

RESEARCH ARTICLE

Assessment of Physical Activity and Sedentary Behaviour among Children's during the COVID-19 Pandemic in Mosul City

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ABSTRACT

The study aimed to assess physical activity, sedentary behaviour and to find association between the total difficulties behaviours score with physical activity and sedentary behaviour during the COVID-19 Pandemic in Mosul City, a descriptive study design was carried out from the data extends from the 11th of May until the 2nd of November 2021. The study conducted during the lockdown period due to the Corona pandemic outbreak. The setting of the study done in the hospitals of Mosul City, Paediatric Consultation Clinics, which included three Hospitals, Ibn-sina teaching Hospital, Al-salam teaching Hospital and general Mosul Hospital. A non-probability (Purposive) sample technique is chosen for the current study. The sample of the study involved of (620) children. The result of the present study shows highest percentage of the study sample in sedentary behaviours which represented (76.0%) of children's watching TV at [1 h], while children uses mobile cell or ipad (53.1%) at [4≥ h.], represent (50.6%) of children with video games at time [2 h], while of physical activity by playing outdoor recorded (52.7) at [1 h.] and Sports spend of time recorded (54.2%) in [1 h]. the results show increased of sedentary behaviours children's spent time instead of physical activity, in addition to that there are significant relationships between children sedentary behaviours and the total difficulties behaviours score during lockdown in pandemic. the study concluded that was many children using mobiles phone or iPads and video games for long hours, that is increased sedentary behaviour rather than physical activity because outbreak of pandemic. The study recommendation: Advise parents to reduce or forbidding using their children from mobile phone, iPad devices and video games where it is reflected in the behaviours of children and Encouraging children to engage in sports and physical activities during a lockdown or any epidemic that may occur in the future.

Keywords: Assessment, Physical Activity , Sedentary Behavior, COVID-19 Pandemic.



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INTRODUCTION

Though the COVID-19 virus outbreak has altered the lives of children and adolescents, it is unclear to what degree these restrictions may limit their capacity to play and follow movement behavior guidelines (Moore et al., 2020). The value of engagement in preventing problematic behavior cannot be overstated, Children are less likely to engage in bad behavior behaviors when they are participating in physical activity that they like. It's important to realize that not all children enjoy or can enroll in the same activities, changed-behavior children should be able to participate in activities. Some children benefit from human guidance when learning a new action, whereas others benefit from a series of pictures that demonstrate how to engage in the behavior (Kaiser, & Scheuthle, 2003).

The environment in which a child develops and behaves can have a significant impact on their development and behavior. It's critical to intervene early when a young child exhibits undesirable behaviors by making positive changes to their environment. Furthermore, establishing partnerships between home and school during the elementary school years leads to a number of positive academic and social outcomes for children, which include increased academic achievement, improved school attendance, better study skills, stronger self-regulatory skills, and fewer discipline issues (Lesser & Nienhuis, 2020).

Children's sleep, physical activity, and sedentary behaviours have all been affected as a outcome of the COVID-19 pandemic's social limits on pandemic spread. Any active behaviour characterized by an energy consumption of 1.5 metabolic equivalents (METs) or even less while in a seated, reclining, or resting posture is classified as sedentary behaviour. Sedentary behaviour such as a person sits or lies down for an extended period of time, watching television,

playing mobile or iPad video games, using computers (together referred to as "screen time"), driving autos, and reading (Dunton, & Wang, 2020). when school closures and sport team/activity class cancellations extend a year or more, similar inactivity patterns as observed on weekend days and during the summer may occur. This could have serious consequences for children's overall health and wellbeing (Yeasmin et al., 2020).

METHOD

A descriptive study design was conducted during the closure period due to the Corona pandemic extended from period of 2th May to 2th October 2021, The present study was conducted in the Hospitals of Mosul City, Pediatric Consultation Clinics, which included three Hospitals, Ibn-sina teaching Hospital, Al-salam teaching Hospital and General Mosul Hospital. A non-probability (Purposive) sample technique is chosen for the current study. The sample involved of (620). The children who intended to visit the counseling clinics from parents they companied with their, the sample technique according to criteria determined by the researcher, the tool of the study consist of two parts of the questionnaire format which was constructed and developed after extensive review of the available literature and related studies. data collection methods: was used self-administered method was used by asking the participants to complete the format of the questionnaire and fulfill the questions. After obtaining each parent's first agreement to participate in the study.

STATISTICS ANALYSIS

The data in the current study were analyzed by using the Statistical package for social science (SPSS) version 26. The following statistical approaches are used for data analysis and result evaluation: Descriptive data analysis such as (percentage, mean and standard deviation)

and Inferential data analysis which include Contingency Coefficients (C.C.) test used to assess the relationship between the overall behaviours scores and other variables

RESULTS

The results in table (1) shows that highest percentage of the study sample represented children (36.5%) in age groups of (8-9) years, (54.0%) fathers age groups of (30 - 39), (56.3%) of mothers with age group (20- 29), male child's gender represented (51.1) of the total study sample , represented (50.2) in the right side and (49.8) in the left side of the Mosul city, educational level

represent (44.2%) of fathers graduates from elementary school , represent (38.9) of mothers by reads and writes, more than half of the children (53.7%) come from families with low socio-economic status level.

