Channel to Death: High School Students Perception about Diabetes in Trinidad

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Abstract

Objective: To assess high school students' perception and knowledge about diabetes during school annual diabetes awareness week programme. **Methods:** A qualitative approach was used to recruit twenty-four (N=24) high school students in November 2014. The students were asked to participate in a focus group discussion to determine their knowledge of diabetes, perceived consequences, possible solutions to the school curriculum, and daily lifestyle practices with diabetes. **Findings:** While all students were aware of the disease, their knowledge about diabetes was inadequate, in that they associated diabetes with death. Knowledge about symptoms, risk factors and management of diabetes was low. Some of the students reported the use of herbal medicine as a major component in the management of diabetes. **Conclusion:** Diabetes knowledge among high school students in Trinidad was found to be suboptimal. Although students were aware of the disease, knowledge about symptoms, risk factors and management care was low. There was also the dangerous misconception among the students that the use of herbal remedies would cure diabetes.

Keywords: Diabetes, High School Education, Herbal Medicine

1. Introduction

Diabetes Miletus continues to be a major public health issue and listed among the leading causes of death in the Caribbean (Boyne, 2009; Ferguson, Tulloch-Reid, & Wilks, 2010). In Trinidad and Tobago, Type 2 Diabetes is the second leading cause of death among non-communicable diseases which result to1 in every 8 deaths (Poon-King, Henry, & Rampersad, 1968).In 2007, population study reported that 1,000 new cases were diagnosed in persons aged 20 years or older(Wild, Roglic, Green, Sicree, & King, 2004).Similarly, more than 450 children are diagnosed with type 1diabetes annually (Poon-King et al., 1968). The disease is more prevalence among Asian Indian heritage and evenly affects males and females. Recently, the World Health Organization reported approximately 60,000 cases of diabetes and projected an increase by the year 2030 (Shaw, Sicree, & Zimmet, 2010). People with diabetes are at risk for many other chronic diseases such as retinopathy with potential blindness, nephropathy, cardiovascular, peripheral vascular and cerebrovascular disease(Gabir et al., 2000). Studies have documented that diabetes can be prevented or complication can be decreased through education, increased physical activity and healthy food choices (Waxman, 2005). Globally, prevention strategies are being implemented to help educate and promote diabetes management, particularly for children in schools (Babwah et al., 2006; Ezenwaka et al., 2007). In Trinidad and Tobago, similar initiatives are ongoing to halt the rise in diabetes prevalence. Several organizations and local healthcare providers have implemented intervention programs to promote diabetes awareness and education, however little is known about the effectiveness of these programs. The purpose of this study was to assess high school students' perception and knowledge about diabetes during school annual diabetes awareness week programme.

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2. Methods

2.1 Settings

This study was conducted at St Joseph Secondary School with a population of 755 students. The school is located in East Trinidad and is surrounded by a population of mixed heritage, including Indians, African and other ethnic groups. Majority of the students resides with their parents, who are either unemployed or employed. In 2005, teachers in the Home Economic Department implemented a Diabetes Awareness week for students, staff, and the general community. The purpose of the event was to bring diabetes awareness to high school children and teach students about self-care management techniques. Since then, annually a weeklong event is held during the month of November in support of World Diabetes Day. In 2013, staff from the Human Nutrition and Dietetics Degree programme, Faculty of Food and Agriculture, the University of the West Indies, St. Augustine Campus were invited to participate in the event under the theme "*Caribbean Home Economics in Action: Diabetes Awareness Week*" Throughout the week, information on nutrition and diabetes was displayed in the classrooms and common areas. The materials included guidelines for healthy eating, snacking, and appropriate menus for breakfast, lunch, snack and dinner for persons with diabetes. In addition, students prepared meals and invited the general community to view and taste the creative dishes. The students, not involved in cooking demonstration activities participated in other competitions based on their talents. For example, students created and developed posters, poem, songs and essays related to specific areas on diabetes. Trophies and educational prizes were provided to winners of the various competitions. Other group activities included health walks, a no soda day, and a water day for students, teachers, parents and the cafeteria staffs.

2.2 Procedure

A purposive sampling design was used to recruit fourth and fifth form students pursuing the Home Economics subjects at the St Joseph Secondary School. To be eligible to participate in this study, students had to have at least two years' experience about the school annual diabetes awareness week and completed one year of the nutrition and health course syllabus on Pre diabetes, Type 1 and Type 2 diabetes. Approval for this study was obtained from the Ministry of Education, Trinidad and Tobago. During the month of November 2014,a total of 24 students provided written consent to participate in the study (see table 2 below). One trained moderator facilitated all the focus group sessions with 4-9 students which lasted for approximately 40 minutes. A note-taker was also present to collect field notes and operated the audio tape. Each session was convened in the classroom during the students Home Economics class period. A phenomenological approach was adopted to gain students perceptions about diabetes. This approach seeks to understand students' experiences and uncover their beliefs toward diabetes disease(Moustakas, 1994).The qualitative survey instrument was developed by the project PI through literature reviews, and piloted with students from a neighboring high school. The questions are presented in Table1 below. The questions seek to query students' knowledge of diabetes, perceived consequences, possible solutions to the school curriculum, and daily lifestyle practices with diabetes. Audit trail was documented for consistent research procedures and future project. This was done to promote consistency and eliminate bias among the students.

