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The Effect of Exposure to Trauma on Type 1 Diabetic Children and Adolescents in AL-Sader City/Baghdad

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Abstract: Background: Iraq has been exposed to many wars and widespread violence during recent years. These lead to reactions to stressful events, especially depressive disorder, anxiety, and post-traumatic stress disorder (PTSD).Objective: This study was carried out in order to explore the effect of violence on school achievement and metabolic control of type 1 diabetic children and adolescents in AL-Sader city/Baghdad.Methods: A total of one hundred thirty type 1 diabetic children and adolescents were selected randomly from AL-Sader city/Baghdad for the period of ten months. Each participant was interviewed, and a questionnaire was filled out. It contains three parts. First part was the Iraqi version of the Harvard Traumatic Questionnaire (HTQ) for estimating the exposure to traumatic events (part IV), the second part was the School Performance Questionnaire about the school achievement, and the third part was a questionnaire about metabolic control of blood glucose level.Chi-square and Yate's correction tests were used to examine the association between the variables, and a P-value of less than 0.05 was considered statistically significant.Results: The rate of PTSD was 46.9%. There was no significant effect of age and gender on the rate of PTSD. It had a negative impact on school achievement and metabolic control of blood glucose levels. Conclusion: PTSD is highly prevalent. It had a negative impact on school achievement. Poor blood glucose control was highly prevalent, and PTSD had a negative role in controlling metabolism.

Keywords: Exposure to Trauma, Diabetic Children, Adolescents, Atopy and Asthma.

INTRODUCTION

In recent years, Iraq has experienced numerous conflicts and extensive violence. The Iraqi field is characterized by distressing, violent, and horrific events, including military operations, sectarian bloodshed, anti-insurgency efforts, counter-insurgency operations, and various crimes (Alkaisy, M.S.K. 2021; Gelder, M. *et al*., 2006). Individuals who are affected may experience various responses to stressful situations, particularly depressive disorder, anxiety, and post-traumatic stress disorder (PTSD) (Seedat, S. *et al*., 2004; Sadock, B. J., & Sadock, V. A. 2003).

PTSD, or post-traumatic stress disorder, is a condition that arises following exposure to a highly distressing event, either by direct experience, witnessing, or learning about it. In order to establish a diagnosis, it is necessary for the symptoms to persist for a duration of over one month following the occurrence and for them to have a major impact on crucial aspects of life, such as family and work (Simon, N. *et al*., 2020; Catani, C. *et al*., 2008; Al-Hemiary, N. J. *et al*., 2016).

This study aims to investigate the impact of violence on academic achievement and metabolic control in children and adolescents with diabetes in AL-Sader city/Baghdad, where they have been exposed to conflict and pervasive violence at ages 12 and 13.

AIMS

To assess the prevalence of traumatic event exposure among children and adolescents with type 1 diabetes in AL-Sader city/Baghdad.

The objective of this study is to assess the impact of traumatic experiences on the academic performance of children and teenagers with type 1 diabetes in AL-Sader City/Baghdad.

The objective of this study is to assess the impact of traumatic experiences on the metabolic management of children and adolescents with type 1 diabetes in AL-Sader City/Baghdad.

MATERIAL AND METHODS:

Study design: Cross-sectional study.

Study setting: Endocrine center of AL-Kendy Teaching Hospital, outpatient clinic of Children Welfare Teaching Hospital, and chronic diseases clinic of two public health centers in AL-Sader city. Period of data collection was between June 1st and November 30th, 2022.

Study population and sample: A total of 130 type 1 diabetic children and adolescents were included in the study as their residency was AL-Sader city/Baghdad. They were randomly selected from the endocrine center of AL-Kendy Teaching Hospital, the outpatient clinic of the Children Welfare Teaching Hospital, and the chronic

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diseases clinic of two public health centers in AL-Sader City.
Participants and their relatives were told about the study and its objectives of those 130 participants, 40 were males and 90 were females, they were of age groups between 6-17 years.

Data collection: Permission to conduct the study was taken; a consent form to perform the study was obtained before the data collection stage started. Participants and/or their relatives were told they are in a research study explaining the aim of the study.