The results in table (2) reflects the sedentary behaviours is highest percentage of the study sample which represented (76.0%) in watching TV at [1 h], while children uses mobile cell or iPad (53.1%) at [\geq h.], represent (50.6%) of children with video games at time [2 h], while of physical activity in playing outdoor recorded (52.7) at [1 h.], and Sports (54.2%) in [1 h]. The table shows significant relationships in sedentary behaviours except the activities of homework and reading which have a non-significant relationship.

Table 1.): Distribution of Socio-demographic Characteristics for Children and their Families.

No.	Variables	Groups	F	%
1	Age of child (years)	6-7	216	34.8
		8-9	226	36.5
		10-12	178	28.7
		mean \pm 8.48 SD 1.892		
2	Age of father (years)	<30	62	10
		30 - 39	335	54
		40 - 49	186	30
		50 and above	37	6
		mean \pm 37.96 SD 6.665		
3	Age of mother (years)	<30	349	56.3
		30 - 39	179	28.9
		40 - 49	88	14.2
		50 and above	4	0.6
		mean \pm 30.77 SD 6.505		
4	Gender of child	male	317	51.1
		female	303	48.9
5	Sides of Mosul city	right side	311	50.2
		left side	309	49.8
6	Education level (father)	illiterate	4	0.6
		reads and writes	110	17.7
		elementary school graduated	274	44.2
		secondary school graduated	186	30.1
		university or institute graduated	42	6.8
		post-graduate certificate	4	0.6
7		illiterate	69	11.1

	Education level (mothers)	reads and writes	241	38.9
		elementary school graduated	210	33.9
		secondary school graduated	87	14.0
		university or institute graduated	11	1.8
		post-graduate certificate	2	0.3
8	Family socio-economic status levels	low levels	333	53.7
		middle levels	244	39.4
		high levels	43	6.9
		total	620	100%

Table 2.): Distribution and Association between total difficulties behaviours score of Sedentary Behaviour , Physical Activity Characteristics for Children by Time in Hours per day

No.	Variables		Time/h.	F	%	C.C.	Sig.
1	Types of Sedentary Behaviour	watching TV	0	120	19.4	0.178	0.030
			1 h	471	76.0		
			2 h.	15	2.4		
			3 h.	6	1.0		
			4≥	8	1.3		
		total		620	100	0.300	0.000
		mobile or iPad	0	55	8.9		
			1 h	125	20.2		
			2 h.	63	10.2		
			3 h.	48	7.7		
			4≥	329	53.1		
		video games	0	85	13.7	0.219	0.032
			1 h	122	19.7		
			2 h.	314	50.6		
			3 h.	78	12.6		
			4≥	21	3.4		
2	Types of Physical Activity	total		620	100	0.113	0.237
		homework, reading	0	192	31.0		
			1 h	324	52.3		
			2 h.	53	8.5		
			3 h.	51	8.2		
			4≥	192	31.0	0.143	0.112
		total		620	100		
		playing outdoor	0	196	31.6		
			1 h	327	52.7		
			2 h.	69	11.1		
			3 h.	18	2.9		
			4≥	10	1.6	0.096	0.666
		total		620	100		
		sports	0	203	32.7		
			1 h	336	54.2		
			2 h.	64	10.3		
			3 h.	6	1.0		
			4≥	11	1.8		
		total		620	100		

DISCUSSION

The results In the table (1) shows that (8.48) years in children the most age group that visits to counseling clinics is close to the age between (8-9) years. The predominant age fathers of children's between 30-39 years, while their mothers less than 30 years. Genders of boys to girls are equal in numbers with a small difference. The place of living is considered an important in the current study because the right side is semi-destructive that is due to military operation throughout liberation of city. The number of samples on both sides of the Mosul city is almost equal that is because the sample of the target study is distributed to hospitals on both sides of the city.

The result of the present study also concerning the educational level of the fathers which revealed that most there were graduated from elementary school (44.2%) then followed by Secondary school (30.1%). The study results revealed that educational levels of mothers is lower than fathers in mothers than fathers, represents (38.9%) reads and writes only then followed by (33.9%) of elementary school graduates. This outcome was expected because that may be because the most of the visitors to the consulting clinics are from low socio-economic status level. Yasmin et al. (2021) disagree with the results of the present study which mentioned that the most of an educational level of their sample coming from Post-Graduation (35.4) then followed by institute or University (27.4%), while represents (25.3%) of secondary school

graduates, the difference in the results of the parents educational levels may be due to the method of collecting the sample, which was done through the Internet (online data collection) and the selection of university and higher levels of study from the parents, where most of the sample is from colleagues at universities.

