

Relationship Between Domains of Subjective Well-Being and Psychopathology: Gender Differences in Chilean Adolescents

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Acceso abierto diamante

Abstract

Mental health and adolescent well-being are central elements of healthy development. Although these concepts are two sides of the same coin, the relationship between them has not been studied extensively, particularly considering the gender variable. The objective of this study was to compare the levels of subjective well-being and risk of psychopathology by gender in a sample of 838 Chilean adolescents (46.7% off women, mean age of 15.50 years, SD = 0.96), as well as to determine the relationship between these two variables. The study was non-experimental, cross-sectional, and correlational. Mean comparison analyzes were carried out to determine in which domains of subjective well-being and psychopathology statistically significant gender differences were present. In addition, multiple linear regression analyzes were carried out (for the complete sample and for the subsamples of male and female adolescents), considering the domains of subjective well-being as independent variables and a general psychopathology factor as the dependent variable, with the objective of identify which specific domains of subjective well-being were associated with psychopathology for each group. The results show that women have a higher risk of psychopathology and lower levels of subjective well-being, these differences being statistically significant in most of the dimensions evaluated (p -value $< .05$). For male adolescents, the domains of subjective well-being that were statistically significantly related (p -value $< .05$) to the risk of psychopathology were satisfaction with “your life in school” (Beta std. = $-.24$), “how confident you feel in your current life” (Beta std. = $-.18$) and “how confident you feel about yourself” (Beta std. = $-.18$), in this order of importance. Likewise for the adolescent women these domains were satisfaction with “how confident you feel about yourself” (Beta std. = $-.21$) and “your personal health” (Beta std. = $-.12$). It is concluded that gender differences in psychopathology and subjective well-being constitute an important gap, which must be addressed by interventions and public policies.

Keywords: mental health, life satisfaction, students, depression, anxiety, ADHD..

Introduction

Adolescence is a critical stage of formation and development, that is characterized by a great variety of biological, psychological, and social changes (Blakemore, 2019) in which individuals begin their transition from childhood to adulthood. Ensuring that adolescents receive support in all facets of their lives is essential to promote this transition and lay the foundations for good health, and personal and social development for the rest of their lives. While there are many factors that significantly affect the lives of adolescents, mental health is one that has been left aside often, remaining largely unrecognized and untreated (United Nations International Children's Emergency Fund [UNICEF], 2018, World Health Organization [WHO], 2021), even though the problems that influence this factor commonly emerge at this stage of life (Patton et al., 2016; Akseer, 2020; Blakemore, 2019) and have a widespread negative impact on adolescents and their environment.

The research by Dalsgaard et al. (2020) suggests that almost all mental disorders in the adolescence may be associated with a lower probability of graduate from high school, which in turn is closely related to the life trajectories of adolescents and predicts different variables in the adult stage, such as the use of substances (Valkov, 2018), among others. Given the impact that this stage of life has on personal and future development, and the influence of mental health and subjective well-being, it is essential to delve into the factors that influence these variables and how they can be covered.

Mental health is defined as the ability to achieve and maintain a level of optimal well-being and psychological and social functioning. It integrates positive and negative indicators (Kim et al., 2019), which can be represented by subjective well-being and psychopathology (Marasca et al., 2021). In the case of adolescents this includes a sense of identity, self-esteem, good relationships with relatives and peers, and the ability to be productive and learn to cope with the challenges of these stages of development, based on the use and availability of cultural resources (WHO, 2005). In contrast, the deterioration of mental health may be categorized through mental disorders, which have various manifestations, and are characterized in general by a combination of disturbances of thought, perception, emotions, behavior, and relationships with others (Waszkiewicz, 2020). Mental disorders account for a large proportion of the burden in terms of adolescents' diseases in all societies around the world (Kapungu et al., 2018; UNICEF, 2018). Worldwide, it is estimated that one in seven adolescents (14%) currently present some type of mental health disorder (WHO, 2021; Polanczyk, 2015). These disorders, in addition to causing suffering to those who experience them and their families, have personal consequences that extend into adulthood, and furthermore, social consequences (Kapungu & Petroni, 2017; WHO, 2021). The high prevalence and negative impacts associated with mental health disorders has resulted in increased recognition of the importance of this topic in the international community (Kapungu & Petroni, 2017; Kapungu et al., 2018; Potrebny et al., 2017). In relation to this point, improvements in mental health are an essential aspect in achieving the Sustainable Development Goals (SDGs) established at the United Nations Conference on Sustainable Development held in Rio de Janeiro in 2012 (WHO, n.d.), and yet despite this, they have been deeply neglected (Kapungu & Petroni, 2017).