Instruments: Each participant and/or his or her relative were interviewed, and a questionnaire was filled. The questionnaire contains three parts; the first part was the Iraqi version of the Harvard Trauma Questionnaire (HTQ) for diagnosis of PTSD (part IV). A score of ≥ 2.5 was significant for meeting the criteria of PTSD based upon the four editions of HTQ. It was applied in previous studies, and the second part was the School Performance Questionnaire about school achievement. A score of ≥ 2.5 was significant for meeting the criteria of bad school achievement, and the third part was on glycemic control (frequency of hospitalization, duration of hospitalization, regular consultation, and sites of consultation). Poor glycemic control was established on frequent hospitalization(more than one after controlling diabetes). There is a significant positive relation of poor glycemic control and diabetic-related hospitalization)

Data analysis: Chi-square and Yate's correction tests were used to examine the association between the variables, and a P-value of <0.05 was considered statistically significant.

RESULTS

A total of 130 type 1 diabetic children and adolescents were included in the study as their residency was AL-Sader city/Baghdad. Their age ranged from 6 to 17 years (13.18± 2.94). Females constituted a higher proportion (69.2%) of the study sample (figure 2). Male to female ratio was (0.4:1).

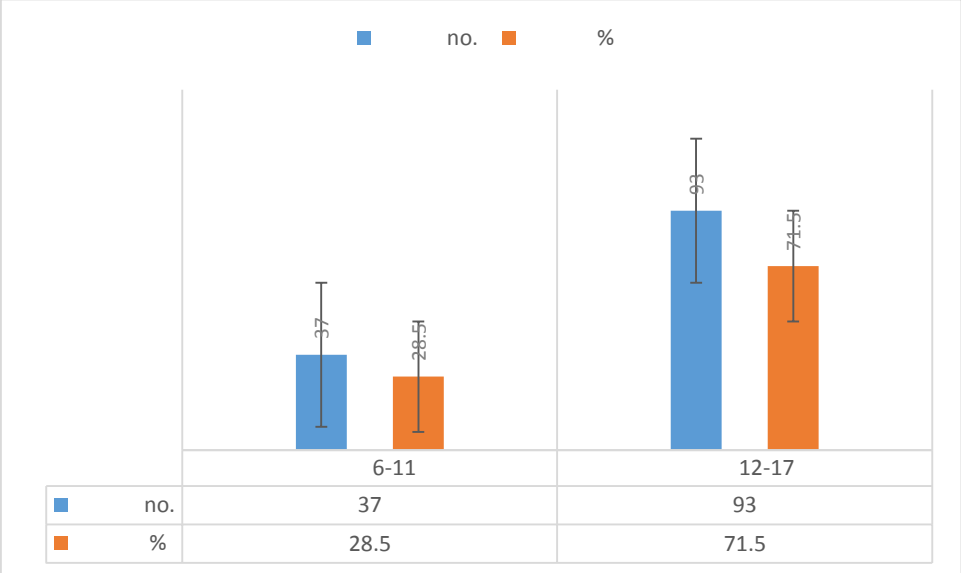

Figure 1: Age group characteristics of participants.

