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‘‘Self Care Practice among Young Adolescent Patient with Type 1 Diabetes Mellitus in Bangladesh’’

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Background: *Diabetes mellitus type 1, also known as juvenile diabetes, is a form of diabetes in which very few or no insulin is produced by the pancreas (CDC,2012).It is the most common type of DM in children and adolescents (Mireille C et al,2011).An upward trend of newly diagnosed T1DM in children (CDiC ,2013). From 2008 to 2013 the new case was 112 to 319 (CDiC,2013). 4.2 new cases of T1DM/100,000 children at the of age 0–14 years in 2013 (IDF).The international trends of T1DM at increasingly younger ages (Marília Costa Flora, et al; 2016). In 2015, one study shows that self-care knowledge gap in some areas of diabetes self- management. But there is a few study to self care practice of diabetes among Bangladeshi-children.(M.A.Sayeedet,.al;2013).* ***Objective:*** *The aim of this study is to describe the self care practice among young adolescent patient with Type 1 Diabetes Mellitus in Bangladesh.* ***Method of the study:*** *A qualitative descriptive study design was applied to assess the self care practice among young adolescent patient with Type 1 Diabetes Mellitus in Bangladesh. Sample of this study was the 15 Young adolescents with Type 1 Diabetes Mellitus Patients admitted in pediatric department and also attending in outpatient department of pediatrics at three tertiary level hospitals in Bangladesh. Convenient sampling method was applied for the study from July 2018 to June 2019. A guided questionnaire was used to collect the data for interview. The data was collected by the Researchers own through face to face interview from the participant. A descriptive statistics was used to analyse the participant’s demographic characteristics. Thematic analysis was used as the approach to data analysis. It involves the identification and analysis of themes. Then themes were cluster into categories.* ***Result of the study:*** *Finally the data was interpreted on the basis of study findings. Out of total 15 participant’s most of 66.67% were boy’s and rest of 33.33 % were girl’s, the mean age of the participants’ 16.53 years and SD 1.76.Monthly family income mean of the participants were 21166.67 taka, and SD 5146.65 taka. Most of the 86.67% participant’s current treatment on insulin. Self care practice divided in to five dimension including blood-sugar monitoring, administer insulin, recommended diabetic meal plan, participate in regular physical exercise, and maintaining in personal hygiene. Majority 86.67% knows that what kind of special care they needs due to T1DM and 13.33% don’t know about self care practice of T1DM.* ***Conclusion:*** *T1DM can’t prevent or cure, but it can well control. So it is important to improve self care practice of adolescents by providing education through motivational and training program. The findings of the study may help to make basement structure to increase of self care awareness about self care practice of T1DM. The study helps nurses to promote their nursing practice. The report of the study may provide information to make guide lines for policy makers. The Result of the study also helpful for the next research.*

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I. Introduction

Background and Significance of the Study

Type 1 Diabetes Mellitus (T1DM) is known as Juvenile Diabetes which is a form of diabetes mellitus in which very little or no insulin is produced by the pancreas in human (Centres for Disease Control, 2012). T1DM is a disorder that arises following the autoimmune destruction of insulin-producing pancreatic b cells (Atkinson, 2001; Bluestone et al., 2010). The disease is most often diagnosed in children and adolescents, usually presenting with a classic trio of symptoms (polydipsia, polyphagia, and polyuria) alongside of overt hyperglycemia, positing the immediate need for exogenous insulin replacement. A medicinal intervention is introduced to the disorder whose therapeutic practice lasts for a lifetime (Atkinson, 2001; Bluestone et al., 2010).

Diabetes mellitus is major public health problems in worldwide (Shrivastava et al., 2013). Globally, more than 180 million people have diabetes, and it is possible that this number would be more than twice by 2030 (World Health Organization, 2008). Around 10% of all people with diabetes have type 1diabetes**.** More than 21 million live births **(**1 in 7 births) were affected by diabetes during pregnancy and 1,106,500 children were living with type 1 diabetes (International Diabetes Federation, 2017).

Bangladesh has the highest population density (1007/sq km) in the world with a total population of 165 million. Of these total 61 million people are in the age < 18 years. It is also known as Bangladesh is one of the least developing countries with its ethnicity most vulnerable for developing diabetes (Sayeed et al 2013). The latest International Diabetes Federation (IDF) Atlas estimated the incidence of T1DM in Bangladesh is 4.2 /100,000 children (0-14)/year (Azad, 2015). There is an upward trend of newly diagnosed T1DM in children (Center for Disease Control Program at BIRDEM, 2013). During 2008 to 2013 the new case was 112 to 319. These results are the international trends of T1DM at increasingly younger ages (Marília Costa Flora, 2016). The number of diabetes patients are annually growing at the rate of 3% in the country and if the present rate continues the number of diabetes will be double to 10.4 million by 2030 (Islam, 2009).

