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The Impact of Screen Exposure on Children in Morocco

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Abstract

Purpose: This cross-sectional study aimed to investigate the prevalence and negative effects of screen exposure on children among a sample of Moroccan families.

Methodology: The study involved 333 parents with an average age of 35 years and an average socioeconomic level of 85%. Participants completed a questionnaire assessing their child's screen exposure and related negative effects. The sample included 590 children aged between 3 months and 12 years.

Findings: The study found that 93% of parents reported using screens in the presence of their child, with televisions being the most frequently used device by children, followed by tablet computers and smartphones. The daily screen exposure was between 2-4 hours for 56% of children, and it increased during the COVID-19 pandemic. Although parents reported that all children were thriving, calm, and attentive during screen exposure, 30% of children exhibited behavioral and concentration problems, and 5% experienced language delay. Moreover, in 60% of cases, adult intervention was necessary to stop children's screen exposure, and in 20% of cases, children exhibited crying or violent behaviors when access to screens was prevented.

Unique Contribution to Theory, Policy and Practice: This study highlights the high prevalence of screen exposure among Moroccan children and the negative effects associated with excessive screen time. The findings underscore the need for parental vigilance and professional awareness-raising to promote healthy screen habits and prevent adverse effects on child development. This study may inform policy and practice aimed at limiting screen exposure and promoting alternative activities to support child development.

Keywords: *Exposure, Child, Screens, Impact, Smartphone*

Introduction :

The rapid spread of digital media is leading to an increased exposure of children to screens via various devices such as television, smartphones, tablets, and gaming consoles. This exposure has negative impacts on children's cognitive, social-emotional, and physical development, as well as on their engagement and skills in school. It is worth noting that screens have invaded the bedrooms of children of all ages in Morocco, and this increasing exposure is doing a great deal of harmful effects, such as language delays, obesity, attention disorders with agitation, cognitive development disorders , poor school performance, sleeping problems, and difficulties at the level of social interactions. Thus, each time a child spends an hour in front of a certain screen, they lose an opportunity to learn important developmental skills, and the impact of this loss can be apparent for many years [1].

The objective:

The questionnaire consists mainly of closed-ended questions and aims to assess two key aspects. First, it aims to assess the status of the study population, and second, it aims to identify any adverse effects of screen exposure reported by parents. Closed-ended questions are used to simplify data collection and facilitate subsequent analysis. Questions are carefully worded to elicit specific information about the negative effects of excessive screen exposure, such as behavioral changes, sleep disturbances, and academic difficulties.

Methods:

A descriptive cross-sectional survey was conducted over a period of two months from November 1, 2020, to January 1, 2021. Data collection was carried out using a questionnaire on "Google Forms," targeting parents of children aged between 3 months and 12 years. The questionnaire consisted of two parts: the first part aimed to collect socio-demographic data related to the parents' age, education level, marital status, household composition, and daily screen time. The second part focused on collecting data on children, such as their age, daily screen time, and context of screen use (family meals, household chores, presence of guests, etc.).

To ensure the quality of the study's results, strict inclusion and exclusion criteria were put in place. Participants had to be Moroccan parents with children aged 3 months to 12 years who had prior exposure to screens. Additionally, they had to fill out a questionnaire evaluating the impact of screen exposure on their child and provide informed consent to participate in the study. Only participants meeting these specific criteria were eligible to participate.

Exclusion criteria were also rigorous, including parents who refused to participate, those with children outside the target age range, and those who could not understand or communicate in the language used in the questionnaire. This was done to avoid confusion and ensure the clarity and precision of responses, thereby obtaining more reliable results.

During this study, parents participation was entirely voluntary and confidential. From the beginning of the questionnaire, participants were informed that they had the freedom to participate or refuse to take part in the study and were also informed of the study's purpose

through a clear question asked at the beginning of the questionnaire. Data analysis was performed using SPSS version 25.

