

# Internalized and Externalized Problematics in Pre-Schoolers and Their Association to the Emotional State of Their Caregivers, Before and During COVID-19 Quarantine

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## Abstract

*This research aims at determining the internal and external problematics from two to five years old kids face and its association to their caregivers' emotional state, before and during COVID-19 quarantine. Regarding the methodology of the study, this is a correlational study with a quantitative scope. Ninety six (96) caregivers participated on it; and the instruments applied were a sociodemographic data questionnaire, a screening questionnaire for depressive and anxious symptoms for adults, and a screening questionnaire for one and a half to five years old kids. With respect to results, the preschoolers presented more internalizing and externalizing symptoms during quarantine than before confinement. About caregivers' emotional state before and during the quarantine, this was related to the kids' symptoms in both phases. Concerning conclusions, two to five years old children presented more symptoms during confinement due to COVID-19. It is necessary to conduct studies that observe the existence of emotional and behavioral problems in preschoolers after quarantine because of COVID-19.*

**Keywords:** *Internalized Problems, Externalized Problems, Preschoolers, Emotional State, Caregivers, Quarantine, COVID 19.*

## Introduction

The outbreak of SARS-CoV-2 infection cause of coronavirus disease 2019 (COVID-19) emerged in Wuhan City, China, in December 2019. Due to its rapid spread, the World Health Organization (WHO, 2020) declared it a pandemic on March 11, 2020. This situation forced to take measures to reduce the spread of contagions; most countries in the world for the first time implemented quarantines (Clemente-Suárez, et al., 2021). Although social isolation and quarantine measures have shown positive effects in reducing the risk of contagion, negative effects on the mental health and psychological well-being of people have also been documented (Brooks, et al., 2020), however, these effects vary among population groups, age groups, economic and labor conditions, and other aspects (Pathak et al. 2020; Alliance for the Protection of Children and Adolescents in Humanitarian Action, 2019).

It has been pointed out that the most serious sequelae of COVID are more common in adults than in children; however, Pathak, et al. (2020) argue that the population of infected children is larger than the statistics shown and that health care systems are not prepared to provide the required care. They also explain that the risk of infection in children will vary according to the socio-economic position of the child's family and its geographical area of influence, for this reason it is estimated that children from low-income families are at greater risk of infection because of the type of work of the parents, i.e., manual and/or service work, which does not allow them to work virtually. On the other hand, De Souza, et al. (2020) state that even though epidemiological analyses indicate that infection rates in children are lower compared to adults and

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older adults, social distancing, changes in routine and virtual classes mean that children are exposed to other types of problems, for example, problems related to their emotions and behavior. In fact, it is estimated that about 860 million children and adolescents will be psychologically affected by quarantine measures (Orgilés, et al., 2020).

Therefore, research has been conducted around the world to determine the psychological effects of Covid-19 associated with mandatory quarantines and other situations resulting from the pandemic; such research has been concentrated mainly in Western countries. Brooks et al. (2020) found that the lasting negative effects on the psyche of the subject are a consequence of the prolongation of quarantine, fear of the risk of infection, frustration, lack of basic supplies, misinformation, economic problems, among others. Similarly, there are other stressors associated with psychological impact on children and adolescents, such as boredom, misinformation, lack of contact with peers and teachers, lack of personal space in the home and decreased family income (Wang, et al., 2020; Broche-Pérez, et al., 2021).

Another point of view, Gómez-Becerra, et al. (2020) found that parents perceived their children to be more nervous, irritable and sad during confinement, in addition to this, they found that the longer the confinement time, the worse the psychological state of children and adolescents. Orgilés, et al. (2020) carried out a study to determine the emotional impact of quarantine on children and adolescents in Italy and Spain. From this study they were able to establish that most parents perceive changes in the emotional state and behavior of their children during quarantine compared to before quarantine, and they also emphasize that the emotional and behavioral symptoms of children and adolescents in both countries seem to be positively related to the well-being of parents, specifically to their level of stress. Along the same lines, Palacio-Ortiz, et al. (2020) state that children and adolescents cope better with isolation and confinement when they are with a stable and calm adult or caregiver; on the other hand, when children and adolescents live with parents or caregivers who present anxious or depressive symptoms, the probability of adverse effects on the mental health of minors increases.

