

Psychological Wellbeing of Vulnerable Children During the COVID-19 Pandemic

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Abstract

Background: A pandemic disaster has specific effects on mental health, however, little is known about those specific effects in children and adolescents. Thus, the aim of this study is to describe the psychological impact of the COVID-19 pandemic on a sample of children and adolescents and to compare the results with previous national data and other studies to determine variations. **Method:** A total of 459 children and adolescents in residential care, foster families, kinship families, or family strengthening programs under SOS Children's Villages Spain were evaluated using the SDQ to measure internalizing and externalizing problems and using KIDSCREEN-10 index to measure health related quality of life. An independent sample t-test, one-way ANOVA and the chi-square test were used. **Results:** The children and adolescents in this study had worse psychological wellbeing than those in the 2017 Spanish reference, that is, before the COVID-19 outbreak. Quality of life remained the same. No differences between care modalities were found. **Conclusion:** It is necessary to monitor the mental health status of children and adolescents to prevent possible problems. Additionally, it is necessary to use well-known assessment instruments because it is essential to have a reference to other situations and populations.

Keywords: Pandemic; children and adolescents; welfare system and at-risk families; psychological wellbeing; health-related quality of life.

Resumen

Bienestar Psicológico de Niños Vulnerables Durante la Pandemia del COVID-19. Antecedentes: una pandemia tiene efectos concretos sobre la salud mental; sin embargo, dichos efectos son poco conocidos en niños y adolescentes. El objetivo de este estudio es describir el impacto psicológico de la COVID-19 en una muestra de niños y adolescentes y comparar los resultados con datos de referencia nacionales y otros estudios. **Método:** un total de 459 niños y adolescentes en acogimiento residencial, familias de acogida extensa y ajena y en programas de fortalecimiento familiar, atendidos por Aldeas Infantiles SOS España, fueron evaluados mediante el SDQ para determinar la presencia de problemas internalizantes y externalizantes y mediante el KIDSCREEN-10 para determinar su nivel de calidad de vida. Se utilizó comparaciones de medias para muestras independientes, ANOVA y Chi-cuadrado. **Resultados:** los niños y adolescentes estudiados obtuvieron peores resultados en bienestar psicológico que los publicados como referencia nacional en España en 2017, antes del brote de la COVID-19. La calidad de vida no se ha visto afectada. No se han encontrado diferencias entre las modalidades de cuidado. **Conclusiones:** es necesario evaluar la salud mental de los niños y adolescentes para prevenir posibles problemas. Adicionalmente, es necesario usar instrumentos bien conocidos que permitan comparar los resultados con otras situaciones y poblaciones.

Palabras clave: pandemia; niños y adolescentes; sistema de protección y familias en riesgo; bienestar psicológico; calidad de vida relacionada con la salud.

Regarding the coronavirus disease 2019 (COVID-19) pandemic, Spain is the fifth most affected country in the world, having over 236,000 confirmed cases and 29,000 deaths since February 2020 (WHO, 2020). On March 14 the state of alarm was declared in Spain. A severe lockdown started, targeting every citizen regardless of age, placing children and adolescents under strict restrictions. After 7 weeks of confinement, children under 14 years old were allowed to go out for short walks once a day, representing the first step towards de-escalation from COVID-19 lockdown (Spanish Government, 2020).

A pandemic disaster has singular importance for mental health. A pandemic does not have a discrete effect because of its long term effects, and the absence of appropriate responses could lead to traumatic consequences (Sprang & Silman, 2013). In the case of children, the persistence of emotional reactions such as complicated grief remains for several years (Lee et al., 2018). However, little is known about the mental health effects of disease outbreaks on children and adolescents (Lee, 2020).

Quarantines, which are a common strategy used to control pandemics (Wang et al., 2020), constitute another way in which psychological problems are produced. A quarantine has a negative impact on health, which can be shown when comparing children who were quarantined and children who were not quarantined (Sprang et al., 2013). Additionally, the negative effects of quarantines are unsurprising and can still be detected months or years later (Jeong et al., 2016).

During the confinement associated with the COVID-19 pandemic, the number of at risk families in Spain (families with

children and without income) increased up to 170,600 (Alto Comisionado para la Lucha contra la Pobreza Infantil, 2020). On the other hand, there are 40,828 children and adolescents in the Spanish welfare system (21,283 in residential care institutions and 19,545 in foster or kinship families) (Observatorio de la Infancia, 2020). Although the number of vulnerable children and adolescents is high, there is a lack of studies about the mental health status of this population in Spain (Águila-Otero et al., 2020).

Therefore, it is necessary to pay special attention to children living in residential institutions or vulnerable families to adapt to their particular needs. School closures or the impossibility of remaining in contact with their parents may have an impact on the psychological wellbeing of these children. Regular monitoring is recommended (Goldman et al., 2020) because the psychological impact could be reduced by protective factors such as social support (Cao et al., 2020).

