



PSYCHOLOGICAL ASPECTS OF TYPE 1 DIABETES MELLITUS AMONG ADOLESCENTS: A CROSS – SECTIONAL STUDY

Renad Takroni, Ghadh Alenazi, Ghala Alenazi, Reem Alanazi, Jawaher Alotaibi, Faten Alanzi, Maram Alanazi, Hanan Kaabi, Reem Alasadi* | Dr. Kalaiselvi.T**

*BSN Student at ELM University, Riyadh, Kingdom of Saudi Arabia.

**Research Supervisor at ELM University, Riyadh, Kingdom of Saudi Arabia.

DOI: <http://doi.org/10.47211/idcij.2024.v11i01.008>

ABSTRACT

A cross – sectional study was conducted to Assess the level of depression, anxiety and stress among the type1 DM adolescents at Riyadh region, Kingdom of Saudi Arabia. The study was aimed to identify the depression and anxiety state of type1 diabetic adolescents in Riyadh region. The study was conducted among type I DM Adolescents who are attending the diabetic center in Riyadh region. The convenience sampling technique was used to select the study sample. Sample size was 200. The Depression Anxiety Stress Scales – Youth Arabic Version (DASS-Y) was used for the data collection to achieve the purpose of the study. This questionnaire was adapted from Szabo, M., & Lovibond, P. F. (2022). Development and Psychometric Properties of the DASS-Youth (DASS-Y): which is the latest tool to measure anxiety and depression, stress of Adolescents and Children. The instrument was already valid and reliable thus it affirmed to be dependable and exact, subsequently they were utilized to proceed with the investigator's information gathering. The information gathered was analysed by descriptive and inferential statistics and interpretation was created supported the objectives of the study. The study revealed that 28% adolescents had moderate depression, 13% had severe depression, 11% had mild depression and 10% had extremely severe depression. 21% adolescents had moderate anxiety, 24% had severe depression, 15% had mild anxiety and 23% had extremely severe anxiety. 23% adolescents had moderate stress, 9% had severe stress, 20% had mild stress and 10% had extremely severe stress. There was a significant difference between gender, age, type of family and their depression, anxiety and stress level. Moreover, there was no significant difference between domicile, duration of type 1 DM, mode of insulin therapy and their depression, anxiety and stress level. A positive statistically significant correlation was identified between depression and anxiety as well as stress.

Keywords: Depression, Anxiety, Stress and Diabetes Mellitus Type I.

INTRODUCTION

The period of adolescence is of special concern for parents and caretakers due to the changes occurring in the individual's biological and intellectual make-up and also in his/her relationship to his/her socio-economic environment. Difficulties in adjusting to these changes may lead to emotional distress and may be manifested as depression or anxiety. Presence of a chronic disease may have an important influence on the physical, psychological and emotional state of the adolescent and can limit his/her ability to cope with the necessary tasks of everyday life. Thus, an adolescent who has a chronic illness needs to adapt to the changes in his/her biological and intellectual make-up on one hand and at the same time should be able to cope with the treatment of his/her condition and also with the stress caused by the presence of a chronic disease. Therefore, compatibility is difficult for adolescents and may expose them to many risks such as depression, anxiety and other psychological states. Research shows that children and adolescents with type1 diabetes are at increased risk of mental health problems such as depression, anxiety and stress-related disorders and that these comorbidities can get in the way of optimal care. Given the worldwide rise in diabetes mellitus (DM) as a chronic disease in recent years, an increase which will probably continue in the coming decades and the increased risk of poor diabetes outcomes associated with co-morbid depression especially among adolescents, DM care should take into consideration not only the endocrinological and physical outcomes of the condition, but also its psychological features. The Kingdom of Saudi Arabia (KSA) is the largest country in the Middle East that occupies approximately four-fifths of the Arabian Peninsula supporting a population of more than 33.3 million people, of whom 26% are under the age of 14 years. As per the Diabetes Atlas (8th edition), 35,000 children and adolescents in Saudi Arabia suffer from T1DM, which makes Saudi Arabia rank the 7th in terms of numbers of T1DM patients and 4th country in the world in terms of the incidence rate (33.5 per 100,000 individuals) of T1DM. However, in comparison with that in the developed countries, the number of research interventions on the prevalence, incidence, and the sociodemographic aspects of T1DM is woefully inadequate.