The relationship between emotional and behavioral symptoms in preschool children and parental mental health has been described previously, however, there are few studies that review this aspect in the quarantine. Davis, et al. (2015) describes that the mental health of the parents, especially the mother, significantly influences the occurrence or not of internalizing symptoms, such as sadness, irritability, fear, and somatic problems. Externalizing problems have also been associated with the emotional state of the parents, Torres, et al., (2018) point out that parental depression and anxiety are risk factors for the appearance of this type of problems that generally manifest themselves in the form of tantrums, aggressiveness, oppositional behaviors, impulsivity and hyperactivity in preschool children. This relationship can be explained taking into account that, in early childhood, the child does not possess sufficient capacity to regulate his emotional states by himself, therefore, he generally responds with intense emotional reactions. In this sense, affective regulation takes place in the context of a relationship with another human being, especially with parents or caregivers (Armus, et al., 2012; Papalia and Martorell, 2017).

The physical and emotional contact between caregivers and the child allows the infant to establish calm in situations of need and frustration and to learn to regulate their emotions by themselves, however, parents with depressive and anxious symptoms find it a little more difficult to respond to the intense emotional reactions of their children by the very nature of their symptoms (Wu, et al., 2019).

It should be noted that, in the face of the current pandemic crisis, stress, anxiety, sleep disorders, depression, and other psychological problems in adults have multiplied in relation to normative life conditions (Sandín, et al., 2020), so it is worth asking: did internalized and externalized problems in preschool children increase during the quarantine? Is the emotional state of caregivers related to the appearance of these problems? Although some international studies have described the consequences of isolation situations in the child and adolescent population, few studies offer conclusive answers as to the psychological effects of a global pandemic on children and adolescents (Mansoor et al., 2022).

In this sense, the absence of conclusive research on the consequences of quarantine on preschool children, but above all, on the psychological effects of the pandemic, raises the need to expand this type of studies; Although there is research on acute or post-traumatic stress, it is not sufficient since it does not indicate other types of problems that children may be experiencing in the midst of the isolation situation, behavioral or emotional manifestations that could occur in later stages, nor an estimate of the percentage of children affected (Espada, et al. , 2020). Other authors, such as Rajkumar (2020), Fernandes (2020) and Sanchez (2021) agree that the number of studies on the effects of confinement on people's mental health is limited, as well as the quality of the literature that can be used is insufficient. For this reason, there is a need for more research focused on studying the impact on mental health of confinement resulting from the COVID-19 pandemic, especially in countries where mental health services are less developed, since it is possible that the effects on the population may be greater; likewise, it is essential that the research carried out evaluate the consequences on vulnerable populations such as children and adolescents, people living in rural areas or those with difficult access, who have problems in accessing health services (Rajkumar, 2020).

Thus, the main objective of this research is to determine the internalized and externalized problems in children aged two to five years and their association with the emotional state of their caregivers, before and during the quarantine due to COVID-19.

## Methodology

### *Design*

This is a cross-sectional, quantitative, correlational study, because it allows establishing the degree of association or linkage between two or more variables to be measured for subsequent quantification and analysis. By establishing links between correlational research variables has a predictive and explanatory value, as well as descriptive and relational, these particularities allow the analysis of internalized and externalized problems in preschoolers and their relationship with the emotional state of their caregivers, before and during quarantine (Hernández, Fernández & Baptista, 2014).

### *Participants*

Ninety-six (96) boys and girls between the ages of two (2) and five (5) years old, and 96 caregivers participated, with different levels of education, such as primary, high school, technical, professional with postgraduate studies and even some with no schooling.