Table 1: High School Students' Diabetes Awareness Survey
1. What do you know about diabetes?
2. Can it be prevented? If yes, how? If no, why?
3. In your own words, how would you describe diabetes?
4. What are the types of diabetes? Can you describe the difference?
5. Where did you first learn about diabetes?
6. What were some of your concerns initially?
7. Do you know anyone with diabetes? If yes, how is this person related to you?
8. What do you know about pre-diabetes?

9.   Do you think schools should include diabetes education in their curriculum? If yes, how do you think this would benefit:
    a.   Students
    b.   Your community
    c.   General population, for those who reply "NO", why do you think so?

10. What are some of your (perceived barriers) concerns to learning about diabetes?
11. Describe the types of food (diabetic) persons with diabetes (should) consume?
12. What types of (barriers) concerns do you think persons with diabetes (may) experience?

2.3 Data Analysis

All focus groups were audio recorded and transcribed verbatim by the research assistant. The principal investigator, then listen to the audio recording and re-read the transcripts to ensure accuracy. Both PI and research assistant coded the data independently, for key phrases and recurring themes. Two or more key words were constituted into themes. During the analysis, a code book was developed for further evaluations of data. Another research member organized the emerging themes with descriptions and explanations of each category(Glaser B, 1967). Throughout data analysis peer debriefing was used to clarify constant discussion between the principal investigator and research assistant to ensure consistent procedure. Whenever, there was a discrepancy regarding the analysis process, the researchers would discuss until consensus was achieved.

3. Results

The purpose of this study was to explore high school students' perception and knowledge about diabetes. Table 2 below shows the sample characteristics of High School students.

Table 2: Sample Profile for the High School Students (N=24)

Sample Characteristics	Frequency	Percent
Gender		
Male	6	25
Female	18	75
Age		
14-16	17	71
17 and above	7	29
Grade		
Fifth	11	46
Fourth	13	54
Ethnicity		
East Indian	4	17
African	8	33
Mixed	12	50
Resides with:		
Mother only	8	34
Father only	3	12
Both parents	13	54
Number of member in household		
1-5 members	12	50
6-8 members	5	20
9-10 members	4	17
above 10 members	3	13

The emerging themes are described below. The themes are organized in the order of the most recurring to the least. During the analysis three primary themes were identified 1) Diabetes is a channel to death, 2) Home remedies are perceived as primary treatments, and 3) primary school education about diabetes was beneficial.

3.1 Diabetes is a Channel to Death

During the diabetes awareness week of activities, students express openly their perceptions about diabetes. The focus group sessions started by asking "what do you know about diabetes? All the participants in each focus group sessions described diabetes as a disease that produces excessive sugar in the human body.

"Diabetes is caused by massive amounts of sugar in the body".
"It's a sickness. It's a disease"

The students further explained that the disease is inherited through family history and the prevalence is more dominant in some ethnic groups than others. *"It can be found in ethnicities, it is most likely African, East Indians, Barbadians and Chinese"* Throughout the discussion, the word "death" emerged several times. The students' believed that if a person is diagnosed with diabetes, the end result is death. The phobia of the disease is associated with other chronic diseases such as cancer and AIDS. The students expressed that diabetes cannot be cured and Type 2 is the most deadly type.

   "Yeah… like cancer"
   "I don't think it could be cure, deadly is something that cannot be cured like A.I.D.S."
   "Type 2 is the deadliest one among the three".

Interestingly, the majority of students in the groups experienced a family member who suffered from diabetes and could relate to some of the complications. Some of the most frequent family members identified were grandmothers, grandfathers, parents, uncles and aunties. None of the students declare themselves as being diabetic.

   "My mother had it but it gone now"
   "My grandmother has it"
   "My grandfather, aunty and uncle have diabetes"

The fact that these students know a close relative with diabetes their present concerns were the fear of knowing they could be diagnosed with the condition in the future. The first question that came to their minds was how soon they were going to die. Secondly, the complications associated with diabetes, overall management and the treatment worry them the most. For example, a few students articulated a small cut that could eventually turn into a big wound was very scary to them.

   "How soon they go dead"
   "Miss, my concern is that a person with diabetes could die soon…and die from a little cut".

3.2 Self-Care Management Practiced at Home

In addition, prevention and self-care management for diabetics were discussed. The responses were varied among the groups. Some of the participants indicated that a good self-care management strategy for diabetes would be to eat more vegetables, lean protein, more nutrients dense foods and less fastfood like KFC, pizza and Chinese foods.