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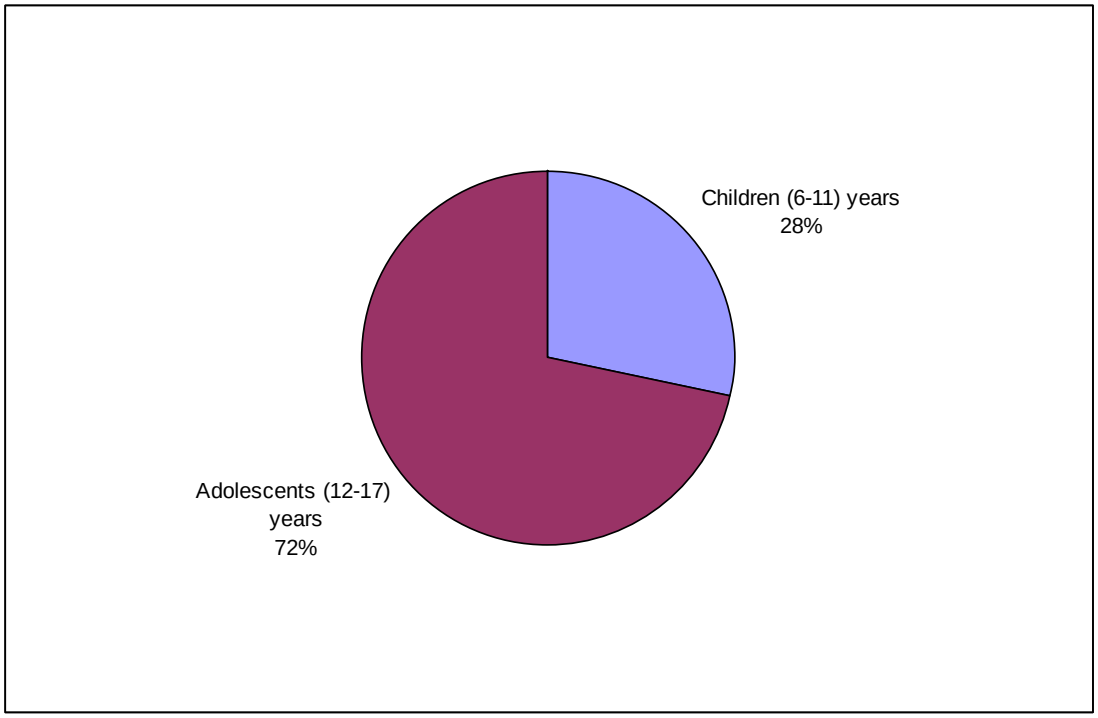

Figure 2: A Pie chart showing the age groups characteristic of participants

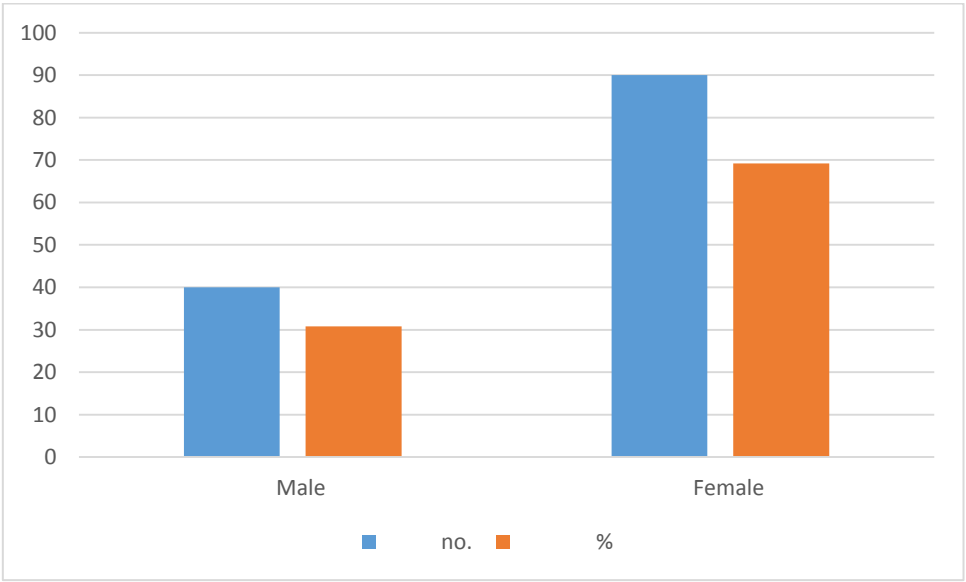

Figure 3: Gender characteristics of participants.

