SURVEYING PARENTAL MEDIATION AND DIGITAL LITERACY. WERE PARENTS READY DURING COVID-19?

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ABSTRACT

The pandemic initiated an extensive and sudden digital transformation in the society. It forced parents and children to take a digital surge in their lives. The aim of our survey is to explore to what extend children's online behavior has changed during the pandemic, to study whether demographic factors and digital literacy of parents, are associated with the changes observed, and lastly to explore to what extend parents are familiar with age and content classification systems online, which will allow them to make informed decisions about media content consumed by their children. The study reveals that a significant percentage of parents (29.8%) report changes in the online habits of their children. Furthermore, our research affirms that digital literacy of parents is the key to overcome potential online risks of children, especially during the pandemic. Notably, the age group 9-12 is the age group, which shows the biggest percentage of parents noticing changes in their child's online habits. Finally, it is revealed that parents were unprepared to follow this fast transformation pace, and only a low percentages of them appears to be familiar with age (49.8%) and content classification systems (27.9%) online.

KEYWORDS

Survey, Pandemic, Covid-19, Children Online Behavior, Parental Guidance, Digital Literacy

1. INTRODUCTION

Living conditions at home have changed suddenly and profoundly by the COVID-19 outbreak causing such problems as mandatory lockdown, the need to home educate, and disparities in physical and mental health of children (Jiao, et al., 2020) (Montag & Elhai, 2020) (Vessey & Betz, 2020) (Spinelli, et al., 2020) (Dunton, et al., 2020) (Roe, et al., 2021). Moreover, the pandemic initiated an extensive, sudden and dramatic digital transformation in the society (Iivari, et al., 2020). It forced parents and children to take an extraordinary digital leap in their everyday life and practices, including children's education. Abruptly children's education was transformed from a traditional classroom procedure to a remote, digital one. An entire generation of children had to start managing and mastering with digital tools to participate in their compulsory education. This required significant adjustments not only from children and their teachers, but also from their families. According to the European survey of (Vuorikari, et al., 2020) more than two-thirds of the responding parents in all participating countries would need more guidelines on how to support children with online education activities.

Parents were not trained to embrace online learning which made them resist or event reject online education. The reasons behind this according to (Dong, et al., 2020) were the shortcomings of online learning, young children's inadequate self-regulation, and their lack of time and professional knowledge in supporting children's online training.

Additionally, certain scholars report that online learning during the pandemic failed to enhance students' motivation and attention (Wong, 2020). This is due to a lack of supervision and strategy from people closest to them, including parents, teachers, and a supportive environment, which would play an essential role in online

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learning. On top of that, the adoption of online-based learning also involved internet connections, which affected the quality of learning (Lemay, et al., 2021).

A percentage of 71.7% of the families that took part in a survey from (Eyimaya & Irmak, 2021) highlight that screen-time of children has increased during the pandemic. The latter study reported that gender, age, household income, mother's employment status, family's screen time rules, and inconsistent parenting practices emerged as significant predictors for children's screen time model.

According to a study from (Pavlenko & Pavlenko, 2020), digital literacy of family members with preschool children was found to be the key to positive experiences during COVID-19. Thus, now more than ever, digital literacy plays an important role in order to avoid and overcome online risks with the support of parental regulations for children's online involvement (Daskalaki, et al., 2020) (Livingstone & Helsper, 2008).

2. THE PRESENT STUDY

By taking into consideration all the aforementioned scholar reports, the present study aims to put another piece in the complex puzzle of the impact that the pandemic had on the online behavior of children and parents. Thus, we are primarily focused on examining to what extent children's online habits changed due to the outbreak of COVID-19, from the perspective of the parents. Apart from the fact that screen time has increased, which was inevitable due to homeschooling, we aim to understand in which ways these changes occurred, which leads us to our first research question:

Research Question 1. If and to what extent has children's online behavior changed due to the COVID-19 outbreak, according to their parents perspective.

Moreover, we seek to understand how several factors, including demographics and the digital literacy of parents, are associated with children's online behavior during the pandemic. We make the hypothesis that variables like children's age, gender, online parental control, discussion frequency about online safety, and other variables, are not necessarily associated with changes parents observed in the online behavior of their children. This leads us to our second research question:

Research Question 2. By exploring different factors, including demographics and digital literacy of parents, can we make any assumptions about the association of these factors and changes that parents observe in the online behavior of their children?

Lastly, we aim to evaluate whether parents know how to use age classification systems and associated content descriptors that would allow them to make good informed decisions about media content their children could consume without causing any harm. Accordingly, our third research question arises as follows:

Research Question 3. To what extent are parents familiar with age classification systems and content descriptors that will allow them to make a good informed decision about whether their child should watch and/or engage with the media content without posing any harm?