The results of present study indicated that the more than half of the sample come from the low level of the families socioeconomic status in (53.7%), poor people may have been exacerbated by the conditions that occurred in the city due to the last war. Without a doubt the Corona pandemic outbreak directly affected the economic level of families and disrupted many jobs due to the restrictions imposed the lockdown, and many parents sitting at home without work for a long period, Mucci, & Diolaiuti, (2020), mentioned that there will be massive implications on welfare and socioeconomic levels, which will, in turn, have a severe impact on everyone's mental and behavioral. Moreover a study conducted in the Shanghai, China by Li et al., (2021) about (socioeconomic status (SES) inequality in child mental health throughout the COVID-19 outbreak) the study revealed that the prevalence of behavioral disrupts is effected approximately 9% from the high to low of socioeconomic levels.

It is a clear from the table (2) that the describe of children sedentary behavior in hours are more than the hours of daily physical activity, where was the percentage of mobile or ipad uses for many hours, starting from 4 hours or more is (53.1%),the TV watching percentage was not high maybe because most people started using TV a

limited instead of using of the mobile phone, Where it accounted for (76.0%) That is only one hour a day. A high percentage was also recorded during the use of video games, reaching (50.6%) 2 hours per day. Playing activities during the pandemic focused on sitting at home and using mobile and videos game instead of physical activity and sporting due to the preventive measures at the time of the COVID-19 pandemic outbreak, as well as school closures playing a role in the occurrence and exacerbation of behavioral problems. The studying and reading time hours accounted only 1 hours per day and represented (52.3), this time is considered insufficiency for student studying that is due to the closure of schools , in addition to that as many students cheat by using mobile phones instead of taking electronic lessons for entertainment and leaving homework.

Fakhouri, Hughes, Brody, Kit, & Ogden, (2013) mentioned that the sedentary behavior standards, recreational screen usage should be less than 2 hours per day. During the school age children, when the child's become with lack time of physical activity, energy discharge and elevated of sedentary behavior among children are major concerns because children 's mental health behavior patterns are likely to continue into adulthood, increasing the likelihood of life-threatening diseases circumstances (e.g., obesity, (DM), and metabolic syndrome) in later early life.

Playing outdoors has a great benefit in developing the child's skills ,mental development and maintains a normal behavior, when a child is outside have more space and freedom to participate in large activities such as running, jumping, kicking,

and throwing which played increased skeleton development and become stronger. The restrictions imposed on children and their families have reduced the opportunity to play outside the home. The results of present study findings that more than half of children spends the time outdoor, while the percentage of sports play and physical activities was (54.2%), which is considered a small percentage compared to the recommendations by Department of Health and Human Services which supported the current study they recommended that the school age children (6-12) years should engage at least an everyday by sixteen minutes or more of moderate physical activity is required (Centers for Disease Control and Prevention) [CDC], 2019). The outcome of the present study agree with their study of Bates, et al., (2020) when a comparing the total screen time spending of 2427 Chinese children and adolescents between (6–17 years old) shows that significantly increased before pandemic outbreak and after occurring time of lockdown because the COVID-19 pandemic quarantine, with an estimated 4 hours per day increase in total screen time (Bates et al., 2020).

The current study results agrees with the study conducted in the five schools at Shanghai, China by Xiang, Zhang, & Kuwahara (2020), about (The Influence of the COVID-19 Pandemic on Child's and Teenagers' Lifestyle) their finding reported that (65.6%) of students during the outbreak screen use increased significantly totaling around 4 hours per day, screen time and mobile use during leisure was also expanded, indicating that about a quarter of students

spent a substantial amount of time screen time for fun.

The lockdown and school closure has contributed to students being able to play electronic games and other entertainment devices for a longer period of time than on normal days, to the degree where playing electronic games has become an addiction for some children, as it is the only way for them to spend their spare time. It is clear from the results of the current study that there is a significant relationship between the sedentary behaviors variables (mobile phone use, video games and watching TV) with the total difficulties behaviors of children.

CONCLUSION:

There were many children using mobile phone or iPads and video games for long hours, that is increased sedentary behavior rather than physical activity. Therefore, advise parents to reduce or forbidding using their children from mobile phone, iPad devices and video games where it is reflected in the behaviors. Encouraging children to engage in sports and physical activities during a lockdown or any epidemic that may occur in the future

ETHICAL CONSIDERATIONS COMPLIANCE WITH ETHICAL GUIDELINES

All experimental protocols were approved under the Baghdad University, College of Nursing, Iraq and all experiments were carried out in accordance with approved guidelines.

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AUTHOR'S CONTRIBUTIONS

Study concept; Writing the original draft; Data collection; Data analysis and Reviewing the final edition by all authors.

DISCLOSURE STATEMENT:

The authors report no conflict of interest.

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