One common barrier to evaluating the impact of an outbreak and its effects on children is the existence of adequate previous measures for this population. A recent Italian study (Di Giorgio et al., 2020) used retrospective information, but it may be preferable to use data from similar studies or public data, if available, to reduce the bias of retrospective information.

In Spain, there is not specific data about children in the welfare system or at-risk families. However, the Spanish National Health Survey (SNHS) (Instituto Nacional de Estadística, 2017) offers public data of the mental health status of the general population of children.

The SNHS selected a representative sample of the Spanish general population using a stratified procedure (Ministerio de Sanidad, Consumo y Bienestar Social, 2017a). This sample included families from different socioeconomic levels (low, medium and high) that distributed throughout Spain. Families who met the eligibility criteria to participate were selected randomly with equal probabilities of being included in the study (Ministerio de Sanidad, Consumo y Bienestar Social, 2017a). The sample of the SNHS is not a sample of the normal population; it is a sample of the general population.

Another relevant fact to consider is how children are evaluated. The parent-report versions of questionnaires are commonly used to avoid the difficulties associated with directly evaluating children, but such questionnaires may distort the information obtained. There are parent-child discrepancies in reporting when the subject concerns emotional or clinical problems (Barbosa et al., 2002). Effective communication about COVID-19 is especially important (Dalton et al., 2020), and the information provided by children is the better option.

The Strengths and Difficulties Questionnaire (SDQ) and KIDSCREEN-10 index, a Health Related Quality of Life Questionnaire (HRQoL), are standardized well-established screening instruments for assessing general mental health and wellbeing in children and adolescents. These instruments have been used in a numerous studies worldwide, and haven been validated in different countries and for use in online-based assessment. Moreover, they have been used together to study complementary aspects of psychological health (Sprang et al., 2013; Di Giorgio et al., 2020).

The aim of this study is (a) to describe the psychological impact of the COVID-19 pandemic on a sample of children and adolescents in the Spanish welfare system or from at-risk families, under the care of SOS Children's Villages Spain and (b) to compare the results with previous national data or other studies to determine variations.

The present study established a comparison between two moments: 2017, that is, prior to the COVID-19 outbreak and 2020, that is, after the COVID-19 outbreak. Data of 2017 was drawn from the SNHS and data of 2020 refers to the present study. Differences between both moments are more likely to refer to the effect of the COVID-19 than to the differences between samples.

SOS Children's Villages, an independent and international non-governmental organization, cares for children who have lost parental care and works to strengthen the bonds in vulnerable families to prevent the separation of children.

Method

Participants

The sample included 459 children and adolescents from 2 settings: (a) the Spanish welfare system under different alternative care modalities: children in residential care and foster or kinship families; and (b) the prevention system: children from vulnerable at-risk families who still live with their parents but receive help to prevent separation.

The participants' ages ranged from 8 to 18 years ($M=13.13$ years; $SD=2.681$), and 51.4% were males. With regard to educational level, 39.4% were in primary school, 47.3% were in secondary school, and 2.4% were in high school. The rest were pursuing postcompulsory studies. A total of 59.7% were in alternative care (48.1% in residential care, 2.8% in foster families and 8.7% in kinship families), whereas 40.3% were in family strengthening programs. A group of 33 children from the residential care setting was also evaluated 3 weeks before the pandemic outbreak ($M=12.14$ years, $SD=2.578$; 48.6% males).

All children were living in different regions of Spain and were under the care of SOS Children's Villages Spain.

Instruments

A brief sociodemographic questionnaire was used to collect information on gender, age, educational level, region of residence, nationality, care modality, knowledge of COVID-19, the degree of exposure to COVID-19 and related fears, self-protection measures against the disease and daily routines during confinement.

The SDQ (Goodman, 1997) was used to measure the psychological wellbeing of children and adolescents. The self-report form, which uses a 3-point Likert response format (0-1-2), was administered to children from 8 to 18 years of age, since some studies have proven the appropriateness of using this tool with children from 9 years of age and older (Sharratt et al., 2014).

The SDQ is composed of 25 statements distributed across five subscales: emotional symptoms, peer problems, conduct problems, hyperactivity, and prosocial behavior. Each subscale ranges from 0 to 10. The first two subscales refer to internalizing problems, whereas the next two subscales refer to externalizing problems. All subscales, with the exception of the prosocial behavior domain, are summed to obtain a total SDQ score that ranges from 0 to 40, where higher scores indicate worse functioning, with the exception of prosocial behavior, where lower scores indicate worse performance.

The self-report version of the KIDSCREEN-10 index (Ravens-Sieberer et al., 2010) is a HRQoL measure for use in children and adolescents from 8 to 18 years old. In the present study, the self-report version was used. The KIDSCREEN-10 index is composed

of 10 items, each of which is rated on a 5-point response scale (1-2-3-4-5). This index includes one extra question (item 11) that explores the overall health status of children and it is not used to compute the total score. Higher scores indicate better functioning.

For both questionnaires, children were asked to report how they felt over the last week.

Procedure

The questionnaires were administered using a private online assessment platform that complied with data protection regulations. The children’s responses were collected anonymously, and participation was voluntary under the consent of the care organization. The institutional review board of SOS Children’s Villages Spain was informed of the study.

