



An Assessment of Knowledge, Attitude and Practices (KAP) towards Diabetes and Diabetic Retinopathy

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Introduction: Diabetes mellitus is an endocrine metabolic disorder whereas Diabetic retinopathy is a major complication of diabetes. Diabetes occurs due to defect in insulin secretion, action, or both which in turn leads to chronic hyperglycemia with disturbances of carbohydrate, fat, and protein metabolism and is associated with long-term damage, dysfunction, and failure of different organs (eyes, kidneys, nerves, heart, and blood vessels). DR is a progressive alteration in the microvasculature that lead to retinal ischemia, altered retinal permeability, neovascularisation, macular edema.

Methods and Materials: It was a prospective cross-sectional study, which was carried out over a period of 6 months (December-2020 to May-2021). The knowledge, attitude and practice were assessed in diabetic patients on diabetes and diabetic retinopathy by using questionnaires. A total of 362 diabetic patients are included in this study. The completed questionnaires were collected and analysed using SPSS software (version 19) and results were expressed in percentages.

Results and Discussion: In the study, majority of the patient were male and in the age group of 46-55 years. Patients had good knowledge on diabetes when compared to diabetic retinopathy, positive attitude was seen towards diabetes than diabetic retinopathy and good practice patterns were observed in diabetes retinopathy than diabetes.

Conclusion: Our study concluded that the patients had good knowledge on about diabetes and a very poor knowledge on diabetic retinopathy. Positive attitude was seen in diabetes than diabetic retinopathy where as good practice patterns was seen in diabetic retinopathy than diabetes patients.

Keywords: *Diabetes, diabetic retinopathy (DR); non-proliferative diabetic retinopathy (NPDR); proliferative diabetic retinopathy (PDR); macular edema (ME).*

1. INTRODUCTION

Diabetes mellitus (DM) is an endocrine metabolic disorder affecting the pancreas [1] which results in either deficit in insulin secretion, insulin action, or both and is commonly increasing world-wide reaching to epidemic proportion [2,3]. Insulin deficiency in turn leads to chronic hyperglycaemia with disturbances of carbohydrate, fat, and protein metabolism [4]. The chronic hyperglycaemia of diabetes is associated with long-term damage, dysfunction, and failure of different organs, especially the eyes, kidneys, nerves, heart, and blood vessels [5]. It was estimated that the prevalence of diabetes may increase in adults by 69% in developing countries and 20% increase in developed countries between 2010 and 2030 [6]. The classic symptoms of diabetes such as polyuria, polydypsia and polyphagia occur commonly, which indicates a rapid development of hyperglycaemia [7].

Diabetic retinopathy (DR) is a major complication of diabetes and is an progressive alterations in the microvasculature which lead to retinal ischemia, altered retinal permeability, neovascularisation, macular edema (ME) [8]. It is one of the leading cause of visual loss in diabetic patients [9-13]. In fact, abnormalities in retinal function can be detected in patients without any evidence of microvascular abnormalities, and the American Diabetes Association (ADA) has recently defined DR as a highly specific neurovascular complication [14]. DR is mainly divided into two stages: proliferative diabetic retinopathy (PDR) and non-proliferative diabetic retinopathy (NPDR). Non-Proliferative diabetic retinopathy represents the early stage of diabetic retinopathy, wherein increased vascular permeability and capillary occlusion and Proliferative diabetic retinopathy, a more advanced stage of diabetic retinopathy, is characterized by neovascularization.

Primary prevention of diabetes is feasible and strategies such as lifestyle modification are effective in populations of varied ethnicity [15,16]. However, for implementation of the strategies at

the population level, national programmes which are culturally and socially acceptable and practical have to be formulated which are currently lacking in most of the developed and developing countries. Early diagnosis and institution of appropriate therapeutic measures yield the desired glycaemic outcomes and prevent the vascular complications [17]. Early detection and timely intervention of DR is also the key to avoid blindness due to diabetes. Hence, the study was conducted to assess the knowledge, attitude and practice towards diabetes and diabetic retinopathy.

1.1 Aim

The aim of the study is to assess Knowledge, Attitude, and Practices (KAP) towards Diabetes and Diabetic Retinopathy.