Results:

1. Sociodemographic data:

A total of 333 parents were chosen to participate in this study . They all agreed to participate with an average age of 40 years +/- and a sex ratio F/M of 2.2. Among them, 7% were divorced and 86% belonged to a middle socio-economic level, the educational level of the mothers was 52% primary/middle school level (table 1).

Table 1: Distribution of the parents' socio-demographic characteristics :

Sex	
Female	229 (69%)
Male	104 (31%)
Family status	
Married	309 (93%)
Divorced	24 (7%)
Socio-economic level	
low	14 (4%)
Average	285 (86%)
High	34 (10%)
Mother's educational level	
Illiterate	44 (13%)
Primary/ secondary school	173 (52%)
High school/University	116 (35%)

The study sample includes 590 children, 53% of whom are female with an F/M ratio of 0.9. In 70% of families, children stay at home before the age of 2, while 68% of the children go to preschool (table2).

Table 2: Distribution of socio-demographic data of children:

Sex	
Female	312(53%)
Male	278 (47%)
Age	
< 2 years	177 (30%)
≥2 years & < 3 years	289(49%)
≥3years	124(21%)
School level	
Pre-school	44 (13%)
Primary	173 (52%)
Secondary	116 (35%)

2. The Context of the exposure to screens:

2 .1 Age of exposure:

The survey showed that parents spend more than two hours on average in front of screens, and 92.8% use them in the presence of their children. According to the results of the study, 46% of children were exposed to screens before their first year, 30% between one and two years, while 24% were exposed after their second year.

2 .2. Exposure duration:

The survey results revealed that only 12% of parents reported that their children spent less than one hour in front of a screen each day, while 54% of children spent between 2 and 4 hours and 32% spent more than 4 hours (figure1). 49% of parents stated that children's exposure to screens was justified ; during household chores, 13% of the time when guests were present, 14% of the time during eating time, and 33% of the time was supervised. During the Covid-19 pandemic especially during the quarantine period, an increase in screen exposure was observed in 68% of children, with an average of 2 to 3 hours in 50% of them.

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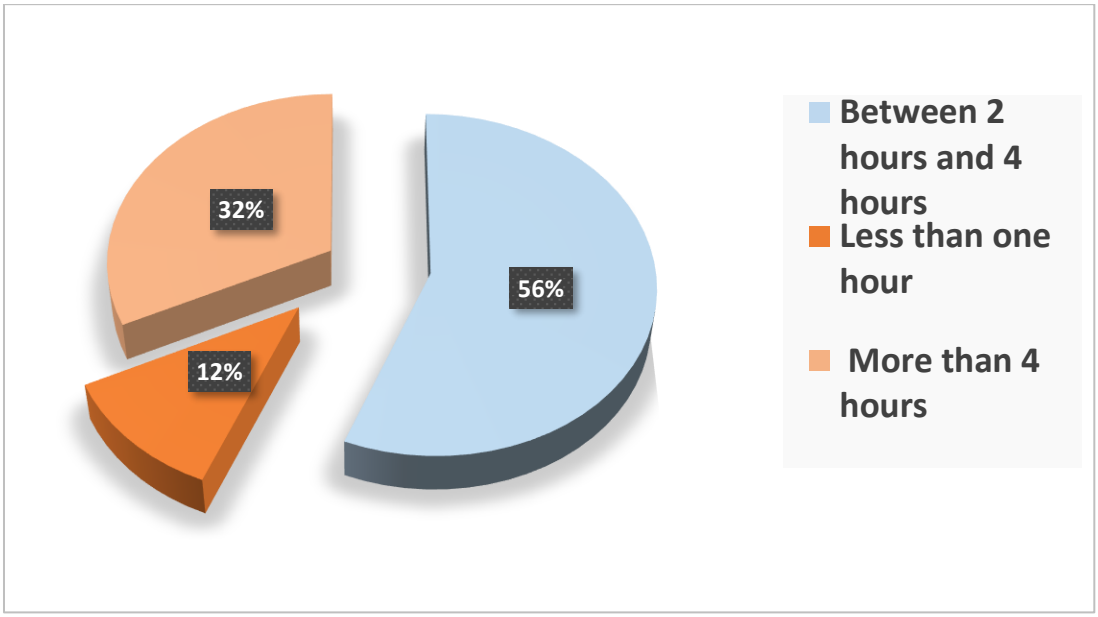