The children completed the questionnaires using their smartphones, tablets, or computers or using other devices with an internet connection. The assessment took place in May 2020 during the 8th week of confinement following the COVID-19 outbreak in Spain.

Data analysis

First, the descriptive statistics of the present sample, the SDQ and KIDSCREEN-10 index were calculated. Then, some correlations between the two measures were explored.

Second, to analyze the results of each questionnaire, different measures were computed: the raw scores for the SDQ subscales and T-score for the KIDSCREEN-10 index (M= 50, SD= 10).

Third, an independent-samples t-test (95% confidence interval (CI)) was conducted to compare the differences in the SDQ and KIDSCREEN-10 scores across gender and age. One-way ANOVA was used to study the differences between different types of settings (welfare system and prevention system). Additionally, another t-test was conducted to compare the results of this study with those of other studies. The effect sizes were calculated for all comparisons using Cohen’s d and considering 0.20, 0.50 and 0.80 as low, medium and large effect sizes, respectively (Cohen, 1998).

Additionally, since some studies use the parent-report versions of the SDQ and KIDSCREEN-10 index, and it has been proven that they offer different results, the correlation between self-report and parent-report versions was used to weight the comparisons and make them equivalent (Goodman et al., 1998; Ravens-Sieberer et al., 2010).

Fourth, the SDQ was classified into different categories according to cut-off points (Goodman, 1997), and the percentage of cases classified in each group was compared across different studies using the chi-square test and Cramers’ V to measure the effect size. Following Cohen (1998), 0.10 was considered a low effect size, 0.30 was considered a medium effect size, and 0.50 was considered a large effect size.

For all analyses, two-tailed p values were considered to determine significance.

Results

Descriptive statistics

The results of the SDQ and KIDSCREEN-10 index are presented in Table 1. The Pearson correlation coefficients between the SDQ total score and the KIDSCREEN-10 index was statistically significant ($r = -0.409, p < 0.01$). This result indicates that the higher the scores on the SDQ, the lower the scores on the KIDSCREEN-10 index, which means that worse psychological wellbeing is related to worse HRQoL. For item 11 of the KIDSCREEN-10 index (“in general, how would you say your health is”), 44.7% of respondents rated it as excellent, 27.7% as very good, 21.1% as good, 6.3% as fair and 0.2% as poor.

The sociodemographic questionnaire revealed that 93% of children received explanations of COVID-19 and information on how to act. Seventy-eight percent indicated that they frequently wash their hands, 60% indicated that they avoid physical contact with other people and respect a distance of 2 meters and 43% indicated that they use respirator masks. Children had some fears related to the pandemic and its associated circumstances. Seventy-four percent feared that the people who are close to them would be infected with the disease, 66% feared not being able to visit their families and friends, 53% feared that life would not be the same after the pandemic and 40% were worried about returning to school. The median response time to complete the survey was 15 minutes.

Gender, age and program differences

An independent-samples t-test for exploring the gender differences in the SDQ and KIDSCREEN-10 index revealed statistically significant differences for males and females in the SDQ emotional subscale ($t[457] = 4.17, p < 0.001$) and the

Table 1
SDQ and KIDSCREEN-10 results for children and adolescents 8-18 years of age (n =459)

Measure	Score	Items	M (95% CI)	SD
SDQ emotional	Raw	3, 8, 13, 16 and 24	3.34 (3.12 to 3.56)	2.36
SDQ peer problems	Raw	6, 11 ^a , 14 ^a , 19 and 23	2.39 (2.22 to 2.56)	1.90
SDQ conduct problems	Raw	5, 7 ^a , 12, 18 and 22	2.74 (2.54 to 2.94)	2.16
SDQ hyperactivity	Raw	2, 10, 15, 21 ^a and 25 ^a	5.01 (4.78 to 5.24)	2.46
SDQ prosocial	Raw	1, 4, 9, 17 and 20	7.42 (7.24 to 7.60)	1.94
SDQ internalizing	Raw	Emotional and peer	5.73 (5.41 to 6.05)	3.49
SDQ externalizing	Raw	Conduct and hyperactivity	7.76 (7.39 to 8.13)	4.04
SDQ total score	Raw	Internalizing and externalizing	13.50 (12.94 to 14.06)	6.13
KIDSCREEN-10 index	T	1, 2, 3 ^a , 4 ^a , 5, 6, 7, 8, 9 and 10	50 (49.09 to 50.91)	10

^aItems with reverse coding

KIDSCREEN-10 index ($t [457] = 2.31, p = 0.021$). Females scored higher ($n=223, M = 3.8; SD = 2.46$) than males ($n=236, M=2.9, SD = 2.17$) in emotional problems, indicating worse functioning. The T-score of the KIDSCREEN-10 index indicates that males ($n = 236, M=51.04, SD=9.89$) scored higher than females ($n = 223, M=48.89, SD = 10.01$), indicating better functioning.