1.2 Objectives

The objective of the study is to evaluate the Knowledge, Attitude, and Practices (KAP) towards diabetes and diabetic retinopathy by using questionnaires.

2. METHODS AND MATERIALS

The study was a prospective cross-sectional, which was carried out in Kalaiyarkovil, Tamilnadu for a period of 6 months from December 2020 to May 2021. The study was carried out by using questionnaire which includes the questions related to knowledge, attitude and practice on diabetes and diabetic retinopathy. IEC was obtained before conducting the study. Informed consent form was signed by the patients or caregivers before conducting the study. The patients diagnosed with diabetes were included in the study and the patients who were not willing to participate or sign the informed consent form were excluded from the study. In total 362 patients were included in the study based on the inclusion and exclusion criteria. The completed questionnaires were collected and analysed using SPSS software. All the obtained results were expressed in the form of percentages.

3. RESULTS AND DISCUSSION

The study was a prospective cross-sectional, which was carried out in Kalaiyarkovil, Tamil Nadu for a period of 6 months from December 2020 to May 2021. A total of 362 patients were included in the study based on the inclusion and exclusion criteria.

Based on the age group (Table 1 and Fig. 1), there were 17 patients in between 25-35 years, 63 patients between 36-45 years, 115 patients between 56-65 years and 43 patients between 66-75 years and majority of the patients were in the age group of 46-55 years (n=124) which was similar to the study carried out by Abdurrahman Al-Yahiya at al., 2020 [18]. Based on the gender (Table 2 and Fig. 2), out of 362 patients majority were males (n=198) when compared to females (n=164) which was similar to the study carried out by NithinKeshav Srinivasan et al [19].

Table 1. Based on the age group

Factor (age in years)	Number of patients (n=362)
25-35 years	17
36-45 years	63
46-55 years	124
56-65 years	115
66-75 years	43

Table 2. Based on gender

Gender	Number of patients (n=362)
Male	198
Female	164

Based on knowledge attitude and practice towards diabetes mellitus, it was observed that majority of the patients had knowledge on diabetes (223 patients out of 362) shown in Fig. 3, majority of the patients had attitude as insulin is the first and best option to control BSL (167 out of 362) shown in Fig. 4 and majority of the patients practice to take tablets correctly as prescribed by doctor (349 out of 362) shown in Fig. 5.

Among the diabetes mellitus patients, a mean of 129 (36.0%) had good knowledge of diabetes, while only a mean of 81 (22%) had positive attitude towards diabetes and a mean of 210 (58%) were found to have good practice patterns towards diabetes [Table 3 and Fig. 6].

Table 3. KAP regarding diabetes (mean)

Parameters	Good/Positive	Poor/Negative
Knowledge	129 (36.0%)	233 (64%)
Practice	210 (58%)	152 (42%)
Attitude	81 (22%)	281 (78%)

Based on knowledge attitude and practice towards diabetic retinopathy, it was observed that majority of the patients had knowledge that diabetes can cause eye diseases (171 patients out of 362) shown in Fig. 7, majority of the patients had attitude that eye examination is needed only when vision is effected (188 out of 362) shown in Fig. 8 and majority of the patients practice to take tablets for diabetes/diabetic retinopathy correctly as prescribed by doctor (349 out of 362) shown in Fig. 9.