Self care practice is the practice of taking action to preserve or improve one's own health. Self care practice in T1DM includes; insulin administration, blood glucose monitoring, maintaining records of insulin administration and glucose levels, management of hypoglycemia and hyper glycemia, complying with meal plans, and exercise regularly (Chien, Larson, Nakamura, & Lin, 2007). Inadequate self care impacts on the patient's morbidity and mortality as well as increasing the cost of medication and laboratory test and cost in time and effort of the care providers (WHO, 2013).

Adolescence is the transitional phase of growth and development between childhood and adulthood. The World Health Organization (WHO, 2012) defines an adolescent as any person between ages of 10 and 19 years. This age range falls within WHO's definition of young people, which refers to individuals between ages 10 and 24 years. The beginning of T1DM characteristically takes place in youth or adolescence (Centres for Disease Control, 2005).

The reports related to childhood diabetes indicate that Bangladeshis are more prone to develop diabetes from its early age. Bangladeshis are genetically more susceptible for developing diabetes or the rapid transition with faster urbanizing environment affecting the lifestyle of the native population or both may attribute to increased the prevalence of childhood diabetes (Sayeed et al., 2013).

The impact to prior treatment of glycemic control and manage the advanced complications in human which leads to polyuria, polydipsia, lethargy and weight loss. If untreated, diabetic ketoacidosis (DKA) occurs and severe fluid, electrolyte and acid-based disturbances will lead to vomiting, dehydration, coma and death (Chapman and Hall, 1995). In addition, they experience a range of emotions initiated by the diagnosis including: shock, distress, disbelief, guilt, confusion,

anxiety, numbness. Parents often feel an intense grief similar to that normally associated with bereavement, and although this lessens over time. For many parents it does not resolve completely, resulting in "chronic sorrow". Children with diabetes may also have difficulty coping with the diagnosis and the relentless diabetes regimen. As health professionals tend to focus on the practicalities of diabetes management, the emotional needs of families can be overlooked (Chapman and Hall, 1995).

Diabetes self-care, adolescents with T1DM are encouraged to periodically attend consultation for urine and blood testing, insulin administration, adjustment of insulin in relation to the consumption of carbohydrate and physical exercise (Rosalind, 2006). Self care management in diabetes patients are crucial to control and prevent associated complications. Diabetes complications are still highly prevalent and are mostly attributed to the lack of self care knowledge and practices (Madeleine et al., 2015). For effective self care, patients need accurate information on self care information (Iwueze, 2007). Adequate self care is associated with positive outcomes in slowing down the development and progression of complication of diabetes (Karam, Samir, Trupti & Sameer, 2012). The self care practice influenced by their knowledge about diabetes; the more they know about their diseases, more they would have self management skills (Umuhoza, et al., 2015). Many research works published have shown that the diabetes do not proper uses of medication, life style modification, dietary plans, and myths associated with insulin and other education program on health issues (Konduru et al., 2017).

The knowledge of diabetes adolescents about the disease is determinant to the adoption of behaviors. The lack of knowledge about the physical process related to diabetes promotes insecurity in adolescents. These concerning the treatment based on the triad of diet, physical exercise and insulin therapy, and also concerning their accountability and autonomy. Knowledge is conditioned by the social and cultural beliefs of the environment (Karlsson, Arman & Wikblad, 2008). Where, adolescents are inserted negatively or positively influencing disease management. Than diabetes as a chronic condition that requires patients self involvement in their own self care (Metha, karki & Sharma, 2006).

There are some descriptive studies on prevalence at diabetes, and their risk factors of knowledge and practice of self care management (Akter, et al., 2014; Mukeshina et al., 2015). However there is a few studies to self care practice of T1DM among Bangladeshi children. That's why Researcher preferred to conduct this study. The findings of the study may help to improve the self care practice about T1DM and self manage of it among the young adolescents in Bangladesh.

Objective of the Study

To describe the self care practice among adolescents with Type 1 Diabetes Mellitus in Bangladesh.

