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Research Article

Self-Perceived Usage of Digital Screen Media and Intentions to Reduce it: An Open, Prospective, Multi-Centered, Pseudonymized Survey among Parents and their Children

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Abstract

Introduction: There are many opinions about the use of digital screen media (dsm) in childhood, however, all experts agree on one thing: children spend on average too much time in front of screens. So far, there are few interventions to restrict the quantity and increase the quality of screen-time. The aim of this study was to investigate the impacts a media fasting intervention would have on screen use and overall wellbeing.

Method: A pilot study with an open, prospective, multi-centered design of a pseudonymized survey with pre and post assessment of a 44-day media fasting intervention. Participating families were approached at family practices, at schools, at one pediatric hospital and by including individuals. Here we report on the intentions of parents and their children at the start of the intervention.

Results: 365 parents (50% <40 years; 51% high school education) and 280 schoolchildren (aged 10.5 ± 3.1 years; 56% boys). Parents had 0.3 ± 0.9 media-free days/week. Children had 0.8 ± 1.5 media-free days/week. Parents found that using less dsm would be good for themselves (77%) and for their children (81%), felt annoyed/stressed by permanent availability of dsm (58%). They hoped that by using less dsm they would have for more time for their children (63%) and become more attentive and calmer as a family (79%). 58% hoped that media fasting would improve their child's ability to concentrate. Some children accused their parents of using too much dsm (49%), felt that they themselves used to much dsm (39%), felt annoyed and stressed by the permanent availability of dsm (only 16%), and hoped for improved concentration (55%) and more attentiveness and calmness as a whole family (72%) by reducing dsm.

Conclusion: Parents and children, show a self-critical attitude towards media, even though children assign them a less negative status. All groups hope reduction of dsm will improve quantity and quality of family time.

Keywords: Child; Digital screen media use; Family; Parents; Screen time; Survey; Stress

Introduction

In July 2017, the first author and senior author convened a Think Tank Future of Childhood: key players in the areas of health and education spent a weekend together to consider the question: "What do we have to do now in order to secure a good future for childhood?" Tackling the question as to the effect of screen media on children was seen as the greatest and most urgent challenge. Thus, in October 2018, a new Think Tank was convened on the subject of digitalization and childhood, additionally inviting specialists in the area of media pedagogy. The goal of this meeting was to develop a plan for an intervention that would be most likely

to have a lasting beneficial effect on how digital screen media (dsm) is used in childhood. The authors came up with the idea of the Media Fasting Set with questionnaires and a calendar as portrayed in this publication.

In addition to TV, children are spending increasing amounts of time in front of interactive screens, such as computers, tablets, smartphones and gaming consoles. Numerous studies have shown that extensive screen exposure during very early childhood can be harmful: for cognitive development [1,2], social competences [3-5], mental health [5,6] and physical wellbeing [7] with negative influences on concentration, sleep, risk of obesity and diabetes, mental development, psycho-motoric development, speech development, and general family life [8]. According to a study by the Media-pedagogical research group South West 97% of the 12-19-year-old adolescents in Switzerland own a smartphone, and on average use it for 3 hours 41 minutes per day, especially for social media [9]. Another survey by Ernst & Young found that young adults aged between 21-30 years spend an average of almost 7 hours per day online, of which 3 hours on their smartphones [10]. The German health insurance DAK reported that 2.6% of German children and adolescents fulfil the criteria for social media addiction as measured by the Social Media Disorder Scale (girls 3.4%, boys 1.9%) [11]. Especially alarming is the finding that people addicted to social media have at times a higher risk of depression. A study carried out at the US San Diego State University showed that teenagers who on average spent more than 5 hours of their free time behind screens were twice as dissatisfied with their life compared to adolescents who spent less time [12]. This does not necessarily mean that screen time generates dissatisfaction with life or depression; screen time can also be an escape from concrete life. According to the German BLIKK study (BLIKK: accomplishment, learning behavior, intelligence, competence, communication) babies whose mothers regularly use their smartphone during breastfeeding often experience feeding problems, problems going to sleep and even attachment issues [13]. Nearly 70% of young people say that they use their mobile phones in the last ten minutes before going to bed. About half of them can even be woken up at night by messages. Young people who use smartphones and tablets late in the evening or even take them to bed have poorer quality of sleep, less sleep in absolute terms and are significantly more tired during the day [14]. The effects of newer display screen devices have still been poorly studied [15] and the above-mentioned sources are partly of a preliminary nature, but new studies show that brain structure changes measurably after only 6 weeks of gaming [16]. South Korean researchers found that intense online gaming destabilizes the chemical balance of the brain. Using Magnetic Resonance Spectroscopy (MRS), they found that in intensive gamers the ratio of important messengers in a particular region of the prefrontal cortex was significantly shifted, including an increased level of GABA. This neurotransmitter slows down neurons and thus brain activity, similar to patients with severe depression. Only after a longer gaming break did the brain chemistry of the volunteers normalize [17].