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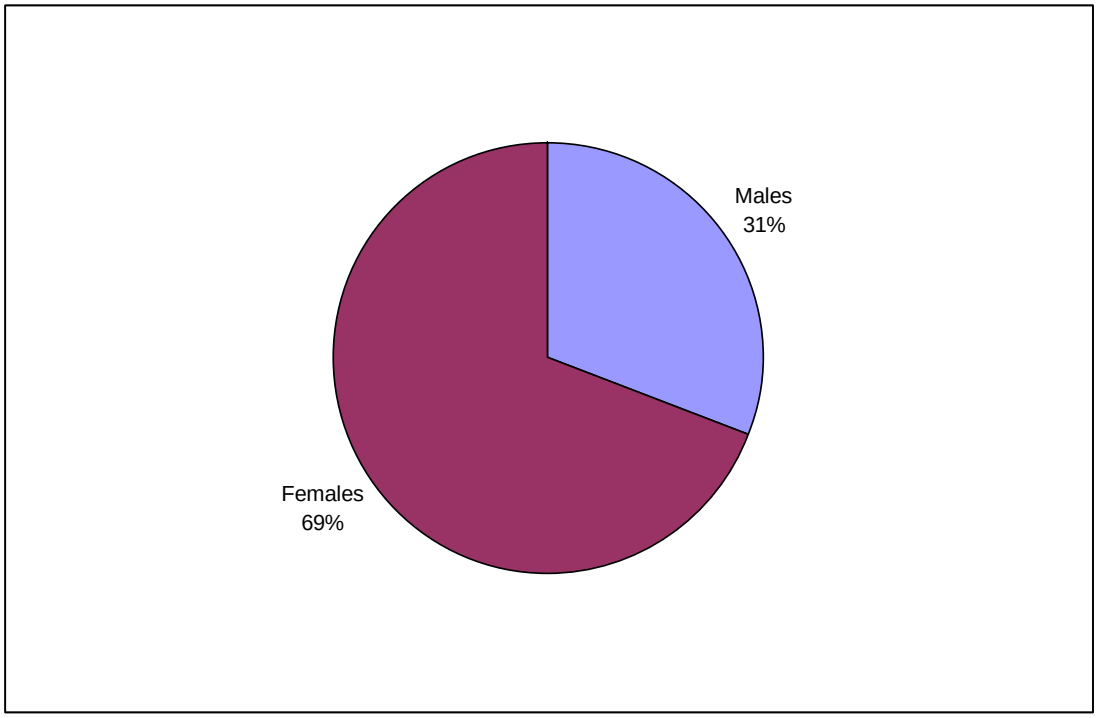

Figure 4: Pie chart showing the gender characteristics of participants

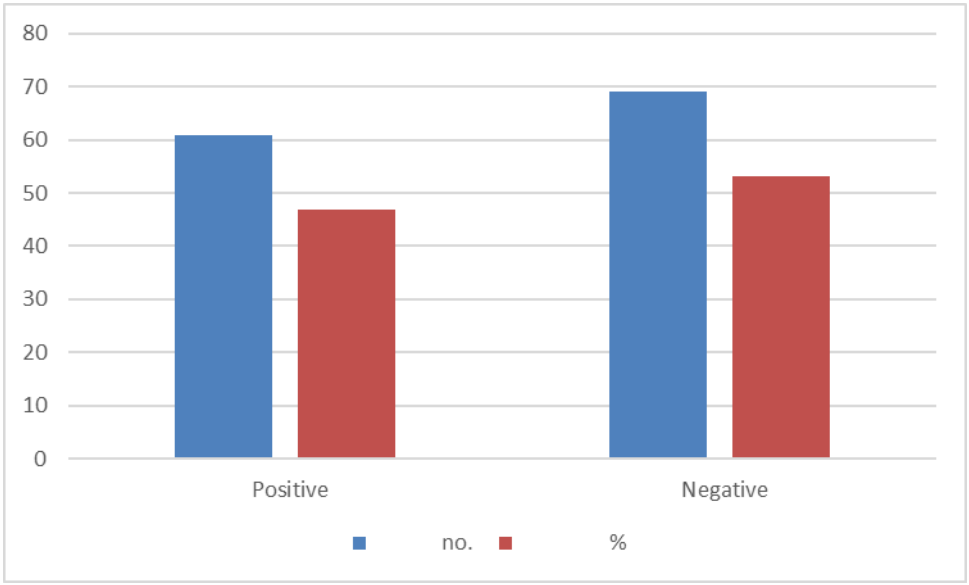

Fig 5: Distribution of PTSD in the sample.