II. Literature Review

A literature review is a critical analysis of a segment of a published body of knowledge through summary, classification, and comparison of prior research studies, reviews of literature, and theoretical articles. The purpose of this chapter is to review the current literature related to study. It guides to researcher from research question to data analysis process. The literature review is as follows-

Self care practice

Self-care is "care of self without medical or other professional consultation" (Webster's New Unabridged Dictionary, 1996). Orem (1991) defined self-care as "the practice of activities that individuals initiate and perform on their own behalf in maintaining life, health, and well-being". Self

care practice is the practice of taking action to preserve or improve one's own health. Self care practice in Type I Diabetes mellitus includes; insulin administration, blood glucose monitoring, maintaining records of insulin administration and glucose levels, management of hypoglycemia and hyper glycemia, complying with meal plans, and exercise regularly (Chien, Larson, Nakamura, & Lin, 2007). Inadequate self care impacts on the patient's morbidity and mortality as well as increasing the cost of medication and laboratory test and cost in time and effort of the care providers (WHO, 2013)

Prevalence of Type 1 Diabetes Mellitus

Globally 366 million people have diabetes in 2011; by 2030 this will have risen to 522 million (IDF Diabetes Atlas - 8th Edition, 2017). In Bangladesh, there has been upward trend in the number of newly diagnosed children, from 112 cases in 2008 to 319 in 2013 as documented by CDC program at BIRDEM. The latest International Diabetes Federation (IDF) Atlas estimated the incidence of T1DM in Bangladesh at 4.2 new cases of T1DM/ 100,000 children (0-14years)/year in 2013. Recent studies shows that it is likely that multi factorial reasons are responsible incidence eg- hygienic practices, feeding regimens (autoimmunity to cow's milk) for the increasing Juvenile diabetes type1(Azad, 2015). Some population-based studies conducted in Bangladesh in different time and have revealed the increasing trends of diabetes prevalence ranging from 1.5 to 3.8% in rural communities (Rahman, Rahim & Nahar, 2007).

Impact of Type 1 Diabetes Mellitus

Type1diabetes is more common in Caucasian population, and in Northern Europe its prevalence in children has doubled in last 20 years, with a particular increase in children under 5 years of age. The exact number of individuals with type 1 diabetes around the world is unknown, but in the U.S., there are estimated to be up to 3 million. (Diabetes Care Volume 37, July 2014). The burden of diabetes is increasing globally**,** particularly in developing countries (WHO, 2011). The global burden of diabetes has been estimated in 2011: 366 million people had diabetes at the cost of at least USD 465 billion dollars in health care expenditures; 11% of total health care expenditures in adults(International Diabetes Federation, 2008). Cost estimates for T1DM in the US amount total annual 14.5 billion (Verrijn Stuart, 2013).

WHO, 2011 estimated that, diabetes is predicted to become the seventh leading cause of death in the world by the year 2030; Total deaths from diabetes are projected to rise by more than 50% in the next 10 years; Type 1 diabetes (previously known as insulin-dependent, juvenile or childhood-onset) is characterized by deficient insulin production and requires daily administration of insulin; Diabetes has become one of the major causes of premature illness and death in most countries, mainly through the increased risk of cardiovascular diseases. It accounts to between 50 -80% of deaths among people with diabetes; Diabetes is a leading cause of blindness, amputation and kidney failure. Lack of awareness about diabetes, combined with insufficient access to health services and essential medicines, can lead to six complications such as blindness, amputation and kidney failure; T1DM cannot be prevented but can be managed. (WHO, 2011). There is increasing worldwide impact of T1DM on mental health and quality of life, with additional focus on the influence that this co morbidity between T1DM and the presence of psychiatric disorders in adolescents, especially depression and anxiety (Mireille, 2017).

Adolescence is a period in life when different hormones decrease insulin sensitivity, which leads to a demand for larger insulin doses and a risk of deteriorated metabolic control (Acerini et al., 2000, Acerini et al., 2001, and Dunger et al., 2005). Diabetes is associated with increased risk for eating disorders, various dependent on type of diabetes. Being eating disorder is more common in patient with type2 diabetes (T2DM). Whereas, intentional omission of insulin doses for the purpose of

weight loss occurs mainly in patient with T1DM. However, in some patients with type 2 diabetes omissions of oral hypoglycemic drugs can be present. Risk factors for the development of eating disorders in patients with diabetes include: age, female gender, greater body weight, and body image dissatisfaction, history of dieting and history of depression. Poor glycemic control, recurrent episodes of ketoacidosis or recurrent episodes of hypoglycemia, secondary to intentional insulin overdose, missed clinical appointments, dietary manipulation and low self-esteem should raise concern. The consequence of eating disorders or disordered eating patterns in patients with diabetes is poor glycemic control and hence higher possibility of complications such as nephropathy, retinopathy and premature death (Ewa & Anita, 2015).

