Understanding the impact of social distancing measures and quarantine on vulnerable families with pre-school children in Chile

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Introduction

> *"It is true that pandemics have much in common with other disasters: community impact, unpredictability, fatalities, and persistent effects. Response to pandemics necessarily differs from that of other disasters by discouraging convergence and gathering of victims; instead, the exact opposite—separation, isolation, and quarantine—is demanded."* (Sprang & Silman, 2013, p. 105)

COVID-19 pandemic has hit the entire world, being one of the major pandemics that humanity has registered, and the greatest in the modern world. According to Johns Hopkings University data, 22.5 millions have been infected with SRAS-CoV-2 and almost 800,000 thousands have died around the world on August 20[1]. Chile has the first confirmed case on March 3, after the virus has already hit China and Europe. Countries had been applying a series of policy interventions to mitigate and contain the spread of the virus, to support families and the economy, to communicate and to treat the infected population. Chile adopted many measures related to social isolation (night curfew, closure of schools, commerce, and borders, among others). Regarding quarantines, Chile applied a local and dynamic strategy closing counties according to sanitary criteria (incidence rates, confirmed cases per km2 and health risk of the population), which have been massive and extended in time in many geographic zones.

Quarantines and other social distancing measures impact different aspects of people's well-being. One of the most important is mental health. Previous literature (Brooks *et al.* 2020) has shown that quarantines and social isolation have psychological effects that can last for years. Those impacts are more frequent on women, young people, those with lower educational levels and with children. Social distance measures the contact with social support networks than can be a protective factor in mental health outcomes (e.g Harandi et al, 2017). This is especially relevant for the most vulnerable households, such as those headed by women in poverty conditions (Balaji et al, 2007; Khazaeian et al, 2017).

[1] https://coronavirus.jhu.edu/map.html

The pandemic also affects mental health through other channels. Despite governmental measures to support employment and the vulnerable (emergency income, food packages, unemployment insurance, bonuses), as well as to improve communications about the pandemic, many people lost their jobs.

According to a study carried out by the International Labor Organization, nearly 400 million have been lost due to the pandemic, the most affected being women and the lowest socioeconomic level groups (International Labour Organization, 2020a). The most affected are those working in the informal sector and the vulnerable that depend on daily/weekly income (International Labour Organization, 2020b). As well, there is the constant fear to get infected and to die, as well as risk factors that can difficult or amplify the mentioned problems, such as housing conditions (i.e. overcrowding), that add other stressors to mental health status.

Changes in children's lives and mandatory confinement are complex situations per se that many times are not completely understood by children affecting their mental health. Moreover, depression symptoms and depression of the main caregiver, especially the mother, directly impact the integral development of children under their care, for example, delaying verbal comprehension, increasing behavioral problems, decreasing cooperation, among others (Belsky & Fearon 2002, Weissman et al. 1997, UN & WHO 2018). This can be more important in the first years, which are determinant for the future development of children (Fox et al., 2010; Meaney, 2010; Phillips & Shonkoff, 2000; Banco Mundial, 2009). Conditions that produce chronic stress at early stages (poverty, abuse, negligence) will tend to produce a negative impact affecting mental and physical health, learning, and behaviour, among others (Sweatt, 2009; UNESCO, 2010; Johnson et al 2016).

By applying a questionnaire to vulnerable women with pre-school children from *Patronato Madre Hijo* (from now on *Patronato)*, this research seeks to understand how different social distancing measures taken in Chile have impacted the most vulnerable families with pre-school children and to identify probable routes of transmission of symptoms associated with mental health, such as depression, anxiety, anger, etc. Patronato Madre e Hijo is a non-profit private institution created in 1901 whose aim is to support the integral development of vulnerable children during their first years of life. In Santiago, they provide free physical and mental health care to about 1,100 children and their mothers, and in the Valparaíso region, to about 1,000 children and their mothers. The research

fits into their efforts to better understand the conditions of vulnerability of their beneficiaries as well as identify risk factors to facilitate interventions. The study contributes to the growing literature on modern pandemics of this magnitude, particularly on the scope of the mental health effects on vulnerable populations in Chile on pre-school children and their caregivers.

The next section presents a review of the literature on the effects that pandemic and other crises have on adults and children as well as on the effects of adult mental health on children at home, considering the impact of living conditions. In section 3, the data and methodology are described. Section 4 shows the findings, followed by a discussion (section 5). Finally, the references (section 6) and appendix (section 7) can be found.

1. Literature review

Pandemic affects children through different channels. A key indirect channel is through its effect on their parents' or main caregivers' mental health. Hence, we first review the existing literature on the effect of parents' or caregivers' mental health on their children. We then describe the main findings regarding the effects of the health crisis, focusing on mental health, distinguishing the research on adults and children's impact. Finally, as quarantines may increase the influence of housing conditions, we discuss the evidence regarding overcrowding and mental health.

2.1. Effects of adults' mental health on children

There is a rich literature on the effects of parents (in particular mothers) mental health on children. In general, authors found that there is an association, which can be mitigated, either by parental sensitivity or by the support of the other adult (Weissman et al.,1997; Kahn, et al., 2004). Thus, any effect of the health crisis on adult's mental health may impact children at home. Due to their relevance in children's wellbeing, as well as by its own importance, our key variable of interest is the depressive symptoms of primary caregivers.

Weissman et al. (1997) followed the offspring of depressed parents into adulthood (N = 182) and compared their results with the offspring of non-depressed parents. They find that the former are

more likely to present *depression, higher rates of morbidity, regarding the age at onset of the symptoms and does not differ by proband group."* (Weissman et al, 1997, p.937). NICHD (1999) developed a longitudinal study that followed the children of mothers with chronic depression. The study follows children from birth to 36 months of age. The main conclusion is that children of mothers with chronic depression are more likely to present behavioral problems, delayed verbal comprehension, less cooperation, among others. However, even if mothers have chronic depression some of these effects could be mitigate by high levels of maternal sensitivity.

Kahn et al (2004) led a study whose objective was *"To examine whether the father's mental health symptoms may modify the association between the mother's mental health and the child's behavioral and emotional health"*. To meet the goal the study was conducted using data from the Panel Study of Income Dynamics and the associated Child Development Survey. To evaluate the mental health of parents they used a validated scale about serious mental illness, including mood or anxiety disorder. They founded *"that the adverse effects of a mother in poorer mental health on a child's behavioral and emotional problems were substantially reduced when a father reported better mental health. When both the father and mother reported poorer mental health, the influence on a child's behavioral problems was strong, particularly for boys"* (Kahn et al, 2004, p.726-727).

In the same way Nicholson et al. (1997) conducted a study to understand the parenting experiences of women with mental illnesses from the perspectives of mothers and case managers employed by the state department of mental health. The approach of this study was qualitative, through six focus groups of mothers and five focus groups of case managers. The authors concluded that there are four sources of conflict: (1) The stigma of mental illness; (2) day-to-day parenting; (3) managing mental illness, and (4) custody of and contact with children.

In the USA Patrick, et al (2020) conducted an online national survey of parents with children under 18 to measure changes in health status, insurance status, food security, use of public food assistance resources, child care, and use of health care services since the pandemic began. The sample size was 1011 people, to whom different instruments were applied to evaluate the mental health of the parents, the behavior of the children and the other items to be evaluated. As a result, 27% of parents reported that their mental health has been affected since the pandemic, while 14% reported that their children's health worsened.

2.2. Covid-19 effects on mental health

General impacts on mental health

Covid-19 pandemic has impacted people's lives in many ways. In addition to the direct impact on those that become ill, it has had a strong negative effect on the economy, with substantive increases in the unemployment and economic insecurity. The pandemic has also an indirect social impact, such as erosion of social capital and trust, stigma against certain ethnic groups, family separation and less access to social supports, risk of domestic violence and child abuse, psychological distress and its negative impact on development (UNICEF, 2020).

Its accompanying uncertainty and fear over one's own or loved ones' health, or even death, income, employment, poverty, hunger, which can be exacerbated by myths and misinformation (Bao et al, p. 37) also impact mental health. These effects might differ between the general population, those confirmed or suspected Covid-19, quarantined population, as well due to sociodemographic characteristics, such as age, gender, socio economic background, caregiver's status, among others). Studies are still ongoing, but some early results show indeed a negative impact.

A study using the Weibo social network, assessed the effects of pandemic on mental health status of network users. Negative emotional indicators (i.e. anxiety, depression, and indignation), positive emotional indicators (i.e. Oxford happiness), and cognitive indicators (i.e. social risk and life satisfaction) were estimated. These indicators were compared before and after the crisis, analyzing their differences (Li et al, 2020). The authors found an increase in negative emotions and sensitivity to social risk, and a decrease in positive emotions.

Besides the side effects of treatment of Covid-19 on the mental health of patients, mainly due to the use of corticosteroids (Li et al. 2020, Xiang et al. 2020), people with confirmed or suspected Covid-19 and their family and friends may experience fear of a life-threatening illness, affecting them emotionally and cognitively. Consequences such as stress, anxiety and depression are frequent in crises like this one (Li, et al, 2020; Bao, et al, 2020). A study realized in China during February of 2020 applied an online questionnaire in a sample of 205 participants. An increase in the prevalence of depression especially in those infected with SRAS-CoV-2 was found (Zhang et al. 2020).

Regarding the impact of quarantines, probably the most stringent measure, Zhang et al (2020)´s study concluded that more than 60% of people in quarantine had depressive symptoms (Zhang, et al, 2020). As well, a meta-analysis developed by Hossain et al. (2020), concluded that symptoms associated with anger, irritability, stress, anxiety, and depression are common in people who have been in quarantine.

Kaiser Family Foundation (KFF) has developed a Health Tracking Survey focused on the Covid-19 outbreak in the USA. In early April, 45% of surveyed adults responded that their mental health has been affected by the virus. The same study reported greater effects on the mental health of parents who have supervised children and adolescents during the pandemic, which are greater for women (Kirzinger et al 2020, Panchal, N, et al. 2020). They also found that in early April there were no significant differences between parents and no-parents regarding the perception of interruption of their lives due to the Covid-19 outbreak. However, if only those who reported that their lives have been "a lot" disrupted (the highest response category) by Covid-19 are considered, more parents report that their life has been affected (49% parents vs 43% non-parents) (Kirzinger, et al, 2020).

Generally, studies about effects of the quarantine on people's mental health have reported high prevalence of symptoms of psychological distress and disorder, like emotional disturbance, depression, stress, low mood, irritability, insomnia and post-traumatic stress symptoms (Brooks, et al, 2020). This effect has been analyzed for previous pandemics like SARS and A(H1N1). Reynolds et al. (2008) examined a cohort of persons quarantined during SARS outbreak in Canada, analyzing the outcomes in mental health indicators through a questionnaire sent on email. People reported different negative emotions: Nervous (18%), worry (40%%), fear (22%), sadness (18%) and guilt (10%). Wu et al. (2013) analyzed the effects of SARS quarantine over health care workers. The study concluded that people who had quarantined were around 3 times more likely to have high posttraumatic stress symptoms, which can persist even three years later. Taylor et al. (2008) conducted a study on horse owners quarantined because of an equine influenza experienced in 2007 (through an online survey based on psychological distress), concluding that around 34% reported high psychological distress during the outbreak, compared with around 12% in the Australian general population (Brooks, et al, 2020).

Another source of stress and negative effects on the mental health of the population is overexposure to the media with repetitive information about Covid-19 . Garfin et al (2020) found that repeated exposure to the media about Covid-19 can cause negative effects on anxiety and stress. Along the same lines, Gao et al (2020) conducted a survey in China to analyze the effect of exposure to social media on the mental health of the population. They found that social media exposure about Covid-2019 increased the likelihood of having depression, anxiety, or a combination of both. This is especially important in periods of isolation, since people tend to be more exposed to the media and social networks, with an overexposure to information related to Covid-19, which causes health problems such as those mentioned previously. This exposure causes vicarious traumatization, increasing anxiety and depression, as well as physical symptoms associated with the disease (Liu & Liu, 2020).