Like many other phenomena that involve biological, psychological, and social variables, the phenomenon of mental health exhibits important gender differences. For example, for unipolar depressive disorders, which increase their incidence during adolescence (Yalin & Young, 2018; Blakemore, 2019), it has been reported a higher incidence rate for female adolescents than for their male peers (Yigurs & Yang, 2015; Frey et al., 2020; Keyes et al., 2019; Hyde et al., 2020), which constitutes a significant gender gap. In the case of anxiety disorders, several studies have shown that the prevalence in adolescent women is considerably higher than in men (Gao et al., 2020; Asher et al., 2017; Özdin & Bayrak Özdin 2020; Hou et al., 2020; Khesht-Masjedi et al., 2019; Grenier et al., 2018).

In the case of male adolescents, several studies have shown a higher prevalence of behavioral disorders, such as aggression, delinquent behavior, justification of violence beliefs and impulsivity (Calvete & Cardeñoso,

2005; Lahey et al., 2000). Likewise, the review of Miranda-Mendizabal et al. (2019), identify that male adolescents have a higher rate of suicide than female adolescents, although the latter have higher rates of ideation and suicide attempts, which is known as the gender paradox in suicide (Barrigon & Cegla-Schvartzman, 2019). In any case, according to the Institute for Health Metrics and Evaluation (IHME, 2019), in 2017 suicide was one of the leading causes of death for adolescents of both genders, in third place for men worldwide in the age range 14–19 years and in the first place in the case of women worldwide. Regarding gender differences in Chilean adolescents, some studies have shown that women present higher prevalence (or associated symptoms) in anxiety disorders, unipolar depressive disorders, oppositional defiant disorder and attention deficit hyperactivity disorder (ADHD), whereas male adolescents present a higher prevalence in the case of behavioral disorder (Barra et al., 2006; De La Barra et al., 2012; Florenzano et al., 2009; Vicente et al., 2010; Vicente et al., 2012; Caqueo-Urizar et al., 2020), which follows a similar line to the evidence presented by international studies (with the exception of ADHD and oppositional defiant disorder).

A concept closely related to mental health, as well as general health, and personal and social development of people, is well-being (Patton et al., 2016; UNICEF, 2012). From the perspective of positive psychology, Diener (2000) defines subjective well-being (SWB) as the cognitive and affective evaluation that people make regarding their own lives. Well-being, seen from this perspective, is related to pleasant emotions, participation in activities of the person's interest, pleasure, and satisfaction with life in different domains. This has been adopted as a measure of the quality of life that transcends the macroeconomic indicators of the countries, by measuring the subjective assessment that people make of their lives in different domains (Diener & Suh, 1997). In this sense, several studies have evidenced the relationship between SWB and different psychosocial variables in the adolescent population, such as satisfaction with family life or perceived family support (Lampropoulou, 2018; Lee & Yoo 2015; Rodríguez-Fernández et al., 2016), satisfaction at school (Lampropoulou, 2018; Lee & Yoo 2015; Varela et al., 2019), self-esteem (Duy & Ali Yıldız, 2019; Yang et al., 2019), and mental health (Bos et al., 2016 ; Haworth et al., 2017), among others. Regarding gender differences, some international studies have reported that adolescents present differences in specific domains of subjective well-being, and not in general SWB (González-Carrasco et al., 2007); Tomyne et al., 2015); whereas other studies have reported that differences occur in the two levels, with female adolescents having lower levels of general subjective well-being (Fernandez et al., 2018; Ma et al., 2015; Marquez & Long, 2020). In the case of Chile, studies have concluded that for adolescent population, the domains of well-being that correspond to personal security, perceived level of life and personal relationships are the greatest predictors of general satisfaction with life (Alfaro et al., 2013; Bilbao-Ramírez et al., 2016). While there is ample research on the adolescent population, few studies have focused on the differences by gender regarding SWB. The ones that have, reported that women present lower levels of quality of life related to health and less satisfaction with life. (González et al, 2016; Alvarez et al., 2017).

