



## Research article

# The role of family support and conflict in cyberbullying and subjective well-being among Chilean adolescents during the Covid-19 period



Matías E. Rodríguez-Rivas\*, Jorge J. Varela, Constanza González, María Josefina Chuecas

Facultad de Psicología, Universidad Del Desarrollo, Santiago, Chile

## HIGHLIGHTS

- Level of family support decreased cyberbullying victimization and increased life satisfaction during the Pandemic.
- Level of family conflict increased the risk of cyberbullying victimization and decreased levels of life satisfaction.
- Interventions and policies are urgently needed to promote positive family bonds and work-life balance.

## ARTICLE INFO

## Keywords:

Cyberbullying  
Well-being  
Life satisfaction  
Family support  
Family conflict

## ABSTRACT

**Introduction:** Life satisfaction plays a crucial role in integral development and mental health during childhood and adolescence. Recently, it has been shown that cyberbullying has severe consequences for the mental health and wellbeing of victims such as increased anxiety, depressive symptoms and even suicide risk. Although the role of the family in life satisfaction and cyberbullying behaviors has been studied, there is limited information on its impacts during the current pandemic period.

**Objective:** The aim of this study is to determine the role of family variables regarding students' levels of life satisfaction and cyberbullying victimization during the pandemic period.

**Method:** Structural equation modeling was done using data from a cross-sectional study (n = 287; age ranged 14–18) conducted in six schools in Santiago, Chile during 2020.

**Results:** The tested model has a good fit and parsimonious adjustment. It explained 25.9% of the life satisfaction and 9% of the variance of cyberbullying victimization. Family support was positively associated with life satisfaction (p < 0.001) and negatively associated with cyberbullying victimization (p < 0.05). Likewise, family conflict was positively associated with levels of cyberbullying victimization (p < 0.05) and negatively associated with life satisfaction levels (p < 0.001). Finally, family visits were only positively associated with life satisfaction (p < 0.01).

**Conclusions:** Generating interventions on several levels focused on positive family bonds has become essential and urgent. This is especially important considering their protective impacts on cyberbullying victimization in promotion of adolescent well-being and quality of life.

## 1. Introduction

The Covid-19 pandemic has negatively impacted people's emotional and physical health, leading to new challenges but also making others that already existed more complicated (Montag and Elhai, 2020). Within the new challenges that have emerged there have been fewer social activities, an increase in family conflicts, and the transition to the online modality classes, which generated several complexities, including an increase in cyberbullying, and a decrease in the well-being of children and adolescents (Magson et al., 2021).

Studies conducted in Chile during this period also show an increase in cyberbullying, especially among adolescents (Varela et al., 2020), as well as a decrease in the levels of life satisfaction in this population (Alfaro et al., 2021b).

In this sense, although the role of the family dynamics in life satisfaction and cyberbullying behaviors has been previously studied, there is limited information on its impact during the current pandemic period, which makes its study relevant, especially due to the increase in family coexistence and the protagonism of the nuclear family (Von Soest et al., 2020).

\* Corresponding author.

E-mail address: [matrodriguezr@udd.cl](mailto:matrodriguezr@udd.cl) (M.E. Rodríguez-Rivas).

### 1.1. Importance of life satisfaction for children and youth

Subjective well-being is understood as the way in which people evaluate and perceive their own lives through positive and negative effects and their cognitive evaluations of life satisfaction (Diener, 2009). In particular, life satisfaction serves to report how people evaluate life in general or the different domains of life. This is an adequate indicator to evaluate the perceptions that children and adolescents hold about their lives (Diener, 2006).

In general, it has been observed that children and adolescents present high levels of well-being and life satisfaction with a decrease in these levels during adolescence (González-Carrasco et al., 2017; Looze et al., 2018). Mixed results have been reported regarding gender differences in the levels of life satisfaction and subjective well-being (Dinisman and Ben-Arieh, 2016). Some studies indicate that there are no differences in the levels of well-being associated with gender, while others state that in general are more likely to show lower levels of well-being and life satisfaction (Atienza-González et al., 2020; Kaye-Tzadok et al., 2017). These differences have been shown to be more marked as adolescence progresses (Aymerich et al., 2021).

A study in Chile with students aged 8–14 years showed that their well-being tends to be high and is even higher in younger children (Guzmán et al., 2017). Another study done in the same country with participants between 8 and 12 years of age found that more than 70% were highly satisfied with their lives as a whole (Oyanedel et al., 2015). Regarding satisfaction in the domains of life, the students reported being more satisfied with the family domain and less satisfied with the school domain (Alfaro et al., 2021a).

Studies have identified several predictors of well-being and life satisfaction levels, ranging from the influence of genetics to community factors (Diener et al., 2018). However, the evidence shows that the factors that have the greatest impact during childhood and adolescence are family and school variables, along with the quality of peer and teacher relationships (Capone et al., 2021; Oberle et al., 2011; Suldo et al., 2013).

### 1.2. Cyberbullying and its effects on victims during childhood and adolescence

Cyberbullying is defined as a repeated and intentional pattern of aggression through computers, cellular phones and other electronic devices (Hinduja and Patchin, 2010; Kowalski et al., 2012; Smith et al., 2008).

Other important features of cyberbullying are *anonymity* or when aggressors hide their identities by using pseudonyms and *disinhibition* due to a lack of adult supervision and the likelihood of not viewing the victim directly. This implies that aggressors do not gauge the harm they cause through cyberbullying. In the third place there is the *viral nature* of cyberbullying, which allows offensive published contents to be seen by a vast amount of people in a matter of minutes (Hinduja and Patchin, 2010).

As cyberbullying is a concern in many countries around the world, prevalence studies have been trying to identify the magnitude of this phenomenon in different contexts. A systematic review by Brochado et al. (2017) based on 159 studies (mostly from North America and Europe) reports a prevalence between 1% and 61.1%, while aggression reports vary between 3% and 39%.

The First National Survey on Poly-victimization (Primera Encuesta Nacional de Polivictimización, in Spanish) in Chile using a sample of students from the 6<sup>th</sup> to 11<sup>th</sup> grades found that 8% suffered 9 or more types of aggressions, and are thus defined as poly-victims. Among this group, 69% reported suffering cyberbullying (Consejo Nacional de la Infancia, 2018; Ministerio de Educación, Centro de estudios Mineduc, 2018). These national reports are consistent with the results of studies conducted in Chile in previous years (e.g. Varela et al., 2014; Varela et al., 2017).

Being a victim of cyberbullying has negative consequences for adolescents and the school community in general. For example, Mason (2008) states that both bullying and cyberbullying have similar negative psychological and health consequences on victims over time. For other researchers, however, the consequences of cyberbullying are more negative compared to bullying because of the particular foci of this phenomenon (Kowalski et al., 2012).

