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A descriptive study to assess the knowledge regarding self administration of insulin injection among diabetic patients in selected rural area of Ludhiana, Punjab

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Abstract

Introduction: Diabetes mellitus is an endocrine disorder, characterized by hyperglycemia that is high blood sugar levels. This is caused due to a relative or absolute insulin deficiency, a hormone produced by the pancreas. Lack of insulin, either relative or absolute affects metabolism or breaking down of carbohydrates, proteins, fat, water and electrolytes leading to an accumulation of glucose in the blood.

Aim: The study was carried out to assess the knowledge regarding self administration insulin injection among diabetic patient in rural area.

Methodology: A descriptive research design was used to assess the knowledge of 60 patient in selected Village Sarabha by sampling technique who were live in Village Sarabha, Ludhiana, Punjab. A self structure questionnaire tool was used to assess the knowledge.

Results: The results of the study reveal that there was no any significance association of age, gender, weight, marital status, income, source of information, type of food habits, family history, insulin units and use of syringe with level of knowledge. But there was significant value i.e. $p=0.056^*$, $p=0.013^*$, $p=0.019^*$ had association between the type of family, education and occupation respectively with the knowledge. Hence it was concluded that type of family, education, and occupation had impact on knowledge of diabetic patients.

Conclusion: Hence, it is concluded that the majority of patients having poor knowledge towards diabetes mellitus.

Keywords: Diabetic patients, self administration

Introduction

Health this is a dynamic resulting from body's constant adjustment and adaptation in response to stress and changes in the environment for maintaining an inner equilibrium. Wellness is first and foremost a choice to assume responsibility for the quality of our life. It begins with a conscious decision to shape a healthy life style. Wellness is a mind set, a predisposition to adopt a series of key principles in varied life areas that lead to high level of well being and life satisfactions ^[1]. Diabetes Mellitus is a group of metabolic disease in which a person has high blood sugar, either because the pancreas does not produce enough insulin or because cell do not respond to the insulin that is produced. The high blood sugar produces the classical symptoms of polyuria, polydipsia and polyphagia. In 2011, 336 million population have diabetes and estimated to reach 552 million by 2030 globally. Low and middle-income countries have 80 percent diabetes burden. Diabetes will be the seventh leading cause of death in 2030 ^[2].

Material and methods

A quantitative research approach was used to accomplish the objectives of study. Non experimental descriptive research design was used to assess the knowledge regarding self administration insulin injection among diabetic patients. The study was conducted in V.P.O. Sarabha, Ludhiana, Punjab. Purposive sampling technique was used for selecting the sample from diabetic patients and sample size was 60.

Data collection procedure

- The data has been collected in month of November 2019 in village Sarabha, Ludhiana, Punjab.

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- Written permission was taken from principal of Shaheed Kartar Singh Sarabha College of Nursing, Sarabha, Ludhiana, Punjab.
- Written permission was taken from head of village (Sarpanch).
- Sample of 60 study subjects was taken for the study.
- Purposive sampling technique was used.
- Study subjects were informed about the purpose of study.
- Interpersonal relationship was build up with study subjects before the data collection.
- The investigator collected the base line demographic data.
- Structured questionnaire was used for data collection.

Result

Table 1: Frequency and percentage distribution of sample characteristics N=60

| S. No. | Demographic variable | n | % |
|--------|--|----|----|
| | Age in (years) | | |
| 1. | 20 – 29 | 3 | 5 |
| | 30 -39 | 7 | 12 |
| | 40 – 49 | 13 | 22 |
| | Above 50 | 37 | 61 |
| | Gender | | |
| 2. | Male | 35 | 58 |
| | Female | 25 | 42 |
| | Weight(in kg) | | |
| 3. | 35 - 45 | 4 | 7 |
| | 46 – 55 | 15 | 25 |
| | 56 – 65 | 23 | 38 |
| | Above 65 | 18 | 30 |
| | Type of family | | |
| 4. | Joint | 45 | 75 |
| | Nuclear | 15 | 25 |
| | Marital status | | |
| 5. | Married | 43 | 72 |
| | Single | 5 | 8 |
| | Divorce | 2 | 3 |
| | Widow | 10 | 17 |
| | Educational status | | |
| 6. | Illiterate | 25 | 42 |
| | Primary | 16 | 26 |
| | Secondary | 13 | 22 |
| | Graduate or above | 6 | 10 |
| | Occupational status | | |
| 7. | Agriculture | 16 | 27 |
| | House wife | 26 | 43 |
| | Labour | 10 | 17 |
| | Others _____ | 8 | 13 |
| | Family income (per month) | | |
| 8. | Rs<5000 | 26 | 44 |
| | Rs 5000-10,000 | 23 | 38 |
| | Rs 11,000-15,000 | 5 | 8 |
| | Rs >15,000 | 6 | 10 |
| | Source of information | | |
| 9. | Friends | 13 | 22 |
| | Family members | 32 | 53 |
| | Health workers | 15 | 25 |
| | Type of food habits | | |
| 10. | Vegetarian | 37 | 62 |
| | Non vegetarian | 23 | 38 |
| | Clinical variables | | |
| 11. | Have any of your family members suffered from diabetes? | | |
| | Yes | 26 | 43 |
| | No | 30 | 50 |
| | Don't know | 4 | 7 |
| 12. | How many unit of insulin you are taking per day? | | |
| | 1 to 5units | 26 | 43 |
| | 6 to 10 units | 17 | 29 |
| | 11 to 15 units | 9 | 15 |
| | | 8 | 13 |
| 13. | How many time do you use a penor syringe? | | |
| | 1 time | 24 | 40 |
| | 2 time | 26 | 43 |
| | 3 time | 7 | 12 |
| | | 3 | 5 |
| 14. | How would you best describe your injections? | | |

