receives about diabetic complications	Private hospital		Govt. Hospital		Percentage Distribution	
		N	%	N	%	N	%
1	Yes	35	70	20	40	55	55
2	No	15	30	30	60	45	45
	Total	50	100	50	100	100	100

Table 4 denotes the distribution of respondents according to the information receive about diabetic complications, and reveals that 55% received information about diabetic complications, and 45% were not receive information about diabetic complications.

Table 5: Distribution of respondents according to the source of information

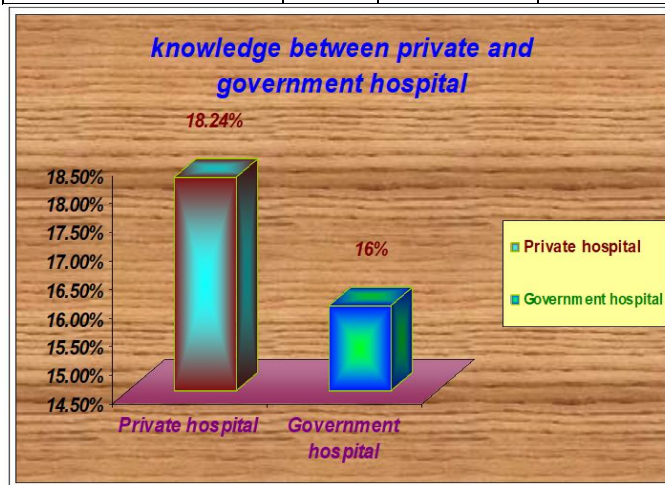
Sn.	Source of information	Private hospital		Govt. Hospital		Percentage Distribution	
		N	%	N	%	N	%
1	Health personnel	18	36	15	30	33	33
2	Television	3	6	3	6	6	6
3	Radio	2	4	4	8	6	6
4	Newspaper	6	12	7	14	13	13
5	Magazine	3	6	2	4	5	5
6	Website	2	4	0	0	2	2
7	Friends	8	16	8	16	16	16
8	Relatives	8	16	11	22	19	19
	Total	50	100	50	100	100	100

Table, 30 reveals that among the 100 respondents 33% received information from the health personnel,6% received information from television, 6% received from radio,13% received from newspaper,5% received from magazine,2% received from website,16% received from friends, and 19% received from relatives.

Section II- Findings regarding assessment of knowledge among diabetic clients’ regarding Diabetic The 100 diabetic clients aged between 20-60 years were respondent to the structured interview schedule regarding knowledge of diabetic complications with 30 items. The structured interview schedule was evaluated by experts. The assessment of knowledge is analyzed and depicted in Table 31 and found that, there is mean difference between private hospital vs. government hospital. The government mean was 16 which is less than private hospital means whose value was 18.24. It indicates that diabetic clients from private hospital had more knowledge regarding diabetic complications than government hospital.

Table 6: Overall mean knowledge score between Private and Government hospitals respondents.

Section	Mean	Total score	SD
Private hospital	18.24	30	5.83
Government hospital	16.00	30	6.14



Section III- Comparison of knowledge score of diabetic clients regarding diabetic complications between private and government hospital. The comparison of knowledge level of diabetic clients regarding diabetic complications in private and government hospital in selected outpatient

departments at Bangalore, was assessed by structured interview schedule of 30 items and depicted in Table.32 out of 100 diabetic clients, the mean score was 2.24 with Standard Deviation of 8.52 and the ‘t’ value was 2.86, df was 49 and ‘p’ value was 0.03 which is < 0.05 it indicates that there is a significant knowledge score difference between private and government hospital. Hence the Hypothesis which states that there is a significant difference in the knowledge of diabetic clients between Private and Government Hospitals regarding diabetic complications is accepted.

Table 7: Comparison of the overall mean knowledge score between Private and Government hospitals respondents.

Section	Mean	SD	‘t’	df	‘p’
Private Vs. Government hospitals	2.24	8.52	2.86	49	0.03

Section IV-Determination of association between knowledge and selected demographic variables was assessed for the private hospital and found out that variables such as socio demographic variables like age, gender, occupation, religion, marital status, type of family, dietary pattern, exercise, habit of smoking, alcohol, age at the onset of diabetes, duration of illness, nature of treatment, and history of high blood pressure, have no significant association in this study but other socio demographic variables like education, income, domicile, duration of diabetic treatment, family history of diabetes mellitus, information received regarding diabetic complications, and source of information have a significant association with the knowledge level. Hence the hypothesis which states that there is a significant association between the knowledge of diabetic clients between Private and Government Hospitals regarding

diabetic complications and socio demographic variables is accepted in the study.