In addition, the possibility of anonymity of the aggressor may increase the negative consequences for the victims (Beale and Hall, 2007). Among the most serious consequences of cyberbullying, some suicides of young people have been linked to being a victim of cyberbullying, since for the victim there seems to be no way out of this serious abusive behavior (Hinduja and Patchin, 2010). Hinduja and Patchin (2010) collected data from students from 6<sup>th</sup> through 8<sup>th</sup> grades on experiences with bullying and peer harassment (online and offline) as well as suicidal thoughts. They found that experience with cyberbullying as a victim or perpetrator is associated with an increase in suicidal ideation among youth. A more recent study reviewed the temporal and reciprocal relationship between being a victim of cyberbullying and problems during adolescence.

### 1.3. Role of family for cyberbullying and life satisfaction

Previous studies have demonstrated the relevance of the family environment on adolescents' life satisfaction (Alfaro et al., 2019, 2021a; Oyarzún et al., 2019; Lee and Yoo, 2015), and its role in the prevention of cyberbullying has also been demonstrated (Arató et al., 2021; Buelga et al., 2016; Kowalski et al., 2014; Ortega-Baron et al., 2016).

Parental warmth is one of the variables of family dynamics that has been studied in relation to cybervictimization. In a literature review, Elsaesser et al. (2017) consistently found negative associations between parental warmth and cyberbullying for both victims and aggressors.

Similar effects have been observed regarding family support, understood as both emotional and instrumental support received from any member of the family that makes the child feel protected and cared for (Rees et al., 2020), with findings from different studies showing an association with less cybervictimization (Arató et al., 2021; Fanti et al., 2012; Kowalski et al., 2014; Martins et al., 2016; Wang et al., 2009).

Thus, the dimensions of family functioning associated with greater closeness and warmth have been systematically associated with lower levels of cyber-bullying as victims and perpetrators (Elsaesser et al., 2017).

A study with Spanish high school students found that adolescents who were victims or perpetrators of cyberbullying reported having less open communication with their parents than those who were not involved in cyberbullying (Ortega-Barón et al., 2019). These findings are consistent with previous studies, which have found that the quality of family communication is a protective factor of cyber-bullying for victims and aggressors (Buelga et al., 2017; Larrañaga et al., 2016; Navarro et al., 2015). Nonetheless, Arató et al. (2021) did not find a significant effect of family communication on cyberbullying involvement.

In addition, family cohesion is considered to be a protective factor against cyber-victimization (Elsaesser et al., 2017; Ortega-Barón et al., 2016; Sasson and Mesch, 2017). However, excessive cohesion would not be adequate for the prevention of online aggression.

According to a recent study with Hungarian adolescents, extreme levels of closeness and emotional dependence in families may make adolescents more vulnerable to cyberbullying, as this would have an influence on the development of appropriate strategies for emotional regulation (Arató et al., 2021). As previous studies have shown, balanced levels of family cohesion could function as a protective factor against cyberbullying (Buelga et al., 2017; Ortega-Barón et al., 2016). On the other hand, family conflicts have been pointed out as a risk factor for participation in cyberbullying victimization and perpetration behaviors (Kowalski et al., 2014; Ortega-Baron et al., 2016).

As described above, different studies have shown the importance of family for the life satisfaction and wellbeing of children and adolescents (Alfaro et al., 2019, 2021a; Lawler et al., 2017; Oyarzún et al., 2019). A comparative study with 11 countries found that around 40% of the variation on the subjective well-being of 12-year-olds was explained by family factors (Lee and Yoo, 2015). Another study in 11 countries showed that family was the factor that contributed the most to children's subjective well-being in the USA, while in the rest of the countries family variables predicted subjective well-being (Lawler et al., 2017).

The above-mentioned studies in Chile highlight the importance of harmonious and non-conflictive relationships with family members for children's and adolescents' well-being (Alfaro et al., 2019, 2021a). In sum, relationships with both the family and with peers exert an important influence on life satisfaction, so conflicts in any of these spheres can be detrimental to children's and adolescent's well-being.

1.4. Life satisfaction and cyberbullying during the Covid-19 period

One of the major consequences of the Covid-19 pandemic was long periods of quarantine and lockdown resulting in many children and adolescents having virtual classes. This has been reported as negatively impacting their mental health (Montag and Elhai, 2020). For example, several studies indicate there was a significant increase in cyberbullying levels in relation to pre-pandemic levels in various groups (Barlett et al., 2021; Deng and Feng, 2021), as well as an increased concern from children and adolescents about this problem (Lessard and Puhl, 2021).

Bartlett and colleagues attribute this increase to two main reasons: increased stress in youth and greater access to the internet due to virtualization of almost all activities, as both factors have been positively related to a higher prevalence of cyberbullying (Garaigordobil and Machimbarrena, 2019; Kowalski et al., 2014).

In Chile, the proportion of reports of cyberbullying increased considerably, in 2019 14 out of 100 reports of abuse among students corresponded to cyberbullying, in 2020 this number increased to 26 out of 100 (Superintendencia de Educación, 2021).

Furthermore, it has been reported that the levels of life satisfaction of children and adolescents during the Covid-19 pandemic period decreased compared to those presented before the pandemic (Magson et al., 2021; Rodríguez-Rivas et al., 2021). This is mainly due to having less contact with significant others such as friends and family, lower levels of peer support, and less contact with teachers due to school closures (Richa, 2020; Tomé et al., 2021). Specifically, a study that included data from students in Oslo prior to the pandemic and during the period of strict lockdown found that levels of life satisfaction decreased to a highly significant degree (Von Soest et al., 2020).

Despite the importance of both variables, to date there are not enough studies that have jointly examined the effects of cyberbullying on life satisfaction during the pandemic. Therefore, understanding this interaction becomes even more important since short- and long-term effects on the mental health of children and adolescents associated with these events will surely be observed due to the prolongation of the measures established during the pandemic.

In this line, some studies have found that a few of the factors that correlated positively with life satisfaction of children and adolescents during the pandemic include perceived parental styles, quality of peer relationships, school engagement and time spent talking with caregivers (Choi et al., 2021).

1.5. The current study

Based on the above background and as shown in the structural model in Figure 1, the present study is supported by the following hypotheses:

- H1. The level of family support is positively associated with levels of life satisfaction and negatively associated with levels of cyberbullying victimization.
- H2. The level of family conflict is negatively associated with life satisfaction and positively associated with cyberbullying victimization.
- H3. The level of family visits is positively associated with levels of life satisfaction and negatively associated with levels of cyberbullying victimization.

The aim of this study is to determine the role of family variables in relation to students' levels of life satisfaction and cyberbullying victimization during the pandemic period.

