Qualitative study on the awareness of eye health risks associated with type II diabetes in Lagos, Nigeria.

Estudio cualitativo sobre el conocimiento de los riesgos de la salud visual asociados con la Diabetes tipo II en Lagos, Nigeria.

Valerie Oninyechi Umaefulam

Abstract

Introduction: Diabetes mellitus is a major public health problem and its burden is expected to increase in developing countries such as Nigeria. One of the most frequent complications of type II diabetes is diabetic retinopathy, and a major cause of blindness worldwide especially among adults. Objective: To determine the awareness of diabetes-related eye health risks and complications among type II diabetics in Lagos, Nigeria. Method: The study was carried out in Rhowil Medical Centre in Lagos, Nigeria and adopted qualitative methodology. Data was collected via semi-structured interviews. Interviews were carried out on nine type II diabetes patients above the age of eighteen via purposive sampling. The interviews were analyzed based on Kvale’s framework for the qualitative data analysis. Results: Knowledge of diabetes, sources of information, cultural health beliefs and practices, and communication were themes that emerged from the thematic analysis. The data revealed significant gaps in awareness of diabetes-related eye complications amongst type II diabetics. Data showed poor knowledge of diabetes-related eye diseases and of inadequate awareness of the connection between diabetes and ocular complications. Also, education, health literacy and communication barrier problems between health professionals and diabetic patients were also evident. In addition, sources of information on diabetes and eye care, as well as health beliefs influenced awareness. Conclusion: Findings from this study can inform strategic plans of public health authorities in addressing the growing diabetes epidemic by developing effective health education programs with the aim to increase awareness amongst people living with diabetes in the region.

Keywords: Diabetes Mellitus; Diabetic Retinopathy; awareness; eye health. (Source: DeCS BIREME)

Resumen

Antecedentes: La diabetes mellitus es uno de los mayores problemas de salud pública y se espera que su carga incremente en países en desarrollo como Nigeria. Uno de las más frecuentes complicaciones de la diabetes tipo II es la retinopatía diabética, y la mayor causa de ceguera en el mundo especialmente en adultos. Objetivo: Determinar el conocimiento sobre la diabetes – riesgos de salud visual relacionados y complicaciones entre diabéticos tipo II en Lagos, Nigeria. Métodos: El estudio fue realizado en el Centro Médico Rhowil en Lagos, Nigeria and adoptó una metodología cualitativa. Los datos fueron recolectados mediante entrevistas semi-estructuradas. Las entrevistas se realizaron en nueve personas con diabetes tipo II mayores de 18 años seleccionados por muestreo intencional. Las entrevistas fueron analizadas basadas en el marco teórico de Kvale para el análisis cualitativo de los datos. Resultados: El conocimiento de la diabetes, las fuentes de información, las creencias y las prácticas culturales de salud, y la comunicación fueron temas que surgieron del análisis temático. Los datos revelaron significativos vacíos sobre el conocimiento de las complicaciones oculares relacionadas con la diabetes entre diabéticos tipo II. Los datos mostraron pobre conocimiento de las enfermedades oculares relacionadas con la diabetes y escaso conocimiento sobre la conexión entre la diabetes y las complicaciones oculares. También fueron evidentes problemas de educación, alfabetización en salud y barreras de comunicación entre los profesionales sanitarios y los pacientes diabéticos. Además, los conocimientos se vieron influenciados por las fuentes de información con respecto a la diabetes y cuidado de los ojos, así como las creencias de salud. Conclusion: Los resultados de este estudio pueden orientar los planes estratégicos de las autoridades de salud pública para hacer frente a la creciente epidemia de la diabetes mediante el desarrollo de programas de educación para la salud eficaces con el objetivo de aumentar los conocimientos entre las personas que viven con diabetes en la región.

Palabras clave: Diabetes Mellitus; Retinopatía Diabética; concienciación; salud ocular. (Fuente: DeCS BIREME)

Introduction
Diabetes is a silent disease and many individuals become aware that they have diabetes when they develop one of its complications. There are two major categories of diabetes, Type I and Type II and its major manifestations causes functional and structural changes to the body particularly the vascular system (1). Complications of diabetes are largely divided into macrovascular and microvascular complications (2). Both macrovascular conditions such as stroke (3) and microvascular conditions such as, retinopathy, nephropathy, and neuropathy contribute greatly to the significance of diabetes as a public health challenge.