This difference in experiences around both mental health and SWB, at the gender level, implies a need to take this variable into account. This, because at the moment of understanding and intervening in the causes and possible solutions of both variables, we will find a gender difference that, when analyzed separately, will allow us to generate interventions, either at the school or public policies level, which may be more effective according to the focus group. Despite the realization of these studies, it is clear that the issue of SWB in adolescents, even at the international level, is still an emerging field of research that lacks investigation and needs to be developed (Alfaro et al., 2015; Chen et al., 2020; Kapungu et al., 2018), and in particular, taking gender into consideration.

Considering the importance of the above and the lack of studies that take account of the relationship between mental health and SWB in adolescents, the need to deepen the investigation of both concepts is evident, especially regarding their association, determining, for example, which domains of life affect in a more determinant way the mental health of this population. In addition, although both men and women are affected by social expectations and norms based on gender (Kapungu & Petroni, 2017), the way in which they

influence the well-being and mental health of male and female adolescents is not the same (WHO, n.d.). This adds complexity, as well as relevance to the study of these phenomena, which have received little attention with respect to gender (WHO, n.d.; Kapungu & Petroni, 2017; Kapungu et al., 2018). This would provide evidence to support the development of future public policies and psychosocial interventions addressing the problem of mental health in adolescents.

The present study has three objectives. The first consists of estimating the risk of presence of various psychopathological disorders in male and female students of the third and fourth year of high school, in order to gain an understanding of the proportion of adolescents that are affected by this type of problems. The hypothesis associated with this objective is that the proportion of adolescents at risk of psychopathology will be related to the proportion of psychopathology reported by previous international studies.

The second objective is to compare the levels of SWB in different domains of life and the levels of symptoms present for different dimensions of psychopathology among male and female adolescents, in order to establish the differences by gender among the adolescents in the sample. The hypothesis associated with this objective is that female adolescents will present higher rates of anxiety disorders and mood disorders, while male adolescents will present higher rates in the case of conduct disorder, as reported by previous studies.

The third objective is to determine which domains of subjective well-being are associated with the risk of general psychopathology of adolescents in general, and by gender, in order to identify relevant domains in common and gender-specific that are relevant to mental health. The hypothesis associated with this objective is, in the case of male adolescents, satisfaction with their life at school is the one most associated with mental health within the domains of their life, while in the case of adolescent's women this would be the domain of self-confidence. This is supported by the idea that self-confidence and therefore self-esteem, is a crucial point for adolescent females regarding to their mental health as they report lower self-esteem than male adolescents (Helwig & Ruprech, 2017). Instead, male adolescents are in higher risk of suffering violence in their environment, being the quality of life at school a defining point for their mental health (Postigo et al., 2009; Rothon et al., 2011).

Although gender gaps in subjective well-being and psychopathology are known, the novelty and relevance of this study lies in identifying which specific domains of subjective well-being are associated with psychopathology in guys and girls. In this way, we will be able to better understand this phenomenon in adolescence and have inputs that allow us to develop more specific interventions (according to gender), focusing on the use of resources.