Study related in Europe and North America the ratio of type 2 to type 1 is approximately 7:3**.** The prevalence of known diabetes in Britain around 2-3%, but is higher in the Middle and Far East (e.g, 12% in Indian subcontinent). Epidemiological reports showed the increased prevalence of diabetes in Turkey (7.2%), India (8.2%), Pakistan (11.1%), and Hawaii (20.4%). In European population, age standardized prevalence varied from 3-10%. Some Arab, migrant Asian Indian, Chinese and Hispanic American populations were at higher risk with prevalence of 14-20% **(**Rahim; Rahman; Mustafa; and Ahmed, 2011).

In Portugal number of new cases of diabetes increases every year. In 2014 was 17.5 % (261 new cases) while in 2000 it was 9.5 % (160 new cases) for each 100,000, age in 0-14 years .These results are the international trends of T1DM at increasingly younger ages (Flora et al., 2016).

In Finland the incidence and prevalence of T1DM in children and adolescents rates among the highest in the world. Overall, the yearly incidence of childhood diabetes in Finland from the year 1987 to 1989 was an estimated 35.2 per people. In boys it was 38.4 making it higher than in girls at 32.6. Fins was 49.1 per 100,000/ year, and there was a slightly boy's predominance with boy's / girl's ratio 1:08 (Tuomilehto et al. 1992).

The self care practice of patient with T1DM influenced by their knowledge about diabetes; the more they know about their diseases, more they would have self management skills (Umuhoza et al., 2015). Many research works published have shown that the diabetes patients do not proper uses of medication, life style modification, dietary plans, and myths associated with insulin and other education program on health issues (Konduru et al., 2017). In diabetes self care, adolescents with T1DM are encouraged to periodically attend consultation for urine and blood testing, insulin administration, adjustment of insulin in relation to the consumption of carbohydrate and physical exercise (Rosalind, 2006). In addition, the knowledge of diabetes adolescents about the disease is determinant to the adoption of behaviors. The lack of knowledge about the physical process related to diabetes promotes insecurity in adolescents concerning the treatment based on the triad of diet, physical exercise and insulin therapy, and also concerning their accountability and autonomy. Knowledge is conditioned by the social and cultural beliefs of the environment (Karlsson, Arman & Wikblad, 2008). Where, adolescents are inserted negatively or positively influencing disease management. The diabetes as a chronic condition, that requires patients self involvement in their own self care practice (Metha, karki & Sharma, 2006). Effective self care, patients need accurate information on self care information (Iwueze, 2007). Adequate self care is associated with positive outcomes in slowing down the development and progression of complication of diabetes (Karam, Samir, Trupti & Sameer, 2012). Self care management in diabetes patients are crucial to control and prevent associated complications. Diabetes complications are still highly prevalent and are mostly attributed to the lack of self care knowledge and practices (Madeleine et al., 2015). Severe underweight and sever stunted was significantly higher among the protein deficient diabetes mellitus compare to Type-2 diabetes. Juvenile diabetes is emerging health problem in modern era. Like old population the incidence of juvenile diabetes is increasing day by day. It is time for the health planner

to prevent and control the disease; otherwise it will be major problem after a decade **(**Karim; Jahan & Mona 2013). The lack of knowledge highlights the major health problems faced by people in Bangladesh, and the immense knowledge gap that needs to be filled to increase diabetes awareness in the country. (Konduru et al., 2017)

Based on the above literature review it was found that self care practice depends on their knowledge, that requires patients self involvement in their own self care practice (Metha, karki & Sharma, 2006).).The self care practice of patient with T1DM influenced by their knowledge about diabetes; the more they know about their diseases, more they would have self management skills and adequate self care is associated with positive outcomes(Umuhoza, et al., 2015). However in Bangladesh there is small research in depth regarding to describe the self care practice among young adolescent patients with Type 1 Diabetes Mellitus.

III. Methodology

Purpose of this study was to explore the self-care practice among adolescents with Type 1 Diabetes Mellitus in Bangladesh. This chapter will describe the methodological aspect of this study. This include: study design, study participant, data collection instrument, data collection method, and data analysis.