3. METHODS

3.1 Participants and Procedure

The responses of the survey were collected anonymously with the method of Computer-Assisted Web Interviewing, via online questionnaires. The survey took place from November 16, 2020 until January 5, 2021.

During data collection, Greece was in a lockdown state due to COVID-19, and schools (public and private) were practicing distance learning via online platforms. Greece entered lockdown for the first time early March 2020, which included Stay-at-home orders, total movement control, and the closure of schools. Until May 2021, schools opened and closed locally according to epidemiological data of the municipality they operate[2] (Hale, et al., 2021).

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[2] https://ourworldindata.org/coronavirus/country/greece

The participants of the survey were clearly informed throughout the study that participation in this research was voluntary. Each participant was asked at the beginning of the questionnaire to select which of his/her children he/she would consider as the subject for the survey questions.

A total of 1750 parents completed the online survey. Table 1 presents the demographic information of the participants. The vast majority of the participants are Female (83.6%). As far as the participants' age is concerned, most of the parents are 40-49 years old (56.2%), then 30-39 years old (30.7%), followed by ages 50-59 (11.6%), ages 20-29 (1%) and lastly ages 60 and older (0.5%). Children's ages, that parents considered as the subject of the survey questions, are mostly 9-12 y.o. (40.6%), then 6-8 y.o. (22.4%), followed by 13-15 y.o. (18.5%), then children 15 y.o. and older (9.1%) and lastly children 3-5 y.o. (7.7%). Most parents declare to have over 10 years of online activity (65.9%) and a Higher Education degree (64.3%). The gender of children, which parents considered as the subject of the survey, was 46.3% Girls and 53.7% Boys.

Table 1. Demographic information of the sample

Measure	Participants	N	%
Age	20-29 y.o.	17	1
	30-39 y.o.	538	30.7
	40-49 y.o.	983	56.2
	50-59 y.o.	203	11.6
	60+	9	0.5
		Total 1750	100
Participants' Gender	Female	1463	1
	Male	287	30.7
		Total 1750	100
Participants' Children Age	3-5 y.o.	134	7.7
	6-8 y.o.	392	22.4
	9-12 y.o.	710	40.6
	13-15 y.o.	324	18.5
	15+	160	9.1
		Total 1720	98.3
Participants' Children Gender	Girls	811	46.3
	Boys	939	53.7
		Total 1750	100
Educational Level	Gymnasium Certificate	60	3.4
	High-school Certificate	568	32.2
	Higher Education	1126	64.3
		Total 1750	100
Years of online activity	<2	38	2.2
	2-4 years	121	6.9
	5-10	438	25.0
	>10 years	1153	65.9
		Total 1750	100
Residence	City (population>10,000)	1208	69.0
	Village (population<10,000)	542	31.0
		Total 1750	100

3.2 Questionnaire and Measures

The online questionnaire was released with specific guidelines on how to be filled. It was specially designed to derive conclusions on how online use and online behavior has shifted during the pandemic, in order to draw recommendations for various stakeholders / target groups such as:

- **Parents**: Concerning the need for improved parental supervision and possibly improved awareness raising and parental understanding, especially during the pandemic.
- **Schools**: Concerning the degree of guidance provided by educators and the level of readiness in confronting emerging risks during the pandemic. Involvement of schools in digital safety education

(cultivation of vigilance, assistance in resilience development), and digital literacy acquired by existing curricula.

- **State/Ministry of Education**: Concerning educational strategies that could be applied during the pandemic to support both parents and children.

The questionnaire contained both quantitative (close-ended) and qualitative (open-ended) questions. In total it consists of 28 questions, from which 19 where multiple choice, three Likert, one open-ended, and seven were demographic questions. By using qualitative research, we seek to explain different perspectives of parents and to uncover trends in thought. The questionnaire was divided into three thematic parts. The first part explored parental supervision, parental digital literacy, and parent-child relationship with respect to internet use. Table 2 shows all questions, measures, and frequencies for this first part of the questionnaire.

The second part of the questionnaire explored parental familiarity with audiovisual age classification systems and their knowledge on how to use tools and methods that would help them rate audiovisual media content (e.g. online gaming, audiovisual streaming content, etc.). Table 3 shows the questions, the measures, and the frequencies of the second part of the questionnaire. This part of the questionnaire also explored parental digital literacy with a focus to age classification system in media.

Finally, the third part contained demographic questions. Table 1 shows the demographic questions of the questionnaire, together with the frequencies.