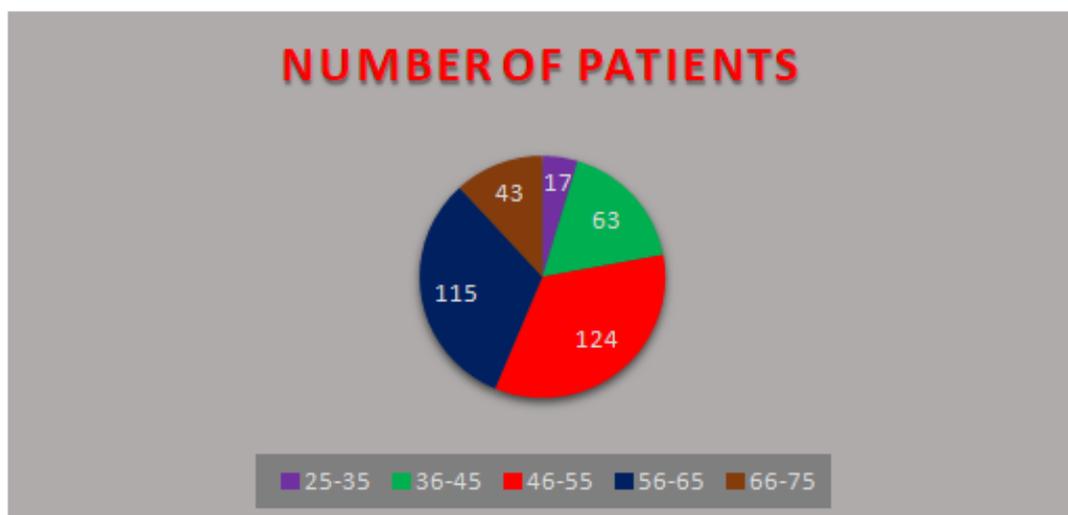


Fig. 1. Based on the Age group

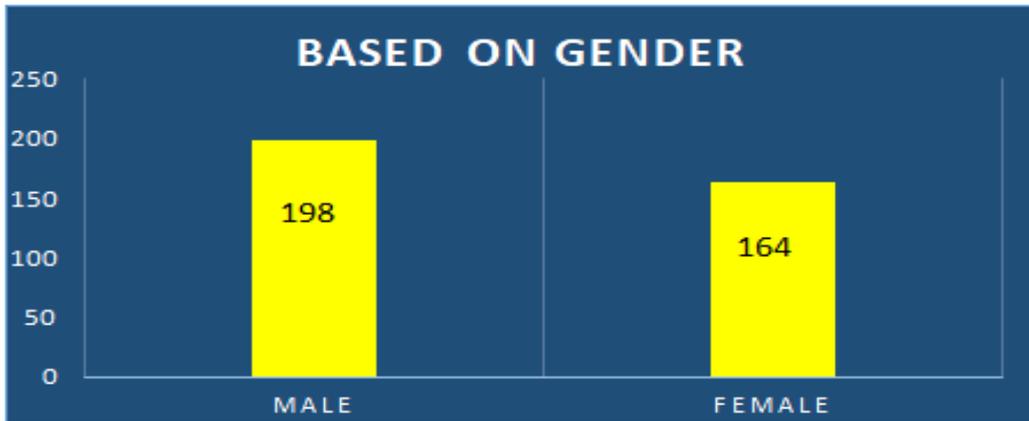


Fig. 2. Based on Gender

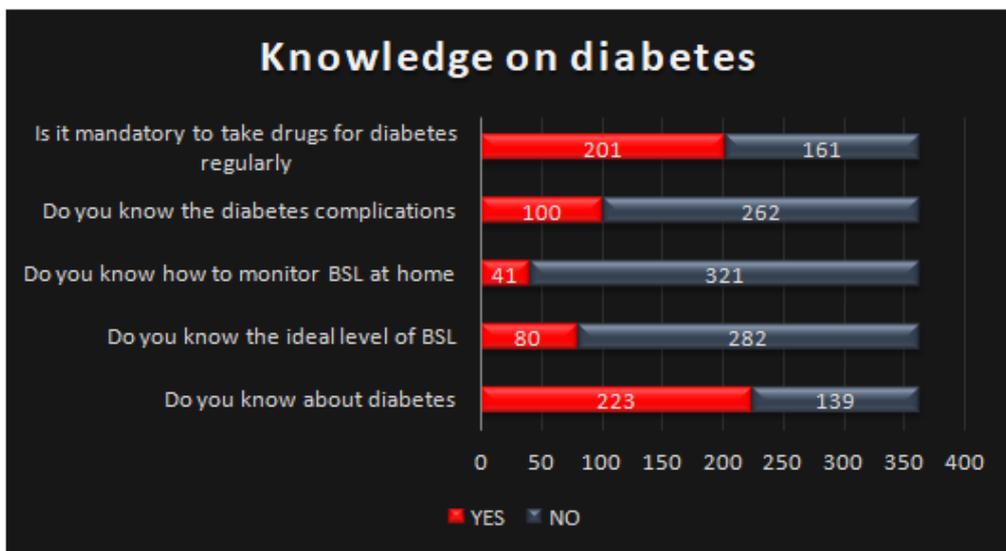


Fig. 3. Based on knowledge towards diabetes mellitus