Table 8: Significant of the socio demographic variables in Private Hospital

Sn.	Variables	Chi-square	df	P value	Inference
1	Education	26.032	4	0.000	S
2	Income	12.980	3	0.005	S
3	Domicile	9.235	1	0.002	S
4	Duration of diabetic treatment	6.632	2	0.036	S
5	Family history of DM	7.182	2	0.028	S
6	Information receiving on diabetic complication	44.427	1	0.000	S
7	Source of information	7.234	2	0.041	S

The rest of the socio demographic variables was non-Significant.

The association between the levels of knowledge among diabetic clients regarding diabetic complications and sociodemographic variables was assessed for the government hospital and the socio demographic variables like, gender, occupation, religion, type of family, domicile, dietary pattern, exercise, habit of smoking, alcohol, age at the onset of diabetes, duration of illness, nature of treatment, duration of diabetic treatment, duration of high blood pressure and source of information, have no significant association in this study, other socio demographic variables such as age, education, income, marital status, history of high blood pressure, information received on diabetic complication, have a significant association with the knowledge level.

Hence the hypothesis which states that there is a significant association between the knowledge of diabetic clients between Private and Government Hospitals regarding diabetic complications and socio demographic variables is accepted in the study.

Table 9: Significant of the socio demographic variables in Government Hospital

Sn.	Variables	Chi-square	df	P value	Inference
1	Age	6.851		0.033	S
2	Education	19.669	3	0.000	S
3	Income	11.358	1	0.010	S
4	Marital Status	5.357	1	0.021	S
5	History of high BP	4.584		0.032	S
6	Information receiving on diabetic complication	24.693	1	0.000	S

The rest of the socio demographic variables was non-Significant.

Conclusion

In this study, on assessment of knowledge of diabetic Clients regarding diabetic complications was perceived that, there is mean difference between private hospital vs. government hospital. The government mean was 16 with the SD of 6.14 which is less than private hospital means whose value was 18.24 and SD of 5.83. It indicates that diabetic clients from private hospital had more knowledge regarding diabetic complications than government hospital.

Limitations

1. Study cannot be broadly generalized, since it was limited to 100 sample subjects in a selected setting only.

2. The study findings were applicable only to the diabetic client who were attending outpatient department of private and government hospital and those who did not developed complications.

Nursing Implication

Nursing practice

Nurses play an imperative and crucial role in creating major impact on the awareness regarding the risk factor, signs and symptoms, complication and management and its prevention of diabetic complications. In the nursing services, the nurse plays a key role in improving the knowledge of diabetic client to take effective measures in teaching them about self-care, treatment and can embrace families in the care process and give health education about the disease of diabetes mellitus, medication, prevention of diabetic complications, and control of blood sugar level to normal level, because it has a long-term ill effect. The effective use of resources will provide enormous saving in both money and human sufferings. The nurse acts as a teacher and plays an important task to improve the knowledge of the disease and motivate the clients to undergo regular follow up.

Nursing Research

One of the main aims of Nursing Research is to contribute knowledge to the body of nursing to expand and broaden the scope of Nursing. This is only possible if nurses take initiative to conduct further research in exploring the reasons and factors leading to diabetic complication. This will help to plan and organize care and to prepare effective teaching materials in providing health care information. Further, nurse researcher can also take necessary steps to implement the finding of this study to promote the quality of life. So, the nursing leaders can motivate nurses to do more research in this aspect.

Nursing Education

Implication for nursing education would be promotion, prevention and early detection of infection, early referral to prevent further complications and economic loss of the family. Nursing curriculum should provide opportunity to plan and conduct health education. A regular health education programmed could be planned by a nurse educator along with the students with an emphasis on prevention and control of diabetic complications.

Nursing Administration.

The concept of extended and expanded role of a nurse offers many opportunities for a nurse administrator to improve compliance with therapeutic regimen of diabetic clients. The nurse administrator co-ordinate the work of her subordinate in the preventive, promotive and rehabilitative care of diabetic clients. She should cooperate with other members of the health team to organize diabetic camps and identify the target population for diabetes. These vulnerable groups should be encouraged to get their investigations done regularly and should be given proper guidance. In her expanded role the nurse administrator should see that refresher courses and workshops for nurses are conducted from time to time to update their knowledge to improve the care to be provided to the diabetic clients.

Recommendations for further study

On the basis of the findings of the study it is recommended that

- Similar study can be undertaken with a large sample to generalize the findings by applying experimental design.
- Further study can be done by correlating the factors influencing diabetic complication & other variable.
- A similar study can be replicated in other part of Bangalore hospital and other state to validate and generalize the findings.

- A similar study can be conducted in general public to assess their knowledge regarding diabetic complications.

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