It should also be noted that a specific statement "My child does not have online interaction" was added as an answer to some of the question, and denotes that the child is not left alone to interact with applications or persons online, but rather the parents choose what the child will watch or engage with, while online. In other words, the child is a passive receiver of the online content, and the parents choose and interact for the child. This is more applicable for small children, who consume online products, but have no other interactions online. Last, but not least, all the questions and answers of the questionnaire were written in Greek.

Assumptions of statistical tests were considered prior to analyses. All statistical tests were conducted using the SPSS software, version 27.0.

4. RESULTS

4.1 Results of the Evaluation of Changes Observed Since the Outbreak of the Pandemic

In the preliminary assessment of the data, the Shapiro Wilk test results rejected the null hypothesis of normality for all the variables of the dataset. This means that the distributions of our variables are statistically significantly different from a normal distributions (Sig < .001), thus non-parametric tests are applied in the main analysis. Regarding the statistical analysis of the responses of the parents, we see in Table 2 that 29.8% (N=521) of all parents have noticed changes in their child's online habits after the outbreak of the pandemic (Table 2 - Pandemic variable). We have analyzed the free text answers of the next open ended question "Would you please describe what kind of changes have you noticed during the pandemic?", only for those parents who answered positively in the previous question, and grouped the similar answers together. According to the responses 84% (N=363) say that their children have noticeable increase in the time they spend online, 8% (N=36) of parents say their children are feeling more anxious and distressed, 5% (N=22) say their children make excessive use of the internet (they refer to it as internet addiction), and 3% (N=13) say their children are playing either more online games or they started to play online games while they did not before.

Table 2. Questions and frequencies of the first part of the questionnaire

Questions	Variable name	(Grouped) Responses	N	%
Have you noticed any change in your child's online habits after the outbreak of the pandemic?	Pandemic Variable	My child doesn't have online interactions	403	23.0
		No	826	47.2
		Yes	521	29.8
If yes, would you please describe what kind of changes you have noticed during the pandemic? (open ended question)	Changes Variable	My child spends more time online	363	84
		My child is more anxious and distressed	36	8
		My child makes excessive use	22	5
		My child plays more games online	13	3
Do you feel in control of your child's online activity?	Control Variable	No	226	12.9
		Partially	848	48.5
		Yes	676	38.6
What worries you most about your child's online activity?(multiple choice)	Worries Variable	Excessive use	1119	63.9
		Personal data exposure	497	28.4
		Bad Influences from the internet	1199	68.5
		Malware	247	14.1
		Online reputation	172	9.8
		Stranger danger	561	32.1
Are you using parental control software?	Parental Control Variable	I would like to, but I don't know how	319	18.2
		No	574	32.8
		Partially	363	20.7
		Yes	494	28.2
Have you set limits on how much time your child is allowed to spend on the computer on a daily basis?	Limits Variable	No	328	18.7
		Yes	1422	81.3
At what age did your child start using the internet?	Starting age Variable	3-5	374	21.4
		6-8	657	37.5
		9-11	539	30.8
		12-14	363	9.5
		>=15	494	0.8
At what age did your child acquire its own social media profile?	SM profile Variable	I am not allowing it	976	56
		5-7	7	0
		8-10	125	7
		11-13	482	28
		14-15	131	7
		>=16	29	2
Does your child trust you with personal information about the internet (such as SM passwords or online interactions)?	Trust Variable	My child doesn't have online interactions	680	38.9
		No	196	11.2
		Yes	874	49.9
How often do you discuss with your child about online safety?	Discussion Variable	Never	51	2.9
		Rarely	229	13.1
		Occasionally	972	55.5
		Very Often	498	28.5
Do you feel you have enough knowledge to advise your child on how to stay safe online	Knowledge Variable	I don't know	407	23.3
		No	388	22.2
		Yes	955	54.6
How often do you seek information about online safety?	Awareness Variable	Rarely	412	24
		Occasionally	1080	62
		Very Often	258	15
Can you tell with whom your child is chatting online?	Chatting Variable	My child doesn't have online interactions	628	35.9
		No	196	11.2
		Yes	926	52.9

Apart from the quantitative results, we also observed that a lot of the free text answers in the question "Would you please describe what kind of changes have you noticed during the pandemic?" reveal emotional distress from parents. For instance, one mother says about her 15-year-old daughter that "Of course! Our children are required to be in front of a screen all day! Which makes it impossible for us to monitor their media use, so your questionnaire is invalid! Open the schools and then we talk again!". A father says about his 12 year-old daughter "She is glued to her cellphone since the first lockdown", and a mother says about her 15 year-old son that "Now he doesn't even go to bathroom without his cellphone". This reveals that dealing with the quarantine is a particularly stressful experience for parents who must balance personal life, work, and raising children, being left alone without other resources. According to (Spinelli, et al., 2020) this situation puts parents at a higher risk of experiencing distress, potentially impairing their ability to be supportive caregivers.