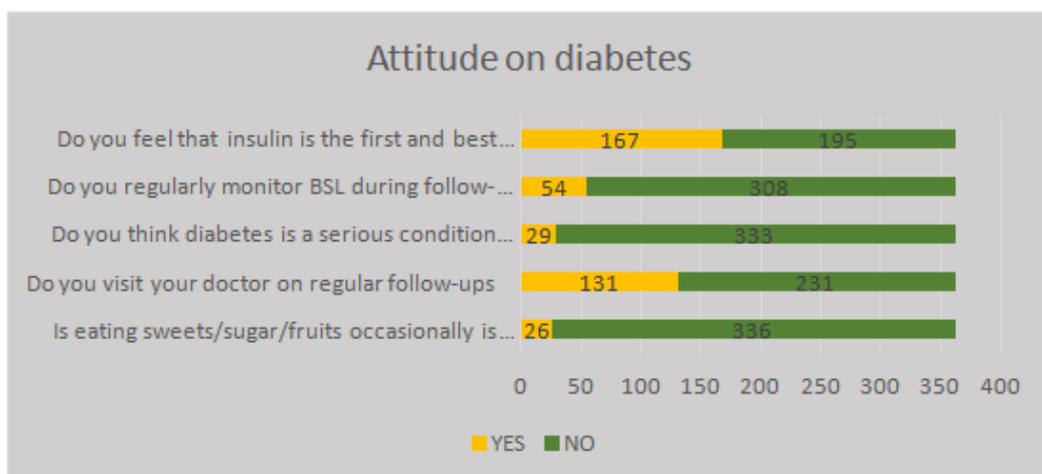


Fig. 4. Based on attitude towards diabetes mellitus

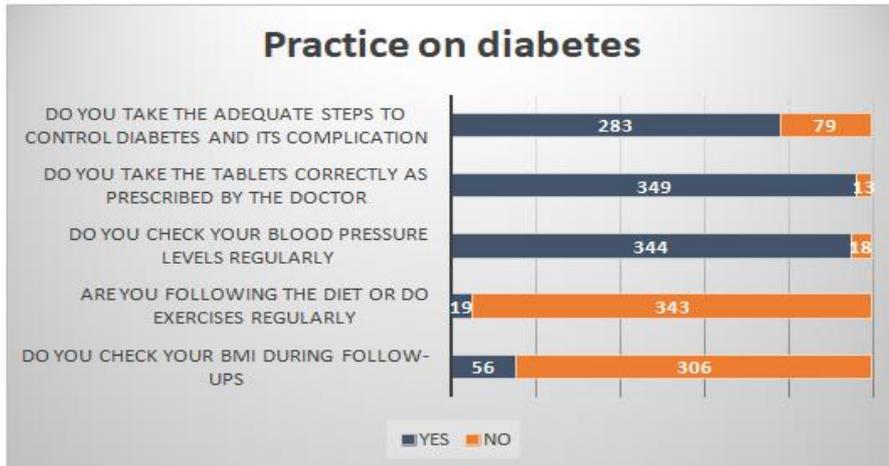


Fig. 5. Based on practice towards diabetes mellitus

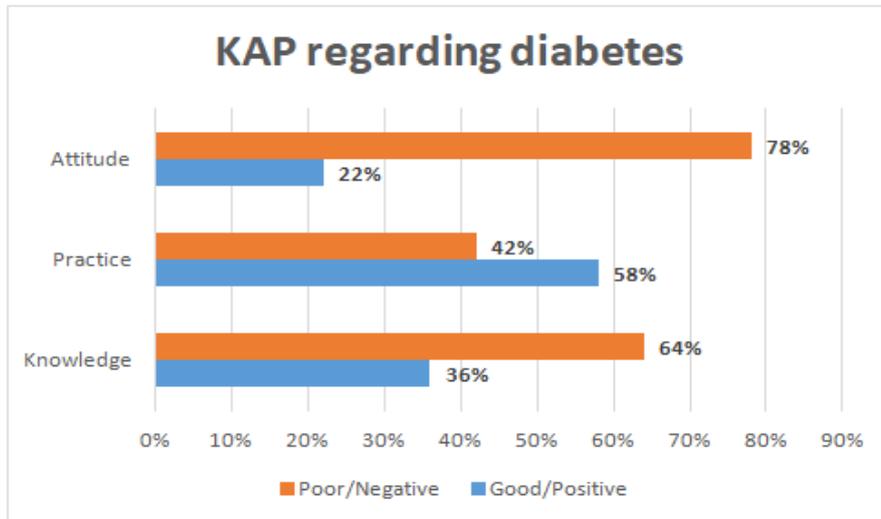


Fig. 6. KAP regarding diabetes (mean)