2 Materials and methods

2.1 Participants

The sample consisted of 838 students in their third and fourth years of high school in the Chilean educational system, in the urban area of the Metropolitan Region of Chile (MR). Although the age range of adolescence is usually considered between 12 and 18 years old, only these levels of the school system were considered (where adolescents are usually between 14 and 16 years old) due to the ease of access to them (the lower levels required a greater amount of permission to apply the instrument and the higher levels showed less willingness to participate in the study because they were preparing for the secondary school leaving exams). The sampling method consisted of a probabilistic and two-stage design, where the first-level units were schools and the final level units were the third and fourth years of secondary school. The sampling frame were schools of the urban area of the MR, present in the 2017 Registration Table of the Ministry of Education of Chile, which lists all the schools in the country. Men corresponded to 53.3% of the sample while 46.7% corresponded to women, with an mean age of 15.50 years (SD = 0.96). Six municipal schools (30.0%), twelve

subsidized private schools (60.0%), and two paid private schools (10.0%) were considered. Table 1 and Table 2 show the number of participants per grade and per type of school according to gender.

Table 1

<i>Number of participants per grade according to gender</i>		
Grade	Men	Women
Third year of secondary	191	132
Fourth year of secondary	256	259

Table 2

<i>Number of participants per type of school according to gender</i>		
Type of school	Men	Women
Municipal schools	113	96
Subsidized private schools	305	298
Paid private schools	29	6

2.2 Instruments

2.2.1 Youth's Inventory-4 (63) in its Spanish version

Youth's Inventory-4 (YI-4) is a self-report questionnaire developed to be applied in adolescent samples (12–18 years), with 128 closed self-report question items that refer to symptoms of 18 diagnostic categories of emotional and behavioral disorders, based on the Diagnostic and Statistical Manual of Mental Disorders IV (APA, 1994). Each item is rated on a scale of 0 to 3 points, according to their frequency. This instrument allows the use of two types of scoring: dimensional (adding all the points of the items corresponding to each dimension) and categorical (establishing a cut-off point for the presence or non-presence of risk of psychopathology). The cut-off points to establish the existence of the risk of psychopathology is different for each of the disorders considered by the instrument and were established in the original design of the instrument based on the association of these with the real existence of psychopathology. To answer the questions on this scale, participants were asked to think about the past two weeks.

The only dimensions of the instrument used in this study were the ones relating to: ADHD, considering its three subcategories, predominantly inattentive (ADHD-I), predominantly hyperactive/impulsive (ADHD-H/I) and combined (ADHD-C); anxiety disorders, split into a category for generalized anxiety disorder and separate items related to symptoms of other anxiety disorders (which includes symptomatology related to specific phobias, panic attacks, obsessions, compulsions, traumatic events, motor tics, vocal tics, somatization disorder, social phobia and separation anxiety); mood disorders, split into two subcategories, major depressive disorder and dysthymic disorder; behavioral disorder; oppositional defiant disorder; and use of substances. The original scale has good psychometric properties in terms of construct validity, content validity (correspondence with clinical diagnoses), and reliability as well. Internal consistency of the dimensions evaluated in this study varied between acceptable and good (see Table 3). Some items were adapted to the Chilean colloquial language in order to facilitate understanding by the students.

Table 3

<i>Internal Consistency of the Psychopathological Dimensions of the YI-4 Instrument</i>		
Dimension	Cronbach's Alpha	N° of Elements
ADHD-I	.80	9
ADHD-HI	.77	9
ADHD-C	.86	18
Conduct Disorder	.85	15
Oppositional Defiant Disorder	.79	8
Generalized Anxiety Disorder	.77	8
Other Anxiety Disorders	.80	17
Major Depressive Disorder	.79	11
Dysthymia Disorder	.86	10
Use of Substances	.76	6
General Factor of Psychopathology	.93	90 ^a

^aThe number of items of the General Factor of Psychopathology does not coincide with the sum of the items of the rest of the dimensions because some of these share items.

In order to analyze the relationship of the other variables of the study with risk of general psychopathology, a General Factor of Psychopathology was constructed, and then extracted through an EFA from all the items of the instrument. The total set of items showed high reliability (Cronbach's Alpha = .93).