Given the worldwide rise in diabetes mellitus (DM) as a chronic disease in recent years, an increase which will probably continue in the coming decades and the increased risk of poor diabetes outcomes associated with co-morbid depression especially among adolescents, DM care should take into consideration not only the endocrinological and physical outcomes of the condition. This study was designed to investigate the psychological aspects of type 1 DM in adolescents.

Aim

The study aimed to identify the depression anxiety and stress state of type1 diabetic adolescents in Riyadh region

Objectives

To Assess the level of depression, anxiety and stress among the type1 DM adolescents based on DASS- Y (21) scale.

To associate the level of depression and anxiety, with their selected demographic data (Gender, Age, family type, domicile, parent's status, duration of type 1 DM and mode of insulin therapy)

Methodology Research approach

Quantitative analysis approach was used for the study.

Research Style

The study utilised a cross-sectional design used to evaluate the psychological aspects of type 1 DM adolescents attending the diabetic centre in Riyadh.

Setting of the study

The study was conducted in diabetic centre in Riyadh region, kingdom of Saudi Arabia..

Population

Target population: type1 DM adolescents

Accessible population: type1 DM adolescents, who are attending the diabetic centre in Riyadh region

Sample selection and Size:

Sample size was calculated using solvin formula, The formula is described as: Sample Size = $N / (1 + N * e^2)$, whereas N = population size surveyed, e= margin of error, $240 / (1 + 240 * 0.042) = 240 / (1 + 240 * 0.0016)$, = $240 / (1 + 0.384) = 240 / (1.384) = 173.41$. So the sample size was rounded to the near maximum 200.

Sampling technique

The convenience sampling technique was used.

Inclusion criteria include:

any gender,

Age group within 12 – 18 years (Adolescents),

child with Type 1 Diabetes for minimum of six months,

should registered in diabetic centre – Riyadh.

Exclusion criteria include:

A child having with any other physical disability or illness, unwillingness to participate in the study

Description of the tool •

The questionnaire composed of two elements.

Component – 1: The first part contains the demographic characteristics of the respondents which are: Gender, Age, family type, duration of type 1 DM and mode of insulin therapy.

Component – 2: The second part determine the level of depression, anxiety and stress of adolescents. The DASS - Y is a 21-item questionnaire with seven questions for anxiety and depressive and stress symptoms each. The instrument is already valid and reliable thus it affirmed to be dependable and exact, subsequently they were utilized to proceed with the investigator's information gathering.

METHOD OF DATA COLLECTION

Step 1: Once the proposal passed from the approval of the university research centre, the necessary permission letter was sent by the researchers to the respective offices. Since the type 1 DM adolescents was the respondents of the study, obtaining their willingness to participate in this study was sought by the researchers.

Step 2: A detailed explanation about the purpose of this study was discussed by the researchers to the study subjects.

Step 3: The research questionnaire was distributed by the researchers to the study subjects. The instruction in answering the instrument was given clearly, then, it was be tallied, and analysed by the researchers. The data collection procedure was taken about one month



DATA ANALYSIS AND INTERPRETATION:

Frequency and percentage distribution of socio demographic variables:

Demographic data	Frequency (f)	Percentage (%)
Gender:	103	51.5%
Male Female	97	48.5%
Age:	92	46%
12-15 Years	108	54%
16-18 Years		
Family Type:	158	79%
Joint Family Nuclear family	22	21%
Domicile:	71	35.5%
Rural Urban	102	51%
Suburban	27	13.5%
Parents Status:		
Living within family	105	52.5%
divorced	31	15.5%
Mother Deceased	21	10.5%
Father Deceased	24	12%
Both Parents Deceased	19	9.5%
Duration of Type 1 DM:		
Less than 6 months	108	55%
More than 6 months	92	45%
Mode of Insulin therapy:		
Less than 4 injections per day	111	55.5%
More than 4 injections per day	89	44.5%

The above table reveals that the majority of the adolescents 103 (51.5%) are male, and the majority of the adolescents 54 (54%) belonged to the age group of 16 to 18 years. And least 3(3%) were in the age group of 12 to 15 years.