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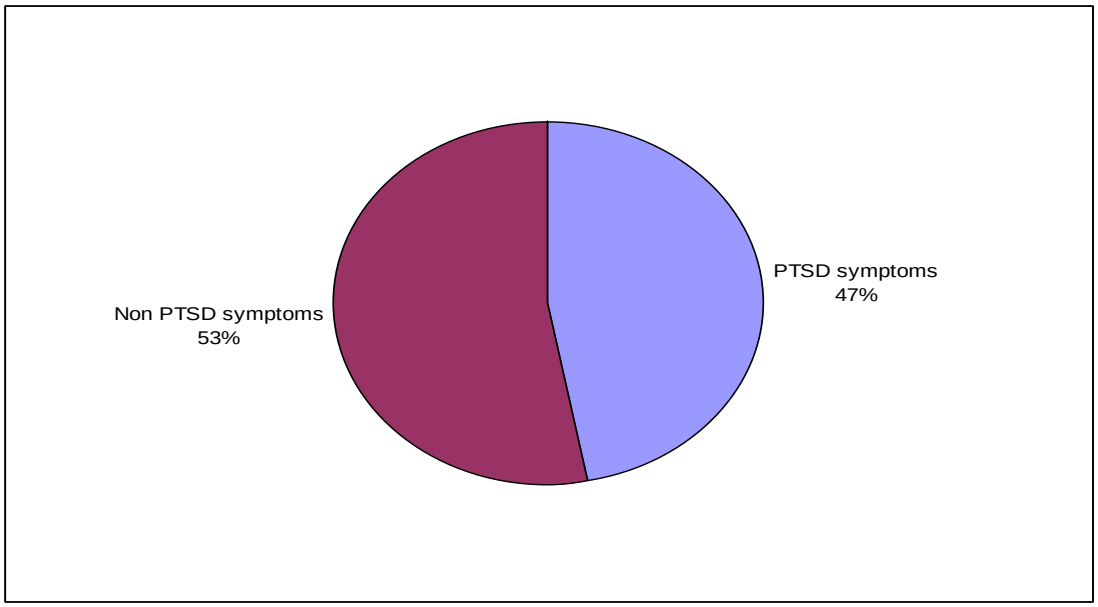

Figure 6: A Pie chart showing the distribution of PTSD in the sample

Table 1 Age distribution of PTSD in the sample.

Age group (years)	PTSD				Total	
	Positive		Negative			
	No.	%	No.	%	No.	%
6-11 years	14	37.8	23	62.2	37	28.5
12-17 years	47	50.5	46	49.5	93	71.5
Total	61	46.9	69	53.1	130	100

χ^2=1.71 df=1 P-value =0.185

Table 2: Gender distribution of PTSD in the sample.

Gender	PTSD				Total	
	Positive		Negative			
	No.	%	No.	%	No.	%
Male	16	40	24	60	40	30.8
Female	45	50	45	50	90	69.2
Total	61	46.9	69	53	130	100

χ^2=1.11 df =1 P-value =0.286

That PTSD had a negative impact on school achievement of 45 students out of 61 (73.8%), while 24 students out of 69 (34.8%) of those who had no PTSD were show bad school achievement. There was a significant statistical association between PTSD and bad school achievement (χ^2=19.8, df=1, P<0.05).

The impact of PTSD on school absenteeism among participants. There was a statistically significant association between PTSD and school absenteeism (χ^2=19.5, df=1, P < 0.05). The number of students who were skipping their schools due to violence was 32 out of 61 (52.5%), related to 11 students out of 69 (15.9%) without PTSD.

From those 32 students who leave their school, 24 were females (53% of total PTSD females), related to 8 males (50% of total PTSD males).

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Table 3: Impact of PTSD on school achievement among participants.

PTSD	Impact on school achievement				Total	
	Negative impact		No effect			
	No.	%	No.	%	No.	%
Positive	45	73.8	16	26.2	61	46.9
Negative	24	34.8	45	65.2	69	53.1
Total	69	53.1	61	46.9	130	100

χ^2=19.8 df=1 P =0.000

Table 4: Impact of PTSD on school absenteeism among participants.

PTSD	Impact on school absenteeism				Total	
	Skipping		No skipping			
	No.	%	No.	%	No.	%
Positive	32	52.5	29	47.5	61	46.9
Negative	11	15.9	58	84	69	53.1
Total	43	33	87	66.9	130	100

χ^2=19.5 df=1 P =0.000

Table 5: Impact of PTSD on metabolic control of blood glucose level among participants.