Covid-19 and mental health in children

According to the United Nations (2020), although children have not been targeted directly by the virus, when ill they can suffer important complications, and many have lost immediate family members or loved ones, which can produce severe effects on their mental health, like symptoms associated with severe depression. As well, being exposed to a health crisis carries different emotions associated with the spread of the disease, adding to excessive information about the virus and the transmission of emotions from adults to them. Children are mainly being affected through the socioeconomic context (affected by the pandemic) and the mitigation and containment measures. They are more likely to be anxious about the negative impact of the pandemic on their own lives and in their community and those who are facing severe deprivations or violence can manifest acute stress, depression, suicidal ideation and other mental health disorders, affecting their cognitive development and causing long-term challenges in their mental health.

Socio-economic effects can have a lifelong impact. Lack of access to basic goods and services can generate stress and anxiety in children, being often invisible by adults. For example, less access and lower quality of care and social services, higher levels of poverty (IMF estimates it between 40 and 65 million children), lack of access to food and basic sanitary products.

Regarding social isolation measures, there are the impacts of quarantines, less access to face-to-face social and health care services, delayed care, domestic physical, psychological, or sexual violence, and school closures. For example, suspension of classes and the conversion of them to distance education, generated uneven learning, hurting the most vulnerable (rural and indigenous population and those living in poverty), since they have less access to computers and the Internet. In addition, this can increase school dropout.

Being in long quarantines alters daily life (no classes, other ways of studying, distancing from family and friends, among other routine changes) can produce symptoms associated with depression, stress, anxiety, and fear. The ability of adults (parents or caregivers) to control their own and children's emotions, as well as to maintain a daily routine, may be essential to reduce the effects (Jiao et al. 2020, UNICEF 2020, Wang et al. 2020).

A study by Xie, et al (2020) in Wuhan and Huangshi (China) focused on the mental health of primary school students comparing those quarantined by Covid-19 with studies prior to the Covid-19 outbreak. They found higher rates of depression and anxiety for those quarantined (22.6% to 17.2% regarding depressive symptoms, and 18.9% to 14% for anxiety symptoms). Wang et al. (2020) also mention the importance of duration, inadequate information, lack of personal space at home, among others (Wang, et al, 2020).

These findings are similar to previous evidence on the effects of quarantines on children's mental health. Sprang & Silman (2013) studied the effect of A(H1N1) pandemic over children and their parents (survey applied to parents in USA and Mexico). Canada was included with data about SARS to obtain a comparison between diseases. The quarantine was included like a risk factor. Parents reported a significant effect of pandemic on their children. Near one-third of children who were quarantined demonstrated symptoms associated with stress post-traumatic disease (PTSD). Moreover, a strong relationship between clinically-significant levels of PTSD symptoms in parents and their children was found.

2.3 Effects of households overcrowding

Overcrowding is an especially important problem in developing countries, and several studies address its relation to well-being. Although the concept of overcrowding seems straightforward, different studies rely on different measures. Chile has established an indicator of overcrowding according to the number of people per bedrooms in the home, 2.5 or more people per room is considered overcrowded conditions (and over 5 as severe). . According to this definition, there are almost 400,000 households living in overcrowded conditions in Chile (Casen, 2017).

Nkosi et al (2019) developed a panel study for a sample of residents in suburbs of Johannesburg (South Africa), concluding that overcrowding "*was associated with elevated levels of acute respiratory and gastrointestinal symptoms, as well as fever/chills"* (Nkosi, et al, 2019, p.6). Mangrio & Zdravkovic (2018) studied the effects of overcrowding on people's mental health, in the migrant population from Sweden, finding that they are correlated, especially in women, who are more likely to suffer depression. In contrast, men living in the same conditions responded with withdrawal or aggression.

Regarding children, overcrowding can "*heighten tensions in families, hold back children's development, be less accessible to the disabled and be less adaptable to people's changing circumstances."* (Clifford, B., 2020). It affects school attendance, completion of secondary education (Lanus 2009) and literacy outcomes (Pillay 2017). As well, it can impact mental health. Evans et al (2002) developed a study to analyze the relationship between overcrowding in homes and children's mental health. For this, they applied a mental health instrument to third and fourth grade children in Austria. The relations between residential density and psychological wellbeing are moderated but significant.

Pepin et al (2018) analyzed the effects of home overcrowding on Inuit adolescents in Canada (longitudinal study, with a first measurement at around 11 and then 18 years), but, contrary to expectations, they found no significant relationship between overcrowding and depressive symptoms and suicidal thoughts. However, overcrowding is considered an indicator of vulnerability and poverty, which leads to psycho-emotional risks. In the same line, Makinde et al (2016) investigated the relationships between overcrowding, domestic violence, and antisocial behavior in

a sample of adolescents (12 to 20) in Lagos metropolitan area, Nigeria. Through the application of a questionnaire that measured a series of indicators related to violence and antisocial behavior, they found a significant relationship between overcrowding and (i) victimization from adult and sibling aggression, (ii) witnessing domestic violence, and (iii) antisocial behavior.

Regoeczi (2003) analyzed the effects of overcrowding on aggression and withdrawal, by assessing the interaction between household and neighbourhood density in Toronto. Interestingly, they found that the effects of density on aggressive and withdrawn behaviour are significant, but nonlinear and that the impact of household density is conditional on neighbourhood density.

In the current context, overcrowding's negative impact on well-being is reinforced due to social distances and quarantines that may exacerbate domestic violence. Overcrowding also increased the likelihood of getting infected due to the impossibility of maintaining physical distance (Clifford, 2020; Mieres et al, 2020). Indeed, World Bank Group (2020) identified overcrowding, both at neighborhood as well as household level, as one of the main risk factors for the spread of Covid-19.

3. Data and methods

3.1. Data

The main source of information for this report is a telephone survey of child's main caregivers conducted during the months of June and July 2020 by professionals that work or had previously worked at the *Patronato Madre-Hijo*.[2] The survey includes questions regarding quarantines, economic and living conditions, as well as sets of questions to construct an index of depression and anxiety of caregivers, and to measure children disruptive and anxiety driven behavior.[3]

[2] Patronato Madre-Hijo will provide us with additional (duly protected) information regarding socioeconomic characteristics as well as mental and physical health. Due to the extended quarantine, it was not possible for Patronato to retrieve this data, but they are gathering the data and we expect to provide an updated version including baseline information of mental and physical health.

[3] The Spanish questionnaire is included in Appendix 1.

Considering the survey objective (i.e. to measure mental health, household relations), interviewers were selected by *Patronato Madre-Hijo* weighing heavily their capacities as well as their previous knowledge of the beneficiaries, to quickly build rapport and getting honest answers. The interviewers were trained by the researchers (virtually) during a session in which ethics considerations were thoroughly discussed. Interviewers understood and shared the importance of explaining the voluntary nature of the survey as well as obtaining their informed consent.

The sample was constructed by *Patronato Madre-Hijo*. It is important to note that all telephones on record are cell phones, many of them prepaid, and hence, Patronato has observed over the years that a substantive proportion of beneficiaries change their number between visits. Hence, only records of those who had attended at least once during the previous 12 months were kept in the sample as they would have the most updated information. For the sample of Santiago beneficiaries, as they keep physical medical records, they first grouped the records by county of residence and defined a number of cases from each country proportional to the distribution of their beneficiaries. Then, they selected a random sample of medical records. For Valparaíso – which constitutes only one county, since medical records are digital, they randomly selected the desired sample size.

For the selected sample, even those that had updated their contact information within 12 months, 25% of all numbers were either disconnected or did not correspond to the beneficiary, another 11% were always turned off, and 18% were always busy, never responded or went directly to voice mail. As Table 2 shows, the response rate 1 as defined by AAPOR (2016) was 44% in Santiago and 78% in Valparaíso. Of those beneficiaries that were reached, the cooperation rate was very high in both regions: 98% and 96%, respectively.

Table 1: Survey information

	Santiago	**Valparaíso**
Completed surveys	156	220
Refused to participate	4	9
Wrong or disconnected number	175	37
Always busy, no answer or directed to voice mail	153	5
Cell phone turned off	43	48
RR1	44%	78%
COOP1	98%	96%
Response rate over total selected sample	29%	69%
Source: Sample and survey respondents.		

3.2 Measures

For depressive symptoms we include the Spanish version of Patient Health Questionnaire of nine items (PHQ9) that evaluates the presence and frequency of depressive symptoms in the last two weeks according to criteria proposed by DSM-IV. The latter was developed by Spitzer, Williams, Kroenke and colleagues thanks to an education grant from Pfizer (Spitzer et al 1999; Diez et al. 2001). Each item is rated in a Likert scale from 0 (never) up to 3 (nearly every day) hence its total score ranges from 0 to 27. This module is widely used for screening in primary care and to assess treatment effectiveness and it has been validated for the Chilean population (Baader et al. 2012). There have been several studies to identify the relevant cut points, the proposed categorization presented in the module's instructions and based on Kroenke & Spitzer (2002) is none or minimal (0-4), mild (5-9), moderate (10-14), moderately severe (15-19) and severe (20-27) As a screening tool, a Chilean study identify the 7-11 range as indicator of a major depression (Saldivia et al. 2019). Due to an error in the programming of the survey, an item was deleted from the module[4], hence

[4] The missing items correspond to the question regarding difficulty to concentrate.

the total score ranges from 0 to 24. For the quantitative studies, as its purpose is not diagnosis, we use the eight items, but, to compare the distribution of depressive symptoms from Patronato's beneficiaries, we rescaled it to 0-27 imputing to the missing item, the mean of the other eight.

Following the items from the PHQ9, we included five additional items rated in the same Likert scale to measure anxiety based on the DSM-V as proposed by a team of two psychologists that had advice and worked with Patronato on mental health projects. These items are similar to those included in GAD7, for example, feeling nervous, afraid, easily irritated, very alert, as well as somatic symptoms. For both scales, we compute total scores for all cases with up to two missing values scored, rescaling them (Kroenke et al. 2010).

All these items were followed by the final question of PHQ9 regarding the difficulty of performing everyday tasks due to any of the problems. The next module enquired about perceptions of changes in each of the problems (if any) identified above. Based on the answer to these questions, we constructed an index that counts all the symptoms for which the respondents identified a change in its frequency.

The module for children's behavior consists of nineteen items that assess socioemotional and behavioral problems. The items were constructed based on the most common symptoms exhibited by small children, and thus were based on clinical criteria from the psychologists as well as a review of the literature and other existing instruments, such as the Eyberg Child Behavior Inventory (ECBI, Eyberg & Pincus 1999) and the Children Behavioral Checklist for children from 1.5 to 5 years (CBCL 1.5/5, Rescorla et al. 2010). Nine out of the nineteen items are associated with externalizing behaviors, such as aggressive behaviors or attention problems. The rest refer to internalizing behaviors, such as anxiety, depression, somatic complaints, and sleep issues. Although some items are applicable to children younger than one year old, we only construct the scale for children 12 months or older. Furthermore, only four items are applicable to children between 12 and 23 months. Hence, in order to obtain comparable scores for all age groups we have in addition to calculate an age appropriate score including only applicable items, we calculate a rescaled score imputing the average scores of the age appropriate items.

Respondents were asked on two occasions whether they have observed a change in their child's behavior since March (the onset of the pandemic in Chile). First, after each of the nineteen items (if they were reported as a problem), and then, in a separate question with a short list of possible changes.