2. Method

2.1. Data collection and sampling

Through convenience sampling, a total of 287 adolescents in the 10th, 11th and 12th grades from six public and private urban schools in the Metropolitan Region of Chile voluntarily participated in this study. Data were obtained through the application of a cross-sectional online self-reported questionnaire during October and November of the year 2020. It is important to mention that in that period the schools continued with virtual activities, since the confinement was decreed on March 15, 2020 (Ministerio de Salud, 2020). The average age was 15.95 years (SD = 1.13) which consisted of 114 female students (39.7%) and 173 male students (60.3%).

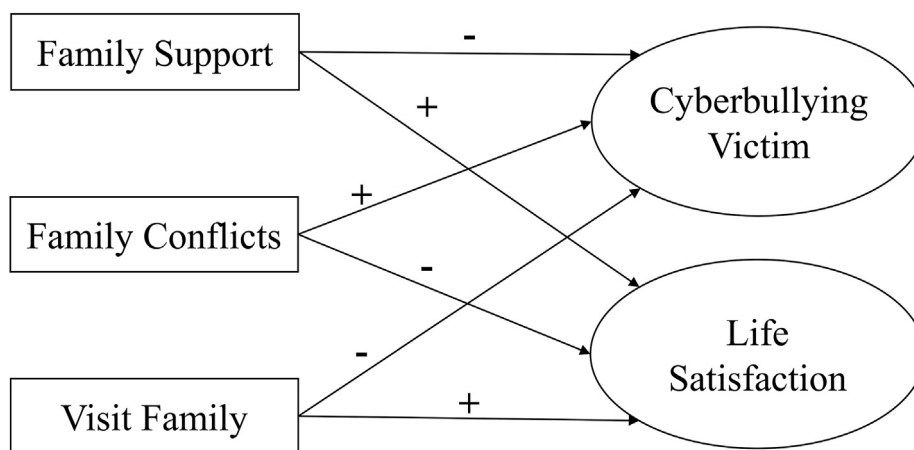


Figure 1. SEM model hypothesized the effects of Family Factors on Life Satisfaction and Cyberbullying Victimization in adolescents during the Covid-19 pandemic. Notes: (+) = Positive association among the variables; (-) = Negative association among the variables.

This study was approved by the Ethics Committee of the Universidad del Desarrollo that obtained passive informed consent from the parents and guardians, informed consent from the students and active consent from the schools.

In addition, power analysis was performed to determine the minimum sample size for the construction of the structural equation model (SEM), anticipating a medium effect size of 0.25, with a power level of 0.80 and an alpha significance level of 0.05 (Wolf et al., 2013). Through the use of the software developed by Soper (2021), it was determined that the minimum sample size for the construction of the SEM was  $n = 138$  participants.

## 2.2. Measures

The gender (dichotomous variable, female = 1) and age (continuous variable) of the participants were used as sociodemographic variables based on students' self-reported questionnaires.

### 2.2.1. Student Life Satisfaction Scale (SLSS)

Instrument created by Huebner (1991) to measure global satisfaction with life in children and adolescents from 8 to 18 years old, which has been validated in Chile and has adequate psychometric properties for Chilean children and adolescents (Alfaro et al., 2016; Benavente et al., 2019).

An abbreviated four-item version of the scale was used, which included the following statements: "I have a good life", "I have what I want in life", "My life is better than most kids", and "My life is going well". The response scale used was a 5-point Likert-type scale (1 = Strongly Disagree; 5 = Strongly Agree), which assesses different measures of life satisfaction. Higher scores on this scale indicate higher levels of life satisfaction. For the present study, the Cronbach's alpha of the measure was .77.

### 2.2.2. Victim of cyberbullying

An instrument developed by Ybarra et al. (2007) reports on the frequency of being a victim of aggressive behavior through the use of the Internet and digital media platforms, through any electronic device. This four-item self-report scale measures the frequency with which during the past year they were victims of these behaviors.

The scale items use a 5-point Likert scale (1 = Not sure; 5 = Often) and include the following statements: "Someone made a rude or mean comment to me online", "Someone spread rumors about me online, regardless of whether they were true or not", "Someone sent a text message that said rude or mean things" and "Someone made a threatening or aggressive comment to me online". Higher scores indicate more levels of cyberbullying as a victim. For the present study, the Cronbach's alpha of the measure was .74.

### 2.2.3. Family measures

This measure was constructed on the basis of three observed variables developed ad hoc for the present study from the International Survey of Children's Well-Being (ISCWeB) questionnaire, related to family dynamics during the pandemic period. The first of these called Family Support was evaluated through the statement "I have felt supported by my family".

The second variable called Family Conflicts was evaluated through the statement "In my family there have been conflicts". Both variables were scored on a 4-point Likert scale (1 = Never to 4 = Often). Higher scores respectively indicate higher levels of family support and family conflicts.

Finally, the variable Visit Family was measured by the following question "How often have I visited my family members?" and was scored on a 5-point scale (1 = Never to 5 = Several times a day every day of the week), where a greater score indicates a higher frequency of visits with family members.

The full questionnaire in English is available as supplementary material.

## 2.3. Data analysis

Descriptive statistics and the Pearson correlation were obtained with IBM® SPSS® version 27. The main analysis technique was structural equation modelling (SEM). Analyses were performed with the AMOS IBM® SPSS® program version 26 using the maximum likelihood estimation considering the non-normality of the data (Byrne, 2001). The three family measures (support, conflicts and visits) were used as exogenous variables, and the SSLS and Cyberbullying Victim scales were used as endogenous variables in the SEM model.

To assess model fit, several indices were examined including the chi-squared goodness of fit statistic ( $\chi^2$ ), degrees of freedom (df), goodness of fit index (GFI), comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR).

For the GFI, CFI and TLI values over .90 indicate adequate fit. For the RMSEA and SRMR, values less than .08 and Chi Square/df ratio <5 indicate adequate fit (Byrne, 2001; Weston and Gore, 2006). In addition, Confirmatory Factor Analysis of the latent variables was performed, which showed adequate adjustments for the Student Life Satisfaction Scale ( $\chi^2/df = 1.25$ ,  $p < .001$ , RMSEA = .039, SRMR = .019, CFI = .977, GFI = .993) and for the Cyberbullying Victimization Scale ( $\chi^2/df = 4.35$ ,  $p < .001$ , RMSEA = .049, SRMR = .011, CFI = .967, GFI = .983).

Lastly, because the missing data are less than 15% of the cases in each continuous variable, we replaced the missing scores with mean values (Mehrotra et al., 2017).

## 3. Results

### 3.1. Descriptive statistics and correlations

Descriptive statistics in the sample include the Life Satisfaction mean of 3.82 (SD = 0.83) and the Cyberbullying Victim scale reporting a mean of 2.01 (SD = 0.43). The descriptive statistics and the correlations among the family, control and dependent variables included in the study are shown in Table 1.