PTSD	Impact on metabolic control				Total	
	Negative Impact		No Impact			
	No.	%	No.	%		
PTSD	60	98.3	1	1.6	61	46.9
Non-PTSD	41	59.4	28	40.5	69	53.1
Total	101	77.6	29	22.3	130	100

χ^2 (yates correction) =26.1 df=1 P = 0.000

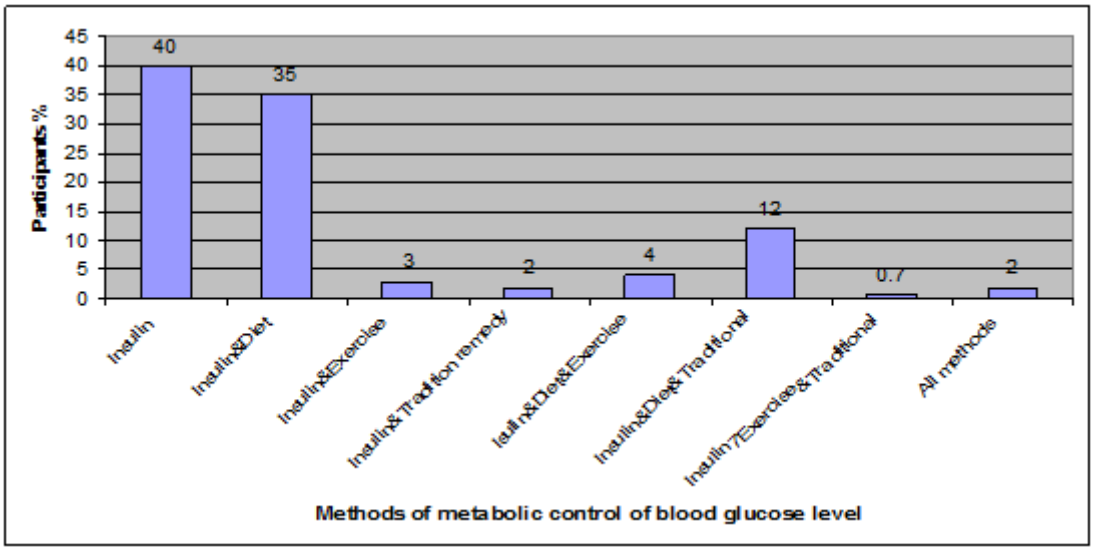

Figure 7: A Bar chart showing the methods of metabolic control of blood glucose levels among participants

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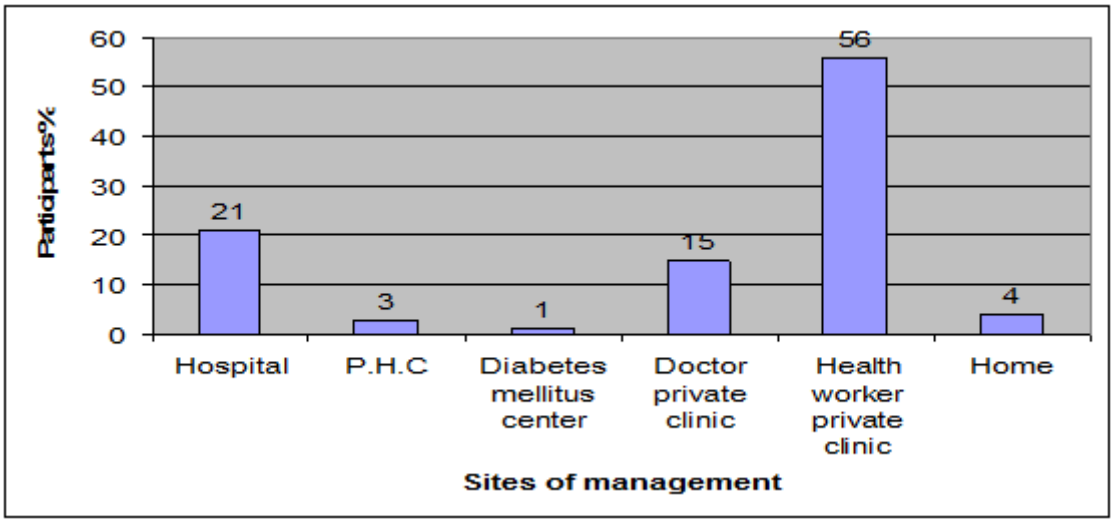

Figure 8: A Bar chart showing the sites that were visiting for bad metabolic control management.