With regard to type of family of the adolescents 158 (79%) were belonged to joint family and least 22(21%) were in nuclear family.

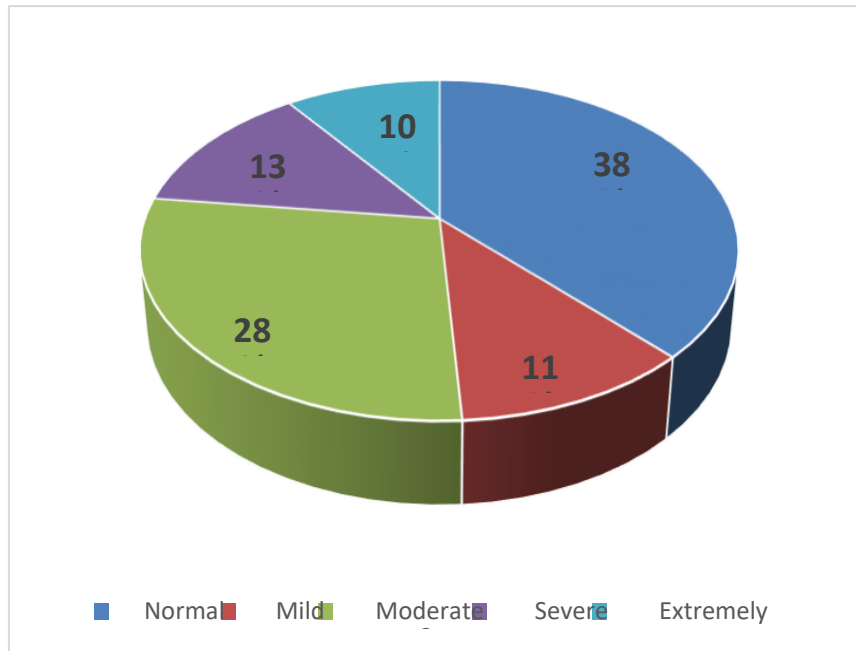
Regarding domicile of the adolescents 102(51%) were living in urban area and least 27(13.5%) were living in suburban area

With regards to parents' status, majority of the adolescents 105(51.5%), living within family, and least 19(9.5%) were both parents Deceased

Considering duration of Type I DM, majority of the adolescents 108 (55%) having less than 6 months and least 92(45) were having more than 6 months

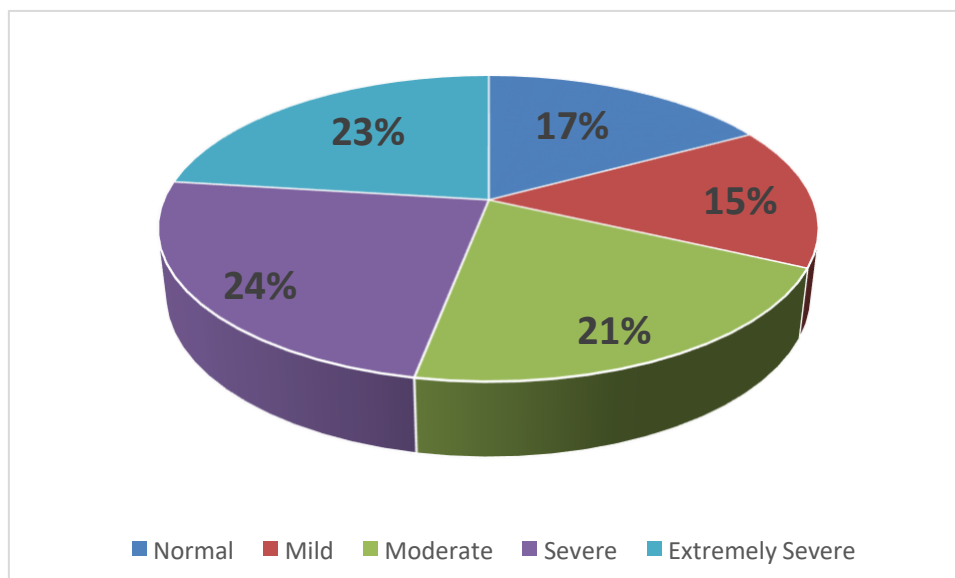
With regard to Mode of Insulin therapy, majority of the adolescents 111 (55.5%) taking less than 4 injections per day, and least 89 (44.5%) were taking more than 4 injections per day.