### 3.2. Structural model

The results of the structural model were consistent with the proposed hypotheses, demonstrating the role of family variables on cyberbullying and life satisfaction (Figure 2). This model was also controlled statistically for age upon cyberbullying victimization and SLSS.

The tested model has a good fit and parsimonious adjustment ( $\chi^2/df = 1.35$ ,  $p < .001$ , RMSEA = .037, SRMR = .039, CFI = .982, GFI = .944), explained 25.9% of the life satisfaction ( $R^2 = .259$ ) and 9% of the variance of cyberbullying victimization ( $R^2 = .09$ ). Family support was positively associated with life satisfaction ( $\beta = .57$ ;  $p < .001$ ) and negatively associated with cyberbullying victimization ( $\beta = -.09$ ;  $p = .02$ ). Likewise, family conflict was positively associated with levels of cyberbullying victimization ( $\beta = .09$ ;  $p = .038$ ) and negatively associated with life satisfaction levels ( $\beta = -.27$ ;  $p < .001$ ). Finally, family visits only were positively associated with life satisfaction ( $\beta = .18$ ;  $p = .007$ ) and did not have a significant effect on cyberbullying victimization ( $\beta = -.03$ ;  $p = .399$ ).

Finally, when estimating the model by gender, both the male and female models did not present statistically significant differences between them or with the general model ( $p > .05$ ), maintaining the significance in their paths.

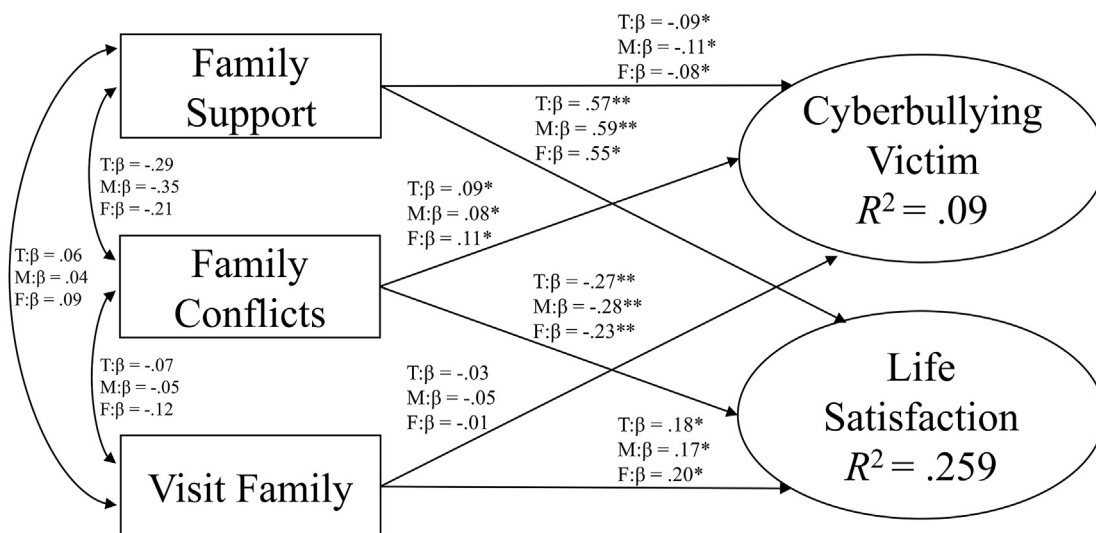
## 4. Discussion

The results were consistent with our hypothesis and highlight the importance of family support, conflicts and visits for life satisfaction and cyberbullying during periods of high stress and uncertainty, as is the current Covid-19 pandemic period (Montag and Elhai, 2020). In

**Table 1.** Descriptive statistics and correlations of Pearson among the measures.

Variables	M	SD	Range	1	2	3	4	5	6	7
(1) Age	15.95	1.13	14–18	–						
(2) Gender (1 = female)	.39	.50	0–1	-.074	–					
(3) Victim Cyberbullying	2.01	.43	1–4	.055	.022	–				
(4) SLSS	3.82	.83	1–5	-.068	-.005	.005	–			
(5) Family Support	3.41	.81	1–4	-.081	-.053	-.165*	.466**	–		
(6) Family Conflicts	1.84	.73	1–4	-.036	.009	.159*	-.291**	-.292**	–	
(7) Visit Family	1.72	.75	1–5	.012	.062	-.057	.172*	.056	-.065	–

Note: \*p < .05; \*\*p < .001; SLSS = Student Life Satisfaction Scale.



**Figure 2.** Structural Model among Family Measures, Life Satisfaction and Victim of Cyberbullying. Notes: \* = p < .05; \*\* = p < .001; R<sup>2</sup> = R-Squared; T = Total sample; M = Male; F = Female. The model also was controlled for age (not shown in the figure) upon cyberbullying victimization and SLSS.

particular, our results show that greater levels of family conflict connect with an increase of cyberbullying victimization and a decrease in life satisfaction levels. This is concordant with research conducted internationally prior to and during the pandemic period, where the negative effects of these conflicts on the levels of subjective well-being and increased victimization have been observed (Ye et al., 2021).

In terms of gender, our study did not show statistically significant differences in the variables of the model or in its pathways, which is consistent with previous studies (Dinisman and Ben-Arieh, 2016). However, future studies should include a comprehensive analysis of the variables associated with gender, given their relevance and the particular differences according to each country and culture.

The levels of life satisfaction (X = 3.82; SD = 0.83) reported in the current study are observed to be slightly lower than those reported using the same scale in other studies with similar samples (Alfaro et al., 2017; Jiang and Huebner, 2017; Oyarzún et al., 2019). These differences may surely be due to the effect that the pandemic has had on the mental health and well-being of children and adolescents. The decrease in the levels of life satisfaction described in this report is consistent with that shown in other studies carried out during the pandemic, indicating that these levels tend to show a significant decline (Magson et al., 2021; Von Soest et al., 2020). Such results show that the pandemic and its associated consequences have negatively impacted the lives of children and adolescents, making it very important to gain a deeper understanding of this phenomenon through future research.

Although the levels of cybervictimization are similar to those of previous studies with the same population and using the same scale (Varela-Torres et al., 2021), denunciations of cyberbullying in Chile increased in 2020 compared to previous years (Superintendencia de

Educación, 2021). Likewise, studies carried out in other countries, like the US and China, have reported an increase in cyberbullying during the pandemic period (Barlett et al., 2021; Deng and Feng, 2021). Regarding family functioning before and during the pandemic, the evidence is divergent. A study in China reported an increase in levels of family violence, which was attributed to an aggravation of conflicts due to the stress of confinement and the health crisis (Zhang, 2020). On the other hand, in a Canadian sample it was found that both conflicts and feelings of closeness with the family increased (Gademann et al., 2021).