### *Procedure*

The Child Development Centers – (CDI, by its Spanish meaning) were visited to socialize the objective and scope of the project, then the project was socialized with the children's caregivers and those who wished to participate could express it that day and sign the informed consents; then the parents answered the evaluation instruments before the quarantine in person and during the quarantine the instruments were answered by telephone call, where the researchers in a Google questionnaire were collecting information provided by the caregivers about themselves and about the children. It was explained to the caregivers that the questionnaires did not contain good or bad answers, and that the information provided in the tests was strictly confidential to people outside the project.

### *Instruments*

Sociodemographic questionnaire: Participants completed a sociodemographic questionnaire that included gender, date of birth, current occupation, level of education, partner's occupation, and partner's level of education.

Child Behavior Checklist (CBCL 1½-5, Achenbach & Rescorla, 2000): is a self-administered instrument for children between the age range of one and a half (1½) to five years, which should be answered by parents or significant caregivers who observe the child in their environment, since it describes the child's

functioning in different situations. This instrument has a response scale with three possible choices which are 0=Not true, 1=Somewhat sometimes, 2=Very true or true frequently, in this way the caregiver must indicate the degree of certainty of the statement in relation to the child. The test is composed of 100 items, which make up seven syndromic scales that are emotional reactivity, anxiety/depression, somatic complaints, withdrawal, sleep problems, attention problems and aggressive behavior; the test is also composed of three higher order dimensions: internalized scale, externalized scale and total.

Beck Depression Inventory (BDI-II, Beck, Steer, & Brown, 2009): is a self-report questionnaire consisting of twenty-one items. It is applied to individuals from thirteen years of age and older. This inventory reports the presence of depressive symptoms in the evaluatee, and their degree of severity. The test has a Likert-type scale ranging from 0 to 3, except for items 16 and 18.

*Costello Comrey Depression and Anxiety Scales (Costello & Comrey, 1976):*

Data analysis: Statistical Package for Social Science (SPSS) V. 20 statistical software was used to calculate the means of the total scores obtained at the two times: before quarantine by COVID-19 and at quarantine. Student's t was calculated for comparison of the scores obtained at the two times. Pearson's correlation was used to calculate the relationship between variables.

## Results

### *Anxiety and Depression of Caregivers Before Quarantine and in Quarantine*

Compared to symptomatic presentation before quarantine, caregivers presented significantly more depressive ( $p < 0.00$ ) and anxious ( $p < 0.00$ ) symptomatology in quarantine. For more information see Table 1.

**Table 1. Caregivers' Symptoms Before in Quarantine**

Anxiety and Depression	Media	N°	Standard deviation	P
Anxiety before	2,8542	96	2,11251	0.000
Anxiety quarentine	3,9792	96	1,87493	
Depression before	3,9362	94	3,90425	0.000
Depression quarentine	8,0745	94	5,85899	

### *Internalized Symptoms of Preschoolers Before Quarantine and in Quarantine*

Preschoolers presented significantly more emotional reactivity ( $p < 0.00$ ), more anxiety/depression symptoms ( $p < 0.00$ ), and more withdrawal ( $p < 0.00$ ), in the quarantine. Also, they had more sleep problems ( $p < 0.5$ ) and more somatic symptoms ( $p < 0.5$ ). Table 2 shows this information in more detail.

**Table 2. Internalized/Externalized Symptoms of Children Before Quarantine and in Quarantine**

Internalized/externalized symptoms	Media	N	Standard deviation	P
Emotional reactivity before	1,2526	95	1,52265	0.000
Emotional reactivity before quarentine	2,7263	95	2,56176	
Anxiety and depression symtomps before	2,0833	96	1,83915	0.000
Anxiety and depression symtomps quarentine	3,9792	96	2,86900	
Somatic symptoms before	1,4583	96	1,77655	.020
Somatic symptoms quarentine	1,9688	96	2,17862	
Withdrawal before	,7979	94	1,41862	0.000
Withdrawal quarentine	2,1702	94	1,91563	

Sleeping problems before	2,2083	96	2,20008	.007
Sleeping problems quarantine	2,9375	96	2,52904	

### *Preschoolers' Externalizing Symptoms Before Quarantine and in Quarantine*

Preschoolers presented significantly more attention problems ( $p < 0.00$ ), more aggressive behavior ( $p < 0.00$ ), more challenging behavior ( $p < 0.00$ ), and more autism spectrum symptoms ( $p < 0.00$ ), during COVID quarantine, than before quarantine. Table 3 shows this information in more detail.