An independent-samples t-test was conducted to explore the differences between different age groups in the SDQ (8 to 11 and 12 to 18 years), but no statistically significant differences were found ($t [457] = 1.12, p=0.075$). Another independent-samples t-test was conducted to explore the differences in KIDSCREEN-10 scores between children 8 to 11 years old and adolescents 12 to 18 years old ($t [457] = 3.82, p < 0.001$). Younger children ($n=133, M = 52.75, SD = 9.8$) scored higher than older children ($n = 326, M = 48.87, SD = 9.87$), indicating better functioning.

An independent-samples t-test was used to compare the SDQ and KIDSCREEN-10 scores between settings (welfare system and prevention system), but no differences were found ($SDQ t [457] = -0.25, p = 0.661$. $KIDSCREEN t [457] = 0.44, p = 0.641$). One-way ANOVA was used to analyze the differences within different types of alternative care programs, but once again, no statistically significant differences across modalities (residential care, foster care or kinship care) were found ($SDQ F [3,455] = 0.373, p = 0.773$. $KIDSCREEN F [3,455] = 0.747, p = 0.524$).

Comparison of SDQ scores before and after the COVID-19 outbreak

The sample of the present study (children from the welfare system or at-risk families) was compared with that of the 2017 SNHS (Instituto Nacional de Estadística, 2017), which evaluated the general population of children in Spain before the pandemic outbreak.

The SNHS used the parent-report form of the SDQ to explore the psychological health of children aged 4 to 14 years. Therefore, the correlation between the parent-report and self-report versions (Goodman et al., 1998) was applied to adjust for the differences between the two versions, and a subsample was created to compare children from 8 to 14 years old between both studies. The results indicate that children in the present study scored differently ($p < 0.0005$) and had medium-high effect sizes (d -Cohen 0.45-0.79) in all SDQ dimensions. These results indicate a worse performance (see Table 2).

Additionally, SDQ cut-off points were used to classify children from 8 to 14 years old into three groups: normal, borderline and abnormal. The self-report cut-off points were applied for the children in the present study, and the parent-report cut-off points were applied for the children in the SNHS. The results show that the distribution of normal and nonnormal cases was different for the children in this study and for those in the Spanish general population in 2017. Regarding the total SDQ score, 60% of cases were normal in this sample, while 87.4% were normal in that of the SNHS. These differences were statistically significant ($p < 0.01$) but small in terms of effect size (Cramer's V 0.052-0.215). The results for each SDQ dimension are presented in Table 3. The chi-square test was not performed for the SDQ prosocial subscale since 100% of cases in this study and 100% of cases in the SNHS were classified as normal.

Comparison of KIDSCREEN-10 scores before and after the COVID-19 outbreak

First, the results of a group of 33 children assessed 3 weeks prior to the outbreak and later in May 2020 were compared. The KIDSCREEN-10 index was administered at both moments. The

Table 2
Comparison of SDQ and KIDSCREEN-10 scores before and after the COVID-19 outbreak 9

Measure	Study ^b	Version ^c	n (ages)	M (SD) ^d	t-test (df)	p (two tailed)	Cohen's d
SDQ emotional problems	Present SNHS (INE, 2017)	Self-report	305 (8-14)	2.44 ^e (2.33)	7.676 (3532)	<0.0005	0.45
		Parent-report	3,229 (8-14)	1.59 (1.81)			
SDQ peer problems	Present SNHS (INE, 2017)	Self-report	305 (8-14)	2.01 ^e (1.88)	10.92 (3532)	<0.0005	0.65
		Parent-report	3,229 (8-14)	1.05 (1.44)			
SDQ conduct problems	Present SNHS (INE, 2017)	Self-report	305(8-14)	2.41 ^e (2.25)	10.92 (3532)	<0.0005	0.65
		Parent-report	3,229 (8-14)	1.32 (1.47)			
SDQ hyperactivity	Present SNHS (INE, 2017)	Self-report	305 (8-14)	4.66 ^e (2.44)	9.437 (3532)	<0.0005	0.56
		Parent-report	3,229 (8-14)	3.25 (2.51)			
SDQ total score	Present SNHS (INE, 2017)	Self-report	305 (8-14)	11.10 ^e (6.22)	13.08 (3532)	<0.0005	0.78
		Parent-report	3,229 (8-14)	7.21 (5.17)			
SDQ prosocial	Present SNHS (INE, 2017)	Self-report	305 (8-14)	7.92 ^e (1.92)	13.13 (3532)	<0.0005	0.79
		Parent-report	3,229 (8-14)	9.08 (1.40)			
KIDSCREEN-10	Present (after COVID-19) Present (before COVID-19)	Self-report	33 (8-18)	50 (10)	0.21 (64)	>0.4	0.05
		Self-report	33 (8-18)	50.4 (10.1)			
KIDSCREEN-10 ^a	Present SNHS (INE, 2017)	Self-report	305 (8-14)	50.40 ^f (9.98)	0.667 (3533)	>0.25	0.04
		Parent-report	3,230 (8-14)	50 (10)			