Over the past half century, type II diabetes, has become a disease of the developed world, it is increasingly prevalent in both developed and developing countries. It is particularly prevalent in Nigeria (4). In fact, diabetes accounts for approximately 10, 000 Years of Life Lost (YLL) and Years of healthy life lost due to Disability (YLD) in Nigeria (5) and the burden is expected to increase even further. Lagos and Port Harcourt, the two most industrialized cities in Nigeria have similarities in high prevalence rates of diabetes which may be due to modernization influenced by the upsurge in petroleum exploration (6).

Although type II diabetes has been previously recognized as a disease of the developed world, it is increasingly prevalent in the developing world causing morbidity and mortality in Africa (7) with the majority of its burden predicted to affect people of working age in low income countries (7). Similarly, the prevalence of diabetes in several parts of developing countries has shown an increasing trend in the past fifteen years (8, 9). There may be a progressive increase in the prevalence of type II diabetes mellitus in countries like Nigeria (10). Since, Nigeria has an estimate adult population of 78,628.36 (in 1000s) with a national prevalence of diabetes in the total adult population of 4.99% (9). In addition, diabetes accounts for approximately 10, 000 Years of Life Lost (YLL) and Years of healthy life lost due to Disability (YLD) in Nigeria (11) and the burden is expected to increase even further. Lagos and Port Harcourt, the two most industrialized cities in Nigeria have similarities in high prevalence rates of diabetes which may be due to modernization influenced by the upsurge in petroleum exploration (12).

Of the many diabetes manifestations in the eye which includes cataracts and glaucoma, diabetic retinopathy (DR) is the most significant cause of visual impairment and blindness (13) and it accounts for an estimated five percent of the forty five million blind people worldwide today (14).

All persons with diabetes are at risk of developing DR (15) and it is the most common cause of new cases of blindness among adults with up to twenty one percent of patients with type II diabetes having retinopathy at the initial diagnosis of diabetes (16). Hence, persons with diabetes are more likely to become blind than persons without diabetes (17).

While eye conditions represent a relatively small portion of complications due to diabetes, diabetic retinopathy remains a leading cause of blindness for adults in developed countries (18). Though there is paucity of data on eye health risks in Nigeria due to diabetes (19), the prevalence of low vision as a result of type II diabetes mellitus in Nigeria is on the rise (20). Diabetic retinopathy is asymptomatic in its early stages and may manifest as a gradual painless progression of vision loss (6) hence, vision might not be affected until the disease becomes severe and may subsequently result in poor prognosis if not managed promptly (21, 22).

In Nigeria, ocular complications due to the presence of type II diabetes mellitus are increasing (23). Although the health promotion policy of Nigeria (2005), contains guidelines for preventing and managing diseases such as diabetes and also advocates creating public awareness of the disease so as to curb the complications that arise from it (24), nevertheless, most persons with diabetes are not receiving the annual recommended eye care and screening to detect retinopathy and prevent visual impairment and blindness (25). Visual impairment as a result of diabetic retinopathy has a significant impact on the quality of life (26), and introduces associated ramifications including falls, depression, as well as other diabetic complications (27).

Hence, based on the growing complications of type II diabetes, it is imperative that to determine the awareness of diabetic related eye diseases especially among persons at high risk. This may prompt health care workers and health institutions to promote eye health education among persons with diabetes.

Methods
Qualitative method was used to provide a rich description of experiences, values and meanings of participants with respect to type II diabetes eye health risk awareness. The research design sought to contribute a better understanding of how society and culture influences health seeking behavior and eye care knowledge. Data was collected via semi structured interviews as this method provides rich data and comprehensive understanding of thoughts and actions from the perspective of the participants (28).

Participants were patients attending Rhowil Medical Centre and identified by the General Practitioner running the Cardio Vascular ward. This center is located in Lagos, the most populous and urbanized state in Nigeria consisting of a mix of people from various tribes and immigrants but Lagos is predominantly a Yoruba region. The researcher is a local,
living in the same region and of the similar culture as the participants.

The researcher projected to carry out the study with ten participants, however nine interviews were carried out due to data saturation. Participants were selected via purposive sampling. Thus, only participants that met the predetermined criterion were selected which was clinically diagnosed type II diabetic patients at the health center above the age of eighteen.