The individual perception of the participants about family support dimensions was associated with the higher reports of life satisfaction and fewer cyberbullying self-reports, which is consistent with previous studies, indicating the importance of family dimensions. One example is Prime et al. (2020) who showed that positive ties and visits with family members have a positive impact on mental health and life satisfaction. Furthermore, a study conducted by Ye et al. (2021) demonstrated its protective role against cyberbullying victimization. This coincide with results of previous research that has reported that the family context plays a role in preventing cybervictimization (Arató et al., 2021; Elsaesser et al., 2017; Fanti et al., 2012; Kowalski et al., 2014; Martins et al., 2016; Wang et al., 2009).

In this regard, diverse hypotheses emerge to explain the influence of family in cyberbullying victimization. For example, Ortega-Barón et al. (2019) state that it is important for the victim of cyberbullying to have the support of family members to communicate the aggression they are suffering and actions can be taken to stop the aggression towards the victim. Under this perspective, if the victim does not trust his/her family, he/she is more likely to remain silent, thus making the harassment more likely to persist. The results of a recent systematic review propose similar

explanations. The authors suggest that proximity with the family and low levels of family conflict are protective factors against bullying and cyberbullying because this favors good communication, which allows the disclosure of situations of abuse from children to parents, a central aspect for prevention of bullying and cyberbullying (Machimbarrena et al., 2019).

On the other hand, there could be other possible ways to explain this relationship. In the same review just mentioned, it is suggested that the protective effect of good family relationships on bullying and cyberbullying would also be indirectly exerted through individual variables such as self-esteem, self-concept, social skills, among others (Machimbarrena et al., 2019). Likewise, other authors have suggested that an adverse and more conflictual family climate has a negative impact on children's emotional regulation skills, which translates into a much higher likelihood of becoming cyber-victims (Arató et al., 2021; Giancesini and Brighi, 2015). However, it is quite complex to establish the directionality of these relationships. For example, some studies have shown that cybervictimization in children and adolescents can impair family communication (Appel et al., 2014; Larrañaga et al., 2018). This would mean that a situation of harassment could negatively impact the victim's mental health and well-being, in turn degrading relationships with family members. Future research is necessary to clarify the underlying mechanisms of these phenomena to enable the identification of critical points for intervention.

Consequently, faced with these lower levels of life satisfaction and greater risks of cyberbullying behaviors, our results highlight actions to take as protective factors, especially in scenarios of great stress and uncertainty such as the current pandemic. It is essential to generate interventions focused on family factors that promote an increase in positive bonds and a decrease in conflicts, thus leading to improved levels of subjective well-being and fewer cyberbullying behaviors (Prime et al., 2020; Schwartz et al., 2021).

Analogously, during this period it has been observed at the international level that promoting positive family bonds is key to better subjective well-being, as this is also a protective factor against bullying and cyberbullying behaviors (Prime et al., 2020; Ye et al., 2021). In turn, school communities should foster synergic and collaborative work with families and provide resilience tools that prove to be useful in preparing for and dealing with high stress and disaster scenarios. Such situations challenge the adaptation of school curricula at different levels (Schwartz et al., 2021). It is important to consider that in the face of mobility restrictions and confinement measures that restrict visits with family members, among other limitations, it is necessary to foster family ties in a way that is appropriate to the specific health contexts (Montag and Elhai, 2020).

Research can inform public policy with knowledge and understanding about the phenomenon of cyberbullying. In addition, different regulations should also provide more support for schools regarding cyberbullying. Even though there is a national Act against school violence in Chile, including cyberbullying, schools are still missing more training and support to deal with these cases. Moreover, families can also be supported because cyberbullying is a type of aggression that mainly occurs outside of school property, such as online (Mason, 2008) or in students' homes.

Lastly, prevention efforts can take different forms. For example, the private sector can contribute by sponsoring public awareness campaigns or supporting prevention programs in schools. Considering the negative effect of the Pandemic on adolescent mental health in general, the private sector can also support schools and communities for prevention efforts, such as training for teachers, school counselors, and families about the consequences and risks of cyberbullying (Suzuki et al., 2012).

Our study has several limitations. First, the sample is relatively small and comes from a specific urban region. It is not representative of the general student population, which may undermine the generalizability of the results. This should be considered in future studies.

Second, the measurements were made through participant self-report, which may increase the risk of bias. Therefore, future research should consider the use of complementary information, such as teacher and parent reports. Third, only family variables were included in the analysis, which were constructed ad hoc for the present study. Future studies should consider the validation and adaptation of these scales. In addition, variables associated with socioeconomic level, owning of smartphones or personal computers and time of use of these devices were not examined, so future studies should include these variables, as well as investigate the impact of cyberbullying on life satisfaction. Furthermore, although this study was conducted during the pandemic, the use of a cross-sectional design without a pre-spread measure limited the temporal link between the outcomes, so future research should consider the design of longitudinal studies to gain a deeper understanding of the long-term effect of variables associated with the pandemic period.

Finally, inconsistent results about race, gender and socioeconomic status related to cyberbullying call for deeper understanding. They can be initially explained by the absence of more robust theoretical models or as a result of the deficit of better instruments to measure cyberbullying. Therefore, future research on cyberbullying can increase understanding about important variables such as race and gender by improving the psychometric properties of existing instruments and developing new ways to measure cyberbullying (Berne et al., 2013).

Despite these limitations, our study represents a relevant contribution to recent literature on life satisfaction and cyberbullying research, not only during the Covid-19 pandemic, but also in the face of future high stress and disaster scenarios. It provides evidence about the importance of the family and its connection to subjective well-being and preventing cyberbullying victimization behaviors. In particular, our results highlight the importance of family support for both life satisfaction and becoming a victim of cyberbullying.

Therefore, schools and communities can provide training and parenting support for those families that need more skills to support adolescents, especially in the context of more stress like the Pandemic. This is especially useful in a context of globalization in which interactions are increasingly occurring through digital media.

## Declarations

### Author contribution statement

Matías E. Rodríguez-Rivas; Jorge J. Varela: Conceived and designed the experiments; Analyzed and interpreted the data; Wrote the paper.

Constanza González; María Josefina Chuecas: Performed the experiments; Wrote the paper.

### Funding statement

This work was supported by FONDECYT Iniciación N°11170746, CONICYT, Chile.

### Data availability statement

Data will be made available on request.

### Declaration of interests statement

The authors declare no conflict of interest.

### Additional information

Supplementary content related to this article has been published online at <https://doi.org/10.1016/j.heliyon.2022.e09243>.