^aItem 7 was removed from the analysis following the methodological description of the SNHS. ^b“Present” refers to the current study. “SNHS” refers to the 2017 Spanish National Health Survey. “Present (after COVID-19)” refers to the present study. “Present (before COVID-19)” refers to the assessment 3 weeks prior to the COVID-19 outbreak. ^c“Self-report” refers to information provided by children/adolescents. “Parent-report” refers to information provided by parents. ^dRepresents the mean and standard deviation using the raw scores of the SDQ and the T scores for KIDSCREEN-10 index. ^eThe weighted mean is calculated using the index of correlation between the self-report and parent-report forms for each dimension (0.52 for the emotional subscale, 0.29 for the peer problems subscale, 0.36 for the conduct problems subscale, 0.29 for the hyperactivity subscale, 0.43 for the total difficulties score and 0.31 for the prosocial subscale) Goodman et al. (1998). ^fThe weighted mean is calculated using the index of correlation between the self-report and parent-report forms (0.54) Ravens-Sieberer et al. (2010)

comparison showed no statistically significant differences between the two moments (see Table 2).

Second, a comparison between the data from the present study and the data from the 2017 SNHS (Instituto Nacional de Estadística, 2017), the most recent wave of this survey, was conducted. The parent-report version of the KIDSCREEN-10 index was used to explore the psychological health of children aged 8 to 14 years. The SNHS did not include item 7 of the KIDSCREEN-10 index (Ministerio de Sanidad, Consumo y Bienestar Social, 2017b), thus, to replicate the results that item was removed from the comparison, and a subsample of children 8 to 14 years old was selected. Additionally, the correlation between the parent-report and self-report versions was applied (Ravens-Sieberer et al., 2010) to adjust for the differences between the two versions. Comparing our group to the 2017 Spanish general population reference, no statistically significant differences were found (see Table 2).

Discussion

The main findings of this study are as follows:

First, the children and adolescents in this study were distributed in a manner similar to the general population but had a poorer psychological status. They scored statistically significantly lower on the SDQ, with medium effect size differences, indicating that in terms of psychological health, they were worse than the Spanish general population assessed in 2017, that is, prior to the COVID-19 outbreak. These differences were higher for externalizing problems than for internalizing problems. However, although the results are slightly worse for the children assessed in this study, the distribution of cases follows the expected direction, with the majority of cases being concentrated in the normal range (the differences in the distribution of cases normal, borderline and abnormal were statistically significantly different but with a low effect size thus, it was considered that this result did not have clinical relevance). This indicates that the Spanish general population and the sample of the present study do not differ as much as expected thus, comparing them could be appropriated to study the impact of the COVID-19.

On the other hand, the poorer psychological status (SDQ scores) of children in the protection system is in line with the prevalence of psychological difficulties among children and adolescents in the

child welfare system (Bronsard et al., 2016), which is a factor to keep in mind to prevent these problems, particularly in the pandemic context. Other studies confirm this disadvantage of children in the protection system compared with those in the general population (Marquis & Flynn, 2009; Jiménez-Morago et al., 2015).

Second, the HRQoL of children and adolescents has not changed over time. The KIDSCREEN-10 scores were the same before the COVID-19 outbreak and after 8 weeks of quarantine. Moreover, considering the national data, there have been no statistically significant differences in HRQoL since 2017. O'Brien (2011) studied children in the protection system and founded out that HRQoL measures are sensitive to changes when there is a significant intervention. The absence of differences in the present study could be interpreted as no statistically significant effect of the COVID-19 on HRQoL of children and adolescents.

The KIDSCREEN-10 scores can decrease over time because the parent-child agreement is moderate to low (Rajmil et al., 2013), and these authors recommend the use of direct assessments as this study used. The use of such assessments could be a reason for the absence of differences. Also, it might be hypothesized that HRQoL measures are general measures that are not sufficiently sensitive to changes over time.

The results obtained are inline those of Gander et al. (2019). They studied children and adolescents in welfare institutions and did not find differences in HRQoL between institutionalized children and a school sample. Additionally, they did not observe differences in institutionalized children at two assessment time points.

Third, no differences between children and adolescents in the welfare (living in residential care, kinship families or foster families) and prevention systems (from vulnerable families receiving help from family strengthening programs) were found, which is in line with the findings of Gander et al. (2019). Children in the protection system and children outside the protection system had the same performance.