2.2.2 Personal Well-being Index in its school version of nine items [Casas et al., 2012; Tomy & Cummins, 2011)

The PWI-SC9 scale is formed by nine closed self-report questions, which assess satisfaction with nine domains of life. Respondents were asked to answer the question “how satisfied are you with...?” completed with the following items, and rate them using an 11-point Likert scale: (1) the things you have; (2) the things you want to be good at; (3) your personal health; (4) how confident you feel in your current life (in general); (5) how confident you feel about yourself; (6) your relationships with other people, in general; (7) what may happen later in your life; (8) your life in school or high school; (9) how you use your time. To answer the questions on this scale, participants were asked to think about the past two weeks. Items are averaged to obtain the total score of PWI-SC9, which represents overall personal satisfaction. Bilbao-Ramírez et al. (2016) applied this questionnaire in a sample of 4,964 Chilean students in their second year of secondary education in the Chilean education system, reporting good psychometric properties in terms of validity and reliability. The internal consistency of this instrument, applied to this study, is considered good (Cronbach's alpha = .89).

2.3 Procedure

The instrument, which included the scales presented in this article, as well as other scales, was applied through a self-report questionnaire during the 2017 school period, during the regular class schedule. The students, their parents, and the managers of the establishments were duly informed of the objectives of the study, and they were asked to sign an informed consent in the case of agreeing to participate. They were also informed about the confidentiality with which the collected data would be treated, as well as about the rights of the students regarding their participation, indicating that they could leave the study at any time, without prejudice. The study was approved by the ethics committee of [BLINDED] according to resolution 15/2017 of the year 2017.

Schools randomly selected to be part of the study were contacted by telephone. Only 8% of the schools contacted agreed to participate in the study. The instrument was applied during regular school hours in paper format. A previously trained group, who carried out the process under standardized conditions, developed the measurements. The students were consulted in the permanent presence of a teacher, completing the questionnaires in an optimal classroom environment, with the help of researchers. Once all the surveys were applied, a team of assistants digitized them.

2.4 Analysis

First, an estimation was made based on the sample of the percentage of the population of first and second years of secondary school students of the MR who scored within the risk range of each disorder described. For this purpose, it was weighted by gender and by type of dependence of the schools, in order to adjust the percentages of the sample to population parameters. In this part, only the categories corresponding to disorders were considered, leaving out the mono-item categories that referred to only one symptom, in order not to overestimate the general prevalence of disorders. Next, comparisons were made of the scores obtained in the scale of SWB (and each of its dimensions), and the scores obtained in each psychopathological dimension (including mono-items referring to symptoms) by gender. For this, Student's *t*-tests were performed for independent samples with the purpose of determining in each case if the differences were statistically significant. Then, Pearson's correlation coefficient was calculated to determine if there were any correlations between the dimensions of psychopathology and the domains of SWB. Finally, a multiple linear regression analysis was performed for the total sample and for each gender, where the different SWB domains were considered as independent variables and the General Factor of Psychopathology as a dependent variable. All statistical analyses were carried out using the IBM-SPSS v.24 software

3 Results

3.1 Risk of Psychopathology

Table 4 presents the estimates of the percentages of adolescents in the first and second years of high school of the MR who meet the risk criteria of psychopathology for each of the categories evaluated. The weighting was done using two variables: gender and type of dependence of the establishment to which the students belonged. The population parameters for these variables were extracted from the 2017 Registration Table of the Ministry of Education of Chile (using information regarding the MR only). The highest risk rates of psychopathological disorders are found in generalized anxiety disorder (15.5%) and major depressive disorder (15.3%). Almost half of adolescents (48.7%) are at risk of suffering from at least one psychopathological disorder, while more than a quarter (28.1%) is at risk of presenting comorbidity.