   "No KFC and thing like Chinese food, Pizza, and Junk foods"

Interestingly, few of the students mentioned that herbal medicines are the primary sources of treatment. This highlighted practice was learned from close relatives who had diabetes and chose to delay their visits to medical practitioners.

   "There are herbal remedies to cure diabetes".
   "My family has lots of herbal trees and they does use it to cure people of their diabetes. I don't know what it is (names of herbs) they does use".

3.3 Schools can Improve Diabetes Education

All the participants admitted education should be a part of the school curriculum. Students' believe education on diabetes, should start at the primary school level. Few participants expressed that the first time they learned about the true knowledge of diabetes was in primary school. They further elaborated that many days they witnessed their relative going back and forward to the Health Centers and could not understand what was wrong.   It was not until their primary school teacher explained the effects of diabetes they understood the health effects of the disease.

   "I can't remember, probably in primary school or something when I learned about diabetes"

The students believed that diabetes education in school would benefit the society. For example, the students perceived they would be more prepared to teach and help their parents with diabetes self-care management. This approach would help reduce the growing diabetes prevalence, improve food option decisions among families, decrease hospital visits, healthcare costs, and most importantly reduce death.

   "Students could teach their parents the effects of diabetes"
   "It will decrease diabetes among families"
   "It will increase your awareness"

In contrast, the students discerned some foreseen barriers to implementing diabetes education. For example, teachers need to be trained on the content area, as displaying visual pictures only about diabetes can affect students' ability to learn more about the disease.

"When the teachers start to teach about it you will find that you will kind a get disgusted in a way. If you really go into the information about diabetes, you will not want to learn any more. I think that is a concern".

"It's disgusting. I've seen it. You could actually get disgusted and you will actually not want to know any more about it.

4. **Discussion**

This present study is the first in Trinidad and Tobago that examined high school students' perceptions about diabetes. Our study revealed several barriers to diabetes education and care among the students. Diabetes awareness week is an annual event at some high schools in Trinidad and Tobago; the students were aware of the disease, but detailed knowledge was inadequate. For example, some students stated that they were not quite sure about the specifics of the disease, but agreed that diabetes can cause amputations and death. The fact that diabetes is associated with death, more emphasis and knowledge about the disease may need to be disseminated in schools. For instance, Type 2 diabetes was noted to be the deadliest among the three categories, therefore it would be worthwhile to include diabetes management and prevention in the school curriculum. Also, researcher may need to explore different teaching style to address knowledge. Previous studies have reported that failure to define diabetes and to recognize its symptoms may reflect the lack of knowledge about diabetes, and it is likely to have negative repercussions, in terms of trying to control and prevent diabetes(Al Shafaee et al., 2008; Mohan et al., 2005).

Another interesting finding that emerged in the data was self-care management for diabetes. The students indicated that herbal medicine was often used in their homes to treat diabetes. This finding is similar to Scott (2001) who expressed that health beliefs of African–Caribbean people may lead to less effective self-management of their diabetes(Scott, 2001). The use of herbal medicine in the management of diabetes, is not well documented in the literature, thus more research on herbal therapies is needed to understand the effects on diabetes. In addition, to address the lack of diabetes preventive care in the home, health care providers may need to intervene at the individual level.   The use of herbal medicine and not medical care was linked to high medical cost for patients (Barcelo, Aedo, Rajpathak, & Robles, 2003).While there is little scientific evidence to support or refute the safety and efficacy of herbal or complimentary alternative medicine(Trangmar & Diaz, 2008; Villa-Caballero et al., 2010),cultural beliefs about diabetes in Trinidad and Tobago and the wider Caribbean is not well known and therefore may affect patients treatment behaviours both positively and negatively.

4.1 Limitation and Implications for Future Research

A limitation of this study is that it cannot be generalized, it was a pilot study carried out at one school with a small group of students which is not representative of all forms four and five students in Trinidad and Tobago. However, the strength was its approach to understand diabetes perception of high schools students who may be a part of the projected cases in the next couple of years. The study findings should also be seen as a foundation for future research. This study identifies some critical aspect to diabetes prevention especially among children. More research is needed to identify the types of herbs family members are using to prevent diabetes, and better understand how cultural-health beliefs influence diabetes outcomes in Trinidad and Tobago. Additionally, schools may want to include more information about health related diseases, such as obesity, diabetes, heart and hypertension. Community health workers, physicians and dietitians may need to collaborate and implement more community outreach education programmes for both parents and children.

5. Conclusion

This study found that diabetes knowledge among high school students in Trinidad was suboptimal. Although, students were aware of the disease, knowledge about symptoms, risk factors and management care was low. There was misconception among the students that the use of herbal remedies would cure diabetes. Future research may need to investigate the type of herbs and home remedies being used to control diabetes. Additionally, the school curriculum for the fourth and fifth forms syllabus may need to be assessed to determine areas for strengthening.

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