Additionally, no differences between ages in the SDQ scores were found, which is consistent with the original validation performed by Goodman (1997), in which no differences were found for children older than 11 years old. Girls scored higher in emotional problems as noted by other authors (Fonseca-Pedrero et al., 2011; Ortuño-Sierra et al., 2014), but no other gender differences were found. Comparing the KIDSCREEN-10 scores, this study found that males and younger children seemed to have

Table 3
SDQ classification before and after the COVID-19 outbreak

Measure	Study ^a	Version ^b	n (ages)	Normal n (%)	Borderline n (%)	Abnormal n (%)	X ² (df)	p (two tailed)	Cramer's V
SDQ emotional	Present SNHS (INE, 2017)	Self-report	305 (8-14)	240 (78.7)	32 (10.5)	33 (10.8)	9.578 (2)	<0.01	0.052
		Parent-report	3,229 (8-14)	2,755 (85.3)	225 (7)	249 (7.7)			
SDQ peer problems	Present SNHS (INE, 2017)	Self-report	305 (8-14)	228 (74.8)	55 (18)	22 (7.2)	53.256 (2)	<0.001	0.122
		Parent-report	3,229 (8-14)	2,800 (86.7)	212 (6.6)	217 (6.7)			
SDQ conduct problems	Present SNHS (INE, 2017)	Self-report	305 (8-14)	190 (62.3)	43 (14.1)	72 (23.6)	76.041 (2)	<0.001	0.146
		Parent-report	3,229 (8-14)	2,627 (81.4)	311 (9.6)	291 (9)			
SDQ hyperactivity	Present SNHS (INE, 2017)	Self-report	305 (8-14)	163 (53.4)	47 (15.4)	95 (31.1)	131.633 (2)	<0.001	0.192
		Parent-report	3,229 (8-14)	2,621 (81.2)	238 (7.4)	370 (11.5)			
SDQ total score	Present SNHS (INE, 2017)	Self-report	305 (8-14)	183 (60)	66 (21.6)	56 (18.4)	163.997 (2)	<0.001	0.215
		Parent-report	3,229 (8-14)	2,821 (87.4)	213 (6.6)	195 (6)			

^a“Present” refers to the current study. “SNHS” refers to the 2017 Spanish National Health Survey. ^b “Self-report” refers to information provided by children/adolescents. “Parent-report” refers to information provided by parents

a higher quality of life than females or older children, which is in line with the original validation of the questionnaire (Ravens-Sieberer et al., 2010).

Children have been affected by the COVID-19 pandemic, but the specific effects are not known. Some studies with no published data provide information about distraction, irritability and fear. Questionnaires for parents to explore DSM-5 criteria were developed to evaluate anxiety disorders and depression (Jiao et al., 2020), but there are no data from standard questionnaires such as the SDQ or KIDSCREEN-10 index. The psychological effects of a pandemic similar to COVID-19 are not known. The higher scores on the SDQ in the present study are in line with the health related disorders observed by Sprang et al. (2013) in pandemic disasters.

There is scarce knowledge of the impact of disasters on children (Klein et al., 2009). The impact of the short and long-term effects of such disasters is not known and will depend on the characteristics and persistence of the threat. Honda et al. (2019) reported that behavioral problems of children related to the Great East Japan Earthquake in March 2011 lasted at least 3 years. Similar data with regard to the 2010 Eyjafjallajökull eruption have been reported (Hlodversdottir et al., 2018), and the mental health problems experienced by the children exposed to the eruption persisted for up to three years after the disaster.

In summary, it is necessary to monitor the mental health status of children to prevent possible problems. In children in protection or prevention systems, such monitoring could be mandatory to identify at-risk children and treat them. It is necessary to use well-known assessment instruments because it is necessary to have a reference to other situations and populations. Finally, it is also necessary for information to be given by the child or adolescent because the different points of view of caregivers might result in distortion.

This study has the following limitations: the lack of data from the welfare system and at-risk families, forced us to establish comparisons with the general population instead of using data from more similar populations. Nevertheless, comparing our results with those of the SNHS is appropriated because most of the sample characteristics of the present study are represented in those of the SNHS. Additionally, the sample was selected in an incidental manner because of the sense of urgency, thus the extent to which it is representative of the welfare system or at-risk family populations is not known. Furthermore, there is a lack of studies covering the entire range of children and adolescents 8 to 18 years old. Finally, when assessing children and adolescents, the high rate of usage of parent-report versions made comparing our results with those of other studies more difficult.