Table 3. Questions and frequencies of the second part of the questionnaire

Questions	Variable name	Responses	N	%
Are you aware of age classification systems on the internet, e.g. PEGI scale for online games?	Age Classification	No	871	49.8
		Yes	879	50.2
Are you aware of what the following descriptive content symbols from PEGI scale signify?	Content Classification	No	1262	72.1
		Yes	488	27.9
When your child watches audiovisual content online, would you like to be aware of the potential harmful content contained in this video/game?	Content Rating	I don't know	34	1.9
		No	30	1.7
		Yes	1686	96.3
When your child watches audiovisual content online, would you like to be aware of the age rating so that you make an informed decision to allow it or not?	Age Rating	I don't know	32	1.8
		No	12	0.7
		Yes	1706	7.5
Would you rather have age rating (e.g.8+) or content rating (e.g. violence) or both?	Preferences	Age Rating	114	6.5
		Content Rating	149	8.5
		Both	1487	85.0
Do you believe that age classifications provide enough information for parents to keep their children safe from potentially harmful content?	Enough Information	I don't know	196	11.2
		No	396	22.6
		Yes	1158	66.2
At what age did your child start using the internet?	Experience	Never	1586	90.6
		Rarely	122	7.0
		Regularly	35	2.0
		Often	7	0.4

Additionally, in the question "What worries you most about your child's online activity" (Table 2- Worries variable), parents mostly answer "Bad influences from the internet" (68.5%) and "Excessive use" (63.9%). On the other hand, "Stranger Danger" receives 32.1% (Table 2), which is small compared to the two aforementioned worries of the parents. All these kind of responses reveal a very difficult situation parents are positioned in, with their new roles as educators and full-time entertainers (Attavar, 2021).

Subsequently, we conducted Pearson's Chi-square test of independence to determine whether there exists association between variables. All the variables that we report meet the conditions that each observation is independent of all the others, no more than 20% of the expected counts are less than 5, and all individual expected counts are 1 or greater (Yates, et al., 1999).

Specifically, we focused on the distribution of the variable of the question "Have you noticed any changes in your child's online habits after the outbreak of the pandemic?" which we will call the "Pandemic variable" (Table 2). Our Null Hypothesis (H$_0$) is that the pandemic variable is independent of all the other variables in the demographics Table 1 and Table 2. In other words, make the hypothesis (H$_0$) that there is no association between the pandemic variable and the other variables mentioned in Table 1 and Table 2.

What we observed from our analysis, is that the pandemic variable is indeed dependent of the participant's children age, thus we reject the Null Hypothesis between those two variables $x^2(8, 1720) = 413.740$, p < .001. The effect size of this finding is moderately strong (V = .347, where V stands for Cramer's V). By comparing children's ages of parents who observe changes in their child's online habits, we see that the ones who observe changes have higher percentages for children aged 9-12 (48.6%), ages 13-15 (24.5%), and ages 6-8 (16%). Thus we conclude that 6-15 year-olds have been affected from the pandemic according to the results, with the age group 9-12 being the mostly affected (Figure 1).

Results of the Spearman's rho correlation proved significant positive association (Sig. two tailed) between children's age and:

- Starting age variable $r_S = .634$, p < .001, C.I. 95% [.604, .663], N = 1720
- Social Media (SM) profile variable $r_S = .701$, p < .001, C.I. 95% [.676, .725], N = 1750
- Parent's age $r_S = .461$, p = .000, C.I.95% [.422, .499], N = 1750

We conducted chi-square test analysis to examine if the pandemic variable and the above mentioned variables are independent. After our analysis we reject the Null Hypothesis (H$_0$) for all the below mentioned variables. Namely:

- The Pandemic variable is associated with the starting age variable with moderate association between variables $x^2(8, 1750) = 145.743$, p < .001, V = .290
- The pandemic variable is associated with the SM profile variable with moderately strong association $x^2(10, 1750) = 357.944$, p < .001, V = .320

- The pandemic variable is associated with the discussions variable with small effect size $x^2(6, 1750) = 52.885$, $p < .001$, V = .123
- The pandemic variable is associated with the knowledge variable with small effect size $x^2(4, 1750) = 20.473$, $p < .001$, V = .076
- The Pandemic variable is also associated with the trust variable with strong association between variables $x^2(4, 1750) = 635.133$, $p < .001$, V = .426

As we observe from the cross tab statistics of the pandemic variable and the starting age variable, parents who have responded that they have noticed change in their child's online habits after the outbreak of the pandemic, are more likely to have answered that their child started to use the internet between 9-11 y.o. (35.9% vs. 33.7%) and 3-5 y.o. (17.1% vs. 15.0%), compared to parents that have not noticed change. On the other hand parents who responded that have not noticed any change during the pandemic, are more likely to have answered that their child started to use the internet between 6-8 y.o. (37.9% vs. 35.9%), 12-14 y.o. (12.2% vs. 10.7%), and 15+ y.o. (1.2% vs. 0.4%).