Although the technology is seen as the "big equalizer" [18,19] which closes the development gap between wealthier and poorer children, the facts speak a different language: families with lower socio-economic status are more willing to allow screen devices in the children's room, and children from such families suffer more damage from media devices in their bedrooms than children from higher socio-economic backgrounds [20,21]. This suggests that parents with higher socio-economic status are more able to choose media content that is conducive to child development, or at least less harmful [22]. Further, parents with lower socio-economic status tend to use screen devices as a substitute for relationships to keep their children busy, and without knowledge of media content [23]. However, the same might be increasingly true for parents of higher socio-economic status. It is now clear that non-educational media content increases the risk of later attention deficit disorder [22]. The American Academy of Pediatrics recommends that children of ages 2–5 years should spend ≤2 hours per day with screen media, because excessive viewing has been linked to a plethora of physical, academic, and behavioral problems [24]. Media education is a challenge for the majority of parents, and real media use paths are far from this ideal, with dire consequences: Longitudinal studies report excessive use of screen media at school age to be connected to a number of negative outcomes: tobacco use, obesity, poor educational performance, alcohol use and drug use, decreased sleep quality, loss of empathy/aggression, and video game dependency [25]. Children with lower socio- economic status are more severely affected [26]: This is true for all three sub dimensions of problematic media use (equipment/time, content and functionality) [27]. In Germany, 10-year-olds with low parental education levels owned TVs three times more often and gaming consoles four times more often than in high parental education families. Daily usage times as well as bedroom screen equipment increase substantially during kindergarten and elementary school years [25,28]. Higher bedroom screen equipment is associated with longer screen time, which in turn goes along with the consumption of a higher percentage of problematic content. Media use paths are difficult to change once they are established [12,28].

Research into universal prevention of other addictions suggests that early interventions strengthening children´s real life resources provide effective prevention in various fields including behavioral addictions [18], whereas cognitive deterrence and information strategies have shown inconsistent or even counterproductive effects in the past [19]. Information and technical media use skills do not automatically provide protection against addictive screen use. On the contrary, they have been shown to be associated with a higher risk of exposure to problematic content and internet addiction [20]. Critical media literacy skills, on the

other hand, show a connection to lower addiction risk. However, they are not connected to technical mastery, but to lower usage times, and to a higher overall educational level [21]. Studies on screen-time reduction programs proved to be effective in RCTs, but most of them focused only on one of the problem dimensions, namely screen time, and that, in turn, was often considered a means to reduce obesity, not a goal in itself [22,26]. Schmidt, et al. [29] conclude that "there are several research gaps, including limited long-term (>6 month) follow-up data (n = 5), and few (n = 4) targeting removing TVs from children's bedrooms." Despite this, there are very few research interventions.