## References

- Alfaro, J., Benavente, M., Chuecas, J., Reyes, F., Varela, J., Melipillán, R., Fábrega, J., Yaikin, T., Rodríguez, C., 2021a. Resultados proyecto “international Survey of children’s well-being” (ISCWeB)- Chile. In: *En Centro de Estudios en Bienestar y Convivencia Social (CEBCS), El bienestar antes, durante y después de la pandemia. Universidad del Desarrollo*, pp. 12–40. <https://psicologia.udd.cl/cebcs/files/2021/01/El-bienestar-antes-durante-y-despu%C3%A9s-de-la-pandemia-CEBCS.pdf>.
- Alfaro, J., Benavente, M., Rodríguez-Rivas, M.E., Melipillán, R., Cabrera, T., Varela, J., Reyes, F., Pacheco, D., 2021b. Informe resultados: estudio Efectos de la Cuarentena Covid-19 en el Bienestar Adolescente. In: *En Centro de Estudios en Bienestar y Convivencia Social (CEBCS)*. <https://psicologia.udd.cl/cebcs/files/2021/11/Informe-Bienestar-COVID-19.pdf>.
- Alfaro, J., Guzman, J., Sirlópu, D., García, C., Reyes, F., Gaudlitz, L., 2016. Propiedades psicométricas de la Escala de Satisfacción con la Vida en los Estudiantes (SLSS) de Huebner en niños y niñas de 10 a 12 años de Chile. *An. Psicolog.* 32 (2), 383.
- Alfaro, J., Guzmán, J., Sirlópu, D., Oyarzún, D., Reyes, F., Benavente, M., Varela, J., Fernández de Rota, J., 2017. Sense of community mediates the relationship between social and community variables on adolescent life satisfaction. In: Tonon, G. (Ed.), *Quality Of Life in Communities of Latin Countries. Community Quality-of-life and Well-Being (185-204)*. Springer.
- Alfaro, J., Ramírez, L., Varela, J., 2019. Notion of life satisfaction and dissatisfaction in children and adolescents of low socioeconomic status in Chile. *Child Indic. Res.* 12, 1897–1913.
- Appel, M., Stiglbauer, B., Batinic, B., Holtz, P., 2014. Internet use and verbal aggression: the moderating role of parents and peers. *Comput. Hum. Behav.* 33, 235–241.
- Arató, N., Zsidó, A.N., Rivnyák, A., Péley, B., Lábadí, B., 2021. Risk and protective factors in cyberbullying: the role of family, social support and emotion regulation. *Int. J. Bull. Prevent.* 1–14.
- Atienza-González, F., Martínez, N., Silva, C., 2020. Life satisfaction and self-rated health in adolescents: the relationships between them and the role of gender and age. *Spanish J. Psychol.* 23, 1–9.
- Aymerich, M., Cladellas, R., Castelló, A., Casas, F., Cunill, M., 2021. The evolution of life satisfaction throughout childhood and adolescence: differences in young people’s evaluation according gender. *Child Indic. Res.*
- Barlett, C., Simmers, M., Roth, B., Gentile, D., 2021. Comparing cyberbullying prevalence and process before and during the Covid-19 pandemic. *J. Soc. Psychol.* 161 (4).
- Beale, A.V., Hall, K.R., 2007. Cyberbullying: what school administrators (and parents) can do. *Clear. House A J. Educ. Strategies, Issues Ideas* 81 (1), 8–12.
- Benavente, M., Cova, F., Alfaro, J., Varela, J., 2019. Propiedades Psicométricas de la Escala de Satisfacción con la Vida de los Estudiantes (SLSS) de Huebner en una Muestra de Adolescentes Chilenos. *Revista Iberoamericana de Diagnóstico y Evaluación – e Avaliação Psicológica* 50 (1).
- Berne, S., Frisén, a., Schultze-Krumbholz, a., Scheithauer, H., Naruskov, K., Luik, P., Zukauskienė, R., 2013. Cyberbullying assessment instruments: a systematic review. *Aggress. Violent Behav.* 18 (2), 320–334.
- Brochado, S., Soares, S., Fraga, S., 2017. A scoping review on studies of cyberbullying prevalence among adolescents. *Trauma Violence Abuse* 18 (5), 523–531.
- Buelga, S., Martínez-Ferrer, B., Musitu, G., 2016. Family relationships and cyberbullying. In: Navarro, R., Yubero, S., Larrañaga, E. (Eds.), *Cyberbullying across the Globe*. Springer, Cham, pp. 99–114.
- Buelga, S., Martínez-Ferrer, B., Cava, M.J., 2017. Differences in family climate and family communication among cyberbullies, cybervictims, and cyber bully–victims in adolescents. *Comput. Hum. Behav.* 76, 164–173.
- Byrne, B.M., 2001. Structural equation modeling with AMOS, EQS, and LISREL: comparative approaches to testing for the factorial validity of a measuring instrument. *Int. J. Test. 1* (1), 55–86.
- Capone, V., Joshanloo, M., Scheffinger, H., 2021. Predictors of life satisfaction in a large representative sample from Italy. *Curr. Psychol.* 40, 3609–3627.
- Choi, J., Park, Y., Kim, H., Song, J., Lee, D., Lee, E., Kang, H., Lee, J., Park, J., Lee, J.W., Yem, S., Lee, S., Ryu, S., Kim, Y., Kim, Y.R., Kim, Y.J., Lee, Y., 2021. Daily life changes and life satisfaction among Korean school-aged children in the Covid-19 pandemic. *Int. J. Environ. Res. Publ. Health* 18 (6).
- Consejo Nacional de la Infancia, 2018. Análisis Multivariable de Estudio Polivictimización en Niños, Niñas y Adolescentes realizado por la Pontificia Universidad Católica de Chile. Santiago, Chile. Retrieved from: [http://www.creciendoconderechos.gob.cl/docs/Informe\\_Final\\_polivictimizacion.pdf](http://www.creciendoconderechos.gob.cl/docs/Informe_Final_polivictimizacion.pdf).
- Deng, S., Feng, X., 2021. How perceived threat of COVID-19 related to aggressive tendencies during the pandemic in Hubei province and other regions of China: mediators and moderators. *Curr. Psychol.*
- Diener, E., 2006. Guidelines for national indicators of subjective well-being and ill-being. *J. Happiness Stud.* 7, 397–404.
- Diener, E., 2009. Subjective well-being. In: Diener, E. (Ed.), *The Science Of Well-Being: the Collected Works Of Ed Diener*. Social Indicators Research Series 37.
- Diener, E., Oishi, S., Tay, L., 2018. Advances in subjective well-being research. *Nat. Human Behav.* 2 (4), 253–260.
- Dinisman, T., Ben-Arieh, A., 2016. The characteristics of children’s subjective well-being. *Soc. Indic. Res.* 126, 555–569.
- Elsaesser, C., Russell, B., Ohannessian, C.M., Patton, D., 2017. Parenting in a digital age: a review of parents’ role in preventing adolescent cyberbullying. *Aggress. Violent Behav.* 35, 62–72.
- Fanti, K.A., Demetriou, A.G., Hawa, V.V., 2012. A longitudinal study of cyberbullying: examining risk and protective factors. *The European Journal of Developmental Psychology* 9 (2), 168–181.
