Factors Affecting School Performance in Primary School Children in Baghdad, 2019

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ABSTRACT

Background: Children education has a basic role in integrating the individual to society. Around 15-20% of children at the beginning of schooling have difficulties in learning, and these estimates can reach 30 to 50% if the first six years of schooling.

Objectives: To estimate the prevalence of weak school performance and to identify the factors that may associated with this problem in a sample of children in primary school in Baghdad.

Methods: A cross-sectional study conducted in two primary health care centers in Baghdad during a period of six months from Oct, 2018 - Mar, 2019 and included all male and female children who were in the primary school and attended the selected PHCCs for any complaint. Any child who was physically or mentally handicapped was excluded from this study. A questionnaire which was predesigned and pretested was used to collect various information. We classified the school performance of children as weak, accepted, good and excellent grades. The total number of children enrolled in this study was 324.

Results: The prevalence of weak school performance was 14.8%. Factors associated with weak school performance were: low family income, low level of parents' education, using electronic devices before sleep, and absence of mothers. It was obvious that children with weak and accepted school performance showed significant lower mean hours of child daily study and daily nighttime child sleep (1.23 and 1.79 versus 2.74 hrs., P= 0.001; and 6.83 and 6.85 versus 7.47 hrs., P= 0.007 respectively) and higher mean of hours of daily using of electronic devices (5.02 and 3.9 versus 3.1 hrs., P= 0.001).

Conclusion: Prevalence of weak and accepted school performance is relatively high and the modifiable risk factors associated were including low monthly income, lower parents' education, decreased duration of study and nighttime sleep, increased duration of using electronic devices especially before sleep.

Keywords: School performance, Primary school children, Weak grades, Iraq.

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Education is one of the most important aspects of human resource development. A good school performance is an indication of future social success[(1)]. Poor school performance (PSP) can be defined as a school achievement below the expected for a given age, cognitive skills, and schooling[(2)]. PSP should be seen as a symptom related to many etiologies. It is noteworthy that regardless the etiology, PSP results in emotional distress (low self-esteem, demotivation) and family concern, in addition to repercussion in individual, family, educational, and social realms [(3)].

It is estimated that around 15-20% of children at the beginning of schooling have difficulties in learning, and these estimates can reach 30 to 50% if the first six years of schooling are analyzed [(4)]. PSP should be seen as a "symptom" reflecting a larger underlying problem in children, which not only results in the child having a low self-esteem, but also a significant stress to the parents [(5)]. Regarding a child with PSP, it is primordial to investigate the cause and consequently outline the best treatment for each individual. There are many reasons for children to underperform at school, such as medical problems[(6-11)], below average intelligence[(12)], neurobehavioral disorders[(13-15)] (as specific learning disability, attention deficit hyperactivity

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disorder and autism), emotional problems[16] (as chronic neglect, sexual abuse and parents' divorce), a poor socio-cultural home environment[17], psychiatric disorders and even environmental causes (as, too much television-viewing linked to poor sleep quality, violent or aggressive behavior, substance abuse and sexual activity)[18].

Primary education in Iraq is suffering due to the difficult economic conditions, which make parents either not sending their children or children dropping out of school at an early age. Moreover, there is frustration among teachers because of low salaries, severe shortage of textbooks and teaching aids, and miscommunication between teachers and parents. One of the most prominent problems of primary education is the high rates of failed students, which due to lack of qualified teachers, poor conditions of schools, lack of textbooks and teaching materials, child labor to increase income. Moreover, the epidemiological transition in the last years including the use of internet, electronic devices, and other many social and psychological problems might play a role in school performance[19].

The aim of this study is to find the possible risk factors for a child's poor school performance in primary school in Baghdad, Iraq.

Methods

A cross sectional study that was conducted in two convenient primary health care centers (PHCCs) in Al-Risafa Health Directorate in Baghdad province during a period of six months from Oct, 2018 – Mar, 2019. Six schools located in the direct neighborhood of the study areas. A simple random technique was used to collect the sample.