Materials and Methods

Specific Objectives

It is a long-term objective to generate an increase of behavioral change and health competent awareness concerning the handling of screen media in the world population, especially in families and institutions with children, by providing medical information and intrinsic incentives for observing one's own experience of the effects of media, and to act upon it. Media fasting times are assumed to generate awareness by first promoting assessment of personal use of screen media for oneself and one's family, and, based on this assessment, to define goals for media fasting. Based on experiences during media fasting, participants are encouraged to make long-term decisions, redesigning media habits with the help of information about the opportunities and risks of dsm for adult and child development. This can lead to a familial, social, empathic sensitization in the use of media monitors. We therefore planned a voluntary 6-week media fasting intervention study for parents and their children as a family. Before and during these six weeks of media fasting, the participants were encouraged to deal with the topic of their habits with regard to the use of screen media and the time spent with it. Various alternatives and offers were suggested, including ideas for common family activities from the areas nature, play, sport, culture and nutrition, in order to make this media-restricted time a 'celebration of the senses, culture and relationships'. In this way, an increased, behavior-changing health awareness of screen media is intended within the families. Since media fasting is to take place annually from 2020, a supporting media fasting community is intended. Thus, media fasting may create a sense of community in the field of prevention. The pediatrician's ambulatory clinics, schools, kindergartens, youth welfare offices and associations are to offer a further supporting role through education, animation, participation and special offers during this time. In this paper we intended to initially analyze and present the media fasting intentions and expectations of parents and children willing to participate at the start of the intervention. We further asked how many hours per day they use these media and how many hours per day they intend to reduce it.

The MediaFasting sets included the pre and post questionnaires for adults, children and adolescents developed in co-operation with the Professional Association of Pediatricians (BVKJ), Germany. Each MediaFasting set consisted of an esthetically designed cover that opened into three sections (Figure 1): Sections one and three each contained questionnaires for two adults plus 3 children to be given before and after media fasting. Section two contained a letter to the family, the MediaFasting calendar with its 44 doors each containing impulses for media-free activities covering the areas movement, nourishment, play, nature and relationships (Figure 2), and a brief guideline on media in childhood based on the BVKJ guideline for families

Figure 1: MediaFasting Set containing calendar and questionnaires.

Figure 2: Front cover of the MediaFasting calendar.

We distributed 1284 sets between February 1st until the end of lent (March 6th) 2019 to six practices for pediatric and adolescent medicine to be handed out to parents. Also, those families who decided not to take part (non-participants) were asked for their reasons not to take part in the study. Recruitment was done in the German federal state of North Rhine-Westphalia in six established pediatric medical practices. In each practice,

250 families with children from all social backgrounds were to be recruited to actively participate in the 6-week media fasting period, parallel to the Christian fasting time, or lent. This began 6th of March 2019 and finished 16th of April 2019. Included were families with children who agreed to participate. There were no exclusion criteria except ability to read the questionnaires. For data collection, consent forms had to be signed by an adult or legal guardian of the children (approved by the ethics commission of Witten/Herdecke University, application no.194/2018).

In order to collect socio-demographic data, data regarding the private dealings with dsm and to assess one's wellbeing, emotions, experiences, current behavior and the limitation of dsm at home, standardized questionnaires for children, adolescents and adults were provided. These were filled out by each participant within a family and were pseudonymized for the examiner.

Statistics

Analysis was open, descriptive and group comparison (gender, age classes). If not otherwise indicated, results are given as mean ± Standard Deviation (SD). Correlational analyses will be carried out in regard to health behavior and use restriction.

Results

Pilot Study Data Collection

Distributions of the media-fasting sets to the patients took place between January 21th and March 6th, 2019. A number of unpredictable issues occurred in 5 out of the 6 original medical practices – mainly involving the medical staff that were meant to hand out the sets (death, diseases, water pipe burst). Thus, those practices did not achieve distribution of 250 sets each. After roughly two weeks in the distribution period the principle investigators received the feedback that not all sets would be successfully distributed. Thus, blank sets were returned from 5 out 6 medical practices, whereas the 6th practice actually ordered 100 further sets. Hence, the principal researchers distributed sets via other institutions. In four schools, a parent-evening was organized on which the investigators directly introduced the study to the parents. Respective amendments were made to the protocol, which received ethics approval. Therefore, altogether there were 15 medical practices involved in the study, one pediatric department of a hospital and 4 small schools (3 Steiner/Waldorf schools and one state primary school) who expressed interest to take part.

The sample-questioning of non-participants (n=249) showed a broad range of reasons for not taking part. 64.5% of them stated no interest to participate, while 35.5% stated interest but were unable to participate. 17.1% of them had a migration background and stated difficulties with the German language. Among other reasons for not participating were: "no need", "no interest", "child has no interest", "child is too young", "participating would result in stress with the children", "as a family we use digital screen media only rarely", "already have a conscious usage of digital screen media", "too much stress" etc.