Study Design

A descriptive qualitative study design was applied to describe the self-care practice among adolescents with Type 1 Diabetes Mellitus in Bangladesh. The study was carried out at pediatric department and endocrine department of three tertiary level hospitals in Bangladesh. These include; Dhaka Medical College Hospital, Shaheed Suhrawardy Medical College Hospital, and Bangabandhu Sheikh Mujib Medical University, Dhaka**.** The study was conducted for one year started from July-2018 to June-2019.

Study Participants

The Study participants were 15 Young Adolescents with Type 1 Diabetes Mellitus in Bangladesh. They are admitted in pediatric department and also attending in outpatient department of pediatrics at three tertiary level hospitals in Bangladesh. Purposive sampling method was applied to select the sample for this study. Total 15 Young Adolescents were selected purposively who were met the following inclusion criteria: known case of Type 1 Diabetes Mellitus among adolescents with newly diagnosed , Type 1 Diabetes Mellitus diagnosed within 1 to 3 months; age between 10 to 19 years; Be able to communicate in this study, those who have no co morbidity or physical and cognitive disability.

Instrument

Data was collected using demographic and interview guided questionnaire developed by the researcher with the help of advisor. It has two parts, **Part 1;** Socio Demographic Questionnaire-There was 10 items including: Age, Gender, Religion, Academic qualification, Occupation, Types of family, monthly family income, Family members etc. **Part 2;** Self Care Practice Interview guidelines -this part was designed to assess the self-care practice of T1DM. This include guided question with five dimensions of self-care practice of T1DM include: insulin administration; blood sugar monitoring; conduct diabetic diet; participate physical exercise, and maintain personal hygiene. Based on guided questions data was written narratively according to participant's response. The instruments of applicability and validity were assessed by three panels of experts. Two were faculty

from NIANER those who has relevant research experience and one was child specialist from Mugda Medical College Hospital, Dhaka.

The instrument was developed by researcher in English and then translated into Bengali version through literature with the help of chief advisor in English language. The back translation technique was followed during translation of the instrument. The interview guiding questions are as follows:

1. Could you please tell me what is your feelings about your disease condition?
2. What do you think about the prognosis of this disease?
3. Can you explain me how do you maintain your daily life?
4. How do you feel about the support from your family, friends and neighbors about caring process?
5. Can you tell me about the impacts of DM in your future life?

IV. Data Collection Method

Ethical clearance was obtained from Institutional Review Board (IRB), National Institute of Advanced Nursing, Education and Research (NIANER) and BSMMU, Dhaka. The IRB no is Exp-NIA-2018-23. Permission was obtained from the Director of concerned hospital and Nursing Superintendent of the hospital. Permission was taken from the participants by written consent paper for data collection. Confidentiality and anonymity was assured by using a coding system. The participation of the respondent was voluntary. The participant can withdraw from the study any time without penalty. There was no harm associated with the study. Purpose of the study was explained by the researcher to the participants'. Data was collected through face to face interview using interview guiding questionnaires focusing on self-care practice among adolescent with Type 1 Diabetes Mellitus in Bangladesh. Obtained information was hand written by researcher and audio recorder in same time, and later translated into verbatim by researcher as soon as possible after finishing interview. The duration of interview was around 30 to 40 minutes for each participant the data was collected from January to February 2019.

Data Analysis

Descriptive statistics was used to analysis the participants' demographic characteristics. Data was analyzed using the process of content analysis. All hand writing and audio recorded information were immediately transcribed verbatim into Bengali by repeatedly listening to audio records. All transcribed data were read repeatedly until familiarity of data was achieved, to achieve a sense of whole picture. Then transcriptions were translated into English by the researcher with the help advisor. Both the Bengali and English translations were double checked by a bilingual medical personnel to check the accuracy of the translation,

Then researcher read that information several time and code the data .It involves the identification and analysis of themes. Then themes were cluster into categories.

V. Result

This chapter describes the findings of the study. The results of this study are presented as description of participants socio demographic characteristic and thematic description of the participants self care practice of T1DM. The findings are divided in to three themes including their subthemes.