References

- Águila-Otero, A., Bravo, A., Santos, I., & Del Valle, J. F. (2020). Addressing the most damaged adolescents in the child protection system: An analysis of the profiles of young people in therapeutic residential care. *Children and Youth Services Review, 112*, 104923. <https://doi.org/10.1016/j.chilyouth.2020.104923>
- Alto Comisionado para la Lucha contra la Pobreza Infantil (2020, August 28). Los hogares sin ingresos con al menos un niño, niña o adolescente aumentan durante el confinamiento [Households with children and without income increased during confinement]. <https://www.comisionadopobrezainfantil.gob.es/es/los-hogares-sin-ingresos-con-al-menos-un-ni%C3%B1o-ni%C3%B1a-o-adolescente-aumentan-durante-el-confinamiento>
- Barbosa, J., Tannock, R., & Manassis, K. (2002). Measuring anxiety: Parent-child reporting differences in clinical samples. *Depression and Anxiety, 15*(2), 61-65. <https://doi.org/10.1002/da.10022>
- Bronsard, G., Alessandrini, M., Fond, G., Loundou, A., Auquier, P., Tordjman, S., & Boyer, L. (2016). The prevalence of mental disorders among children and adolescents in the child welfare system: A systematic review and meta-analysis. *Medicine, 95*, e2622. <https://doi.org/10.1097/MD.0000000000002622>
- Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research, 287*, 112934. <https://doi.org/10.1016/j.psychres.2020.112934>
- Cohen, J. (1998). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Dalton, L., Rapa, E., & Stein, A. (2020). Protecting the psychological health of children through effective communication about COVID-19. *The Lancet. Child & Adolescent Health, 4*(5), 346-347. [https://doi.org/10.1016/S2352-4642\(20\)30097-3](https://doi.org/10.1016/S2352-4642(20)30097-3)
- Di Giorgio, E., Di Riso, D., Mioni, G., & Cellini, N. (2020, July 4). The interplay between mothers' and children behavioral and psychological factors during COVID-19: an Italian study. *PsyArXiv*. <https://psyarxiv.com/dqk7h/>
- Fonseca-Pedrero, E., Paino, M., Lemos-Giráldez, S., & Muñiz, J. (2011). Prevalencia de la sintomatología emocional y comportamental en adolescentes españoles a través del strengths and difficulties questionnaire (SDQ) [Prevalence of emotional and behavioral symptoms in Spanish adolescents using the strengths and difficulties questionnaire (SDQ)]. *Revista de Psicopatología y Psicología Clínica, 16*(1), 15-25. <https://doi.org/10.5944/rppc.vol.16.num.1.2011.10348>
- Gander, T., Boonmann, C., Fegert, J. M., Kölch, M., Schmeck, K., Di Gallo, A., Dölitzsch, C., & Schmid, M. (2019). Predictive factors for changes in quality of life among children and adolescents in youth welfare institutions. *Social Psychiatry and Psychiatric Epidemiology, 54*(12), 1575-1586. <https://doi.org/10.1007/s00127-019-01724-8>
- Goldman, P. S., van Ijzendoorn, M. H., & Sonuga-Barke, E. J. S. (2020). Lancet institutional care reform commission group. The implications of COVID-19 for the care of children living in residential institutions. *The Lancet Child & Adolescent Health, 4*, e12. [https://doi.org/10.1016/S2352-4642\(20\)30130-9](https://doi.org/10.1016/S2352-4642(20)30130-9)
- Goodman, R. (1997). The strengths and difficulties questionnaire: A research note. *Journal of Child Psychology and Psychiatry, and Allied Disciplines, 38*(5), 581-586. <https://doi.org/10.1111/j.1469-7610.1997.tb01545.x>
- Goodman, R., Meltzer, H., & Bailey, V. (1998). The strengths and difficulties questionnaire: A pilot study on the validity of the self-report version. *European Child & Adolescent Psychiatry, 7*(3), 125-130. <https://doi.org/10.1007/s007870050057>
- Hlodversdottir, H., Thorsteinsdottir, H., Thordardottir, E. B., Njardvik, U., Petursdottir, G., & Hauksdottir, A. (2018). Long-term health of children following the Eyjafjallajökull volcanic eruption: A prospective cohort study. *European Journal of Psychotraumatology, 9*(sup2), 1442601. <https://doi.org/10.1080/20008198.2018.1442601>
- Honda, Y., Fujiwara, T., Yagi, J., Homma, H., Mashiko, H., Nagao, K., Okuyama, M., Ono-Kihara, M., & Kihara, M. (2019). Long-term impact of parental post-traumatic stress disorder symptoms on mental health of their offspring after the great east Japan earthquake. *Frontiers in Psychiatry, 10*, 496. <https://doi.org/10.3389/fpsy.2019.00496>
- Instituto Nacional de Estadística (INE) (2017) (2020, May 25). Encuesta nacional de salud 2017. Cuestionario (menores de 15 años) [Spanish national health survey 2017. Questionnaire under 15 years]. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C