Semi-structured interview was the method of data collection and due to the consistent use of the interview schedule as a standard guide, this increased the comparability and reliability of the data. A pre-test of the interview questions was conducted on the first participant and the responses were analyzed in order to reveal if the questions were understandable and if deficiencies in the design of the interview schedule existed so as to make necessary modifications based on this. But, no major alterations were made as such, the reported data includes the first participants’ interview session. Approximately thirty minutes long semi-structured interviews were carried out by the researcher who was knowledgeable of the interview topic.

Topics addressed in the interview discussions were focused on knowledge and awareness of diabetes and its complications in general and complications specific to the eye, discussions on eye health and sources of eye health information, diabetic eye symptoms and disease and the understanding of diabetic eye disease and retinopathy. All interview sessions were recorded and field notes were also taken during the interviews in order to record observations and expressions. At the end of the interview, ‘member checking’ was carried out.

Analysis
The framework for the data analysis of this study was based on Kvale’s approaches to qualitative analysis (29) and involved the five approaches of developing meanings from data which includes Condensation, Categorization, Narrative Structuring, Meaning Interpretation and Re-Interview. To this end, the researcher condensed meanings as expressed by the participants from the transcribed interview and focused on those aspects considered relevant to the study and extracted significant statements. In addition, related patterns of ideas and experiences that emerged were combined into themes and variations in the data noted (30).

The researcher analyzed statements made by the participants based on the objective of the study. The relevant themes were then brought together into a descriptive statement and reoccurring ideas and patterns of belief identified as well as salient categories of meaning held by the participants. Subsequently, verbatim quotes from the data were included and meanings and interpretations were then formulated from the significant statements in the context of the participant’s terms. Finally, the researcher presented analyzed and interpreted interviews to the participants for confirmation of the interpretation and accuracy of data so as to increase its trustworthiness.

Ethical Issues
Approval was obtained from the Ethics committee of the School of Health, University of Wolverhampton, United Kingdom. In addition, a letter of access and approval was obtained from the Medical Director of Rhonl Total Care Medical Centre, Lagos State, Nigeria. The researcher explicitly explained study details to prospective participants as well as their right to withdraw and participants signed a consent form. There was no potential risks or discomfort as a result of the research.

Results
A common theme was the personal experience of eye conditions affecting diabetic patients themselves or a family member influencing awareness of eye risks associated with diabetes. There was limited knowledge of what diabetes is in general and how it can affect the body. In addition, the deteriorating state of participant’s eyes and resulting situations such as bumping into objects and sudden change of lens prescriptions increased awareness of the connection between diabetes and the eye. It is worthy to note that, some of the participants had no idea that their diabetic condition could affect their eye health. A few participants indicated that by reading the participant information sheet that was provided prior to the interview, they were able to make the connection between diabetes and the eyes while some made the connection during the interview.

‘So, it affects the eyes? Okay, that’s why the doctor told me to go to that eye clinic. I guessed as much, and when I read that letter you gave, I guessed as much’

The results also showed that literacy and education influenced the way diabetes and its complications are perceived. Poor health literacy and being uneducated were factors in comprehending what it meant to be diabetic and how to adequately manage their condition. Also, participants’ attitude to eye care affected how aware and knowledgeable they were of diabetes related eye risks. Some participants considered regular eye examinations as vital in order to see well. Whereas, some did not consider it necessary to visit eye specialists, while others saw eye examinations as a waste of time, and highly irrelevant despite been advised to do so by their general physicians.

‘If you are not sick will you go and see the doctor? The eye is okay, why will you go and start checking’.
Sources of health information

The source of eye health information appeared to be very important to awareness. The varying means by which the participants derived their general health and eye health information influenced awareness. A number of participants relied on the doctors for trustworthy eye health information. However, participants also acquired their eye health information from other sources such as the internet, magazines, television and journals. Participants trusted eye health information from family and friends especially among those who have had prior eye condition because the information was based on personal experience.

Cultural health beliefs and practices

Culture was a primary factor for awareness and cultural practices influencing awareness included traditional cures for diabetes and its related complications by drinking concoctions and using herbs. One participant was highly unlikely to seek eye care and have eye examinations due to spiritual beliefs and fear.