Socio-Demographic Data

Results of parent (Table 1a) and children (Table 1b) investigations: In the parent group (n = 365), mothers (66%) were more frequently represented than fathers (34%). Parents had an average of 2 children (Table 1a). The parent group of < 40 years was the strongest with 50%, followed by the 40-50-year-olds (42%). The parent group was dominated by people with a higher school education (51% with high school graduation and 21% with vocational baccalaureate diploma). Media-free days in the week were hardly present (0.3 ± 0.9 days): 88% did not have any media-free days, 9% 1-2 days, 3% used no media for more than 2 days per week. There were no significant differences between men and women. In the primary group of children (n = 407) 20% were 0-5 years old, 34% 6-9 years old, 29% 10-13 years old and 17% 14-18 years old. The group of small/kindergarten children was not considered for the following analyses, so that 280 school children (56% boys and 44% girls) with an average age of 10.5 ± 3.1 were examined (Table 1b). Media-free days in the week were hardly present (0.8 ± 1.5 days): 72% did not have any media-free days, 16% had 1-2 days, 12% used no media for more than 2 days per week. There were no significant differences between boys and girls. In the group of primary school children, the number of media-free days was relatively highest (1.2 ± 1.8 days), and intermediate (0.6 ± 1.3 days) among 10-13 year olds and hardly any among 14-18 year olds (0.1 ± 0.4 days); these differences were statistically significant (F=13.4; p<0.0001).

	Number	%	M ± SD
Gender			
Female	238	66	
Male	123	34	
Age class			
< 40 years	178	50	
40-50 years	148	42	
<50 years	30	8	
Average age			41,2 ± 6,8
School education			
Lower secondary education	18	5	
Secondary school level	81	23	
College	74	21	
High school	182	51	
Number of children			2,0 ± 0,8
Media-free days			0.3 ± 0,9

Table 1a: Characteristics of investigated parents (N = 365).

	Number	%	M ± SD
Gender			
Girls	124	44	
Boys	156	56	
Age classes			
6-9 Years	120	43	
10-13 Years	101	36	
14-18 Years	59	21	
Average age			10,5 ± 3,1
Media-free days			0,8 ± 1,5

Table 1b: Characteristics of investigated children and adolescents (N=280).

Agreement in The Child and Adolescent Group On Use of dsm

77% of parents found that it would be good for them to use less dsm and 81% found that using less dsm would be good for their children. 58% felt annoyed / stressed by the permanent availability of dsm. If they reduced their use of dsm, 63% hoped for more time for their children and 79% hoped to become more attentive and calmer as a whole family. 58% hoped that media fasting would improve their child's ability to concentrate. For these statements there were some noticeable differences for the age cohorts, which was strongest for the self-assessment that it would be good to use less dsm. This was highest among <40 year olds and lowest among >50 year olds. For gender, there was a relevant difference only for the perception of being stressed by dsm, which was higher in women (Table 2a).

		N1: it would do me some good, to use less dsm.	N2: it would be good for my child(ren) to be using less dsm.	N3 I feel stressed because of dsm.	N4 I hope for more time with my children.	N10 I hope that as a family we will become more attentive and calmer.	N13 I hope that the ability to concentrate will improve for my child(ren).
Agreement (%)		77	81	58	63	79	58
Scale Agreement-Score		0-3	0-3	0-3	0-3	0-3	0-3
Age classes							
All parents (n=355)	Mean	2.05	2.15	1.71	1.68	1.95	1.60
	SD	0.78	0.84	0.95	0.88	0.83	1.01
<40 years (n=177)	Mean	2.15	2.01	1.72	1.73	1.95	1.45
	SD	0.75	0.90	0.94	0.93	0.90	1.09
40-50 years (n=146)	Mean	2.01	2.28	1.77	1.65	1.97	1.73
	SD	0.78	0.74	0.94	0.80	0.78	0.96
> 50 years (n=28)	Mean	1.68	2.25	1.41	1.61	1.75	1.86
	SD	0.77	0.75	1.01	0.88	0.70	0.76
F-value		4.96	4.48	1.70	0.44	0.82	3.88
p-value		0.008	0.012	n.s.	n.s.	n.s.	0.022
Gender							
Female (n=236)	Mean	2.10	2.20	1.83	1.72	2.01	1.66
	SD	0.75	0.83	0.91	0.85	0.81	1.04
Male (n=120)	Mean	1.95	2.04	1.47	1.62	1.83	1.50
	SD	0.83	0.86	1.00	0.93	0.85	0.96
F-value		2.88	2.80	10.91	1.11	3.50	2.09
p-value		0.090	0.095	0.001	n.s.	0.062	n.s.
dsm = digital screen media							

Table 2a: Agreement-scores in the adult group.