**Table 3. Externalizing Symptoms of Children Before Quarantine and in Quarantine**

Internalized/externalized symptoms	Media	N	Standard deviation	P
Attention problems before	1,9167	96	1,40425	0.000
Attention problems quarantine	3,9375	96	1,69713	
Aggressive behavior before	5,7474	95	4,13848	0.000
Aggressive behavior quarantine	10,4421	95	6,68710	
Challenging behavior before	2,9158	95	2,12715	0.000
Challenging behavior quarantine	4,4947	95	3,15174	
Autism spectrum symptoms before	1,5638	94	2,08713	0.000
Autism spectrum symptoms quarantine	3,8617	94	2,58865	

### *Association Between Internalized/Externalized Symptoms of Children and Internalized Symptoms of Caregivers Before Quarantine*

Caregivers' depressive symptoms were related to the presence of anxious and depressive symptoms ( $p=.000$ ), sleep problems ( $p=.000$ ), withdrawal ( $p=.000$ ), somatic symptoms ( $p=.000$ ), emotional reactivity ( $p=.000$ ), aggressive behavior ( $p=.000$ ) and ASD symptoms ( $p=.000$ ) in children before quarantine. Likewise, caregiver anxiety was related to anxiety and depression symptoms ( $p=.000$ ), withdrawal ( $p=.001$ ) and ASD symptoms ( $p=.000$ ) in girls and girls. See Table 4.

**Table 4. Association Between Caregiver and Child Symptoms Before Quarantine**

Association between caregiver and child symptoms Association between caregiver and child symptoms	Caregivers' Depression		Caregivers' anxiety	
	Pearson correlation	P	Pearson correlation	P
<b>Anxiety and Depression symptoms</b>	.606	.000	.399	.000
<b>Sleeping problems</b>	.361	.000	.041	.695
<b>Withdrawal</b>	.453	.000	.337	.001
<b>Somatic symptoms</b>	.392	.000	.265	.009
<b>Emocionally reactive</b>	.432	.000	.258	.011
<b>Aggressive behavior</b>	.528	.000	.210	.041
<b>Attention problems</b>	.282	.006	.088	.393
<b>TEA symptoms</b>	.559	.000	.389	.000

### *Association Between Internalizing/Externalizing Symptoms of Children and Externalizing Symptoms of Caregivers in Quarantine*

Depressive symptoms in caregivers predicted the presence of sleep problems ( $p=.001$ ), emotional reactivity ( $p=.001$ ) and attention problems ( $p=.014$ ) in children after quarantine. See Table 6.

Table 6. Association Between Caregiver Symptoms and Children After Quarantine

Association between caregiver and child symptoms after quarantine	Caregivers' depression		Caregivers' anxiety	
	Pearson correlation	P	Pearson correlation	P
Anxiety and Depression symptoms	.265	.009	.268	.008
Sleeping problems	.348	.001	.219	.032
Withdrawal	.039	.708	.167	.104
Somatic symptoms	.158	.125	.046	.655
Emocionally reactive	.335	.001	.190	.064
Agressive behavior	.140	.176	.056	.586
Attention problems	.250	.014	.152	.140

## Discussion

The current study aimed at determining the internalized and externalized problems in children aged two to five years and their association with the emotional state of their caregivers, before and during the quarantine due to COVID-19. Certainly, the recent international literature contains numerous studies on this line, which expose the state of mental health in various population groups. However, although international research is able to provide fundamental and empirical information on this phenomenon, contextualized studies that allow a more precise description of the state of mental health at the national and departmental levels are important. Therefore, this research is proposed as an approach to the contextualized study of the characteristics of mental health in children in the department of Sucre (Colombia) and their caregivers.