Socio Demographic Questionnaire

Table 1 showed that the socio demographic characteristics of young adolescent patient with Type 1 Diabetes Mellitus in Bangladesh. The mean age of participants was 16.53(SD: 1.76). The minimum ages of participants were 13 years and Maximum age was 19 years. Most of the 10 (66.67 %) participants were male and female were 5 (33.3%). Most of the Religion of participants 7 (46.67%), was Islam, Hindu were 3(20%), Christian were 3 (20%), and Buddhist were 2 (13.3%). Most of the Educational status of the participants 10 (66.67%) were SSC, HSC 3 (20%), Primary Education were 2 (13.3%). Most of the Occupation of participants 8(53.3%) were Student, Unemployed 1 (6.6%) others are 6(40%) including small business, house wife, and housemaid/ servant. Most of the types of family13 (86.67%) were Single family and joint family 2 (13.3%), Family member's mean: 5.40, SD: 1.08.Mini to max range 3 to 8. Monthly family income mean: 21166.67 SD: 5146.65. Mini/max ranges 15000 / 30000 tk. Most of the Age of Diagnoses: 2 months, 7 (46.67%), 1month 6 (40%), and 3 months of diagnosis 2 (13.3%). Most of the participants 13 (86.67%), treatment on insulin taken but don't take insulin 2 (13.3%).

Table 1: Socio Demographic Questionnaire (N=15)

Subject	Characteristics	n/(%)	M/ SD	Min-Max
Age in Year			16.53±1.76	13-19
Gender	Male	10(66.67)		
	Female	5(33.33)		
Religion	Islam	7(46.67)		
	Hindu	3(20)		
	Buddhist	2(13.33)		
	Christian	3(20)		
Education	Primary	2(13.33)		
	SSC	10(66.67)		
	HSC	3(20)		
Occupation	Student	8(53.33)		
	Unemployed	1(6.67)		
	Others	6(40)		
Type of family	Single Joint	13(86.67) 2(13.33)		
Family member			5.40± 1.08	3-8
Monthly family income			21166.67 ±5146.65	15000-30000
Age of Diagnosis	1month 2months 3months	6(40) 7(46.67) 2(13.33)		
Treatment on Insulin	Yes No	13(86.67) 2(13.33)		

Thematic description of the participants Self Care Practice of T1DM

This study revealed three themes emerge including their subthemes are describe –

Theme one (01): Disease Perception:

Perception of Participants

Some of the Diabetes patients (participants) response that Diabetes is genetic or hormonal disease. They feels different types of problems due to DM, they cannot eat with full abdomen, cannot play, cannot work, cannot reading properly, cannot mixed with others, People bad command, when their blood glucose level is less than normal or decrease more they feel sick, or high that time needs to take insulin, At different times they may feel more or less motivated and able to keep their blood glucose at normal ranges.

Some participant response that

"My parents and grandparents have Diabetes. May be I get from them. So it is genetic disease. The treatment of Diabetes Mellitus are take insulin every day before meal and sometimes after meal also" (P 2, 6).

One participant response that- *"Diabetes is a hormonal disease" hormone name is I nsulin. Insulin is produced from pancreas"* (P, 4).

Another participant response that *" Diabetes it is nothing else, it happens due to excess sugar & sweet intake then increases blood glucose* (P-15).

Subthemes: Uncertainty- Uncertainty is the inability to determine the meaning of illness related events, The cognitive state created when the person cannot adequately structure or recognize illness related events due to lack of sufficient cues. Ocurs in a situation where the when the decision maker is unable to assign definite value to objects or events or is unable to predict outcomes accurately (Mishel, 1988) . However, lots of people describe experiencing diabetes 'burn-out' due to the unceasing, and sometimes unpredictable nature of the monitoring and maintenance of type 1 diabetes.

One participant response that- *"Diabetes is a dangerous disease. It can not prevent" (*P,5)

Another participant response that- *"Diabetes is a serious problem. It can not cure fully, so I will die"*(P,11)

Impacts: The action of one object coming forcibly into contact with another.

Social impact- Some of the participants express that the impact of Diabetes Mellitus in social life a lot - People bad command, neglecting, feels sympathy

One participant response that "*I may not bearing child, So I would not get married*" (P-13).

Another participant response that" *if it is not control then financial problem"* (P 5,12).

Educational impact- Most of the participants response that it hamper to school performance- sudden migraine, tension, less attention to study, if it is sever to go to hospital and cannot study. Sometimes failed to see book page

One participant response that – *During playing at school if cut injury occur then it is problem, I cannot play normally, cannot meet with others* (P-7)

One participant response that "*At school, sometimes I fell sudden migraine, if it is sever I go to hospital and hamper regular study*" (P,1).