In addition to these modules, we included a set of questions regarding quarantine, both voluntary and mandatory, social distance measures and if the respondent or any close relation was diagnosed with Covid-19. A second module explores the economic conditions and additional support received by the respondent from the national and local government as well as other groups or institutions. A final module includes questions on household composition and living conditions. These enabled us to calculate an overcrowding index based on the definition of the Ministry of Social Development and Family of Chile, as well as whether they lived with a partner and with whom they shared their bedroom. We also constructed an index based on eleven household conditions that may affect negatively respondents well-being and mental health. The survey ends with a battery of four questions to assess perceptions of likelihood of contagion and measures taken to avoid it.

3.3 Methods

The sample design was stratified, selecting a simple random sample in each stratum, its size proportional to their population over the total population of Patronato beneficiaries. But there are two sources of potential selection bias: first, only beneficiaries who had attended at least once during the last year were in the sampling frame (undercoverage). This implies that the sample is representative of this subgroup, and inferences about the total population should be drawn with caution. In particular, this group may be more concerned about the children's health as they are more consistent in their healthcare or have children with more frequent health issues. Second, a substantial proportion of the selected sample is unreachable. At the time, it is not possible to assess the differences between our respondents and the total population, but we plan to incorporate such analysis once we have access to descriptive statistics on key variables for the whole population.[5] Hence, for this report, inferences might be drawn with respect to the subgroup that has attended at least once during the previous year and maintained and answered their cell phone.

[5] We plan to conduct a second survey for the Valparaíso respondents during October, and expect to have the baseline information at the end of that month.

In order to describe the experiences of the respondents during the first months of the pandemic in Chile, we present descriptive statistics of key questions from the survey. After describing the perceptions and economic as well as household conditions, we analyze the distribution of caregivers' mental health: the depression and anxiety score. We also present the distribution of children's index of children's socioemotional and behavioral problems. First, we explore through bivariate analysis the association between our key variables of interest - depression and anxiety scale and children's behavioral issue - with the factors that the literature has identified as relevant. To continue the analysis, a correlation analysis was performed between the variables, analyzing the statistical significance. In order to compare the results between groups, an ANOVA test for comparison of means was performed, using the range of days of quarantine as the group identifier.

But do quarantines affect mental health as the literature suggests? Do they have an independent effect above the general effect of the pandemic? To explore these questions, due to lack of baseline[6], we analyze whether there is an association between respondents' perception of change of depressive and anxious symptoms and the time under mandatory quarantine. In particular, the variable counts the number of items for which the respondent declared experimenting a change in its frequency. Preliminary data analysis showed that a significant number of observations had zero value, which could be due to two reasons: (1) people did not report changes in reported symptoms, or (2) given that people did not report symptoms, this set of questions was not applied to them. This characteristic means that there may be two groups with different characteristics that report zero as a result, so a Zero Inflated Poisson Regression model was applied using robust standard errors to mitigate the effect of the difference between the variance and the mean of the dependent variable, a necessary condition to use the Poisson Regression model (Mouatassim & Ezzahid, 2012; Hua, et al, 2014). This model has two parts, a Counting Poisson Regression and a Logit model to estimate the probability of excess zeros. The dependent variable of the first model is the number of symptoms on the depression scale that changed since the start of the Covid pandemic. To estimate the Logit model of excess zeros, the anxiety scale was used as a predictive variable. We include as explanatory variables factors associated with Covid-19, household conditions, socioeconomic situation and number of people in the household. Children's behavior was incorporated as an independent variable in order to analyze its impact on the mental health of their caregivers.

[6] We plan to include them in the next version of this study and thus, construct a synthetic control group.

However, this should be taken with caution due to a possible endogeneity bias due to the non-independence of the variable with the error term. We will address this issue by incorporating baseline information.

3.4. Description of the sample

As Table 2 shows, all respondents from the Valparaíso Region live in the same county, which is also called Valparaíso. Respondents from the Metropolitan Region live in different counties, all of them belonging to what is called Gran Santiago. For ease of exposition, we refer to Valparaíso county as Valparaíso and all the counties from Gran Santiago as Santiago, the name of the capital city. More than half of the sample is from Valparaíso, whereas in Santiago beneficiaries. Estación Central county concentrates the higher proportion of Santiago respondents (28%), followed by Lo Espejo (14%), Pedro Aguirre Cerda (10%) and Lo Prado (6%), all the rest represents 5% or less of the regional sample.

Table 2: Geographic distribution of the respondents

Region	County	Proportion of cases	Proportion over regional total	First day of mandatory quarantine	Average days of quarantine at the time of the survey
Valparaíso	Valparaíso	59%	100%	12-06-20	14.4
Metropolitan (Gran Santiago)	Estación Central	12%	28%	30-04-20	53.6
	Lo Espejo	6%	14%	08-05-20	42.9
	Pedro Aguirre Cerda	4%	10%	23-04-20	57.5
	Lo Prado	3%	9%	08-05-20	41.3
	Conchalí	2%	6%	08-05-20	46.1
	Quilicura	2%	5%	05-05-20	43.3
	Maipú	2%	4%	15-05-20	40.0
	Pudahuel	2%	4%	15-05-20	37.8
	Cerro Navia	1%	3%	08-05-20	45.3
	Other (less than 5 cases each)	7%	18%	(different dates)	49.6
Source: own elaboration.					

Regarding the characteristics of the respondents and their offspring (Table 3), most of the primary caregivers both in Santiago and Valparaíso are the birth mothers of the children, 95% and 92%, respectively. Grandmothers are in second place with 2.6 and 4.4%, respectively. The child's age differs in both regions, being greater in Santiago. There is a higher proportion of families with two kids served by *Patronato Madre-Hijo* in Valparaíso than in Santiago and the average age of the second children is also greater in the former.

Table 3: Household socio demographic characteristics

Characteristic		Santiago	Valparaíso	Difference
Caregiver	Mother (%)	94.9	91.9	-3.0
	Grandmother (%)	2.6	4.1	1.5
	Father (%)	0	3.2	-3.2**
Children	Mean age of child in *Patronato Madre-Hijo* (S.E)	2.8 (0.8)	2.5 (.13)	0.3**
	Two children in Patronato (%)	11.5	21.3	
	Mean age of the second child in *Patronato Madre-Hijo* (S.E.)	2.1 (0,32)	3.4 (,22)	-1.3***

Note: S.E. for standard error of the mean. *** p <0-01, ** p<0.05, * p<0-10

Source: One elaboration base on survey data.

4. Survey results

4.1 Living conditions

Before describing the experiences during the pandemic, we present their household composition as well as living conditions in which they faced the quarantine and social distance measures. In relation to living conditions, household size (members) is, on average, larger in Santiago, and about two thirds of caregivers live with their partner in both regions. As Table 4 shows, the majority of respondents live in a house, a proportion that is higher in Valparaíso. The second most common type of lodging are apartments, where the proportion is higher in santiago. Almost 10% of Santiago´s respondents live in a room inside a house and 7.2% in Valparaíso.

More than two thirds of the caregivers share their bedroom with their children (with or without a partner), with a much greater proportion in Santiago than in Valparaíso (86% and 68%, respectively), where overcrowding (scores 2.5 or over in table 4) is also much prevalent (37.2 and 19%, respectively).

Table 4: Household composition and overcrowding

Aspect	**Detail**	**Santiago**	**Valparaíso**	**Difference**
Household members	Mean number of household members (S.E.)	5.4 (0.15)	4.8 (0.12)	5.9***
	Lives with partner (%)	63.5	67	4
	Lives with at least one other person between 21 and 64 (%)	85	78	8*
	Lives with at least one person 65 or older (%)	14	20	-6
Type of accomodation (%)	House	65.4	75.1	-10**
	Apartment	20.5	12.2	8**
	Room in a house	9.6	7.2	2
	Informal settlement	1.9	4.5	-3
Shared bedroom (%)	Does not share or with partner	9	28	-19***
	With partner and children	48	36	12**
	With children	38	32	6
	Other arrangements	4	4	0
Overcrowding index (%)	Less than 2.5	62.8	79.2	-16.3***
	Between 2.5 and 3.4	25	14.9	10.1**
	Between 3.5 and 4.9	7.1	0.9	6.1**
	Greater or equal to 5	5.1	3.2	1.9
	Missing information	0	1.8	-1.8*
New members arrived during pandemic (% yes)		10.3	9.5	0.8

The survey also enquired about eight conditions of their living arrangement, such as, whether the place is too cold, the presence of someone makes (me) feel uncomfortable, unsafe place to cook, presence of pests, too many people. In Santiago, 84% mention that their place has at least one negative condition and 30% mentions 4 or more. Those numbers are much lower for Valparaíso, 64% and 13%, respectively. It is remarkable that despite those negative conditions mentioned by the respondents, 76.9 and 87.8% mention that house conditions are adequate for living during the pandemic and, when asked about the conditions stated above, only 39.7% in Santiago and 18.1% in Valparaíso mention that at least one of them makes it more difficult to live during the pandemic.

Table 5: Living conditions

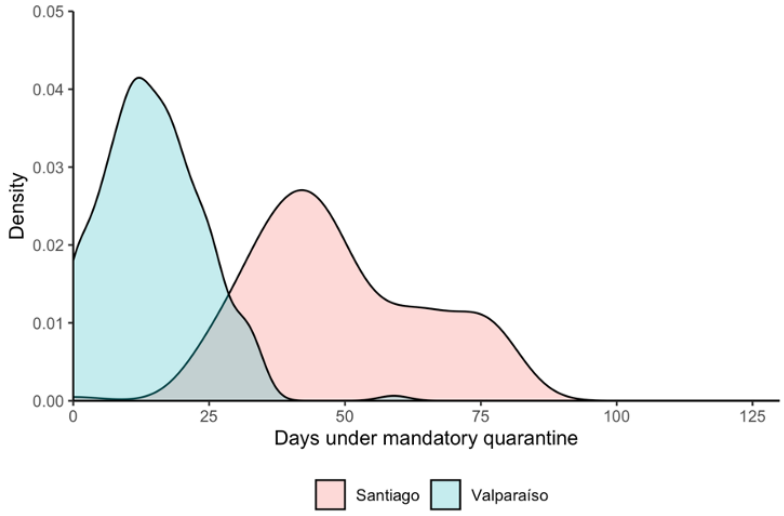
Aspect	**Detail**	**Santiago**	**Valparaíso**	**Difference**
Living place negative conditions (%)*	None	16	33.9	-17.9***
	One	21.2	26.7	-5.5
	Two	17.3	15.8	1.5
	Three	16	10.4	5.6
	Four or more	29.5	13.2	16.3***
More common conditions	Too cold	54.5	37.1	17.4***
	Not enough bedrooms	41	22.2	18.8***
	Not enough bathrooms	37.8	16.2	21.5***
	Too many people	30.8	19.9	10.8**
House conditions are adequate (% yes)		76.9	87.8	-10.9***
At least one of the situations or house conditions make more difficult the pandemic (% yes)		39.7	18.1	21.6***

Note: *The negative conditions or situation are if the living place is too cold, if there are conflicts, if there is no access to yard or terrace, if the presence of someone makes (me) feel uncomfortable, if the cooking place is unsafe, if there are pests, if there is no privacy, not enough bedrooms, bathrooms and if there are too many people. *** p <0-.1, ** p<0.05, * p<0-10
Source: Survey responses.

4.2. Experiences and perceptions of *Patronato* beneficiaries during the pandemic

The experiences of mandatory quarantine vary between respondents as mandatory quarantines were implemented at different times in different areas according to sanitary conditions (Table 2) and that the survey was fielded between June and July. Some respondents had less than a week under mandatory quarantine, whereas others had endured more than two months. Nevertheless, as mandatory quarantine was established more recently in Valparaíso than in the other counties of the Metropolitan Region, its distribution is concentrated in the lower end (Figure 1).