| | | | |
|--|-------------------|----|----|
| | Always painful | 10 | 17 |
| | Often painful | 8 | 13 |
| | Some time painful | 32 | 53 |
| | Never | 10 | 17 |

Table 1 Depicts that study was distributed into various categories such as age, weight, gender, education status and food habits etc. Most of the patients (61%) was above 50 years age group. More than half patients (58%) were male. Maximum of patients had (38%) weight is 56 – 65kg. Mostly patients (75%) were lived in joint family. Most of patients (72%) were married. Most of the patients (42%) were illiterate. Majority of patients (43%) were housewife. Most of patients had (44%) monthly income RS<5000. More than half patients (43%) were get information from family members. Majority of patients (62%) were eat vegetarian food. Most of patients (43%) had family history of diabetes mellitus. Near about half (53%) patients were diagnosed with diabetes mellitus when they were in 20–30 years age group. Most of patients (43%) take 6 to 10 units of insulin. More than half (53%) patients were used 3 times pen or syringe.

This table shows that least patients i.e. 3(5%) had average knowledge (13-19) about self administration of insulin injections whereas 57 (95%) respondents had poor knowledge about self administration of insulin injection.



Fig 1: Percentage distribution of diabetic patient according to knowledge score

Table 2: Frequency and percentage distribution of diabetic patients in terms of level of knowledge regarding self administration of insulin injection N=60

| Level of knowledge | N | % |
|--------------------|----|----|
| Average(13-19) | 3 | 5 |
| Poor (1-12) | 57 | 95 |

Maximum score=25
Minimum score=1

This table is show's that patients i.e. 5%comes under the range of 13-19 have good knowledge about self-administration of insulin injections. Respondents 95% come under the range of 1-12 have fair knowledge about self-administration of insulin injection.

Table 3: Finding related to association between knowledge and selected variables

| Demographic variable | n | Mean + SD | df | F/t test | P |
|------------------------------------|-----|------------|----|----------|---------------------|
| 1. Age | | | | | |
| 20 - 29 | 3 | 8.66+1.15 | 3 | F=0.7558 | 0.522 ^{NS} |
| 30 - 39 | 7 | 9.57+2.14 | | | |
| 40 - 49 | 13 | 7.84+2.07 | | | |
| Above 50 | 37 | 8.24+2.76 | | | |
| 2. Gender | | | | | |
| Male | 35 | 8.48+2.51 | 1 | t=0.5534 | 0.582 ^{NS} |
| Female | 25 | 8.12+2.53 | | | |
| 3. Weight(in kg) | | | | | |
| 35 to 43 | 4 | 9.75+2.87 | 3 | F=1.0186 | 0.390 ^{NS} |
| 46 to 55 | 15 | 7.73+2.76 | | | |
| 56 to 65 | 23 | 8.73+2.39 | | | |
| Above 65 | 18 | 8.00+2.35 | | | |
| 4. Type of family | | | | | |
| Joint | 45 | 8.68+2.53 | 1 | t=1.9458 | 0.056* |
| Nuclear | 15 | 7.26+2.15 | | | |
| 5. Marital status | | | | | |
| Married | 43. | 8.51+2.33 | 3 | F=0.2904 | 0.832 ^{NS} |
| Single | 5 | 8.20+2.04 | | | |
| Divorce | 2 | 8.0+1.41 | | | |
| Widow | 10 | 7.7+3.62 | | | |
| 6. Educational status | | | | | |
| Illiterate | 25 | 7.68+2.64 | 3 | F=3.8614 | .0013* |
| Primary | 16 | 7.56+1.89 | | | |
| Secondary | 13 | 9.76+2.45 | | | |
| Graduate or above | 6 | 10.00+1.67 | | | |
| 7. Occupational status | | | | | |
| Agriculture | 16 | 8.37+2.18 | 3 | F=3.5638 | 0.019* |
| House wife | 26 | 8.38+2.54 | | | |
| Labour | 10 | 6.60+2.41 | | | |
| Others _____ | 8 | 10.25+1.90 | | | |
| 8. Family income (per moat) | | | | | |
| Rs<5000 | 26 | 7.53+2.85 | 3 | F=2.2890 | 0.087 ^{NS} |
| Rs 5000-10,000 | 23 | 8.60+2.06 | | | |