The study population included all male and female children who were in the primary school and attended the selected PHCCs for any complaint. Their parents were informed about the purpose of the study and those who agreed to participate were enrolled in the study. The data collection was done through daily visits, and spending four hours / day, five days / week, for the allocated time for each PHCC. The time required for completing the interview with each patient was considered as the system to include the next patient. In general, each interview needed about 10 minutes. Any child who was physically or mentally handicapped was excluded from this study. The total number of children enrolled in this study was 324.

A predesigned and pretested administered questionnaire was used to collect information including socio-demographic (age, gender, residence, and family information), medical and surgical history, information about their parents (availability, age, educational level, occupation), duration of daily watching TV, duration of daily study, nighttime child sleep hours, and duration and type of child and parents' social media using.

Primary education in Iraq lasts six years, for children aged 6 to 12 years. The primary schools are divided into six classes, each containing one age group. Most of the primary schools in Iraq grade out of 10 with a passing grade of five in the first four classes while grading becomes out of 100 percent with a passing grade of 50 percent in the last two classes. We classified the school performance of children as the following table:

Table 1: Classification of school performance of children.

Grade	First four classes	Last two classes
Weak	< 5	< 50
Accepted	5 - 6	50 - 69
Good	7 - 8	70 - 89
Excellent	9 - 10	90 - 100

The data analyzed using Statistical Package for Social Sciences (SPSS) version 25. The data presented as mean, standard deviation and ranges. Categorical data presented by frequencies and percentages. Analysis of variance (ANOVA) (two tailed) was used to compare the continuous variables according to the grades of school performance with LSD post-hoc test for significant values. Chi square test was used to assess the association between prevalence of weak grades of school performance and certain information. A level of P – value less than 0.05 was considered significant.

Results

We noticed that 44.8% of them were graded as excellent in their school performance and 14.8% were graded as weak, (Figure 1).

In table 2, 68.4% of children who lived with other than parents were showed ≤ accepted school performance with a significant association between grade of school performance and living with parents (P= 0.016). No significant association (P ≥ 0.05) between grade of school performance with both of age and gender).

In this study, 84.6% of children with absent mother and 45.1% of children with low educational level of mother showed significant ≤ accepted school performance, (Table 3).

No significant association (P ≥ 0.05) between grade of school performance with both of fathers' availability or their educational level.

Mean hours of child daily study and daily nighttime child sleep were significantly higher in children with good and excellent grade of school performance compared to the children with weak and accepted grades (2.74 versus 1.23 and 1.79 hrs., P= 0.001; and 7.47 versus 6.83 and 6.85 hrs., P= 0.007 respectively). While the mean of hours of daily using of electronic devices was significantly higher in children with weak grade of school performance compared to the children with accepted, good and excellent grade (5.02 versus 3.9 and 3.1 hrs., P= 0.001).

The highest prevalence of good and excellent grades of school performance was found in children who did not use electronic device before sleep (65.1%, P= 0.003), (Table 4).

Post hoc tests (LSD) were run to confirm the differences occurred between groups and showed that mean of hours of child daily study was significantly higher in children with accepted grades than that in children with weak grades in school performance (1.79 versus 1.23 hrs., P= 0.008) and it was also significantly higher in children with good and excellent grades compared to that in children with weak or accepted grades of school performance (2.74 versus 1.23 and 1.79 hrs., P= 0.001).

Regarding hrs. of nighttime child sleep, they were significantly higher in children with good and excellent grades compared to that in children with weak or accepted grades of school performance (7.47 versus 6.83 (P= 0.02) and 6.85 hrs., P= 0.008).

About the number of hours of daily using electronic devices; they were significantly higher in children with weak grades compared to that in children with accepted, good and excellent grades of school performance (5.02 versus 3.9 (P= 0.009) and 3.1 hrs., P= 0.001) and it was also significantly higher in children with accepted grades compared to that in children with good and excellent grades of school performance (3.9 versus 3.1, P= 0.007), (Table 5).