Table 4

<i>Estimation of the Rate of the Adolescents that Qualifies in the Category of Mental Disorder Risk</i>			
Prevalence			
Disorder	Total	Men	Women
ADHD-I	8.6%	7.9%	8.8%
ADHD-HI	2.6%	3.0%	2.1%
ADHD-C	3.0%	2.8%	3.0%
Conduct Disorder	10.8%	14.4%	6.7%
Oppositional Defiant Disorder	12.6%	11.4%	13.3%
Generalized Anxiety Disorder	15.5%	8.8%	21.4%
Major Depressive Disorder	15.3%	8.6%	21.2%
Dysthymia Disorder	8.1%	6.7%	9.1%
Use of Substances	12.8%	14.4%	10.5%
A disorder at least	48.7%	45.6%	49.5%
Comorbidity	28.1%	25.1%	29.8%

Table 5 presents the descriptive analysis (mean and standard deviation) of the punctuation obtained by the total sample and by the subsamples of male and female adolescents, for each of the psychopathological dimensions evaluated (including the General Factor of Psychopathology), as well as the results of Student's t-test for independent samples that compared these scores by gender. Considering the adjusted p-value, statistically significant differences were found in 10 of the 20 categories analyzed. Female adolescents presented higher scores in all dimensions in which statistically significant differences were observed, with conduct disorder being the only exception.

Table 5

Descriptions and Comparison by Gender of the Mean Scores of the Psychopathological Dimension in Adolescents Sample.

	Media (DT)			Levene test			T test to independent samples ^a		
	Total (N=838)	Men (n=447)	Women (n=391)	F (gl)	p-value	t (gl)	p-value	Adjusted p-value*	Mean differences
ADHD-I	10.49 (4.58)	9.98 (4.54)	11.08 (4.57)	0.21 (836)	.65	-3.51 (836)	< .001	<.01	-1.11
ADHD-HI	7.58 (4.60)	7.42 (4.52)	7.76 (4.7)	0.06 (836)	.80	-1.07 (836)	.29	5,70	-0.34
ADHD-C	18.07 (8.13)	17.39 (8.04)	18.84 (8.17)	0.15 (836)	.70	-2.58 (836)	< .05	0,20	-1.45
Conduct Disorder	2.15 (3.70)	2.51 (3.66)	1.74 (3.69)	4.63 (836)	< .05	3.00 (819.45)	< .01	0,06	0.76
Oppositional Defiant Disorder	6.30 (4.00)	6.00 (3.98)	6.65 (3.99)	0.81 (836)	.37	-2.37 (836)	< .05	0,36	-0.65
Generalized Anxiety Disorder	9.72 (4.56)	8.60 (4.14)	10.99 (4.69)	5.86 (836)	< .05	-7.77 (784.35)	< .001	<.001	-2.39
Symptoms of Specific Phobia	0.84 (0.90)	0.59 (0.71)	1.13 (1,00)	28.06 (836)	< .001	-8.78 (691.10)	< .001	<.001	-0.54
Panic Attack	0.69 (0.88)	0.49 (0.75)	0.92 (0.95)	16.59 (836)	< .001	-7.12 (735.98)	< .001	<.001	-0.43
Obsessions	1.26 (1.00)	1.04 (0.96)	1.50 (0.98)	9.37 (836)	< .001	-6.80 (816.64)	< .001	<.001	-0.46
Compulsions	1.01 (0.98)	1.06 (0.97)	0.95 (0.99)	0.04 (836)	.83	1.61 (836)	.11	2,17	0.11
Traumatic Events	2.34 (1.74)	1.87 (1.60)	2.88 (1.74)	10.89 (836)	< .001	-8.64 (798.74)	< .001	<.001	-1.00
Motor Tics	0.86 (0.97)	0.81 (0.96)	0.91 (0.98)	0,00 (836)	.99	-1.46 (836)	.14	2,87	-0.10
Vocal Tics	0.41 (0.68)	0.44 (0.71)	0.37 (0.66)	4.07 (836)	< .05	1.58 (832.59)	.11	2,27	0.07
Somatic Symptom Disorder	2.36 (1.29)	2.25 (1.22)	2.48 (1.35)	7.62 (836)	< .05	-2.52 (791)	<.05	0,24	-0.23