Moreover, comparing the percentages from the cross tab statistics of the pandemic variable and the SM profile variable, we see that parents who observe changes in their child's online habits say in high percentage that they do not allow their children to have their own social media (44.3% vs. 43.6%), they answer that they have started a social media profile at 11-13 y.o. (38.4% vs. 33.5%), then 8-10 y.o. (9.8% vs. 8.7%). Contrarily, parents who claim that their children have not been affected by the pandemic give higher percentages for ages 14-15 y.o. (11.5% vs.5.8%) and 16+ y.o. (2.2%vs. 1.3%). This observation is also inline with our previous finding that younger children seem to be more affected by the pandemic, because as we can see from Spearman's rho correlation there is a positive association between children's age and SM profile variable. This reveals that the older the child is, the older it created its own SM profile and the younger a child is the younger it created a SM profile. This also shows that the average age of children opening a profile in SM tends to decline over the years (Daskalaki, et al., 2020).

What's more, the chi-square test between the pandemic variable and the discussion variable $x^2(6, 1750) = 52.885$, $p < .001$, V = .123 indicates also that parents who answer that they noticed changes in their child's online habits after the outbreak of the pandemic have higher score in the answer that they rarely discuss online safety with their child compared to parents who do not notice changes after the pandemic (12.3% vs. 10.9%). On the other hand, parents who answer that they have not noticed changes have higher score in answers "Occasionally" (57.3% vs 56.2%) and "Very Often" (30.1% vs. 29.9%). Authors in (Wang, et al., 2020) also support that good parenting practices gain significance during the lockdown at home.
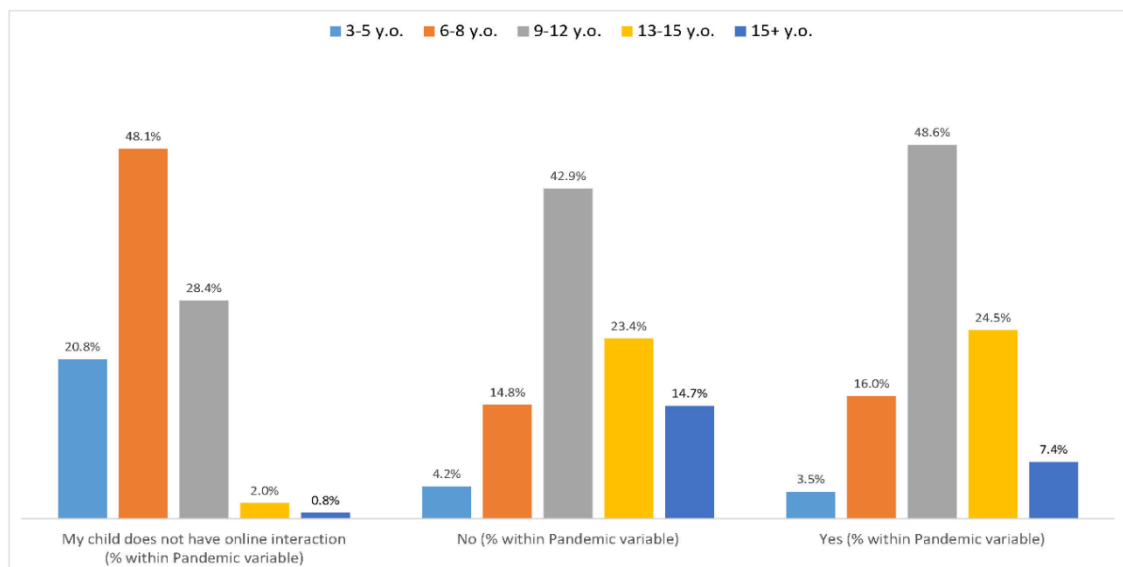

Figure 1. Comparison between the answers of the question if the children of the participants have changed their online behavior during the pandemic and the ages of the children (Cross-tabulation analysis between Pandemic variable and Children's age variable)

On top of that, the chi-square test between the pandemic variable and the knowledge variable $x^2(4, 1750)$ = 20.473, p < .001, V = .076 indicates that parents who answer that they have enough knowledge to advise their child on how to stay safe online, report less that their child has been affected by the pandemic (28.6% vs. 37.1%).