| | | | | | |
|--|----|------------|---|----------|---------------------|
| Rs 11,000-15,000 | 5 | 9.00+1.87 | | | |
| Rs >15,000 | 6 | 10.16+1.94 | | | |
| 9 Source of information | | | | | |
| Friends | 13 | 8.53+2.02 | 2 | F=0.0539 | 0.949 ^{NS} |
| Family members | 32 | 8.28+2.92 | | | |
| Health-workers | 15 | 8.26+2.01 | | | |
| 10. Type of food habits | | | | | |
| Vegetarian | 37 | 8.51+2.86 | 1 | t=0.7026 | 0.485 ^{NS} |
| Non vegetarian | 23 | 8.04+1.82 | | | |
| Clinical variables | | | | | |
| 11. Have any of your family members suffered from diabetes? | | | | | |
| Yes | 26 | 7.69+2.51 | 2 | F=1.5365 | 0.220 ^{NS} |
| No | 30 | 8.80+2.53 | | | |
| Don't know | 4 | 9.00+1.63 | | | |
| 12. How many unit of insulin you are taking per day? | | | | | |
| 1 to 5 units | 26 | 7.53+2.96 | 3 | F=1.6544 | 0.186 ^{NS} |
| 6 to 10 units | 17 | 9.11+2.14 | | | |
| 11 to 15 units | 9 | 8.66+1.58 | | | |
| Above 15 units | 8 | 8.87+1.95 | | | |
| 13. How many time do you use a pen or syringe? | | | | | |
| 1 time | 24 | 8.54+2.48 | 3 | F=0.4893 | 0.690 ^{NS} |
| 2 time | 26 | 8.46+2.48 | | | |
| 3 tires | 7 | 7.28+3.09 | | | |
| More than 4 time | 3 | 8.00+2.00 | | | |
| 14. How would you best describe your injections? | | | | | |
| Always painful | 10 | 7.00+2.35 | 2 | F=1.4397 | 0.239 ^{NS} |
| Often painful | 8 | 7.87+1.80 | | | |
| Some Time painful | 32 | 8.78+2.28 | | | |
| Never | 10 | 8.60+3.50 | | | |

Ns=Non-significant ($p > 0.05$) (*) Significant ($p < 0.05$)

Table 3 illustrate that there was no any significance association of age, gender, weight, marital status, income, source of information, type of food habits, family history, insulin units, use of syringe with level of knowledge. But there was significant value i.e. $p=0.056^*$, $p=0.013^*$, $p=0.019^*$ had association between the type of family, education and occupation respectively with the knowledge. Hence it was concluded that type of family, education, and occupation had impact on knowledge of diabetic patients.

Discussion

According to objectives

Objective 1: To assess knowledge of diabetic patient regarding self-administration of insulin injection.

Findings revealed that 95% of subject had poor knowledge score followed by 5% had average knowledge score regarding self-administration of insulin injection.

Objective 2: To find out the association of knowledge score with the selected demographic variables.

According to age of participants depicts that the most of participants 61% found within age group of above 50 have no knowledge regarding self-administration of insulin injection, followed by 22% within age group of 40-49 have poor knowledge regarding self-administration of insulin injection, followed by 12% within age group of 30-39 have average knowledge, and lowest 5% in age group of 20-29 have knowledge regarding self-administration of insulin injection.

According to gender of participants depicts that poor knowledge of self-administration of insulin injection of gender i.e. 58% were male and 42% were females.

According to weight of participants depicts that poor knowledge of self-administration of insulin injection of weight of participants i.e. 38% were had 56-65 weight (kg), followed by 30% were had weight above 65(kg), followed by 25% were had 46-55 weight (kg) and 7% were had 35-45 weight (kg).

Conclusion

The conclusions were drawn from the present study was diabetic patients had poor knowledge regarding self-administration of insulin injection. The study finding indicate that there is no significant association between the age, gender, weight, marital status, income, source of information, type of food habits, family history, insulin units, use of syringe with level of knowledge expect type of family, education and occupation. Which has impact on knowledge. Education can gradually change people from their wrong unhealthy perception and practices. Health education is provided to encourage healthy practices and positive attitude was reinforced.

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