Some of the participants response that *"I go to school regularly with my food and medicine. It don't hamper to school performance"* (P-4,11,12)

Family burden: Most of the participants' response their disease burden to family

One participant response that *" I take every day insulin and medicine, check my blood sugar by machine and strip, strip is costly. So my family suffering money problem,"* (P,9)

Another participant response that " *During my serious illness I have to admit hospital, my parents stay with me, that my father can not work, this is not good for our family because my father is only earning member" (*P,11)

Theme two (02): Disease management: Type 1 diabetes usually starts in childhood; people with the condition will often have many years gaining experience in managing it includes; insulin administration, blood glucose monitoring, conducted diabetes diet , and exercise regularly (Chien, Larson, Nakamura, & Lin, 2007).

Subthemes : Coping : The act of adjusting; adaptation to a particular condition, position, or purpose. Many factors that affect glucose control – such as eating, sleeping, stress, physical activity and medication.

One participant response that "*I don't do exercise regularly before my Diabetes, now I am doing regular walking and exercise"* (P,3)

Another participants response that *"I have to learn new ways to eat and possibly need to start insulin" (* P,7)

Therapeutic Management: T1DM can't prevent or cure, but control well (WHO, 2011) and lead a normal life (Indian Endocrinol Metab, 2015)

One participant response that *"I can live better life by maintain discipline"* (P,14)

One participant response that "I can live better life by insulin" (P,6).

Another One participant response that "I can live better life take less amount food and sweet" (P,12)

Theme three (03): Family Support: Participants expressed their family relationship with their parents, siblings, and parental burden, here showed most of the positive and some of the negative relationship.

Parental support: Most of the parents being careful with foods, checking blood glucose levels and taking insulin.

One participants response that *"I can't push insulin, at home my father or mother puss me insulin"* (P,2)

Another participant response that " *In my all are not suffering from diabetes, only I have diabetes, my parents take care me more than other members"* (P,9)

VI. Discussion

A discussion of the theoretical implications of the study comes next, followed by implications for clinical practice. Aim of this study is to describe the findings of the self care practice. The findings of the current study make several contributions among demography and theme of SCP.

Type 1 diabetes mellitus is a metabolic disease that depends on insulin for continued existence. According to a worldwide longitudinal research study, the prevalence of type 1 diabetes is increasing universally at annual rate of 2.8%, demonstrating the significance of addressing the influence of the disease (American Diabetes Association, 2011).

1. Socio Demographic Characteristics of the participants

The selecting sample were 15 known cases of Type 1 Diabetes Mellitus among adolescents with newly diagnosed within 1 to 3 months who admitted in pediatric department, endocrine department and outpatient department of pediatrics at three hospitals. The mean age of participants was 16.53(SD: 1.76). The minimum ages of participants were 13 years and Maximum age was 19 years. Most of the 10 (66.67 %) participants were male and female were 5 (33.3%). Most of the Religion of participants 7 (46.67%), was Islam, Hindu were 3(20%), Christian were 3 (20%), and Buddhist were 2 (13.3%). Most of the Educational status of the participants 10 (66.67%) were SSC, HSC 3 (20%), Primary Education were 2 (13.3%). Most of the Occupation of participants 8(53.3%)

were Student, Unemployed 1 (6.6%) others are 6(40%) including small business, house wife, and housemaid/ servant. Most of the types of family13 (86.67%) were Single family and joint family 2 (13.3%), Family member's mean: 5.40 SD: 1.08. Mini to max range 3 to 8. Monthly family income mean: 21166.67 SD: 5146.65. Mini/max ranges 15000 / 30000 tk. Most of the Age of Diagnoses: 2 months, 7 (46.67%), 1month 6 (40%), and 3 months of diagnosis 2 (13.3%). Most of the participants 13 (86.67%), treatment on insulin taken but don't take insulin 2 (13.3%).

There was an American young people in the research with T1DM, the mean ages of the participants were 12.8 years, where is male are more than female young adolescents (Viikinsalo et al., 2004,)

The 1st theme in this study Uncertainty of Disease condition under this topic findings educational impact which similar to the study of School performance in children with type 1 diabetes a population-based register study (Diabetologia, 2007)

The 2nd theme in this study- Living with Disease management under this topic findings Coping adjustment, It has been revealed that approaches increase the youths' capacity to cope with the disease might impact both psychological and metabolic alteration (Grey et al., 1998).