- Gadermann, A.C., Thomson, K.C., Richardson, C.G., Gagné, M., McAuliffe, C., Hirani, S., Jenkins, E., 2021. Examining the impacts of the COVID-19 pandemic on family mental health in Canada: findings from a national cross-sectional study. *BMJ Open* 11 (1).
- Garaigordobil, M., Machimbarrena, J.M., 2019. Victimization and perpetration of bullying/cyberbullying: connections with emotional and behavioral problems and childhood stress. *Psychosoc. Interv.* 28 (2), 67–73.
- Gianesini, G., Brighi, A., 2015. Cyberbullying in the era of digital relationships: the unique role of resilience and emotion regulation on adolescents’ adjustment. In: Blair, S.L., Claster, P.N., Claster, S.M. (Eds.), *Technology and Youth: Growing up in a Digital World (1-47)*. Emerald Group Publishing Limited.
- González-Carrasco, M., Casas, F., Viñas, F., Dinisman, T., 2017. Changes with age in subjective well-being through the adolescent years: differences by gender. *J. Happiness Stud.* 18, 63–88.
- Guzmán, J., Varela, J., Benavente, M., Sirlópu, D., 2017. Sociodemographic profile of children’s well-being in Chile. In: Sarriera, J., Bedin, L. (Eds.), *Psychosocial Well-Being of Children and Adolescents in Latin America, Children’s Well-Being: Indicators and Research*, 16. Springer, Cham.
- Hinduja, S., Patchin, J.W., 2010. Bullying, cyberbullying, and suicide. *Arch. Suicide Res.* 14 (3), 206–221.
- Jiang, X., Huebner, S., 2017. Students’ life satisfaction scale: analysis of factorial invariance across gender. *J. Well-Being Assess.* 1, 25–34.
- Kaye-Tzadok, A., Kim, S., Main, G., 2017. Children’s subjective well-being in relation to gender- what can we learn from dissatisfied children? *Child. Youth Serv. Rev.* 80, 96–104.
- Kowalski, R.M., Giumetti, G.W., Schroeder, A.N., Lattanner, M.R., 2014. Bullying in the digital age: a critical review and meta-analysis of cyberbullying research among youth. *Sch. Psychol. Bull.* 140 (4), 1073–1137.
- Kowalski, R.M., Limber, S.E., Agatston, P.W., 2012. *Cyberbullying: Bullying in the Digital Age*, 2nd ed. Wiley-Blackwell, Malden, MA.
- Larrañaga, E., Yubero, S., Navarro, R., 2018. Parents’ responses to coping with bullying: variations by adolescents’ self-reported victimization and parents’ awareness of bullying involvement. *Soc. Sci. 7* (8), 121–132.
- Larrañaga, E., Yubero, S., Ovejero, A., Navarro, R., 2016. Loneliness, parent-child communication and cyberbullying victimization among Spanish youths. *Comput. Hum. Behav.* 65, 1–8.
- Lawler, M.J., Newland, L.A., Giger, J.T., Roh, S., Brockevelt, B.L., 2017. Ecological, relationship based model of children’s subjective well-being: perspectives of 10-year-old children in the United States and 10 other countries. *Child Indic. Res.* 10 (1), 1–18.
- Lee, B., Yoo, M., 2015. Family, school, and community correlates of Children’s subjective well-being: an international comparative study. *Child Indic. Res.* 8 (1), 151–175.
- Lessard, L., Puhl, R., 2021. Adolescent Academic Worries amid Covid-19 and Perspectives on Pandemic-Related Changes in Teacher and Peer Relations. *School Psychology*.
- Looze, M.E., Huijts, T., Stevens, G.W.J.M., Torsheim, T., Vollebergh, W.A.M., 2018. The happiest kids on earth. Gender equality and adolescent life satisfaction in Europe and North America. *J. Youth Adolesc.* 47, 1073–1085.
- Machimbarrena, J.M., González-Cabrera, J., Garaigordobil, M., 2019. Family variables related to bullying and cyberbullying: a systematic review. *Pensamiento Psicológico* 17 (2), 37–56.
- Magson, N., Freeman, J., Rapee, R., Richardson, C., Oar, E., Fardouly, J., 2021. Risk and protective factors for prospective changes in adolescent mental health during the Covid-19 pandemic. *J. Youth Adolesc.* 50, 44–57.
- Martins, M.D., Veiga Simao, A.M., Freire, I., Caetano, A.P., Matos, A., 2016. Cybervictimization and cyber-aggression among Portuguese adolescents: the relation to family support and family rules. *Int. J. Cyber Behav. Psychol. Learn. (IJCPL)* 6 (3), 65–78.
- Mason, K.L., 2008. Cyberbullying: a preliminary assessment for school personnel. *Psychol. Sch.* 45 (4), 323–348.
- Mehrotra, D.V., Liu, F., Permutt, T., 2017. Missing data in clinical trials: control-based mean imputation and sensitivity analysis. *Pharmaceut. Stat.* 16 (5), 378–392.
- Ministerio de Educación, Centro de Estudios, 2018. *Ciberacos: una revisión internacional y nacional de estudios y programas. Evidencias N° 43*. Santiago, Chile. Retrieved from: <https://centroestudios.mineduc.cl/wp-content/uploads/sites/100/2018/11/EVIDENCIAS-43.pdf>.
- Ministerio de Salud, 2020. *Presidente anuncia suspensión de clases y reduce actos públicos*. Santiago, Chile. Retrieved from: <https://www.minsal.cl/presidente-anuncia-suspension-de-clases-y-reduce-actos-publicos/>.
- Montag, C., Elhai, J., 2020. Discussing digital technology overuse in children and adolescents during the Covid-19 pandemic and beyond: on the importance of considering affective neuroscience theory. *Add. Behav. Rep.* 12.
- Navarro, R., Yubero, S., Larrañaga, E., 2015. Psychosocial risk factors for involvement in bullying behaviors: empirical comparison between cyberbullying and social bullying victims and bullies. *School Mental Health* 7 (4), 235–248.
- Oberle, E., Schonert-Reichl, K., Zumbo, B., 2011. Life satisfaction in early adolescence: personal, neighborhood, school, family, and peer influences. *J. Youth Adolesc.* 40, 889–901.
- Ortega-Barón, J., Buelga-Vasquez, S., Cava-Caballero, M.J., 2016. The influence of school climate and family climate among adolescents victims of cyberbullying. *Comunicar* 24 (46), 57–65.
- Ortega-Barón, J., Postigo, J., Iranzo, B., Buelga, S., Carrascosa, L., 2019. Parental communication and feelings of affiliation in adolescent aggressors and victims of cyberbullying. *Soc. Sci.* 8 (1), 1–12.
- Oyanedel, J., Alfaro, J., Mella, C., 2015. Bienestar subjetivo y calidad de vida en Chile. *Revista Latinoamericana de Ciencias Sociales, Niñez y Juventud* 13 (1).
- Oyarzún, D., Casas, F., Alfaro, J., 2019. Family, school, and neighborhood microsystems influence on children’s life satisfaction in Chile. *Child Indic. Res.* 12, 1915–1933.
- Prime, H., Wade, M., Browne, D.T., 2020. Risk and resilience in family well-being during the COVID-19 pandemic. *Am. Psychol.* 75 (5), 631–643.