Figure 1: Distributions of days under mandatory quarantine among respondents in Santiago and Valparaíso



Source: Own elaboration according to survey responses.

Regarding the pandemic experiences (Table 6), the majority of the respondents mentioned that they self-isolated. In relation to the illness, the proportion of people that experienced it (through a close friend or family member) in Santiago is as twice as large than in Valparaíso, as well as the proportion that mentioned that a close friend or family member has to be hospitalized (17.3 and 7.7%, respectively)[7]. All respondents had reduced interactions with friends and family outside of their household, with 9 in 10 reporting seeing them much less frequently.

[7] All differences are statistically significant at 1%.

Table 6: Actions and experiences with COVID-19

Aspect	Santiago	Valparaíso	Difference
Voluntary self-isolation (stay at home) (%)	89	92	-3
Average number of days under mandatory quarantine (SE)	48.9 (1.3)	14.6 (0.62)	28.8***
No close friend or family with Covid-19	46.8	73.8	-26.9***
Close friend or family with Covid-19 and hospitalized	17.3%	7.7%	9.6***
Respondent with Covid-19	10.3%	2.3%	8***
Reduction in frequency meeting relatives and friends (% a lot less)	90.4	86.9	3.5
Note: *** p <0-.1, ** p<0.05, * p<0-10 Source: Survey responses.			

As reported in Table 7, most of the respondents think they and their children can avoid the virus and mention that they are taking measures to avoid it, with greater proportions in Santiago than in Valparaíso. Nevertheless, in Santiago, 63.5% of interviewees expect that close people will be infected, more than doubling the proportion for Valparaíso (28.5%). This is consistent with the greater proportion of respondents that had a close friend or family member with Covid-19, as well as hospitalized (Table 6).

Table 7: Perceptions related to COVID-19

Percentage of respondents who agree or strongly agree	Santiago	Valparaíso	Difference
In general, I think I can avoid getting coronavirus (%)	75	71.9	3.1
In general, I think I can avoid that my child gets coronavirus (%)	82	76.9	5.1
I believe people close to me will get seriously ill from coronavirus	63.5	28.5	35***
I am taking measure to avoid getting coronavirus (%)	98.7	97.3	1.4
*** p <0-.1, ** p<0.05, * p<0-10. Source: Survey responses.			

Respondents were also asked about their own behaviour and changes of it during the pandemic in relation to alcohol, cigarettes and drugs consumption, as well as about the relation with their children to assess if some conflictive situations emerged during this time. Regarding caregiver and other household members, majority mention not smoking, drinking or doing drugs. The only relevant difference appears in Valparaíso where more caregivers and other household members report drinking than in Santiago. As well, a relevant proportion of the respondents that are smokers (around 35%) reported having increased smoking. The highest number was in Valparaíso where 42.4% of caregivers reported this increment.

In relation to children behaviour and relation with caregivers, also around 30% of respondents report having experienced conflictive situations with their child, and that around 20% of other household members also experienced these situations.

Table 8: Conflictive situation with children and risk consumption

Aspect	Detail	Santiago	Valparaíso	Difference
Respondent	Does not smoke (%)	67.3	70.1	-2.8
	Increased smoking of those who smoke (%)	25.5	42.4	-16.9*
	Does not drink (%)+	82.1	67.9	14.2***
	Does not use drugs (%)+	98.1	95	3.1
Household members	Does not smoke (%)	51.3	49.8	1.5
	Increased smoking of those who smoke (%)	31.6	26.1	5.5
	Does not drink (%)+	67.3	43.4	23.9***
	Does not use drugs(%)+	91	89.1	18.9
Respondent	Conflictive situation with child	27.5	29.9	-2.3
	Screamed or insulted the child	32.7	29.9	2.8
Other household member	Conflictive situation with child	19.2	19.9	0.7
	Screamed or insulted the child	12.2	14.5	-2.3

Note: + Only consumption is reported since those that report increasing consumption less than 3. *** p <0-.1, ** p<0.05, * p<0-10.
Respondents were asked whether several situations with respect to the child had occurred during these months of pandemia, such as lived conflictive situations with him/her. See Appendix for the exact wording of the quesitions.
Source:Own elaboration

4.3. Economic conditions and support during the pandemic

Economic conditions

Regarding economic conditions (Table 9) and support, the situation appears to be better in Valparaíso than in Santiago. In the latter, 83% of caregivers mentioned that the household economic conditions had worsened since March (somewhat and much worse) compared to 69% in Valparaíso, and 29.5 and 15.8%, respectively, reported having lost jobs and not being able to find a new one. In

Santiago, 28% of the respondents mentioned not having enough food for their households compared to 17% in Valparaíso.

Table 9: Economic situation and support during the pandemic

Condition/situation/support		**Santiago**	**Valparaíso**	**Difference**
Household economic condition	The same or better	16.7	30.8	-14.1***
	Somewhat worse	60.9	49.3	11.6**
	Much worse	21.8	19.5	2.3
Caregiver occupational status (%)	Inactive	42.3	47.5	-5.2
	Currently working	22.4	28.5	-6.1
	Lost job, unable to find	29.5	15.8	13.7***
	Lost job, not searching	2.6	3.6	-1
	Change or leave job for other reasons	0	3.2	-3.2**
	Other	1.9	0.5	1.5
Other members lost job		45.5	39.8	5.7
Household has enough food		82.1	89.6	-7.5**

Note: *** p <0-.1, ** p<0.05, * p<0-10
Source:Own elaboration

Support during the pandemic

Consequently with the worse economic conditions for people in Santiago than in Valparaíso, they received more institutional support (from the State or other organizations) in addition to the one received from *Patronato,* in Santiago than in Valparaíso (83 and 62%, respectively) (Table 10). The main support received was food, and Santiago respondents were much more likely to have received at the time of the survey (73.7 versus 47.1%). In relation to monetary support the numbers are similar for both regions.

Regarding support with children and household chores (Table 10) a greater proportion of caregivers in Valparaíso mentioned not having any support than in Santiago (46.6 and 33.3% respectively), and that during the pandemic the frequency of receiving help decreased (22 and 7%, respectively). In Santiago, a greater percentage reported that the frequency of support increased in relation to Valparaíso (27.6 and 17.6%). Nevertheless, the majority of the surveyed households reported no changes in the frequency of support.

Table 10: Institutional and personal support

Frequency / change			**Santiago**	**Valparaíso**	**Difference**
Support from institutions (other than *Patronato*)	Support from the government, municipality or any other institution than Patronato.		16.7	39.4	-22.7***
	Type	- Food	73.7	47.1	26.7***
		- Money	35.9	33.5	2.4
		- Psychological	0	1.4	-1.4
Support with children and household chores	**Frequency of support (%)**	Never	33.3	46.6	-13.3***
		Several days	16.7	18.6	-1.9
		More than half of the days	18.6	3.2	15.4***
		Nearly every day	31.4	31.2	0.2
	Change in frequency (%)	More	27.6	17.6	9.9**
		Equal	64.7	59.3	5.5
		Less	7.7	22.6	-14.9***

*** p <0-.1, ** p<0.05, * p<0-10
Source:Own elaboration.

4.4. Mental health

Adults mental health

Regarding the mental health scales for the caregiver, first, in table 11 the results for the PHQ9 test (rescaled for missing values) show that the average population shows relevant levels of depression. For descriptive purposes, we present the distribution of beneficiaries according to the categories proposed by Kroenke and Spiter (2002) to classify the severity of their symptoms into five groups. It is important to notice that 13.8% of the surveyees show important levels of depression symptoms (moderately severe or severe ones), proportion that is greater in Valparaíso than in Santiago (17.7 and 8.3%, respectively). Nevertheless, the majority do not present depression symptoms or present mild ones (78.9 and 61.5% in Santiago and Valparaíso, respectively).

Table 11: Scores for PHQ9*

		Santiago	**Valparaíso**	**Difference**
Mean (standard deviation)		6.37 (0.38)	8.18 (0.38)	-1,8***
Percentile 25		3	3	0
Median		6	7	1
Percentile 75		9	12	3**
Reports change in frequency in at least one symptom (%)		56.4	47.5	8.9*
Level of depression symptoms	None (0-4)	44.2	34.8	9.4*
	Mild (5-9)	34.6	26.7	7.9*
	Moderate (10-14)	12.8	20.4	-7.5*
	Moderately severe (15-19)	6.4	15.4	-9***
	Severe	1.9	2.3	0.3

Note: for descriptive purposes, we have imputed the score of the missing item as the average of the other eight items in order to reconstruct the PHQ9 scale.
*** p <0-.1, ** p<0.05, * p<0-10
Source:Own elaboration

In relation to anxiety symptoms of caregivers, the results are also worse for Valparaíso than for Santiago, with 5.4 and 4.7 average points (out of 15), respectively. It is relevant that 25% of the respondents from Valparaíso present scores of 8 or higher. In the same sense, the distribution of the anxiety scale is also concentrated in the lowest values of the range (less than 5, on a scale from 0 to 15).

Table 10: Scores for anxiety related questions

	Santiago	**Valparaíso**	**Difference**
Mean (standard deviation)	4.7 (0.25)	5.4 (0.26)	-0.7**
Percentile 25	2	2	0
Median	4	4	0
Percentile 75	6	8	-2*
Reports change in frequency in at least one symptom (%)	55.1	46.6	8.5
Note: score ranges from 0 to 15. *** p <0-.1, ** p<0.05, * p<0-10 Source: Survey responses.			

The applied questionnaire asked about the change in symptoms since the beginning of the Covid-19 pandemic. Figure 2 shows the symptoms for which the respondents report a change in frequency. An important proportion of respondents reported changes in one or more of the items asked in the depression related questions (56.4 and 47.6% for Santiago and Valparaíso, respectively). Regarding the anxiety, the results are fairly similar: 55.1 and 46.6, and the difference is not statistically significant.

Children mental health

In order to understand the potential impact of the pandemic on vulnerable children, caregivers were asked 19 questions related to children's behavior (that assess socioemotional and behavioral problems). Since some items are not applicable to small children, we have rescaled the age

appropriate scores to a 0-54 scale for descriptive and comparability purposes. Children younger than 12 months were not included. Similarly, to the results for caregivers, we observe higher levels of behavioral problems in Valparaíso than in Santiago (Table 11).

Respondents were also asked (two times) about changes in their child's behavior since the onset of the pandemic (Table 11). The results show that when asked about the specific behaviours during the 19 items battery, there is a large difference between the perceptions of change in Santiago and Valparaíso (75 vs 17% report changes in behavior). But, when asked more generally about changes in behavior, the differences shortens: 85 vs 66%.

Table 11: Scores and changes for first children behavioral questions

		Santiago	**Valparaíso**	**Difference**
Scores	Mean (standard deviation)	14.9 (0.64)	17.5 (0.64)	-2.6***
	Percentile 25	10	10	0
	Media	14	17	3**
	Percentile 75	19	24	5**
Changes (%)	Reports change in at least one of 19 behavioral items	75	19.9	58.1***
	Reports change in behaviour (more generally)	85	65.6	19.3***

Note: score ranges from 0 to 54. *** p <0-.1, ** p<0.05, * p<0-10.
Source: own elaboration

5. Understanding perceptions under quarantine

The description in the previous section shows a puzzling result: even though Valparaíso respondents present lower levels of overcrowding, better living and economic conditions, they report more depressive and anxiety symptoms as well as more disruptive behavior of their children. This is puzzling considering that they have also experienced less time under mandatory quarantine. On the other hand, those in Santiago received more economic support (particularly food) and with child care and household chores. In this section we explore associations between respondents perceptions and time under quarantines and we then explore whether time under quarantine is associated with depressive and anxiety symptoms consider other factors, such as socioeconomic conditions, support and experience with Covid with estimate through a Zero Inflated Poisson Regression where the dependent variables is perceptions of change of frequency of those symptoms.