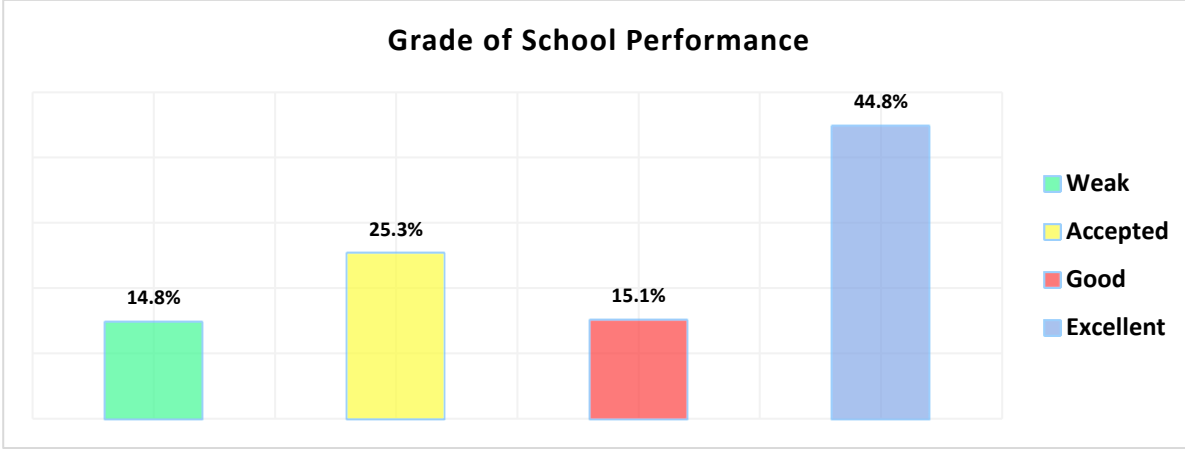

Figure 1: Distribution of study patients by grade of school performance

Table 2: Association between grade of school performance and socio-demographic characteristics

Variable	Grade of School Performance		Total (%) n= 324	X^2 value	P - Value
	≤ Accepted (%) n= 130	> Accepted (%) n= 194			
Age group (Years)					
< 8	32 (32.3)	67 (67.7)	99 (30.6)	**4.02**	**0.133**
8 – 10	68 (45.0)	83 (55.0)	151 (46.6)		
> 10	30 (40.6)	44 (59.4)	74 (22.8)		
Gender					
Male	66 (43.7)	85 (56.3)	151 (46.6)	**1.512**	**0.218**
Female	64 (37.0)	109 (63.0)	173 (53.4)		
Living with parents					
With both	109 (37.6)	181 (62.4)	290 (89.5)	**8.199**	**0.016**
With one of them	8 (53.3)	7 (46.7)	15 (0.9)		
With others	13 (68.4)	6 (31.6)	19 (5.9)		

Table 3: Association between grade of school performance and parents' characteristics.

Variable	Grade of School Performance		Total (%) n= 324	X^2 value	P - Value
	≤ Accepted (%) n= 130	> Accepted (%) n= 194			
Father availability					
Present	126 (41.2)	180 (58.5)	306 (94.4)	**2.54**	**0.11**
Not Present	4 (22.2)	14 (83.3)	18 (5.6)		
Mother availability					
Present	119 (38.3)	192 (61.7)	311 (96.0)	**11.15**	**0.001**
Not Present	11 (84.6)	2 (15.4)	13 (4.0)		
Father educational level					
Secondary school or below	123 (42.6)	152 (57.4)	265 (81.8)	**3.84**	**0.05**
Higher education	17 (28.8)	42 (71.2)	59 (18.2)		
Mother educational level					
Secondary school or below	120 (45.1)	146 (54.9)	266 (82.1)	**15.39**	**0.001**
Higher education	10 (17.2)	48 (82.8)	58 (17.9)		

Table 4: Association between grade of school performance and Social information.