These two last findings, about the discussion variable and the knowledge variable, reveal that digital literacy of parents may be the key to help overcome potential online risks of the children, especially during the pandemic.
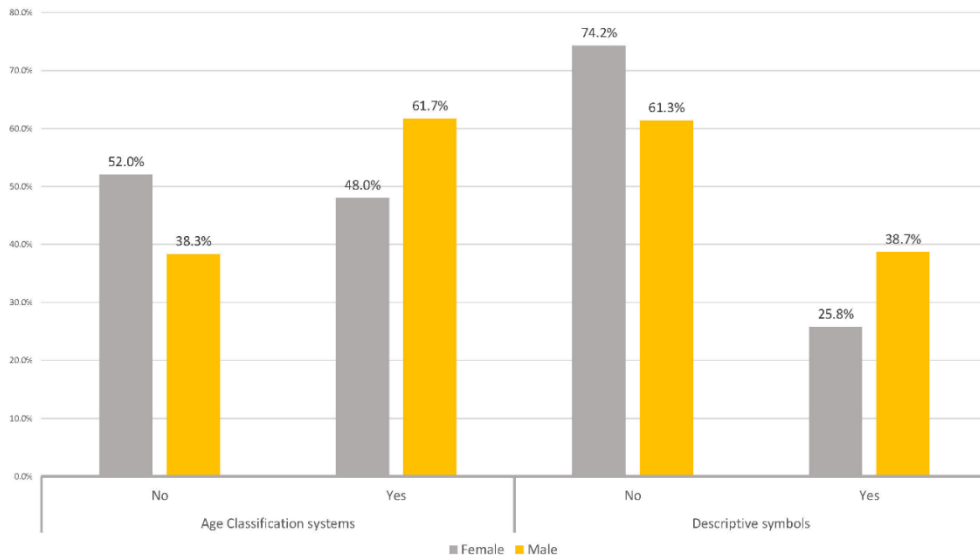
Figure 2. Comparison between the gender of the participants and if they are aware of the age classification systems and descriptive symbols

Furthermore, the chi-square test between the pandemic variable and the control variable $x^2(6, 1750)$ = 294.922, p < .001, V = .290 revealed that there is a moderate association between the two variables. In this case, our Null Hypothesis is also rejected. According to cross-tabulation analysis between the two variables, parents who have answered that they have noticed change in their child's online habits after the outbreak of the pandemic are more likely to have answered that they are partially in control of the activity of their children (59.9% vs. 51.5%) or that they have no control of their child's online activity (16.1% vs. 14.6%).

By conducting chi-square test between the children's age variable and the control variable we reject the H_0, concluding that there is indeed association between these variables too x^2 (12, 1750) = 280.099, p<.001, V = .233. In specific, what we observe from Figure 3 is that parents of children aged 3-5 (57.5%) and 6-8 (49.2%), say that they are in control of what their children do online. Parents of children aged 9-12 mostly respond that they are partially in control (54.6%), but there is still a high percentage of parents (33.7%) who respond that they are in control. Parents of children aged 13-15 and 15+ mostly answer that they are partially in control (58.6% and 54.4%) but a high percentage of them also reports that they are not in control (20.7% and 31.3%) (Figure 3).

Finally, from the chi-square test between the pandemic variable and child's gen-der variable, we retain the null hypotheses that the two variables are independent x^2 (2, 1750) = .097, p = .953, thus there is no association between the variables.

4.2 Results of the Evaluation of Parents Knowledge about Audiovisual Tools and Ratings for Parental Control

In the second part of our study, we examined to what extent parents know how to use age and descriptive content classification systems. The goal of a classification system is to provide parents advanced knowledge about media productions (on-demand-video, video games, etc.), that would allow them to make a good informed decision about whether their child should watch and/or engage with the media content without posing any harm (Gentile, 2008) (Gentile, et al., 2011) (Gentile, et al., 2005) (Bushman & Cantor, 2003).

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From our analysis, we see that half of the parents (49.8%) do not know the existence of age classification systems such as the PEGI system (Konzack, 2012). What's more, the vast majority of them (72.1%) is not aware of what the descriptive content symbols of the PEGI system indicate (Table 3). At the same time, almost all parents wish to be informed about age ratings and potentially harmful content that is contained in the audiovisual content their children engage with (97.5% and 96.3%). The vast majority would prefer to have both kind of information provided, that is age ratings combined with content ratings (85.0%).

On the other hand, 22.6% of parents believe that classifications systems do not provide enough information for parents to keep their children safe from potentially harmful content (Table 3).