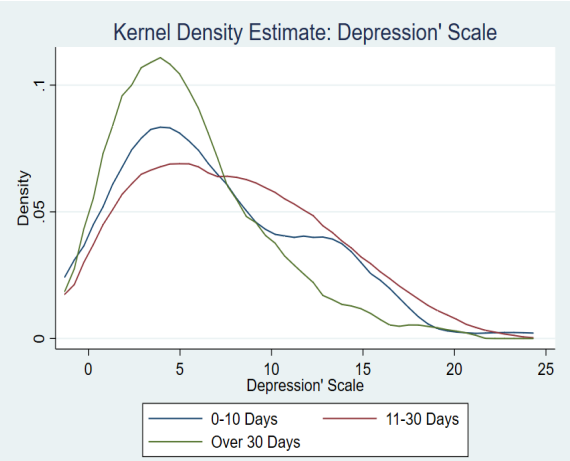
There is a non-monotonic relation between quarantines and depressive and anxiety symptoms. hence, to explore the relationship between quarantine days and mental health outcomes, we constructed three ranges to generate comparison groups:

- 0-10 days of legal quarantine (n=75).
- 11-30 days of legal quarantine (n=144).
- Over 30 days of legal quarantine (n=158).

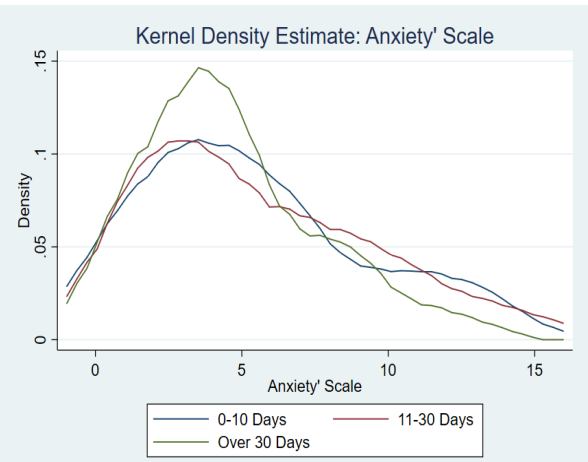
The following figure shows the distribution of the depression scale according to the quarantine ranges. Although it is expected that those who have been in quarantine for a longer time will have a higher score on the scale, the data does not show this result. According to the density graph (Figure 3), where the red line shows those being quarantined for 11 to 30 days, the intermediate range of quarantine days presents a distribution with a higher concentration at higher values. Similarly, the distribution of the anxiety scale shows that the highest concentration of medium or high values of the scale occurs in the mid-quarantine range. As there are several other factors that may be playing a role, and thus, we explore these patterns further with multivariate analysis and, in subsequent work, including baseline characteristics and a follow-up survey.

Figure 3: Density depression and anxiety scales

Panel A



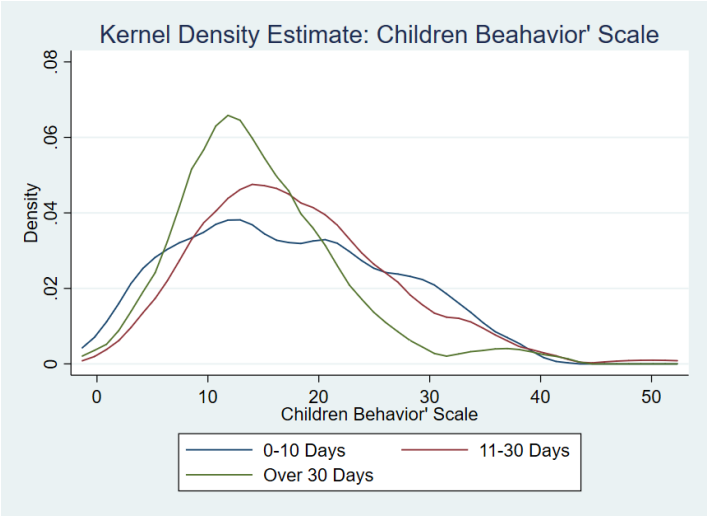
Panel B



Source: Own elaboration based on survey responses.

The scale showing behavioral problems in children shows that those who have been in quarantine for the longest period (over 30 days) report fewer adverse behaviors by children. This puzzling result may be due to several factors, including different baselines. An alternative explanation that we will explore with a follow-up survey is whether after spending a long time in confinement, there is an adjustment to the new situation and the creation of a new routine.

Figure 4: Density Child's Behavior scale



Source: Own elaboration based on survey responses.

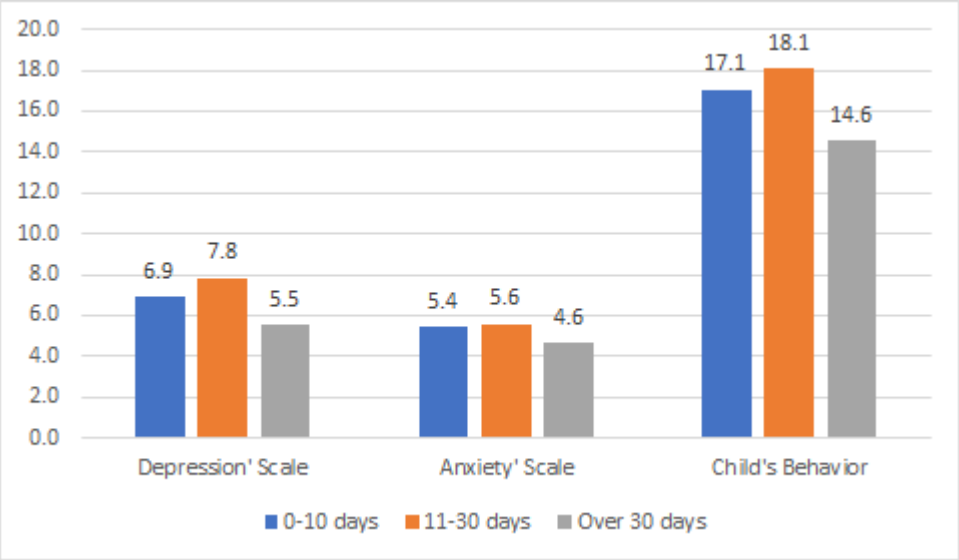
As another approximation to the relationship between the scales and the time in quarantine, we perform several correlation analysis (see Appendix for results) which showed a negative and significant correlation between the confined time and the three scales, which is consistent with what was observed in the previous distributions. Likewise, there is a positive and significant correlation between the mental health scales of adults and the behavioral problems of children. As discussed, these results must be taken with caution as there are clear endogeneity issues. A possible mechanism that has been reported in the literature reviewed above is a possible transmission of mental health between members of a household

Before turning to our multivariate analysis, Figures 5 and 6 show the relationship between the days of quarantine and the mental health scales was the comparison of means between groups.

First, a simple mean comparison was performed for each scale. Figure 5 shows that, in the case of the depression scale, the lowest value occurs in the third quarantine range (over 30 days). The analysis on the anxiety scale shows similar results, with the lowest value of the scale for people who have been in mandatory quarantine for more than 30 days. Children's behavior also shows similar conclusions, with fewer behavioral problems reported in homes that have been in for more than 30 days.

The previous results show that people who are in an intermediate quarantine range (between 11 and 30 days) are those who report the greatest conflicts on the mental health scales, both in adults and in children.

Figure 5: Means according to quarantine range



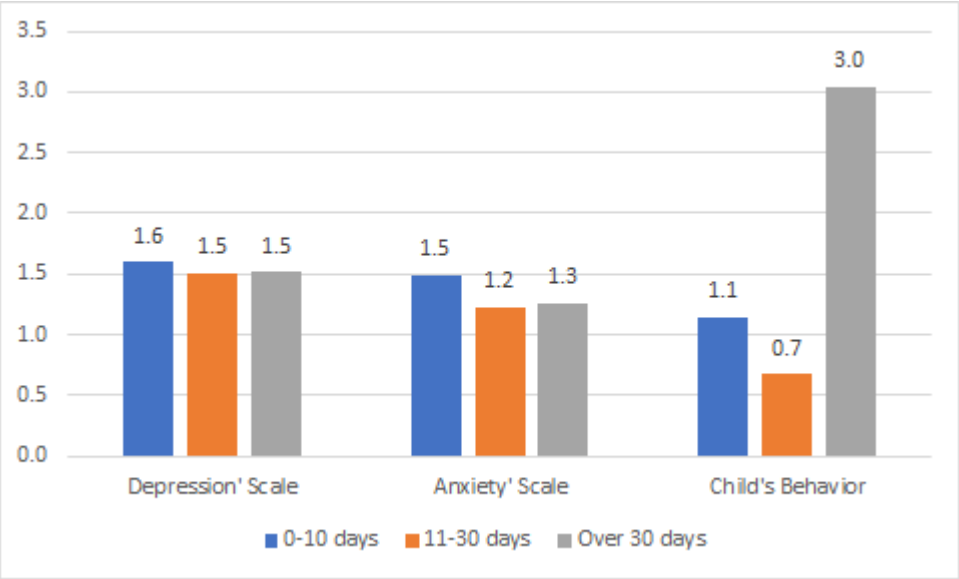
Source: Own elaboration based on survey responses.

Then, the changes in the scales during the quarantine period were analyzed. In the case of the depression scale, there are no great differences between the quarantine ranges, with about 1.5 symptoms that have increased since the beginning of the mandatory quarantine.

In the case of the anxiety scale, there seem to be more symptoms that change for those in the first range of quarantine, while people who are in ranges 2 and 3 have similar variations.

Children's behavior shows different results than adults. Homes that have been locked up the longest report that their children have had a greater number of symptoms that have changed since mandatory quarantine began.

Figure 6: Change of means according to quarantine range



Source: Own elaboration based on survey responses.

To analyze whether the differences found above are significant, an ANOVA test of comparison of means of one factor was applied (see Appendix for results). The third range of length mandatory quarantine (over 30 days) has a lower average on the scale than the rest of the ranges, this difference being statistically significant. When comparing the means of the change in the depression scale, the significant differences disappear, with similar means for the three quarantine ranges. That is, people who have been in quarantine for longer report, on average, fewer symptoms associated with depression, but do not identify that they have changed since the beginning of the mandatory quarantine.

Regarding the scale of behavior of children, those who have been in quarantine longer report that children have had fewer behavioral problems, with 3.5 points less than those who have been in the intermediate range of time in legal confinement. This difference is the only statistically significant when comparing groups according to mandatory quarantine time. When analyzing the relationship between time in quarantine and changes in children's behavior, the results show that those who have been in quarantine for a longer time report a higher average than those in the first ranks, this difference being statistically significant. If this is compared with the analyzes of the scale value, it can be concluded that those who have been in compulsory quarantine for the longest time have fewer behavioral problems, but the changes have been greater since the beginning of the pandemic.

5.2. Multivariate analysis

In order to isolate the results from all the variables, other than quarantine days that could impact mental health, we develop an econometric analysis. As explained in the methods sections, we use a zero Inflated Poisson Regression Model Results (Change in Depression' Scale as Dependent Variable)

Controlling for other factors, the regression model shows that there is a positive but not significant relationship between the changes in depression scale and the time in quarantine. This result is consistent with the descriptive analysis presented in the previous sections. Regarding other factors that explain an increase in the symptoms associated to depressión, first, it is the fact that close people have had Covid-19 and have been serious, which is probably related to the stress associated with this situation. Second, overcrowding at home, as expected, considering that, even when there is no legal quarantine, most people report having been in voluntary confinement. The high number of people in the household increases the probability of conflicts within the home and, therefore, it is expected that it increases the symptoms associated with depression. Finally, child´s behavior is associated with the depressive and anxious symptoms of their mothers or caregivers, with a positive and statistically significant relationship. Though it is important to mention that the causality is not evident, since it can be the opposite way.