- Children's views on their lives and well-being in 35 countries: a report on the Children's Worlds project, 2016-19. In: Rees, G., Savahl, S., Lee, B.J., Casas, F. (Eds.), 2020. Jerusalem, Israel: Children's Worlds Project (ISCWeB). <https://iscweb.org/wp-content/uploads/2020/07/Childrens-Worlds-Comparative-Report-2020.pdf>.
- Richa, B., 2020. Editorial: effects of the Covid-19 pandemic on child and adolescent mental health. *Curr. Opin. Psychiatr.* 33 (6), 568–570.
- Rodríguez-Rivas, M.E., Cabrera, T., Benavente, M., Pacheco, D., Melipillán, R., Alfaro, J., Varela, J., Reyes, F., 2021. Efectos del Período de Pandemia en el Bienestar de Adolescentes Chilenos. En Centro de Estudios en Bienestar y Convivencia Social (CEBCS), *El Bienestar Antes, Durante y Después de la Pandemia*. Universidad del Desarrollo, pp. 152–165. <https://psicologia.udd.cl/cebc/files/2021/01/El-bienestar-antes-durante-y-despu%C3%A9s-de-la-pandemia-CEBCS.pdf>.
- Sasson, H., Mesch, G., 2017. The role of parental mediation and peer norms on the likelihood of cyberbullying. *J. Genet. Psychol.* 178 (1), 15–27.
- Schwartz, K.D., Exner-Cortens, D., McMorris, C.A., Makarenko, E., Arnold, P., Van Bavel, M., Williams, S., Canfield, R., 2021. COVID-19 and student well-being: stress and mental health during return-to-school. *Can. J. Sch. Psychol.* 36 (2), 166–185.
- Smith, P.K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., Tippett, N., 2008. Cyberbullying: its nature and impact in secondary school pupils. *JCPP (J. Child Psychol. Psychiatry)* 49 (4), 376–385.
- Soper, D.S., 2021. A-priori sample size calculator for structural equation models [Software]. Available from. <https://www.danielsoper.com/statcalc>.
- Suldo, S., Thalji-Raitano, A., Hasemeyer, M., Gelley, C., Hoy, B., 2013. Understanding middle school students life satisfaction: does school climate matter? *Appl. Res. Qual. Life* 8, 169–182.
- Superintendencia de Educación, Prensa, 2021. *Proporción de denuncias de ciberacoso recibidas por la Superintendencia de Educación aumentó en 2020*. Santiago, Chile. Retrieved from. <https://www.supereduc.cl/prensa/denuncias-de-ciberacoso-recibidas-por-la-superintendencia-de-educacion-aumentaron-en-2020/>.
- Suzuki, K., Asaga, R., Sourander, A., Hoven, C.W., Mandell, D., 2012. Cyberbullying and adolescent mental health. *Int. J. Adolesc. Med. Health* 24 (1), 27–35.
- Tomé, G., Branquinho, C., Cerqueira, A., Gaspar do Matos, M., 2021. Covid-19, social distancing and adolescents' risk behaviours, wellbeing and life satisfaction: a proxy study drawn from HBSC study. *Análisis Modif. Conducta* 47 (76).
- Varela, T., J., Pérez, J.C., Schwaderer, Z., H., Astudillo, J., Lecannelier, A., F., 2014. Caracterización de cyberbullying en el gran Santiago de Chile, en el año 2010. *Psicología Escolar e Educativa* 18 (2), 347–354.
- Varela, J.J., Zimmerman, M.A., Ryan, A.M., Stoddard, S.A., 2017. Cyberbullying among Chilean students and the protective effects of positive school communities. *J. Sch. Violence* 1–13.
- Varela-Torres, J.J., Sánchez-Soto, P.A., Chuecas, J., Benavente, M., González, C., Torres, A.O., 2021. Cyberbullying. Bullying and antisocial behavior among Chilean adolescents. *Tesis Psicológica* 16 (2), 1–25.
- Varela, J., Fundación Summer, Statsknow, 2020. Estudio de Percepciones de Adolescentes y Jóvenes de la Región Metropolitana Antecedentes para Establecer Posibles Relaciones entre Ciberacoso y Tendencias Depresivas, Patrones de Uso de Redes Sociales y Perfil Sociodemográfico. En Centro de Estudios en Bienestar y Convivencia Social (CEBCS). <https://psicologia.udd.cl/cebc/files/2020/09/Estudio-ciberacoso-StatKnows-con-UDD-para-Fundaci%C3%B3n-Katy-Summer-Informe-de-hallazgos.pdf>.
- Von Soest, T., Bakken, A., Pedersen, W., Sletten, M., 2020. Life satisfaction among adolescents before and during Covid-19 pandemic. *Tidsskr. Nor. Laegeforen* 140 (10).
- Wang, J., Iannotti, R.J., Nansel, T.R., 2009. School bullying among adolescents in the United States: physical, verbal, relational, and cyber. *J. Adolesc. Health* 45 (4), 368–375.
- Weston, R., Gore, P.A., 2006. A brief guide to structural equation modeling. *Counsel. Psychol.* 34 (5), 719–751.
- Wolf, E.J., Harrington, K.M., Clark, S.L., Miller, M.W., 2013. Sample size requirements for structural equation models. *Educ. Psychol. Meas.* 73 (6), 913–934.
- Ybarra, M.L., Espelage, D.L., Mitchell, K.J., 2007. The Co-occurrence of internet harassment and unwanted sexual solicitation victimization and perpetration: associations with psychosocial indicators. *J. Adolesc. Health* 41 (6), S31–S41.
- Ye, Y., Wang, C., Zhu, Q., He, M., Havawala, M., Bai, X., Wang, T., 2021. Parenting and teacher-student relationship as protective factors for Chinese adolescent adjustment during COVID-19. *Sch. Psychol. Rev.* 1–19.
- Zhang, H., 2020. The influence of the ongoing COVID-19 pandemic on family violence in China. *J. Fam. Violence* 1–12.