Self Care Practice

In this study it was revealed that out of 15 participants around ½ participants can't perform blood sugar/glucose monitoring (testing) by him or herself, they get help from his or her parents, sister or brother. Near about ½ participants can perform blood sugar by himself or herself, and rest of them don't know perform his or her blood sugar by themselves. They can perform their blood sugar by pharmacy or medicine shop. Practice self blood sugar which is lower than study conducted in Qatar, where 2/3 participants can perform blood sugar by himself or herself (Integrative Obesity and Diabetes, 2015).

Around ½ participants can't administer insulin by themselves. They take help from parents or sister and brother,. Near about ½ can administer insulin by them self and rest of them doesn't know the process of administer insulin and not take insulin. Another study showed that near about ½ participants can administer insulin by them self (BIRDEM, 2012) similar to our study.

More than ¾ participants followed daily diabetic meal plan, but rest the participant don't follow daily diabetic meal plan. Another study found that more than ½ participants followed daily diabetic meal plan that finding did not similar to our study (Rwanda, 2015).

More than ¾ participants do physical exercise routinely, running or walking ½ hour to one (01) regular at morning or evening, but rest of the participants doesn't do physical exercise. More than ½ of all American participants not engaging exercise (Rwanda, 2015) that is lower than this study. Increase physical exercise helped to sustain weight loss, decrease glucose –stimulated insulin production, increase insulin sensitivity, decrease abdominal adipose (Bolem and Chang, 2008). Another study found that 70% participant's do physical exercise routinely

Regarding Self Care practice another study found that half of the participants have poor self care practice where study participants were 119 and ½ had poor diabetes self care practice (World Journal of Medicine and Medical Science, 2014). In adequate self care impacts on the patient's morbidity and mortality as well as increasing the cost of medication and laboratory test and cost in time and effort of the care providers. Finally participants, who have adequate self care have better outcomes, live longer, enjoy a higher quality of life, and suffer from fewer symptoms and less complication (World Journal of Medicine and Medical Science, 2014).

VII. Conclusion And Recommendation

Conclusion

From the findings of the study researcher showed three themes with their subthemes indicate some positive and negative impacts. Diabetes in children and adolescents is increasing in Bangladesh, and comprehensive diabetes care is essential to achieve good glycemic control. Diabetes education combined with appropriate motivation of the patients and caregivers is the cornerstone of DM management. Sustainability of the programs will ensure that the child with diabetes can lead a normal life. (Indian Endocrinol Metab, 2015)

This study illustrated that around ½ participants were more self care practice. T1DM can't prevent or cure, but it can manage well (WHO, 2011). So it is important to improve self care practice of adolescents by providing education through motivational and training program including blood sugar monitoring; insulin administration; recommended diabetic meal plan; and participating physical exercise and maintaining personal hygiene. The study can help nurses to promote their nursing practice. The Result of the study also helpful for the next researcher. The findings of the study may help to make basement structure to increase self care awareness about self care practice of T1DM. Thus health care provider should consider developing educational program and activities to educate the patients on self care practice of Diabetes Mellitus, and should not rely on medical intervention only.

Recommendation

On the basis of the findings of the present study of Self Care Practice among adolescents with Type 1 Diabetes Mellitus in Bangladesh are: This study recommends comprehensive measures for early diagnosis, self monitoring, self care and affordable cost-effective treatment facilities. Health facilities for diagnosis and treatment of diabetes mellitus should be available to prevent complications of the disease among Adolescents with T1DM because prevention is better than cure. To reduce the economic burden of the disease, holistic approaches like cost-effective care and subsidized or free of cost treatment should be launched for the Adolescents with T1DM especially for the poor and middle classes people, in this research found more than ¾ participants take insulin and insulin is costly medicine.

Health education and promotional activities must be enhanced in the communities to make them aware regarding physical exercise, sedentary lifestyle, hazards of obesity and dietary habit to reduce the rapidly escalating prevalence of diabetes mellitus, Ongoing training and structured education of pediatric diabetes teams is required annually, in this research, observed that only some participants had training to administered insulin from nurses in hospital. National, quality assured, educational programmes for children with T1DM and their families and carers should be developed, in this research, observed that ½ participants can check blood sugar by him or herself, they got help from others. Awareness of Self Care Practice among young adolescent patient with T1DM in Bangladesh can also improved through poster, flip chart and diagram in the hospitals. Mass media (radio, television, news paper, magazine, and medical journal) can also play an important role to increases Self Care Practice among adolescents with T1DM in Bangladesh among the public.

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