‘Member of the enemies attack you when people touch your eyes. Because the eye is like the light. I don’t play with it. It is very important. Can’t start allowing anybody to touch your eyes’.

Some participants acknowledged that these cultural practices were not helpful in adequately managing diabetes and its’ complications and negatively influences awareness.

Communication

There was insufficient communication and not enough dissemination of information from the health professionals in regards to the relationship between diabetes and eye health hence many participants were not enlightened on the necessity of eye care. On the other hand, eye care recommendations by doctors were not often taken seriously.

‘I think my doctor said something like that. He said that diabetes can affect the eye. I don’t believe in all these things. The eye is okay; my eye is okay. I don’t have any other problem’.

Discussion

The result showed that the process via which persons discovered they were diabetic increased awareness of the eye health risks associated with diabetes. This experience could be that of the individual or that of a family member.

This resonates with studies which indicates that diabetic patients’ source of awareness was based on personal experience with diabetes related eye complications rather than from prior knowledge of the complications of their condition, either from their physician or health materials (31). In addition, this study finding align with a similar study in Nepal that showed a majority of participants obtained information about diabetic retinopathy from family members as a result of diabetic family history, while about 4.8% of participants obtained information from newsletters and magazines (32).

Thereby, indicating that source of awareness is linked with the experience of a family member or participants own personal experience (33). Literacy and its impact on awareness or knowledge of diseases is a known fact (34). Hence, it is not surprising that one of the major factors influencing awareness of eye health risks associated with diabetes is health literacy. Poor health literacy represented an important variable contributing to high rates of diabetes complications (35,36). As such, from a public health perspective, as a result of poor health literacy there is lack of awareness amongst patients with type II diabetes in Lagos, Nigeria primarily due to the inability to understand diabetes, the need for regular health and eye check-ups, and not regarding health information received as vital. This has similarly been seen in studies where inadequate understanding of diabetic retinopathy is a barrier to awareness (37,38).

Another important finding from this study is that participants consider health professionals as well as written materials such as; Magazine, books and the internet as key sources of health information. Showing that health related written materials were primary sources of information (39). Contrarily, some studies indicate that patients primarily obtained information at hospitals from general practitioners, physicians, or nurses (40). While the media and primary health care centers provided secondary information with regards to diabetes eye health complications associated with diabetes (41,42).

Cultural practices and beliefs affected the awareness of diabetes as a whole and its relation to eye health which influences compliance with medication, attitudes to eye care, seeking eye health information, and eye health beliefs. This accords with similar findings that identified the association between awareness of eye health risk and diabetes was extremely poor due to factors related to language, and cultural health beliefs (43,44). Hence, the need for culturally appropriate diabetic-eye health education that is region and language specific.

Strengths and Limitations

At the end of the interview, ‘member checking’ was carried out and a re-interview was carried out after data analysis to confirm the interpretation and accuracy of data so as to increase its trustworthiness. The researcher, as a local living in the same region and of similar culture as the participants assisted with engagement and building of trust. It is necessary to note that although most participants mentioned
the eyes as the organ most commonly affected by diabetes, it is possible that the response was influenced by the information gathered via the participants’ information letter which was given to participants before consent was obtained hence, participants made a connection between diabetes and the eye. Thus, this should be considered while interpreting the results. Nevertheless, some participants were still unaware of the ocular manifestation of diabetes.

Conclusion
This research shows that not one factor is responsible for the awareness of eye health risks associated with diabetes but a series of factors interplay. It reveals significant gaps in diabetes-related eye complications knowledge among type II diabetes patients. The research shows poor knowledge and comprehension of diabetes related eye diseases and highlights education and health literacy as key factors influencing awareness.

Implications for practice
From a public health perspective, findings from this study can inform strategic plans of public health authorities to address the growing diabetes epidemic by initiating innovative health promotion, public health messages, and interventions target diabetes patients with low health literacy levels.

Recommendations
Health policies should target community health education on diabetes mellitus, its ocular risk factors and preventive measures. A scale-up of this research among persons living with diabetes drawn from both urban and rural areas and from different cultural communities would be valuable.

Contributions to knowledge
- Increased knowledge of the awareness of diabetes eye risks associated among persons with diabetes.
- It has also increased knowledge on constraining factors that limit eye health awareness in this urban region of Nigeria.

Competing interests
The author states that she has no conflict of interest.

Funding
This research was self-funding.

References