By conducting chi-square test between Participants' gender and the classification systems variable we reject the Ho, because we find that there is association between the gender of the parents and if they are familiar with the age classification systems x^2 (1, 1750) = 17.984, p < .001, V = .0.101. Specifically, what we observe is that the majority of male participants (Fathers) have responded that they are aware of age classification systems (like the PEGI scale) at 61.7%. On the other hand the majority of female participants (Mothers) have responded that the are not aware of the age classification systems at 52% (Figure 2). This observation might be based on the fact that males play more online games than females, so they are more familiar with age classification systems (Daskalaki, et al., 2020) (Chen, et al., 2018) (McKinnon-Crowley, 2020).

Moreover, we came to the conclusion that parents who have more than 10 years of experience online, are more familiar with age classification systems than parents who have less experience. This conclusion was drawn from the chi-square test between the online experience of the participants (Years of online activity form Table 1) and the age classification variable from Table 3. Specifically, we reject the Ho, as the x^2 (3, 1750) = 38.299, p < .001, V = .148, which indicates that there is association between these variables. From Figure 4 we see that the more online experience one has (in years) the more familiar she is with age classification systems. Only participants who have reported to have more than 10 years of experience, report in majority that they are aware of age classification system (55.2%).

The overall picture drawn, is that a big percentage of parents are not aware of important tools that could help them in the parental mediation task of their children, especially during the pandemic, although the majority of the them report to be savvy users and of higher education (65.9% over 10 years of online activity and 64.3% have college or bachelor degree) (Table 1).
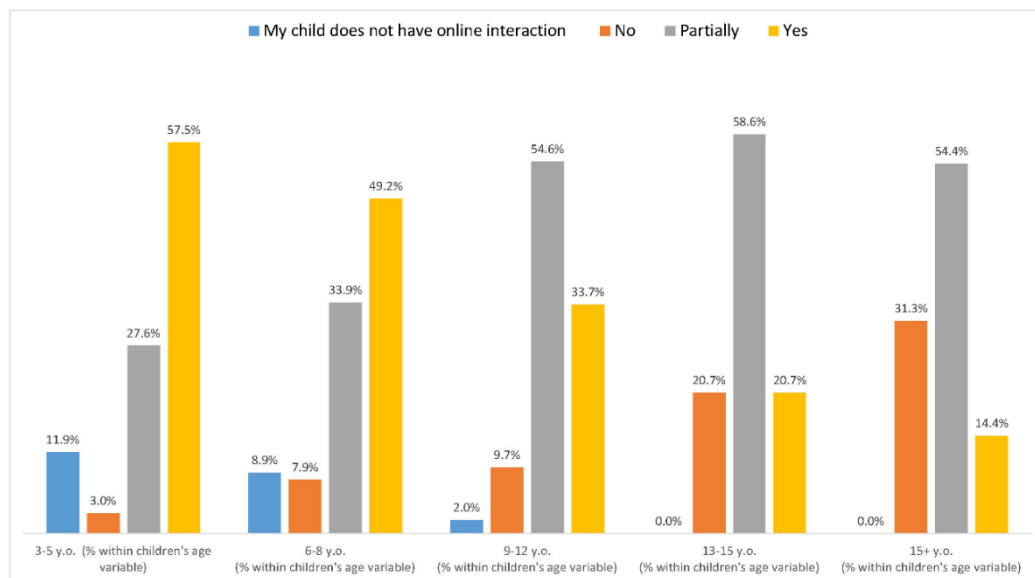

Figure 3. Comparison between children's age and if parents are in control of their online activity (Cross-tabulation analysis between children's age variable and control variable)
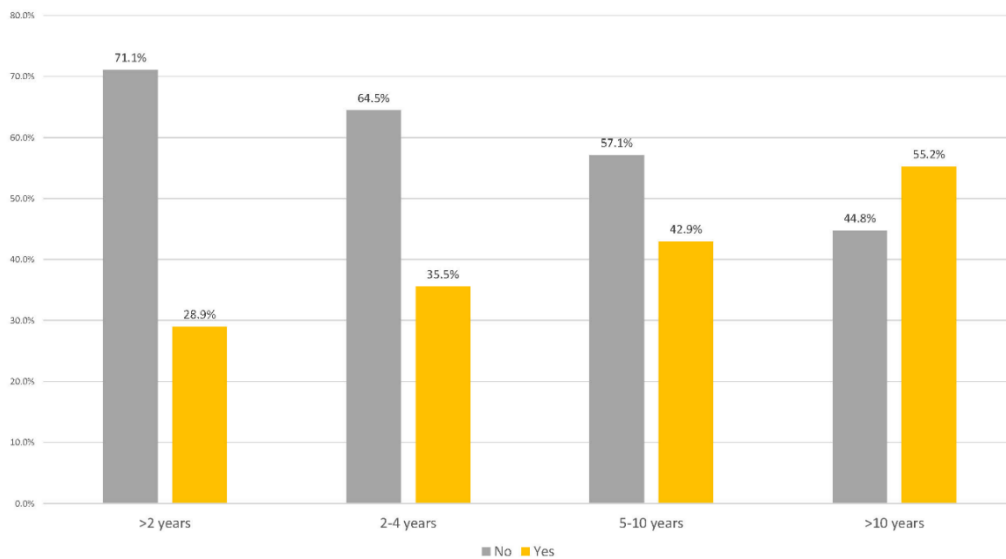
Figure 4. Comparison between the years of online experience of the participants (in years) and if they are aware of the age classification systems (Cross-tabulation analysis between years of online activity variable and the classification systems variable)