Table 12: Zero inflated poisson regression model results (change in depression scale as dependent variable)

Change in Depression scale	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Quarantine (0-10 days = 0)						
11-30 days	0.12	0.15	0.79	0.43	-0.17	0.41
Over 30 days	-0.11	0.38	-0.30	0.77	-0.86	0.63
Region (Valparaiso=0)	-1.31	0.97	-1.36	0.18	-3.22	0.59
Self Covid (non Covid=0)	-0.17	0.24	-0.70	0.49	-0.65	0.31
Relatives Covid (non Covid=0)						
Yes. Some, but no severe	-0.06	0.14	-0.43	0.67	-0.34	0.22
Yes. A lot, but no severe	0.31	0.28	1.11	0.27	-0.24	0.85
Yes. Severe	0.35**	0.16	2.24	0.03	0.04	0.66
Overcrowding	0.14**	0.06	2.23	0.03	0.02	0.27
Housing conditions	-0.04	0.04	-1.08	0.28	-0.11	0.03
Perc housing (bad=0)	-0.06	0.16	-0.34	0.73	-0.37	0.26
Economic Support	-0.02	0.06	-0.26	0.80	-0.14	0.10
Economic Situation (Same or better than pre-Covid=0)	-0.31**	0.15	-2.12	0.03	-0.59	-0.02

Employment situation (same job=0)						
Found job during pandemic	-0.55**	0.22	-2.44	0.02	-0.98	-0.11
Lost job during pandemic, and out of work	-0.22	0.15	-1.47	0.14	-0.52	0.07
Out of work pre and post pandemic	-0.16	0.14	-1.10	0.27	-0.44	0.12
Child's behavior Scale	0.03***	0.01	3.81	0.00	0.01	0.04
Seniors	0.03	0.18	0.14	0.89	-0.32	0.37
Total children in the household	0.09	0.06	1.38	0.17	-0.04	0.21
Total people in the household	0.02	0.05	0.33	0.74	-0.08	0.11
Live with partner (no=0)	0.07	0.14	0.53	0.60	-0.20	0.34
New cases in the region	0.00	0.00	1.30	0.19	0.00	0.00
New deaths in the region	0.00	0.00	1.98	0.05	0.00	0.00
Constant	0.08	0.33	0.23	0.82	-0.58	0.73
INFLATE						
Anxiety scale	-0.21***	0.06	-3.68	0.00	-0.32	-0.10
Constant	1.07	0.29	3.69	0.00	0.50	1.63

Note: * Significance level of 0.1. ** Significance level of 0.05. *** Significance level of 0.01

Source: Own elaboration based on survey responses.

In the case of the anxiety scale, the results show that those in the high-quarantine range have had fewer changes in the symptoms associated with anxiety. Likewise, child's behavior problems are

positively associated with the total score on the anxiety symptoms of their mothers or caregivers, which is consistent with what was found for the depression scale.

Table 13: Zero inflated poisson regression model results (change in anxiety scale as dependent variable)

Anxiety scale	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf.	Interval]
Quarantine (0-10 days = 0)						
11-30 days	-0.27	0.20	-1.34	0.18	-0.67	0.13
Over 30 days	-0.72*	0.41	-1.77	0.08	-1.51	0.08
Region (Valparaiso=0)	0.66	1.47	0.45	0.65	-2.22	3.55
Self Covid (non Covid=0)	-0.45	0.29	-1.53	0.13	-1.02	0.13
Relatives Covid (non Covid=0)						
Yes. Some, but no severe	0.13	0.19	0.67	0.50	-0.24	0.49
Yes. A lot, but no severe	0.13	0.32	0.40	0.69	-0.50	0.77
Yes. Severe	0.20	0.23	0.85	0.40	-0.26	0.66
Overcrowding	-0.05	0.11	-0.48	0.63	-0.27	0.17
Housing conditions	0.01	0.04	0.14	0.89	-0.08	0.09
Perc housing (bad=0)	0.03	0.20	0.17	0.87	-0.35	0.42
Economic Support	-0.07	0.08	-0.88	0.38	-0.21	0.08

Economic Situation (Same or better than pre-Covid=0)	0.04	0.17	0.21	0.84	-0.31	0.38
Employment situation (same job=0)						
Found job during pandemic	0.38	0.29	1.30	0.19	-0.19	0.94
Lost job during pandemic, and out of work	0.06	0.20	0.31	0.75	-0.32	0.45
Out of work pre and post pandemic	-0.24	0.17	-1.42	0.16	-0.58	0.09
Children behavior	0.03***	0.01	3.96	0.00	0.02	0.05
Seniors	-0.31	0.19	-1.65	0.10	-0.67	0.06
Total children in the household	-0.12	0.09	-1.33	0.18	-0.28	0.05
Total people in the household	0.10	0.07	1.60	0.11	-0.02	0.23
Live with partner (no=0)	0.06	0.15	0.40	0.69	-0.23	0.34
New cases in the region	0.00	0.00	-0.23	0.82	0.00	0.00
New deaths in the region	0.00	0.00	0.40	0.69	0.00	0.00
Constant	0.06	0.42	0.15	0.88	-0.77	0.90
INFLATE						
Anxiety scale	-0.28**	0.15	-1.92	0.04	-0.57	0.01
Constant	1.40	0.53	2.62	0.01	0.35	2.45

Note: * Significance level of 0.1. ** Significance level of 0.05. *** Significance level of 0.01

Source: Own elaboration based on survey responses.

It is important to emphasize that although the previous tables provide results that can help to understand the effect of quarantine on the mental health of child care caregivers, the model must be refined for future research, as there is a potential endogeneity bias coming from the lack of independence between the children's behavior scale and the error term.

6. Discussion and next steps

The aim of this study was to understand the impact of social distancing measures and quarantine (to contain and mitigate COVID-19) on vulnerable families with pre-school children in Chile. A telephone survey was applied to caregivers of children served by *Patronato Madre-Hijo* (a non-profit institution that provides health and other services to vulnerable families), in two regions in Chile (Santiago and Valparaíso) that inquired on different areas, such as demography, economy, mental health, living conditions, among others.

According to the reviewed literature, on the one hand, long quarantines can impact mental health, of adults and children, and on the other hand, caregivers' mental health can impact children's mental health. Thus, the study focused on the relation of quarantines duration and mental health (depression and anxiety symptoms) of adults and children.

A first result of the analysis is that more than 14% of the respondents show important levels of depression symptoms (moderately severe or severe ones). In both dimensions, caregivers´ symptoms are greater in Valparaíso than in Santiago. The same differences are found when assessing children's negative behavior. This finding is puzzling since the living conditions (type of house, overcrowding) and economic situation of people living in Valparaíso are better than for those living in Santiago. The only difference found was regarding support, where a greater proportion of households in Santiago received economic support (mainly food) and help with household choresWe expect to gather more pre-pandemic information from *Patronato* to continue researching, as well as explore these other factors in a follow-up survey of Valparaíso respondents.

A second result, which was the main question of the analysis, was that quarantine duration does not appear to be associated with an increase in caregivers´ depression and anxiety symptoms. The econometric analysis, which control for other variables that can explain mental health changes in caregivers, reaches results that are not concluding. In the case of depression, quarantine duration

does not appear as significative to explain an increase in symptoms. The most relevant variables that explain the increases are that close people have had Covid-19 and have been serious, overcrowding at home, and child's behavior. In the case of anxiety symptoms, having been isolated for 30 or more days does increase them. There is an association between child's behavior, but due to an endogeneity (double causality) in the case of caregivers´ mental health status and children behavior, it is not possible to isolate whether the impact goes from children to caregiver or if it goes from caregivers to children. Indeed, the correlation analysis shows higher levels of relation among them.

The results for behavioral problems in children shows that those who have been in quarantine for the longest period (over 30 days) report fewer adverse behaviors by children, which could respond to an adjustment to the new situation and the creation of a new routine.

Our next steps are first, analyze these results considering baseline characteristics of respondents which would enable us to better understand the effect of quarantines, as well as construct synthetic control groups. We will also conduct a follow-up survey which will further enable us to estimate the impact of the pandemic and quarantines measures on vulnerable populations.

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Appendix

A1. Questionnaire

Q1 **Esta sección es para completarla antes de empezar la encuesta**. **Y por lo tanto, no se lee a la mamá o cuidadora**

Q2 Por favor, escriba su nombre

_____

Q3 A continuación, ingrese los siguientes datos de la ficha

Número de ficha

_____

Q4 Teléfono

_____

Q5 Nombre niño/a

_____

Q6 Fecha nacimiento

_____

Q7 Persona responsable del niño

_____

Q8 Relación con niño

_____

Q9 Dirección registrada en Patronato:

Calle y número

_____

Q10 Comuna

_____

Q11

Nota explicativa sobre las alternativas en las encuestas:
En todas las preguntas se ha incluido un espacio "Observaciones encuestadora", este espacio es sólo en caso que considere relevante añadir alguna información adicional respecto a la respuesta a esa pregunta. Puede ser algo que la entrevistada no le quedó claro, alguna observación suya sobre la respuesta, etc.
Algunas preguntas además tienen la opción no sabe, esta opción está entre paréntesis (no leer: no sabe), la idea es que surja espontáneamente de la persona entrevistada, no que Ud. se la

Start of Block: Sección I: Cuarentena y contagio

INICIO ENTREVISTA (RECUERDE GRABAR CONSENTIMIENTO INFORMADO)

Hola, la estamos llamando del Patronato Madre Hijo y queremos hacerle una encuesta telefónica para saber cómo ha estado usted y su familia desde marzo a la fecha.
Si usted está de acuerdo y acepta participar, la llamada quedará grabada para uso de investigación, siendo su información confidencial (resguardamos sus datos personales). Los resultados serán publicados, pero nunca se revelará la identidad de las personas entrevistadas. Su participación es voluntaria, Usted tiene derecho a no aceptar participar en esta encuesta, y también a dejar de participar en el momento que Ud lo decida. Cualquiera sea su decisión, esto no afecta en nada su relación con el Patronato.
De todas formas, para agradecerle por su tiempo, le entregaremos 5.000 pesos. Al terminar la encuesta le solicitaré su cuenta RUT para hacerle una transferencia durante el mes. En caso de no tener cuenta, nos pondremos en contacto nuevamente con Ud. para coordinar la mejor forma de hacerle llegar esta cooperación.
Si se corta la llamada, la volveremos a llamar.
Si usted está de acuerdo en participar de esta encuesta, por favor diga: sí acepto participar, y su nombre completo.

Q13 **En marzo de este año, empezó la pandemia de COVID-19 en Chile. Pensando en la cuarentena, es decir, el quedarse en casa sin salir ni ver a nadie**

Q14 **¿Ha realizado cuarentena voluntaria, es decir, Ud. ha decidido no salir de su casa como medida ante el COVID-19?**

Sí	
No	

Q15 Observaciones encuestadora

_____

Q16 **¿La comuna o zona donde vive ha estado en cuarentena obligatoria decretada por el gobierno?** Nota aclaratoria: es la cuarentena que decreta el gobierno a comunas o zonas de la comuna. No es la que se le da a la personas por dar positivo en Covid.