57% of the children admitted that their parents felt that they (the children) would be too busy with dsm, while 49% of the children accused their parents of using too much dsm themselves. As many as 39% of the children felt that they were too busy with dsm for too long, but only 16% felt annoyed and stressed by the permanent availability of dsm. If they reduced their use of dsm in media fasting, 55% hoped that their concentration would improve and 72% hoped that they would become more attentive and calm as a whole family. There were no significant gender differences when agreeing with these statements, but there was for the age cohorts. When it came to estimating too much dsm use, this was lowest among primary school children and highest among adolescents. Primary school children felt more strongly than older children that their parents would use too much dsm. It was also the primary school children who hoped that media fasting would make their families more attentive and calmer toward one another (Table 2b).

		X2: My parents say that I am too engaged with dsm	X25: In my opinion I am currently too engaged with dsm	X26: my parents are using too much dsm	X3: I feel stressed because of dsm	X13: concentration improves	X28: that we are doing much more together as a family
Agreement (%)		57	39	49	16	55	72
Range agreement score		0-3	0-3	0-3	0-3	0-3	0-3
All children (n=274)	Mean	1.54	1.12	1.45	0.62	1.56	2.00
	SD	1.04	0.98	1.01	0.85	1.08	1.04
Age classes							
6-9 years (n=116)	Mean	1.19	0.74	1.67	0.49	1.51	2.10
	SD	1.05	0.86	1.00	0.78	1.05	1.00
10-13 years (n=101)	Mean	1.71	1.30	1.35	0.66	1.58	2.09
	SD	1.04	1.07	1.08	0.85	1.16	1.07
14-18 years (n=58)	Mean	1.97	1.55	1.19	0.81	1.60	1.63
	SD	0.77	0.78	0.79	0.96	1.01	0.96
F-Value		13.95	17.78	5.37	3.02	0.20	4.76
p-value		<0.0001	<0.0001	0.005	0.050	n.s.	0.009
Gender							
Female (n=123)	Mean	1.45	1.24	1.45	0.60	1.63	1.94
	SD	1.03	1.01	1.03	0.84	1.06	1.09
Male (n=151)	Mean	1.62	1.02	1.46	0.64	1.49	2.05
	SD	1.05	0.96	1.00	0.87	1.09	0.99
F-value		1.93	3.29	0.00	0.15	1.10	0.68
p-value		n.s.	0.071	n.s.	n.s.	n.s.	n.s.
dsm = digital screen media							

Table 2b: Agreement-scores in the child and adolescent group.

Correlation in the child and adolescent group on use of dsm

The perception that it would do good to use less dsm was moderately associated with the assessment that it would also do children some good to use less dsm (r=.41) and to be annoyed and stressed by the permanent availability of dsm (r=.34). Moderately associated with this was also the expectation that through media fasting more time would be available for the children (r=.37). The perception that it would be good for their children to use less dsm was moderately associated with the hope that their ability to concentrate would improve (r=.48) and that they would become more attentive and calmer as a family (r=.37). There was a strong correlation between the hope of parents to become more attentive and calmer as a family and the hope that media fasting would improve the child's ability to concentrate (r=.53). All these statements showed no significant correlation with the previous media-free days of the parents (Table 3).

Children's perception that they would be too busy with dsm coincides strongly with their statement that their parents would also perceive this (r=.51). The self-assessment of being too busy with dsm showed a moderate correlative relationship with the perception of being annoyed / stressed by dsm (r=.35) and with the expectation that media fasting would improve concentration (r=.45). The concrete stress sensation itself was also moderately associated with the expectation of concentration improvement if one were to limit the use of dsm (r=.32). This improvement in concentration was also moderately associated with the expectation of becoming more attentive and calmer as families (r=.42). The perception that their parents themselves use too much dsm was not significantly associated with any of the other perceptions. The frequency of media-free days to date was moderately negatively associated with the statement that their parents felt that they (the children) are too busy with dsm and weakly negatively with the confirming self-perception (r=-.38) (Table 3, Figure 3).