Initially, it was found that, compared to symptomatic presentation before quarantine, caregivers presented significantly more depressive and anxious symptomatology during quarantine. These data are congruent with those reported in recent studies, particularly Rodriguez, et al. (2020), who point out that even though quarantine has proven to be an effective measure to prevent the number of infections, the isolation situation is related to an increase in mental health disturbances. For their part, Li, et al. (2020) concluded that people experienced that both positive and negative emotions intensified in quarantine; while positive emotions such as happiness and satisfaction decreased. Similarly, Özdin and Bayrak, (2020) agree with the above approach, and state that quarantine and other conditions accompanying a pandemic can be a source of stress for children, adolescents and adults, these authors, evaluated the levels of depression and anxiety in Turkish population during the coronavirus pandemic and explored the factors that facilitate its occurrence; They also found that being female, living in urban areas and having a psychiatric history were risk factors for experiencing anxiety during the pandemic, while living in urban areas was a risk factor for depression.

Indeed, the presence of psychological sequelae due to the impact of Covid-19 and isolation as a result of quarantines has also been latent in the child population. According to Loades, et al., (2020) children and adolescents, due to the characteristics of their age, under normal conditions, are exposed to a higher risk of developing mental health problems compared to adults. However, quarantine, social isolation and restrictions on usual social contact probably lead to increased rates of depression and anxiety during and after the isolation period. The findings of this research confirm this hypothesis, as anxiety/depression symptoms in preschool children were more significant in the quarantine period compared to data collected before quarantine.

As well as anxiety and depression, other research has reported an increase in the appearance of other internalizing symptoms and some externalizing symptoms in childhood. Larraguibel, et al. (2021) studied the psychological impact of the Covid-19 pandemic in Chilean preschool and school children; they found a high frequency of irritability, disobedience, somatic complaints, appetite changes, sadness, lack of desire and sleeping problems in the participants due to the pandemic. Erades and Sabuco (2020) found that the

greatest difficulties experienced by Spanish children during covid-19 confinement centered on emotional reactions (69.6%), sleep problems (31.3%) and behavioral reactions (24.1%). In line with previous findings, children in this study presented significantly more emotional reactivity, withdrawal, attention problems, aggressive behavior, challenging behavior, autism spectrum symptoms, sleep problems, and somatic symptoms compared to before quarantine. It has been shown that this type of problems during childhood largely model behavioral and emotional adjustment in later stages (Jiménez, et al., 2019), for this reason, it would be important to take into account these data for the development of interventions, which decrease the presence of externalized and internalized symptoms in children and consequently the possibility that these are maintained over time.

When analyzing the relationships between internalizing and externalizing symptoms in children and the presence of anxiety/depression in their caregivers during the quarantine period, the results show a statistically significant relationship. As has been described in other research that has studied this relationship in normative conditions, Davis, et al. (2015) found that the mental health of the parents, especially the mother, permeates the appearance of internalizing symptoms, such as sadness, irritability, fear, somatic problems in their children. On the other hand, Torres, et al., (2018) found that parental depression and anxiety were associated with the appearance of externalizing problems and that they generally manifest themselves in the form of tantrums, aggressiveness, oppositional behaviors, impulsivity and hyperactivity in preschool children.

Although it is not possible to generalize about the consequences that a specific event may have on mental health, because they depend on multiple biopsychosocial variables (predisposition, physical condition, age, coping, life events, social and family support, media influence) and on how these interact at the individual level (Gómez-Becerra, et al., 2020), Ferget, et al (2020), Ferget, et al., (2020) consider that confinement is a measure that increases the risk of suffering mental health problems in children and adolescents as well as in their parents. It has even been determined that fear, stress and worry about the pandemic situation increase clinical manifestations in the adult population (Adhikari, et al., 2020; Ozamiz-Etxebarria, et al., 2020), and it is likely that these, in turn, are reflected in the mental health of children, given that it is adults who help regulate the emotions of minors.

### Interests' Conflicts

This paper authors declare do not have interests' conflict regarding the evaluation and publication of this article.

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