INTRODUCTION

Diabetes as an epidemic

- According to the WHO, there will be a steep rise in the prevalence of type II diabetes mellitus both in the developed and developing countries within the next two decades. The projected increase is 46% in the developed world and 150% in the developing nations.
- Diabetic retinopathy (DR) is the leading cause of blindness among the working age population in the US.
- A diabetic is 25 times more likely to go blind than a person in the general population.
- The number of people with DR is expected to increase from 5.5 million in 2005 to 16 million in 2050, and the number with VTDOR (Vision Threatening Diabetic Retinopathy) is expected to increase from 1.2 million in 2005 to 3.4 million in 2050 in US.
- Ten years after diagnosis the prevalence of retinopathy is 40-50% and after 20 years the prevalence is 90%

Screening Guidelines

AAO Guidelines

The American Diabetes Association (ADA) follows similar guidelines, and also suggests that the follow-up can be every 2 years.

Project Goals and Objectives:

- To measure the awareness level of diabetic retinopathy (DR) and a dilated eye exam within 2 years.
- To identify potential barriers and facilitating factors to getting a DFE in an urban academic primary care practice.

Significance:

- Healthy People 2020 objective- Increase the proportion of adults with diabetes who have an annual dilated eye exam
- Diabetic retinopathy – which damages small blood vessels in the back of the eye – causes up to 24,000 new cases of blindness each year. And it’s preventable.

EXPERIMENTAL APPROACH

STUDY DESIGN:

Cross-sectional study

Setting: Jefferson Family Medicine Associates (JFMA) within age range of 18-64 years and H/O Diabetes

METHODS:

A complete package of the survey sheet, a cover letter (printed on the letter head from JFMA) and a self addressed return envelope was mailed to the selected participants.

STUDY POPULATION

- The lists of diabetic patients from 3 insurance companies were received (Private (Aetna, Independence Blue Cross IBC) and Medicaid (Keystone Mercy Health Plan KMHP)). These cover the largest population of JFMA patients.
- Simple random sampling technique using Microsoft Excel was used to select 67 participants. All the subsequent data analysis was done using SAS.

THEORETICAL BASIS OF SURVEY

The Health Belief Model (HBM)

Components of HBM

- Intentions
- Self-reported/ knowledge
- Action
- Perceived barriers

SAMPLE SIZE AND STATISTICAL POWER

The probability is 80% that the study will detect a difference of 20% between the independent and dependent variables at a two-sided 5% significance level

Simple random sampling technique using Microsoft Excel was used to select 200 participants. All the subsequent data analysis was done using SAS.

PROJECT GOALS AND OBJECTIVES:

- To evaluate the association between knowledge of DR and DFE
- To measure the awareness level of diabetic retinopathy (DR) and a dilated eye exam within 2 years.
- To identify potential barriers and facilitating factors to getting a DFE in an urban academic primary care practice.
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RESULTS

Participant Characteristics

- Fifty-six (28%) responses out of 200 mailed surveys were received.
- Gender: 70% were females and 30% males
- Race: 75% African American, 23% Caucasians, 2% Asian
- Ethnicity: 9% Hispanic
- Type of diabetes: 85% have type II diabetes, 7.4% have type I diabetes, 7.4% were not sure.
- Employment status: 80% are currently employed
- Education: 6% do not have high school diploma, 94% have high school diploma
- Income: 6% are below 17,000, 23% are between 17,000 – 30,000, 22% are 30,000 – 40,000, 33% are 40,000 – 55,000, 30% are above 55,000

Relationship between type of insurance and decision to get an eye exam

- Medicaid: 48% were current Medicaid recipients, 42% were not sure
- Private insurance: 94% were current private insurance recipients, 6% were not sure
- More than 80% of the respondents would like to get an eye exam

Self Reported Reasons for getting a DFE

- 48% knew it was their time to get this done,
- 36% had some eye problems,
- 27% were told by their doctors to get the exam,
- 13% were told by their diabetes educators,
- 4% received a reminder in mail,
- 2% were told by their family/friends

Self Reported Reasons for NOT getting a DFE

- 36% were fearful to get it done,
- 27% felt that their eyes were ok and they didn’t need to get a dilated eye exam
- 18% had cost as a problem (high co-pay),
- 18% had transportation issues,
- 18% had difficulty in getting an appointment, 9% said they don’t have time for it.

Knowledge of diabetic retinopathy vs. dilated eye exam within 2 years (p=0.016)

- 94% knew it was their time to get this done,
- 94% had some eye problems,
- 94% were told by their doctors to get the exam,
- 94% received a reminder in mail,
- 94% were told by their family/friends

Knowledge of dilated eye examination vs. dilated eye exam within 2 years (p=0.012)

- 81% knew it was their time to get this done,
- 60% had some eye problems,
- 60% were told by their doctors to get the exam,
- 60% received a reminder in mail,
- 60% were told by their family/friends

CONCLUSIONS

- The results of this study suggest that 68% of the population from this primary care practice got a dilated eye exam within a year. Facilitators were awareness/knowledge about the DR and DFE, eye problems and information from their doctors.
- About 20% of the patients did not get an eye exam as recommended. Various barriers included cost, transportation issues, time constraint issues, lack of symptoms of the disease, and fog of the exam.
- There is a significant difference in getting an eye exam by the type of insurance with a smaller percentage of Medicaid recipients (60%) meeting the guidelines compared to Private (94%) and 80% (p=0.01)
- Improved provider education efforts that address patient barriers may increase adherence to the recommendations for getting a DFE.
- Information and support on diabetic retinopathy and the importance of a dilated eye exam can help motivate diabetes patients to be examined by ophthalmologists.