Variable	Grade of School Performance			Total (%) n= 324	P - Value
	Weak (%) n= 48	Accepted (%) n= 82	Good and excellent (%) n= 194		
Hours of study / day	1.23 ± 0.8	1.79 ± 0.8	2.74 ± 1.2	**0.001**	
Watching TV (hrs./day)	2.85 ± 1.6	2.34 ± 1.9	2.4 ± 1.7	**0.27**	
Nighttime child sleep (hrs.)	6.83 ± 1.5	6.85 ± 2.1	7.47 ± 1.5	**0.007**	
Using electronic devices (hrs./day)	5.02 ± 2.0	3.9 ± 2.2	3.1 ± 2.3	**0.001**	
Using electronic devices by parents (hrs./day)	3.3 ± 5.3	2.88 ± 2.6	2.47 ± 2.3	**0.255**	
Using electronic device before sleep					
Yes	15 (13.8)	40 (36.7)	54 (49.5)	109 (33.6)	**0.003**
No	33 (15.3)	42 (19.5)	140 (65.1)	215 (66.4)	

Table 5: Post hoc tests (LSD) to confirm the differences in mean of certain variables according to grades of school performance.

Variable	Grade of School Performance			
	Weak Mean ± SD	Accepted Mean ± SD	Good and excellent Mean ± SD	P - Value
Hours of study / day	1.23 ± 0.8	1.79 ± 0.8	-	**0.008**
	1.23 ± 0.8	-	2.74 ± 1.2	**0.001**
	-	1.79 ± 0.8	2.74 ± 1.2	**0.001**
Nighttime child sleep (hrs.)	6.83 ± 1.5	6.85 ± 2.1	-	**0.94**
	6.83 ± 1.5	-	7.47 ± 1.5	**0.02**
	-	6.85 ± 2.1	7.47 ± 1.5	**0.008**
Using electronic devices (hrs./day)	5.02 ± 2.0	3.9 ± 2.2	-	**0.009**
	5.02 ± 2.0	-	3.1 ± 2.3	**0.001**
	-	3.9 ± 2.2	3.1 ± 2.3	**0.007**

Discussion

Poor school performance, regardless of etiology, affects the various spheres of the child's relational network, leading to emotional problems such as anxiety, low self-esteem, and demotivation[4].

In the current study, the highest prevalence of > accepted school performance was seen in those lived with both parents, which is consistent to Nusinovici et al study (2018)[20] and Anthony et al study (2014)[21] that revealed a decrease in school performance after parent's separation. Parental separation has been associated with reduced cognitive development and educational performance[22]. Moreover, it negatively affect a child's motivation, engagement,

and learning-related behavior in classroom[21]. Current study showed that ≤ accepted was significantly associated with absence of mothers, low educational level of mother, which is agreed with Ruijsbroek et al study (2015)[23], when found that school performance was strongly associated with parental education. Besides heredity of intelligence and cognitive skills[24], studies have shown that educational level of the parents can be considered a proxy for human capital, that is the literacy environment of the home, the parental engagement in school, and the belief in the importance of schooling, which is positively linked to learning abilities in childhood[25]. In current study, mean hours of child daily study and nighttime sleep were significantly higher in those with > accepted school performance, while hours of using electronic devices was significantly higher in children with ≤ accepted school performance. These were in line to Fallone et al study (2005), as noticed that reducing sleep had a direct effect on academic performance, as rated by teachers[26]. Also, Mössle et al study (2010) found that the more time students spend on consuming media and the more violent its contents are, the worse are their marks at school[27]. Frequent mobile device use is likely to increase children's social isolation and hinder opportunities for social interaction, both of which promote social development, all these factors had a negative impact on school performance[28]. On other hand, better school performance is associated with more time in bed, better sleep quality and fewer night times arousal. Experimental restriction of sleep in students (ages 6–12) has been shown to lead to difficulty in the classroom as well as increased severity of school related attention problems[26].

In conclusion; the prevalence of PSP is relatively high and the modifiable associated risk factors were including absence of mother and lower mothers' education, decreased duration of study and nighttime sleep, increased duration of using electronic devices especially before sleep.

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