ASSESSMENT OF THE LEVEL OF DEPRESSION, ANXIETY AND STRESS USING DASS-YOUTH (DASS-21) SCALE: Level of Depression:



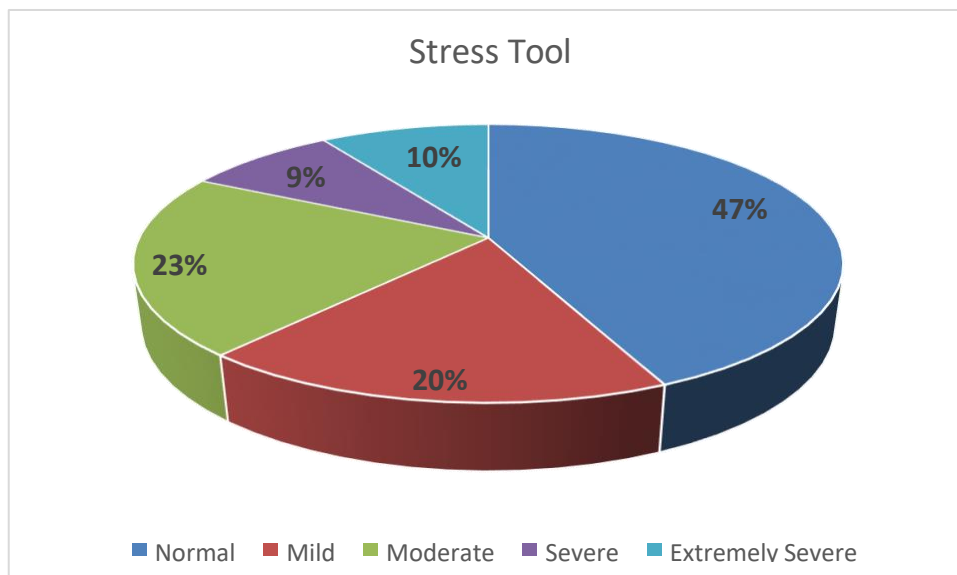
The above Figure shows that as regards the level of depression, 28% adolescents had moderate depression, 13% had severe depression, 11% had mild depression and 10% had extremely severe depression.

Level of Anxiety



The on top of figure discovered that, level of anxiety, 21% adolescents had moderate anxiety, 24% had severe depression, 15% had mild anxiety and 23% had extremely severe anxiety.

Level of Stress



The above Figure shows that s the level of stress, 23% adolescents had moderate stress, 9% had severe stress, 20% had mild stress and 10% had extremely severe stress.

Correlation analysis between Depression, Anxiety and Stress:

		Depression Total	Anxiety Total	Stress Total
Depression	Pearson Correlation	1	.395**	.276**
	Sig. (2-tailed)		.000	.006
	N	200	200	200
Anxiety	Pearson Correlation	.395**	1	.332**
	Sig. (2-tailed)	.000		.001
	N	200	200	200
Stress	Pearson Correlation	.276**	.332**	1
	Sig. (2-tailed)	.006	.001	
	N	200	200	200

****Correlation is significant at the 0.01 level (2-tailed).**

The above table shows that positive statistically significant correlation between depression and anxiety as well as stress.

CONCLUSION

The study aimed to identify the depression and anxiety state of type1 diabetic adolescents in Riyadh region. There was a significant difference between gender, age, type of family and their depression, anxiety and stress level. Moreover, there was no significant difference between domicile, duration of type 1 DM, mode of insulin therapy and their depression, anxiety and stress level. A positive statistically significant correlation was identified between depression and anxiety as well as stress. Considering the ever-increasing population of diabetic adolescents in our country and the significant relationship of DM with psychosocial problems such as depression and/or anxiety throughout its course, the provision of psychological support and social support from their parents is an issue of special concern. Therapeutic strategies of DM should also consider the treatment of co-existing psychiatric conditions throughout the course of the disease.



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