Figure 1: Distribution of daily screen time spent among children:

2 .3 Types of screens and channels watched:

Television comes at the top of the list for the electronic devices employed with 53% of the cases, followed by smartphones 34% which starts to penetrate our population given the changing habits and lifestyles of Moroccan women , in addition to electronic tablets 12% which are gaining popularity among Moroccans. As for the programs followed by children, they vary between cartoons, TV series and YouTube channels.

3. The pros and cons of screen exposure according to parents:

The side effects that result from the exposure to screens can vary widely and can manifest themselves in different forms. Some of the physical effects reported include obesity, language problems, sleeping disorders and noticeable decrease in social interaction(figure2). In addition, a significant number of children exposed to screens have visual impairments, which are reported in about 10% of children, as well as concentration problems, which affect about 13% of children. Behavioral problems, such as hyperactivity and aggression, have also been reported in about 14% of children exposed to screens.

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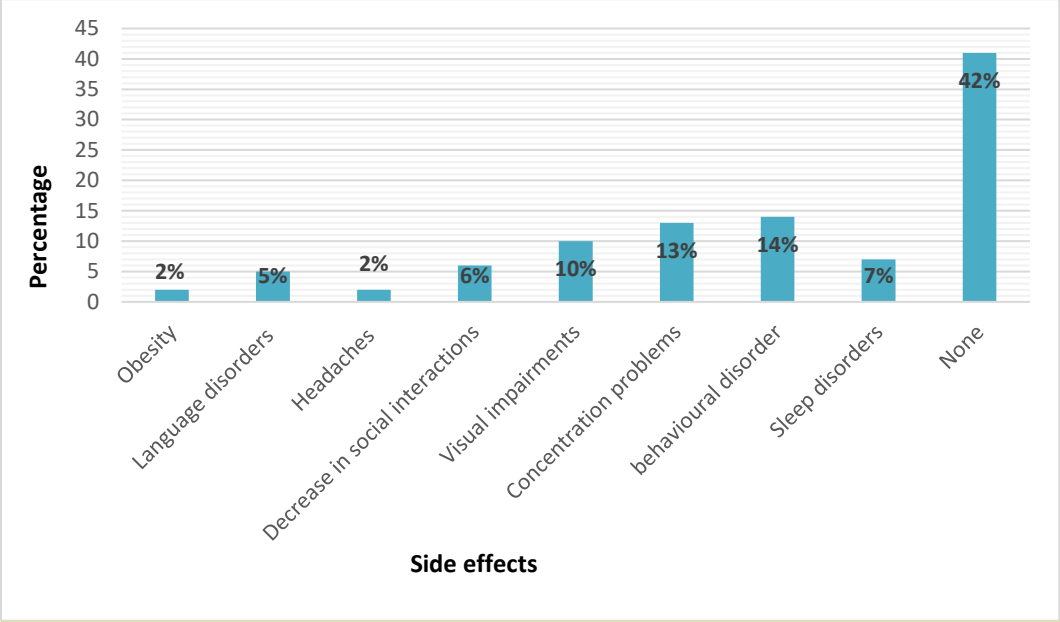

Figure 2: Distribution of side effects of screens

Discussion:

The results of the present study showed that 46% of children were exposed to screens before their first year and 30% between the ages of one and two. This observation goes hand in hand with the results of a September 2018 Inserm study which investigated more than 18,000 children. This study revealed that half of children begin watching television before the age of 18 months. In addition, two-thirds of two-year-olds watch television daily [2].