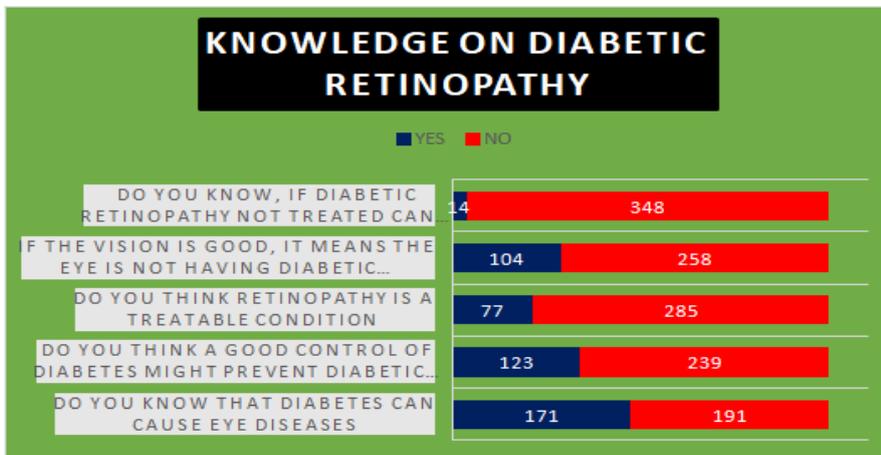


Fig. 7. Based on knowledge towards diabetic retinopathy

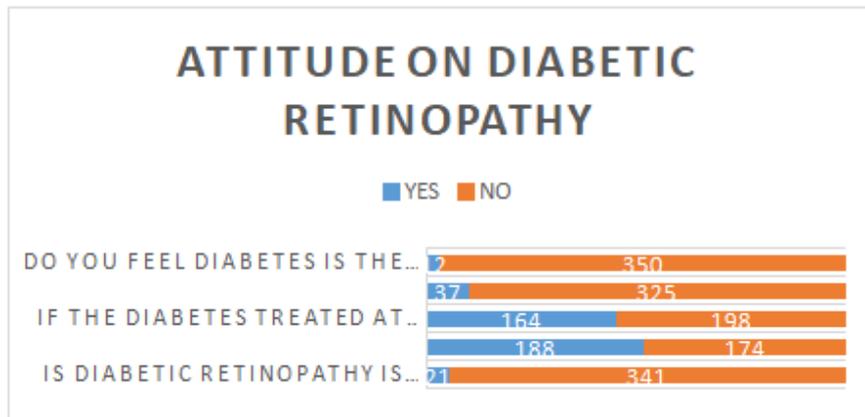


Fig. 8. Based on attitude towards diabetic retinopathy

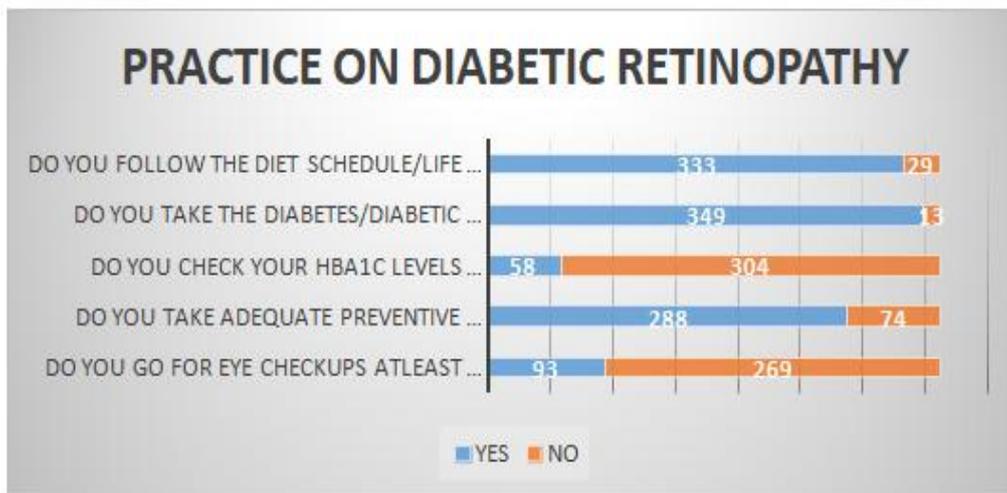


Fig. 9. Based on practice towards diabetic retinopathy

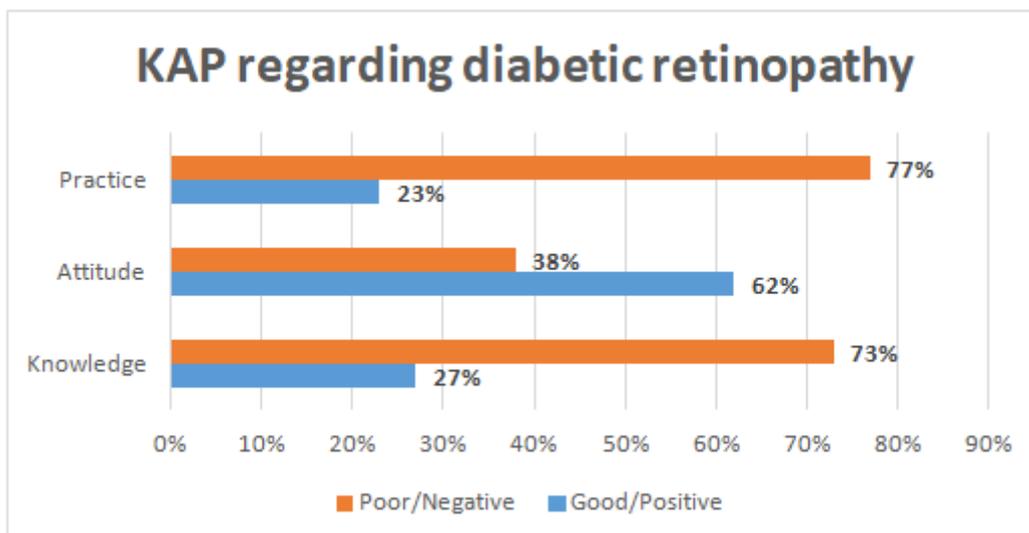


Fig. 10. KAP regarding diabetic retinopathy (mean)

Table 4. KAP regarding diabetic retinopathy (mean)

Parameters	Good/Positive	Poor/Negative
Knowledge	98 (27%)	264 (73%)
Practice	224 (62%)	138 (38%)
Attitude	84 (23%)	278 (77%)

Among patients with diabetic retinopathy, a mean of 98 (27%) had good knowledge of diabetic retinopathy, while a mean of 224 (62%) had positive attitude towards diabetic retinopathy and only a mean of 84 (23%) were found to have good practice patterns towards diabetic retinopathy [Table 4 and Fig. 10].

4. CONCLUSION

Our study concluded that the patients had good knowledge on about diabetes and a very poor knowledge on diabetic retinopathy. Positive attitude was seen in diabetes where as good practice patterns was seen in diabetic retinopathy. Lack of knowledge is the major barrier with regards to the screening for diabetic retinopathy for visual impairment and blindness. The complication of diabetes especially diabetic retinopathy is almost entirely preventable with early diagnosis and treatment. Therefore, there is an urgent need to evolve the strategies to educate the diabetes patients regarding diabetic retinopathy and its complications. Furthermore, large scale studies are needed to support our study.

CONSENT AND ETHICAL APPROVAL

Ethical clearance was obtained by Institutional Ethical Committee and informed consent was obtained before conducting the study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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