These finding reveal that there is a need for more effort on awareness raising and tools that could help parents choose what is best for their child, regarding online activities. Furthermore, it reveals that parent are not digitally literate when it comes to content classification systems.

5. LIMITATIONS

The underrepresentation of male participants might limit the generalization of the findings. On the other hand, the over-representation of female participants is a pattern that we come across regularly, as the audience demographics of the awareness platform of the Greek Safer Internet Center (SIC) comprises of approx. 65% Females and 35%Males. Furthermore, the followers of the social media accounts of the Greek SIC are 70% Females and 30% Males. As indicated from other researches (Connell, et al., 2015) mothers spend more time with their children than fathers on both weekdays and weekend days. Not surprisingly, the more time the parent reported spending with the child, the more likely they were to co-use media. Furthermore, other studies show that fathers tend to have less parental concerns compared to mothers (Yosi, 2020) (Pratt, et al., 2019). Lastly, the study is prone to certain biases, as data are self-reported from parents.

6. DISCUSSION AND CONCLUSION

Our survey showed that there is a high percentage of parents (29.8%) that report changes in the online habits of their children during the pandemic. Hence, the answer to our first research question is that a fair amount of parents, have noticed changes in the online behavior of their children. From a qualitative perspective, we indicated that some parents' responses reveal emotional distress, because of the complicated situation parents are positioned in, with their new roles during the pandemic, as educators and full-time entertainers.

Regarding our second research question, our research revealed that those parents who reported that they discuss more with their child about online safety have lower chances of reporting that their child has been affected by the pandemic. Moreover, we showed that parents who answer that report to have enough knowledge to advise their child on how to stay safe online, report less that their child has been affected by the pandemic. Overall, our research affirms that digital literacy of parents might be the key to overcome potential online risks of children, especially during the pandemic.

Another factor that has been proven crucial on how children coped with the pandemic was demographic factor and specifically the age of the child. Children aged 6-15 years old, seem to be more affected from the pandemic compared to children 3-5 and children 15+ years old. Notably, the age group 9-12, appears to be the age group, which shows the biggest percentage of parents noticing change in their child's online habits after the outbreak of the pandemic. What's more, the age group 9-12, is admittedly the crucial age where children make the first outbreak to the online world. For this specific age group, parents who report that they do not have the control or parents who report partially in control of the online activities of their children are more than parents who say that they are in control of the online activity of their children. The latter was not the case for the younger age groups.

For the older age groups 13-15 and 15+, parents who respond that they are not in control of their children online activities are more than parents who say that they are, regardless of the pandemic variable. Moreover, our research showed that the gender of the child and the residence (city or village) is independent of whether a child is more or less affected by the circumstances of the pandemic.

These findings reveal that the lockdown measures that have been taken from countries, due to the COVID-19 pandemic, accelerated the turning point where parents were in control of the online activities of their children and then began to lose it. This faster pace of changing of the online behavior of children, left parents unprepared and thus unable to react at the same pace.

Just as importantly, regarding our third research question, parents seem to be incompetent to make good informed decision about what is appropriate for their children online. This is obvious from the low percentages of parents reporting being aware of age and content classification systems online, but also from the fact that 51% of parents don't use parental control systems, either because they are not aware of how to use them or because they choose not to use them. Our statistical analysis showed that parents who have more than ten years of online experience but also male participants, are more familiar with age classification systems.

To conclude with, the COVID-19 pandemic initiated an extensive, sudden and dramatic digital transformation in the society. The pandemic forced children, to take an extraordinary digital leap. This required significant adjustments from the entire society. Parents had to take the lead in this sudden, unexpected digital transformation of children's basic education, without being prepared for it. In our survey, we showed that there is a need to put more effort on awareness raising on tools that could help parents choosing what is best for their child, regarding their online activities.

CONFLICT OF INTEREST

No potential competing interest was reported by the authors.

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