The time of exposure to screens have many grounding factors, such as low socioeconomic conditions, childcare arrangements before the age of two, family conditions (parents' age, divorced parents, only-children, parents' educational background), parents' high exposure to screens and use in front of their children at mealtimes, which tended to encourage their children to do the same. On the other hand, if parents invested more efforts to limit their own screen use, this could lead to a decrease in screen use by their children [3]. Moreover, several studies have linked screen time to overweight or obesity in children and adolescents. Correlations vary depending on the type of screen used. This observation suggests that behaviors associated with screen use are primarily responsible for screen-related weight gain. For instance, the time spent watching television is associated with increased food consumption, a shrinkage of sleeping time and impaired sleep quality. There are also socioeconomic factors that influence the use of different types of screens that play an important role in explaining these different effects [4 ,5].

The present study suggests that 32% of the children having a daily use of screens higher than 3h, then one can consider them as "Big consumers" which was also emphasized in several studies [1]. This consumption increased during the quarantine period of Covid-19 pandemic among the majority of the children in our sample. Similarly, a study confirmed that the majority of the children's screen time had increased at the time of quarantine [6,7]. Furthermore, the

participants reported difficulties in setting limits to their children use of screens, leading to an unusual use of screens both in terms of exposure time and choice of screen. Also, the device sometimes became means to accumulate remote work and childcare. [6 ,7,8].

Concerning the side effects, the present study and previous ones have drawn attention to many pitfalls, notably behavioral disorders. Young children who spend great time using electronic devices show behavioral disorders one year later (self-declaration of parents). These are often emotional disorders, conduct disorders, and hyperactivity/inattention [9]; that is on hand. On the other hand, the language disorder or delay, are highlighted by a large number of studies which have associated the deleterious role of screens on language development [10]. For example, between 8 and 16 months of age, each hour daily of videos supposedly adapted to very young children results in a lexical impoverishment of about 10% of children [11].

It is now well established that screen exposure has a very negative effect on sleep. The presence of a screen in a child's bedroom is strongly associated with a decrease in the quantity and quality of sleep, as well as problems such as obesity and vision problems. These physical effects are due to the prolonged sedentary lifestyle that often accompanies screen use, as well as exposure to the blue light emitted by screens. This light can disrupt circadian rhythms and affect sleep [12].

The strength of this study lies in its innovative nature, as there is a lack of research conducted on screen addiction in children under 12 years old, especially in the Moroccan context. Therefore, our study could contribute to the initiation of research in this area and serve as a reference for future studies.

Moreover, the strict inclusion and exclusion criteria used for participant selection allowed for more relevant and valid results, as only parents with prior exposure to screens and who gave their informed consent were included in the study. This can enhance the reliability of the results and help to better understand the effects of screen addiction on children in Morocco.

However, a limitation of this study could be the relatively small sample size, which does not allow for generalization of the results to the entire Moroccan population. Additionally, the use of an online questionnaire may also result in selection bias, as only parents with internet access and sufficient time to complete the questionnaire were able to participate.

Recommendations:

It is important for professionals to encourage parents to establish and justify rules for screen use. It is also advisable the prevention of such devices at certain times and in some places, such as the morning, meals time, sleeping hours, school (apart from learning tools), sports halls and during collective activities, for both children and adults. Yet, screens may be present in collective living spaces, but not in children's bedrooms [13,14].

It is worth mentioning that screen use affects children's sensory development and can affect learning; even if this is not necessarily negative, it is vital to preserve a slower form of memory and encourage children to use their prefrontal cortex. Although, operators help them save time [15], children need to develop both their numerical (faster) and literary intelligence. Before the age of 3, all exposure to screens should be avoided. Between the ages of 3 and 6, it is important

to limit screen time to 1 hour per day. It is also recommended that collective use to be more favorable over individual screen use. From 6 to 9 years, parents should opt for an agreement with the child in order to make him/her responsible for the time spent using such devices [16].

Conclusion:

It is evident that screen exposure is harmful to children of all ages, whether in terms of the television environment, the time of exposure, or the content viewed. The effects of this phenomenon have been confirmed by several studies touch upon sleeping time, behavioral attitudes and school performance.

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