- &cid=1254736176783&menu=resultados&idp=1254735573175#!tab-s-1254736195650
- Jeong, H., Yim, H. W., Song, Y. J., Ki, M., Min, J. A., Cho, J., & Chae, J. H. (2016). Mental health status of people isolated due to middle east respiratory syndrome. *Epidemiology and Health*, 38, e2016048. <https://doi.org/10.4178/epih.e2016048>
- Jiao, W. Y., Wang, L. N., Liu, J., Fang, S. F., Jiao, F. Y., Pettoello-Mantovani, M., & Somekh, E. (2020). Behavioral and emotional disorders in children during the COVID-19 epidemic. *The Journal of Pediatrics*, 221, 264-266.e1. <https://doi.org/10.1016/j.jpeds.2020.03.013>
- Jiménez-Morago, J. M., León, E., & Román, M. (2015). Adversity and adjustment in children in institutions, family foster care, and adoption. *The Spanish Journal of Psychology*, 18, E45. <https://doi.org/10.1017/sjp.2015.49>
- Klein, T. P., Devoe, E. R., Miranda-Julian, C., & Linas, K. (2009). Young children's responses to September 11th: The New York City experience. *Infant Mental Health Journal*, 30(1), 1-22. <https://doi.org/10.1002/imhj.20200>
- Lee, J. (2020). Mental health effects of school closures during COVID-19. *The Lancet. Child & Adolescent Health*, 4(6), 421. [https://doi.org/10.1016/S2352-4642\(20\)30109-7](https://doi.org/10.1016/S2352-4642(20)30109-7)
- Lee, S. H., Nam, H. S., Kim, H. B., Kim, E. J., Noh, J.-W., & Chae, J.-H. (2018). Factors associated with complicated grief in students who survived the Sewol ferry disaster in South Korea. *Psychiatry Investigation*, 15(3), 254-260. <https://doi.org/10.30773/pi.2017.05.04>
- Marquis, R. A., & Flynn, R. J. (2009). The SDQ as a mental health measurement tool in a Canadian sample of looked-after young people. *Vulnerable Children and Youth Studies*, 4(2), 114-121. <https://doi.org/10.1080/17450120902887392>
- Ministerio de Sanidad, Consumo y Bienestar Social (2017a) (2020, May 20). Encuesta nacional de salud de España 2017. Metodología [Spanish national health survey 2017. Methodology]. https://www.mscbs.gob.es/estadEstudios/estadisticas/encuestaNacional/encuestaNac2017/ENSE17_Metodologia.pdf
- Ministerio de Sanidad, Consumo y Bienestar Social (2017b) (2020, May 20). Encuesta nacional de salud de España/Encuesta europea de salud en España. Serie histórica. Definición de variables 1987-2017 [Spanish national health survey. Historical series. Definition of variables 1987-2017]. <https://pestadistico.inteligenciadegestion.mscbs.es/publicoSNS/Comun/DescargaDocumento.aspx?IdNodo=17189>
- O'Brien, M. (2011). Measuring the effectiveness of routine child protection services: The results from an evidence based strategy. *Child & Youth Services*, 32(4), 303-316. <https://doi.org/10.1080/0145935X.2011.639239>
- Observatorio de la Infancia (2020). Boletín de datos estadísticos de medidas de protección a la infancia [Statistical data of child welfare], Vol. 21. Ministerio de Derechos Sociales y Agenda 2020. https://observatoriodelainfancia.vpsocial.gob.es/productos/pdf/Boletin_Proteccion_21_Accesible.pdf
- Ortuño-Sierra, J., Fonseca-Pedrero, E., Paíno, M., & Aritio-Solana, R. (2014). Prevalencia de síntomas emocionales y comportamentales en adolescentes españoles [Prevalence of emotional and behavioral symptomatology in Spanish adolescents]. *Revista de Psiquiatría y Salud Mental*, 7(3), 121-130. <https://doi.org/10.1016/j.rpsm.2013.12.003>
- Rajmil, L., López, A. R., López-Aguilà, S., & Alonso, J. (2013). Parent-child agreement on health-related quality of life (HRQoL): A longitudinal study. *Health and Quality of Life Outcomes*, 11(1), 101. <https://doi.org/10.1186/1477-7525-11-101>
- Ravens-Sieberer, U., Erhart, M., Rajmil, L., Herdman, M., Auquier, P., Bruil, J., Power, M., Duer, W., Abel, T., Czemy, L., Mazur, J., Czimbalmos, A., Tountas, Y., Hagquist, C., Kilroe, J., & European KIDSCREEN Group (2010). Reliability, construct and criterion validity of the KIDSCREEN-10 score: A short measure for children and adolescents' well-being and health-related quality of life. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation*, 19(10), 1487-1500. <https://doi.org/10.1007/s11136-010-9706-5>
- Sharratt, K., Foca, L., Gavriluta, C., Jones, A., & Asiminei, R. (2014). Dimensionality and construct validity of the Romanian self-report strengths and difficulties questionnaire (SDQ). *Romanian Journal of Applied Psychology*, 16(2), 33-39. http://www.rjap.psihologietm.ro/Download/rjap162_2.pdf
- Spanish Government (2020, May 22). Estado de alarma. Medidas crisis sanitaria COVID-19 [State of alarm. COVID-19 health crisis measures]. https://administracion.gob.es/pag_Home/atencionCiudadana/Estado-de-alarma-crisis-sanitaria.html#.Xs8rsjrHzIU
- Sprang, G., & Silman, M. (2013). Posttraumatic stress disorder in parents and youth after health-related disasters. *Disaster Medicine and Public Health Preparedness*, 7(1), 105-110. <https://doi.org/10.1017/dmp.2013.22>
- Wang, G., Zhang, Y., Zhao, J., Zhang, J., & Jiang, F. (2020). Mitigate the effects of home confinement on children during the COVID-19 outbreak. *Lancet* (London, England), 395(10228), 945-947. [https://doi.org/10.1016/S0140-6736\(20\)30547-X](https://doi.org/10.1016/S0140-6736(20)30547-X)
- World Health Organization (WHO) (2020, May 25). WHO Coronavirus Disease (COVID-19) Dashboard. <https://covid19.who.int/>