DISCUSSION

In this study, the prevalence of PTSD was found to be 46.9%, which surpasses the rates reported in other recent studies conducted in Iraq, specifically Baghdad (18.8%), Erbil (21.6%), and Mousl (25.9%). This discrepancy may be attributed to variations in the sample and the place of residence. The sample originated from AL-Sader City, which has experienced significant levels of violence in recent years. The vast majority of the population, including children and adolescents, in AL-Sader City experienced a significant level of exposure to various types and quantities of traumatic events. Additionally, this city is characterized by high levels of crowding, low socioeconomic status, and low educational attainment. These variables may have influenced the elevated rate. A number of workers have shown a notable correlation between a high crowding index and PTSD. The presence of diabetes mellitus among the participants may have been another contributing cause to this elevated result.

The reported percentage (46.9%) is greater than the reported percentages in Sri Lanka (30.4%), Afghanistan (39.8%), and Kosovo (17%) (AL-Shawi, A. F. 2009; Murphy, D. *et al*., 2009; Shoeb, M. *et al*., 2010). This discrepancy can be ascribed to variations in instruments, cultural factors, educational attainment, personality traits, economic standing, and the availability of human resources. (Sabri, R. 2006). Additionally, it can be related to the exposure to repeated traumatic incidents. A recent study found a direct correlation between the level of post-traumatic stress disorder (PTSD) and the severity of exposure to stressful experiences.

The PTSD rate in Kirkuk is lower than in Baghdad, Mosul, and Afghanistan, with a significant association between the loss of one or both parents and PTSD, especially among children. However, age does not significantly vary, possibly due to the ongoing traumatic events from civil war and widespread violence.

PTSD is influenced by various factors, including stressor types, gender, genetics, and personal history of trauma. Females are more likely to develop PTSD symptoms than males, with 50% of cases being higher. This gender difference is not due to higher exposure to potentially traumatic events but rather due to gender differences in exposure. The study found a significant association between PTSD and poor school achievement, similar to other studies in Baghdad, Baquba/Diyala, Lebanon, South Africa, and Kenya. PTSD negatively impacts a child's ability to concentrate, remember information, and trust authority figures. It can also diminish adolescent self-efficacy and academic performance. PTSD can cause life-long impairment, hindering normal development and preventing the acquisition of basic life skills needed for independence and self-sufficiency. Bad school performance may indicate impairment of normal development. The high rate of poor metabolic control of blood glucose levels (98.3%) in Iraq can be attributed to the deterioration of health services, inaccessible data, poor documentation, and lack of knowledge, which hinders the delivery of high-quality healthcare services (Khaleel, R. I., & Al-Doori, M. 2020; Cardozo, B. L. *et al*., 2004; Cardozo, B. L. *et al*., 2000; Karzan, J.A. 2019; Dhungana, S. *et al*., 2022; Ainamani, H. E. *et al*., 2022).

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Impair metabolic control by two ways. First, the stressful experience can lead directly to endocrine changes. Second, many diabetics show poor self-care and poor compliance with medical advice, especially at times of stress (30). This was clear in the methods were used for metabolic control. Low rate of diabetics (4%) were controlling their metabolism by scientific methods of metabolic control (insulin therapy, balanced diet, and regular exercise). This finding was reflecting the deterioration in the Iraqi health system (lack of nutritionists, dietitians, specialist nurses, and other auxiliaries).

No diabetic patients in this study were using self-monitoring blood glucose (SMBG). Recently, all diabetics in Iraq declare that the cause of poor glycemic control is related to the current health situation in Iraq.

CONCLUSION

PTSD symptoms are prevalent among type 1 diabetic children and adolescents in AL-Sader city/Baghdad, negatively impacting school achievement, poor blood glucose control, and negatively controlling metabolism.