Sí	
No	

Q17 Observaciones encuestadora

_____

Q18 **¿Tuvo que realizar cuarentena debido a posible contagio de COVID-19 o debido a que estuvo en contacto con alguien contagiado?**

Sí	
No	

Q19 **En total ¿Cuántas semanas ha estado en cuarentena?**

_____

Q20 **SI RESPONDE QUE HIZO CUARENTENA VOLUNTARIA**

Durante ese período, ¿suspendió por algún tiempo su cuarentena voluntaria?
Por suspender me refiero a empezar a salir libremente, por lo tanto, salidas a comprar comida u otras actividades esenciales no se consideran suspender la cuarentena voluntaria.

Sí	
No	

Q21 Observaciones encuestadora

_____

Q22 **¿Se encuentra ahora en cuarentena, ya sea voluntaria u obligatoria?**

Sí	
No	

Q23 Observaciones encuestadora

_____

Q24 **¿Se ha contagiado de COVID-19 alguien cercano a Ud., ya sea de su grupo familiar o amigo cercano?**

Sí, muchos	
Sí, algunos	
Sí, uno o muy pocos	
No, nadie	
(No leer: no sabe)	

Q25 Observaciones encuestadora

_____

Q26 **SI RESPONDE QUE SI:**
Alguno de ellos estuvo grave y tuvo que ser hospitalizado?

Sí	
No	

Q27 Observaciones encuestadora

_____

Q28 **¿Se ha contagiado Ud. de COVID-19?**

Sí	
No	

Q29 **SI RESPONDE QUE SI:**
Estuvo Ud grave y tuvo que ser hospitalizada?

Sí	
No	

Q30 Observaciones encuestadora

_____

Q31 **Comparando su situación laboral antes de (la pandemia de) COVID-19 y ahora, cuál de las siguientes afirmaciones describe mejor su situación actual:**

No estaba trabajando antes marzo y no estoy trabajando actualmente	
Actualmente estoy trabajando en el mismo trabajo que tenía antes de que empezara la pandemia en marzo	
Perdí mi trabajo durante la pandemia, pero ahora tengo un nuevo trabajo	
Perdí mi trabajo durante la pandemia, y no he podido encontrar un nuevo trabajo	
Perdí mi trabajo durante la pandemia, y NO HE QUERIDO buscar un nuevo trabajo	
No estaba trabajando antes de la pandemia, pero estoy trabajando ahora	
Cambié o dejé mi trabajo, pero por otras razones	

(No leer: No sabe / otro)	

Q32 Observaciones encuestadora

_____

Q33 **Y pensando ahora en las otras personas de su hogar que se encontraban trabajando a inicios de marzo de este año, ¿hay alguna que haya perdido el trabajo?**

Sí	
No	
(No leer: No sabe / otro)	

Q34 Observaciones encuestadora

_____

Q35 **Si compara la situación económica de su hogar hoy con respecto a inicios de marzo, ¿cómo piensa Ud. que ha cambiado?**

Está mucho mejor que antes.	
Está algo mejor que antes.	
Está igual que antes (no ha cambiado).	
Está algo peor que antes.	
Está mucho peor que antes.	

Q36 Observaciones encuestadora

_____

Q37 **¿Ha tenido suficientes alimentos para su familia?**

Sí	

No	

Q38 Observaciones encuestadora

_____

End of Block: Sección II: Efectos de la cuarentena en la situación socioeconómica del hogar

Start of Block: Sección Apoyo y ayuda de familiares y externos

Q39 **Aparte de la ayuda que recibe del Patronato, ¿ha recibido ayuda de otras instituciones?**

Sí	
No	

Q40 Observaciones encuestadora

_____

SI RECIBE AYUDA DE OTRAS INSTITUCIONES:

Q41 **¿De quién? Municipalidad**

No	
Sí: alimento	
Sí: Apoyo psicológico	
Sí: dinero	
Sí: otro _	

Q42 **¿De quién? Estado**

No	

Sí: alimento	
Sí: Apoyo psicológico	
Sí: dinero	
Sí: otro _	

Q43 **¿De quién? Otros**

No	
Sí: quién	
Sí: alimento	
Sí: Apoyo psicológico	
Sí: dinero	
Sí: otro _	

Q44 Observaciones encuestadora

_____

Q45 **¿Con qué frecuencia ha tenido apoyo con los niños y con las labores del hogar este mes?**

Nunca	
Varios días	
Más de la mitad de los días	

Casi todos los días	

Q46 Observaciones encuestadora

_____

Q47 **¿Es diferente la frecuencia de apoyo comparándola con la que recibía antes de iniciar la pandemia?**

Sí, es mayor.	
No, no ha cambiado.	
Sí, es menor.	

Q48 Observaciones encuestadora

_____

Q49 **Pensando en su amistades y familia con las que no comparte vivienda, comparando la situación antes de la pandemia COVID-19 y ahora, Ud. considera que los ve:**

Mucho menos.	
Algo menos.	
No ha cambiado	
Un poco más	
Mucho más	

Q50 Observaciones encuestadora

_____

NOTA A ENCUESTADORA

A CONTINUACIÓN, VIENEN LAS PREGUNTAS SOBRE SALUD MENTAL DE LA PERSONA QUE ESTÁ RESPONDIENDO LA ENCUESTA (MAMÁ O CUIDADORA DEL NIÑO/A)

ESTA PREGUNTA ESTÁ UN POCO DIFERENTE A CÓMO APARECE EN LA ENCUESTA ONLINE

PARA FACILITAR: SE AGREGARON DOS COLUMNAS SOBRE SI CAMBIA O NO, PERO RECORDAR QUE SE DEBE MANTENER LA FORMA DE PREGUNTAR DEL FORMATO ONLINE

ASÍ PRIMERO SE VA UNA POR UNA DE LAS PREGUNTAS DEL LISTADO

LUEGO SE HACE LA PREGUNTA SIGUIENTE SOBRE CUÁN DIFICIL SE LE HECHO

LUEGO: VUELVEN A LA PREGUNTA DEL LISTADO, PARA LOS PROBLEMAS QUE IDENTIFICÓ, SE LE PREGUNTA SI CAMBIO LA INTENSIDAD Y SE MARCA YA SEA AUMENTÓ O DISMINUYÓ. SI NO CAMBIA, SE DEJA EN BLANCO.

Q51 **Durante las últimas 2 semanas ¿con qué frecuencia le han molestado los siguientes problemas?**

	Nunca	Varios días	Más de la mitad de los días	Casi todos los días	PREG DESPUES	
					Aumenta	Disminuye
Tener poco interés o placer en hacer las cosas.						
Sentirse desaminado/a, deprimido/a, o sin esperanza.						
Con problemas en dormirse o en mantenerse dormido/a, o en dormir demasiado.						
Sentirse cansado/a o tener poca energía.						
Tener poco apetito o comer en exceso.						
Sentir falta de amor propio o que sea un fracaso o que decepcionara a si mismo/ a, a su familia.						
Se mueve o habla tan lentamente que otra gente se podría dar cuenta o de lo contrario, está tan agitado/a o inquieto/a, que se mueve mucho más de lo acostumbrado.						

Se le han ocurrido pensamientos de que sería mejor estar muerto/a o de que se haría daño de alguna manera.						
Sentirse irritable.						
Sentirse fácilmente nervioso.						
	Nunca	Varios días	Más mitad días	Casi todos los días	PREGUNTA	
					Aumenta	Disminuye
	Nunca	Varios días	Más de la mitad de los días	Casi todos los días	PREGUNTA SUB-SIGUIENTE	
					Aumenta	Disminuye
Estar sobre alerta, vigilante o en guardia.						
Sentir malestar físico: dolor de cabeza, de estómago, tensión muscular, etcétera.						
Sentir miedo.						

Q52 Observaciones encuestadora

_____

Q53 **Si usted se identificó con cualquier problema de los recién mencionados, ¿Cuán difícil se le ha hecho cumplir con su trabajo, atender su casa, o relacionarse con otras personas debido a estos problemas?**

Nada en absoluto	
Algo difícil	

Muy difícil	
Extremadamente difícil	

Q54 **Pensando ahora en los problemas que Ud mencionó, hay alguno que haya cambiado de frecuencia o intensidad de que se inició la pandemia del coronavirus en marzo?**

Sí	
No	

[NOTA A ENCUESTADORA:
COMO ES LA VERSIÓN WORD: AQUÍ HAY QUE VOLVER AL LISTADO DE ARRIBA E IR MENCIONANDO AQUELLOS PROBLEMAS QUE MARCÓ VARIOS DÍAS O MÁS FRECUENTEMENTE]

Q69 **Primer niño / niña atendida en Patronato por la que responde: nombre**
_____

Q70 **Durante las últimas 2 semanas: ¿con qué frecuencia el niño/la niña ha presentado alguna de las siguientes cond**

[SI RESPONDE VARIOS DÍAS O MAYOR FRECUENCIA]

¿Y ha mostrado un cambio en la intensidad de estas conductas desde marzo, el inicio de la pandemia de Covid?

NOTA ENCUESTADORA:
Para cada conducta, pregunte frecuencia. Una vez que respondió la frecuencia de la conducta, pregunte si ha cambiado en intensidad desde marzo, al inicio de la pandemia si dice menciona que la ha observado, desde varios días en adelante.
Si señala que no cambia, deje la última columna (CAMBIA) en blanco

	No aplica	Nunca	Varios días	Más de la mitad de los días	Casi todos los días	CAMBIA
No obedece las reglas del hogar.						
Actúa de forma desafiante cuando se le dice que haga algo.						
Tiene explosiones de rabia.						

Llora con facilidad.						
Grita.						
Golpea a los padres o cuidadores.						
Tiene pataletas.						
Está pegado a usted.						
Busca más atención.						
Está muy activo o inquieto.						
Se ve desganado o con falta de energía.						
Se orina en la cama.						
Tiene dificultades para dormir.						
Presenta dolores físicos como: cólico, dolor de cabeza, vómitos, etc.						
Tiene pesadillas.						
Se ve asustado.						
Se ve triste sin motivos aparentes.						
Tiene dificultades para concentrarse en una cosa.						
Tiene poco apetito o come en exceso.						
	No aplica	Nunca	Varios días	Más de la mitad de los días	Casi todos los días	CAMBIA

Q71 Observaciones encuestadoras

_____

Q72 **¿El niño/a ha tenido algún cambio de comportamiento desde el inicio de la pandemia COVID? Como por ejemplo, cambios de ánimo, estar más apegado a Ud., o demandar más atención?**

Sí	
No	

Q73 Observaciones encuestadoras

_____

Q74 **¿Cuál o cuáles?**
Por favor marque todas las opciones que corresponde, y si no aparece, agregue en la opción otro.