	N1: it would do me some good to use less dsm.	N2: it would be good for my child(ren) to use less dsm.	N3: I feel stressed because of dsm.	N4: I hope for more time with my children.	N10: I hope that as a family we will become more attentive and calmer.	N13: I hope that the ability to concentrate will improve for my child(ren).
N1 it would do me good to use less dsm.	1.000					
N2 it would be good for my child(ren) to use less dsm.	**.414****	1.000				
N3 due to the continued availability of dsm I feel irritated/ stressed.	**.336****	.150**	1.000			
N4 I hope for more time with my children.	**.370****	**.371****	.197**	1.000		
N10 I hope that as a family we will become more attentive and calmer.	.286**	**.372****	.219**	**.399****	1.000	
N13 I hope that the ability to concentrate will improve for my child(ren).	.147**	**.478****	.043	**.431****	**.532****	1.000
So far I have already had (...) media-free days.	.076	-.001	.101	-.021	.024	.037

**p<0,01 (Spearman rho), dsm = digital screen media, moderate and strong correlations were highlighted (bold)

	X2 My parents tell me that I am too engaged with dsm	X25 Currently, I am very engaged with dsm	X26 My parents are using too much dsm	X3 stressed due to dsm	X13 concentration improves	X28 that we are going to do more together as a family
X2 My parents tell me that I am too engaged with dsm	1.000					
X25 Currently, I am very engaged with dsm	**.514****	1.000				
X26 My parents are using too much dsm	.029	-.035	1.000			
X3 stressed due to dsm	.129	**.347****	.088	1.000		
X13 concentration improves	.162**	**.452****	.045	**.316****	1.000	
X28 that we are going to do more together as a family	.045	.266**	.096	.087	**.424****	1.000
So far I have already had (…) media-free days	**-.380****	-.238**	-.076	-.108	-.036	-.016

**p<0,01 (Spearman rho), dsm = digital screen media, moderate and strong correlations were highlighted (bold)

Table 3: Correlational analysis - children and adolescents (dsm = digital screen media).

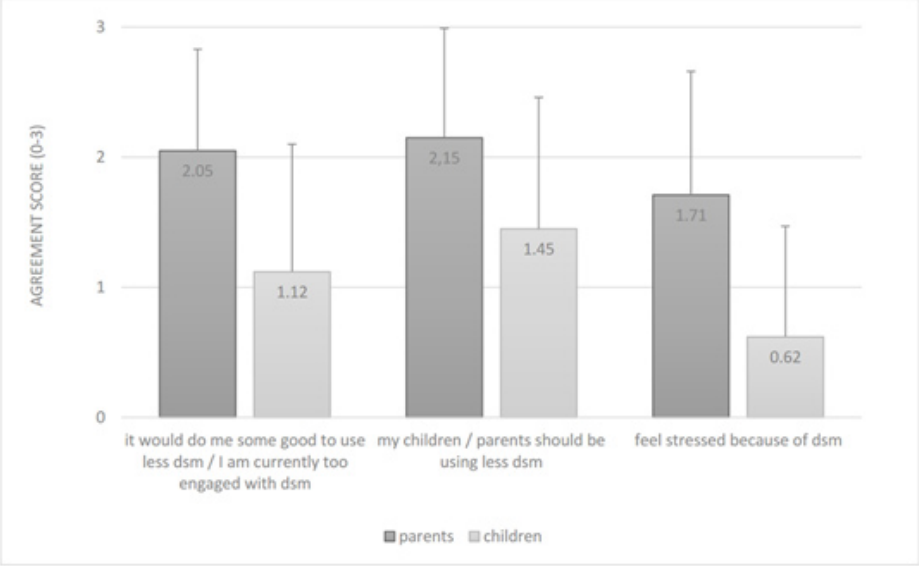

Figure 3: Perceptions of parents and their children towards usage of digital screen media (dsm).