REFERENCES

1. Alkaisy, M.S.K. "Posttraumatic stress disorder among the staff of the Causality Department in Mousl City."*A fellowship Thesis, Iraqi Board for Medical Specialization* 2021.
2. Iraq Family Health Survey Study Group. "Violence-related mortality in Iraq from 2002 to 2006." New England Journal of Medicine 358.5 (2008): 484-493.
3. Burnham, G., Lafta, R., Doocy, S., & Roberts, L. "Mortality after the 2003 invasion of Iraq: a cross-sectional cluster sample survey." *The Lancet* 368.9545 (2006): 1421-1428.
4. Gelder, M., Harrison, P. and Cowen, P. "Reaction to stressful experiences. In. Shorter Oxford Textbook of Psychiatry." Fifth *edition. Oxford, Oxford University Press*, Published on (2006):163-175.
5. Seedat, S., Nyamai, C., Njenga, F., Vythilingum, B., & Stein, D. J. "Trauma exposure and post-traumatic stress symptoms in urban African schools: Survey in Cape Town and Nairobi." *The British Journal of Psychiatry* 184.2 (2004): 169-175.
6. Sadock, B. J., & Sadock, V. A. "Post-traumatic stress disorder synopsis of psychiatry. Vol. 1." (2003): 623-631.
7. Simon, N., Hollander, E., Rothbaum, B. O., & Stein, D. J. (Eds.). The american psychiatric association publishing textbook of anxiety, trauma, and ocd-related disorders. American Psychiatric Pub, 2020.
8. Catani, C., Jacob, N., Schauer, E., Kohila, M., & Neuner, F. "Family violence, war, and natural disasters: A study of the effect of extreme stress on children's mental health in Sri Lanka." *BMC psychiatry* 8 (2008): 1-10.
9. Al-Hemiary, N. J., Hashim, M. T., Al-Shawi, A. F., & Al-Diwan, J. K. "Effect of post-traumatic stress disorder on school achievement among secondary school students in Baghdad, Iraq." *Journal of the Faculty of Medicine Baghdad* 58.2 (2016): 146-148.
10. AL-Shawi, A. F. "The effect of violence on youth in Baghdad." A *master Thesis, science in Community Medicine* 2009.
11. Murphy, D., Al-tee, A. *et al*. "Military Analysis and education for civilian leaders." Region Baghdad/Sadr city 2010 .http://www.standingwar.org /region/sadr-city, institute for the study of war, 2010.
12. Shoeb, M., Weinstein, H., & Mollica, R. "The Harvard trauma questionnaire: adapting a cross-cultural instrument for measuring torture, trauma and posttraumatic stress disorder in Iraqi refugees." *International Journal of Social Psychiatry* 53.5 (2007): 447-463.
13. Sabri, R. "Prevalence of post-traumatic stress symptoms among internally displaced people after 22nd Feb.2006 in Erbil governorate." *A fellowship Thesis*, Iraqi Board for Medical Specialization 2008.
14. Khaleel, R. I., & Al-Doori, M. "Prevalence of Post-Traumatic Stress Disorder among Adolescents in Mosul City after War." *International Journal of Psychosocial Rehabilitation* 24.09 (2020)..
15. Cardozo, B. L., Bilukha, O. O., Crawford, C. A. G., Shaikh, I., Wolfe, M. I., Gerber, M. L., & Anderson, M. "Mental health, social functioning, and disability in postwar Afghanistan." *Jama* 292.5 (2004): 575-584.
16. Cardozo, B. L., Vergara, A., Agani, F., & Gotway, C. A. "Mental health, social functioning, and attitudes of Kosovar Albanians following the war in Kosovo." *Jama* 284.5 (2000): 569-577.
17. Karzan, J.A. "Prevalence of Post-Traumatic Stress Disorders among orphan children living in orphanages in Kirkuk governorate." *A*

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fellowship thesis, Iraqi Board for Medical Specialization 2019.
18. Dhungana, S., Koirala, R., Ojha, S. P., & Thapa, S. B. "Resilience and its association with post-traumatic stress disorder, anxiety, and depression symptoms in the aftermath of trauma: a cross-sectional study from Nepal." *SSM-Mental Health* 2 (2022): 100135.
19. Ainamani, H. E., Weierstall-Pust, R., Bahati, R., Otwine, A., Tumwesigire, S., & Rukundo, G. Z. "Post-traumatic stress disorder, depression and the associated factors among children and adolescents with a history of maltreatment in Uganda." *European journal of psychotraumatology* 13.1 (2022): 2007730.

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