Cambios de ánimo	
Su niño/niña está más pegado a usted	
Se enoja fácilmente	
Demanda más atención	
Está más silencioso, tranquilo	
Otro	

Q75 Observaciones encuestadoras

_____

Q76 **En la relación con el niño/a, este tiempo de pandemia, ¿qué situaciones han ocurrido?**

	Sí	No
He vivido situaciones de conflicto con él/ella		
Otro miembro adulto del hogar ha vivido situaciones de conflicto con él/ella		
He llegado a gritarle o insultarlo:		
Otro miembro adulto del hogar ha llegado a gritarle o insultarlo		
He llegado a pegarle		
Otro miembro adulto del hogar ha llegado a pegarle		

Q77 Observaciones encuestadora

_____

End of Block: Primer niño

Start of Block: Filtro más de un niño

Q78 **Además del [primer niño], tiene otro niño que se atiende en el Centro?**

Sí

No

SI RESPONDE QUE NO TIENE MÁS NIÑO PASE A LA PÁGINA 28 DONDE SIGUE EL CUESTIONARIO

[NOTA ENCUESTADORA
SI RESPONDE QUE TIENE MÁS NIÑOS:

PARA EL CUARTO NIÑA/A: ABRA DOCUMENTO "PREGUNTAS CUARTO NIÑO.DOCX"]

(NOTA ENCUESTADORA:
SIGUE ENCUESTA (DESPUÉS DE LAS PREGUNTAS SOBRE LOS NIÑOS)

Q111 **¿Ha aumentado Ud. su consumo de cigarrillos o cigarros?**

Sí	
No	
No consume	

Q112 Observaciones encuestadora

_____

Q113 **¿Alguno de los miembros del hogar, ha aumentado su consumo de cigarrillos o cigarros?**

Sí	
No	
No consume(n)	

Q114 Observaciones encuestadora

_____

Q115 **¿Ha aumentado Ud. su consumo de alcohol?**

Sí	
No	
No consume	

Q116 Observaciones encuestadora

_____

Q117 **¿Alguno de los miembros del hogar, ha aumentado su consumo de alcohol?**

Sí	
No	
No consume(n)	

Q118 Observaciones encuestadora

_____

Q119 **¿Ha aumentado Ud. su consumo de drogas?**

Sí	
No	
No consume	

Q120 Observaciones encuestadora

_____

Q121 **¿Alguno de los miembros del hogar, ha aumentado su consumo de drogas?**

Sí	
No	
No consume (n)	

Q122 Observaciones encuestadora

_____

Q123 **¿Usted ha sido víctima de maltrato este último mes? Ya sea verbal, psicológico, físico o sexual**

Sí	
No	

Q124 Observaciones encuestadora

_____

Q125 **SI RESPONDE SI**
¿De qué tipo?

Verbal, como insultos o gritos	
Psicológico, como chantaje o humillaciones	
Físico	
Sexual	

Q126 Observaciones encuestadora

_____

Q127 **¿Alguno de los demás miembros del hogar ha sido víctima de maltrato? Ya sea verbal, psicológico, físico o sexual**

Sí	
No	

Q128 Observaciones encuestadora

_____

Q129 **SI RESPONDE SI**
¿De qué tipo?

Verbal, como insultos o gritos	
Psicológico, como chantaje o humillaciones	
Físico	
Sexual	

Q130 Observaciones encuestadora

_____

End of Block: Sección Factores de riesgo en el hogar

Start of Block: Características vivienda y hogar

Q131 **Para terminar, quisiera preguntarle sobre su hogar y con quiénes con lo comparte.**

Q132 **En su primera atención en el Patronato, Ud. vivía en [dirección en la ficha médica]**

¿Ud sigue viviendo en ese lugar?

Sí	
No, cambio temporal	
No, cambio permanente	

Q133 Observaciones entrevistadora a la pregunta

_____

SI RESPONDE QUE NO VIVE (YA SEA POR CAMBIO TEMPORAL O PERMANENTE)

Q134 **¿Me puede dar su nueva dirección, por favor?**

Q135 **Nombre calle y número**

_____

Q136 **Comuna**

_____

[LAS SIGUIENTES SE PREGUNTANA A TODAS LAS PERSONAS]

Q137 **Donde vive actualmente es**

Casa	
Departamento	
Pieza dentro de una casa	
Vivienda en toma o vivienda de emergencia	
(No leer: otro)	

Q138 Observaciones encuestadora

_____

Q139 **¿Cuántos dormitorios (de uso exclusivo para dormir) tiene su lugar de residencia?**

_____

Q140 Observaciones encuestadora

_____

Q141 **¿Cuántos baños tiene su lugar de residencia?**

_____

Q142 Observaciones encuestadora

_____

Q143 **¿Comparte dormitorio?**

Sí	
No	

Q144 Observaciones encuestadora

_____

Q145 SI LA RESPUESTA ES SÍ: **¿Con quién o quiénes?**

Por favor marque todas las que corresponde

Pareja	
Hijos	
Otros familiares	
Otros no familiares/amigos	
(No leer: otro)	

Q146 Observaciones encuestadora

_____

Q147 **¿Está usted actualmente viviendo con una pareja?**

Sí	
No	

Q148 Observaciones encuestadora

_____

Q149 SI LA RESPUESTA ES SÍ: **¿Es el padre de alguno de sus hijos atendidos en el Patronato?**

_____

Q150 **¿Cuántas personas viven en su hogar?**
(Ingresar número de personas, por ej, 3, 9, etc)

_____

Q151 Observaciones encuestadora

_____

Q152 **¿Podría listar las personas que viven en su hogar junto con su edad aproximada así como su relación con ellas?** En esta lista NO incluya al primer niño por el cual se le entrevistó.
EN PARENTESCO SEÑALE LA RELACIÓN QUE TIENE EL INTEGRANTE DE LA FAMILIA CON EL PRIMER NIÑO ENTREVISTADO.

	EDAD	Relación con niño/a	OBS. ENCUESTADORA
Integrante 1			
Integrante 2			
Integrante 3			
Integrante 4			
Integrante 5			
Integrante 6			
Integrante 7			
Integrante 8			
Integrante 9			
Integrante 10			
Integrante 11			
Integrante 12			
Integrante 13			
Integrante 14			
Integrante 15			
Integrante 16			

Q185 **Desde que empezó la pandemia del COVID-19, ¿ha cambiado el número de personas en su vivienda?**

Sí, llegaron más personas	
No ha cambiado	
Sí, se han ido personas	

Q186 Observaciones encuestadora

_____

Q187 **Pensando en el lugar en que vive actualmente, cuál o cuáles de estas condiciones o situaciones vive en en ellas?**

NOTA ENCUESTADORA:
En la versión word, se le revisa la lista de las condiciones. Una vez que la encuestada responde, le hace la pregunta sobre si las condiciones de su casa son adecuadas.
Después de esa pregunta, y si marco alguna de las anteriores, le pregunta si de las que marcó, le hace particularmente díficil vivir la pandemia, y vuelve a nombrar las condiciones que la encuestada marcó como en las alternativas de amarillo en cada condición]

	Sí	No	Se la hace difci particularmente díficil
Se pasa frío.			
Hay conflictos.			
Tiene acceso a patio exterior o terraza.			
Hay personas que me hacen sentir incómoda en la vivienda.			
Tiene electricidad			
Tiene un lugar seguro para cocinar			
Hay plagas/ratones.			
Tiene privacidad			
Hay suficientes dormitorios			
Hay suficientes baños			
Somos demasiadas personas			
Otros			

Q188 Observaciones encuestadora

_____

Q189 **En general, ¿considera Ud. que las condiciones de su casa son adecuadas para vivir estos días de pandemia?**

Sí	
No	

Q190 **Pensando en las situaciones y condiciones de su vivienda recién nombradas, ¿hay alguna de ellas que le haga particularmente difícil vivir estos días de pandemia en ella?**
Sí
No

[NOTA A ENCUESTADORA:
EN LA VERSIÓN EN WORD, SE TIENE QUE VOLVER A LA TABLA DEL LISTADO DE PROBLEMAS Y MARCAR CUANDO CORRESPONDE]

Q204 **Por favor indique cuán de acuerdo o en desacuerdo está Ud. con las siguientes afirmaciones:**

	Muy de acuerdo	De acuerdo	Ni de acuerdo ni en desacuerdo	En desacuerdo	Muy en desacuerdo
En general, pienso que puedo evitar contagiarme del coronavirus					
En general, pienso que puedo evitar que mi hijo se contagie el coronavirus					
Creo que personas cercanas a mi van a enfermar gravemente de coronavirus.					
Estoy tomando medidas para evitar contagiarme del coronavirus					

Q205 Observaciones encuestadora
_____

Q206 Muchas gracias por participar en esta encuesta, como conversamos, para agradecerle por su tiempo, le entregaremos 5.000 pesos.

En caso de no tener cuenta, nos pondremos en contacto nuevamente con Ud. para coordinar la mejor forma de hacerle llegar esta cooperación.

Tiene cuenta RUT u otra cuenta?

Sí: cuenta RUT Banco Estado	
Sí: cuenta otro banco _____	
No	

Q207 Observaciones encuestadora

_____

Q208 RUT

_____

Q209 Si menciona otro banco: TIPO DE CUENTA Y NÚMERO

_____

Q210 Nombre completo (con dos apellidos)

_____

Q211 Correo electrónico

_____

Q212 Muchas gracias por su participación

(despedida)

Table A1: Correlation between scales and quarantine days

	Depression' Scale	Anxiety' Scale	Children' Behavior	Quarantine Days
Depression scale	1			
Anxiety scale	0.6793*	1		
Children behavior	0.5023*	0.4250*	1	
Quarantine days	-0.1907*	-0.1962*	-0.1976*	1

Note: * Significance level of 0.05.

Source: Own elaboration based on survey responses.

Table A2: Correlation between change in scales and quarantine days

	Change Anxiety' Scale	Change Depression' Scale	Children Behavior	Quarantines Days
Change anxiety scale	1			
Change depression scale	0.8094*	1		
Children behavior	0.3651*	0.3415*	1	
Quarantines days	0.0537	0.0351	-0.1962*	1

Note: * Significance level of 0.05.

Source: Own elaboration based on survey responses.

TableA3: Means comparison of depression scale according to days of quarantine

Row Mean-Col Mean		**0-10 days**	**11-30 days**
11-30 days	**Diff**	0.94	
	p-value	0.40	
Over 30 days	**Diff**	-1.41*	-2.35***
	p-value	0.09	0.00
Note: * Significance level of 0.1. ** Significance level of 0.05. *** Significance level of 0.01 Source: Own elaboration based on survey responses.			

Table A4: Means comparison of change in depression scale according to days of quarantine

Row Mean-Col Mean		**0-10 days**	**11-30 days**
11-30 days	**Diff**	-0.06	
	p-value	1.00	
Over 30 days	**Diff**	-0.07	-0.16
	p-value	0.99	1.00
Note: * Significance level of 0.1. ** Significance level of 0.05. *** Significance level of 0.01 Source: Own elaboration based on survey responses.			

Table A5: Means comparison of anxiety' scale according to days of quarantine

Row Mean-Col Mean		**0-10 days**	**11-30 days**
11-30 days	Diff	0.13	
	p-value	0.99	
Over 30 days	Diff	-0.80	-0.93*
	p-value	0.30	0.07
Note: * Significance level of 0.1. ** Significance level of 0.05. *** Significance level of 0.01 Source: Own elaboration based on survey responses.			

Table A6: Means comparison of change in anxiety' scale according to days of quarantine

Row Mean-Col Mean		**0-10 days**	**11-30 days**
11-30 days	Diff	-0.24	
	p-value	0.70	
Over 30 days	Diff	-0.22	0.02
	p-value	0.73	1.00
Note: * Significance level of 0.1. ** Significance level of 0.05. *** Significance level of 0.01 Source: Own elaboration based on survey responses.			

TableA7: Means comparison of change in child's behavior scale according to days of quarantine

Row Mean-Col Mean		**0-10 days**	**11-30 days**
11-30 days	Diff	1.02	
	p-value	0.82	
Over 30 days	Diff	-2.50	-3.52***
	p-value	0.15	0.00
Note: * Significance level of 0.1. ** Significance level of 0.05. *** Significance level of 0.01 Source: Own elaboration based on survey responses.			

Table A8: Means comparison of Child's behavior scale according to days of quarantine

Row Mean-Col Mean		**0-10 days**	**11-30 days**
11-30 days	Diff	-0.54	
	p-value	0.41	
Over 30 days	Diff	1.91***	2.45***
	p-value	0.00	0.00
Note: * Significance level of 0.1. ** Significance level of 0.05. *** Significance level of 0.01 Source: Own elaboration based on survey responses.			