Discussion

This study obviously has a bias in that the majority of the responding parents had high-school education. By the same token it reflects that well-known problem that over-use of dsm is not only a phenomenon of the less-advantaged [30]: 77% of these parents found that it would be good for them to use less dsm and 58% stated, that they felt annoyed or stressed by the permanent availability of dsm. While 88% of the parents did not have any media-free days in the week, 12% of these parents do still have media-free days. Our results raise the question as to whether dsm steals time parents would normally spend with their children, because 63% of the parents hoped for more time for their children if they would reduce their use of dsm. Fitting with this hypothesis is the fact, that half of the children (49%) also openly accused their parents of using too much dsm while primary school children felt more strongly than older children that their parents use too much dsm. The fact that 79% of the parents and 72% of the children hope to become more attentive and calmer as a family can be interpreted as a sign that the whole family is challenged by dsm. Again, primary school children hoped most, that media fasting would make their families closer toward one another. That using less dsm would be good for their children was stated by 81% of the parents and that 58% hoped that media fasting would improve their child's ability to concentrate, shows that parents somehow know about the negative influences of dsm or at least associate dsm with negative developments of their children. All these intentions point in the right direction as it is being suggested that the parental home has a defining effect on children's early media socialization, as parents are role models for duration and style of media use [31]. Pediatric recommendations for parents regarding mindful dsm use have already been put forward: 1. Be aware: you are a role model for your child; he or she will imitate you. 2. Use, and let use, technical equipment purposefully and not out of boredom or to occupy your child. 3. Eat without screen media and use screen media without eating. 4. Enable healthy sleep: screen-free sleep rituals and screen-free bedrooms are necessary. 5. Do not use screen media as a reward, punishment or reassurance [32].

Not only parents, depending on their age also 72% of the children did not have any media-free days in the week. The well-known rise in use of dsm with age (13) is reflected in our data. However, in contrast to their parents, children seem to be less critical of the situation: even if 57% of the children admitted that their parents felt that they (the children) would say so, only 39% of the children felt that they were too busy with dsm for too long, and only 16% expressed feeling annoyed or stressed by the permanent availability of dsm. Like their parents, children seemed to attribute dsm a negative influence and 55% hoped that their concentration would improve if they reduced their use of dsm during media fasting. This attitude is emphasized by the correlation of children's self-assessment of being too busy with dsm, the perception of being annoyed or stressed and with the expectation that media fasting would improve concentration. As expected, the frequency of media-free days to date was moderately negatively associated with the statement that their parents felt that they (the children) are too busy with dsm and weakly negatively with the confirming self-perception. The correlation of the perceptions to be annoyed and stressed by the permanent availability of dsm and that it would do good to use less dsm for both, parents and children, combined with the expectation that through media fasting more time would be available for the children indicates that there seems to be a need among parents for less media use. Especially when it comes to a child's ability to concentrate, parents envisage a context with a more attentive and calmer family as a result of less media. This correlation was also suggested by Babic et al. who have looked at changes in screen time and mental health in adolescents investigating n = 322 kids throughout an entire school year. They found that changes in total recreational screen time and computer use were negatively associated with psychological well-being [6].

As this study has found, many parents feel irritated and stressed due to dsm and would like to limit their use and instead have more time with their child(ren) and more conscious quality time as a family. Their children, on the other hand, feel significantly less irritated and stressed, nor do they have the feeling that they are using too much dsm, but they hope nevertheless that there would be more conscious quality time as a family if they all were to reduce the use of dsm. This pilot study also showed that there seems to be a discrepancy of judgement between parents and children: children see the problem of ´too much´ to be centered on their parents.

Finally, media use in children is not being sufficiently researched; its premature pedagogization, instrumentalization and misuse of childhood play through dsm require more political attention. The importance of the strengthening of early media competency can only be underlined and repeated. Research, scientifically accompanied model settings and online qualification of dsm users should be one of the top priorities on the political agenda [33]. There is a remarkable paucity of interventional studies aiming at helping whole families become more conscious of the use of dsm and motivating them to make positive changes. The fact that all the invited pediatricians (who were asked to invite parents to participate) came to the study launch meeting on January 18th, 2019, free of charge and even brought staff with them, is an indication of the high degree of concern and motivation regarding this theme. Collectively, the study showed that a sensitization of user behavior towards dsm leading to intentions for change are possible. In coming articles we will describe the results of the media fasting. The lessons learned in this pilot study are also useful for a large randomized trial, which is planned by the authors.

Conflict of Interest

The authors declare that the research was conducted in the

absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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