Symptoms of Social Phobia	2.20 (1.74)	2.06 (1.69)	2.35 (1.80)	3.78 (836)	.05	-2.41 (836)	< .05	0,33	-0.29
Symptoms of Separation Anxiety Disorder	2.81 (2.24)	2.39 (1.93)	3.28 (2.47)	21.50 (836)	< .001	-5.77 (734.13)	< .001	<.001	-0.89
Major Depression	9.18 (4.57)	7.95 (4.08)	10.59 (4.7)	9.76 (836)	<.001	-8.63 (778.12)	<.001	<.001	-2.64
Dysthymia	9.61 (5.25)	8.11 (4.66)	11.33 (5.36)	11.13 (836)	<.001	-9.22 (778.63)	<.001	<.001	-3.22
Use of Substances	0.95 (1.73)	0.93 (1.79)	0.97 (1.67)	1.27 (836)	.26	-0.28 (836)	.78	15,55	-0.03
General Factor of Psychopathology	0.00 (1.00)	-0.21 (0.93)	0.23 (1.03)	4.22 (836)	<.05	-6.46 (790.46)	<.001	<.001	-0.44

^a Equal variances (or not) were assumed according to the significance of the Levene Test (p-value < .05) *Adjustment of the significance level: consider the original p-value multiplied by 20 (because 20 comparisons were made).

3.2 Subjective Well-being

Table 6 presents the descriptive analysis of the punctuations obtained by the total sample and the male and female subsamples, for each of the SWB domains and of the global SWB measure, as well as the results of Student's t-test for independent samples that compared these scores by gender. Male adolescents scored more than their female counterparts in all domains and only in three of them the differences observed were not statistically significant ("The things you have", "What may happen later in your life" and "Your life in school or high school").

Table 6

<i>Descriptions and Comparison by Gender of the Average Scores in the Domains of Subjective Well-Being in Adolescents Sample</i>									
Satisfaction with...	Media (DT)			Levene Test			T test to independent samples ^a		
	Total (N=838)	Men (n=447)	Women (n=391)	F (gl)	p-value	t (gl)	p-value	Adjusted p-value*	Mean differences
“The things you have” PWI-SC9_1	8.04 (2.26)	8.07 (2.25)	8.00 (2.28)	.36 (836)	.55	0.41 (836)	.68	6,81	0.07
“Things you want to be good at” PWI-SC9_2	6.70 (2.45)	6.93 (2.42)	6.45 (2.46)	.98 (836)	.16	2.85 (836)	<.01	<.05	0.48
“Your personal health” PWI-SC9_3	6.68 (2.71)	7.04 (2.59)	6.26 (2.79)	.71 (836)	.05	4.17 (836)	<.001	<.001	0.78
“How confident you feel in your current life (in general)” PWI-SC9_4	6.93 (2.70)	7.34 (2.58)	6.46 (2.76)	.76 (836)	.10	4.82 (836)	<.001	<.001	0.88
“How confident you feel about yourself” PWI-SC9_5	6.39 (3.01)	7.16 (2.77)	5.51 (3.03)	.86 (836)	.09	8.22 (836)	<.001	<.001	1.65
“Your relationships with other people (in general)” PWI-SC9_6	7.02 (2.63)	7.34 (2.58)	6.66 (2.65)	.81 (836)	.37	3.74 (836)	<.001	<.01	0.68
“What may happen later in your life” PWI-SC9_7	6.89 (2.54)	7.10 (2.57)	6.66 (2.50)	.08 (836)	.78	2.45 (836)	<.05	0,14	0.44

“Your life in school or high school” PWI-SC9_8	6.56 (2.79)	6.77 (2.76)	6.33 (2.81)	.49 (.836)	.48	2.28 (.836)	<.05	0,23	0.44
“How you use your time” PWI-SC9_9	6.13 (2.86)	6.41 (2.77)	5.81 (2.93)	.26 (.836)	.61	3.05 (.836)	<.01	<.05	0.60
PWI-SC9	6.82 (1.95)	7.13 (1.90)	6.46 (1.94)	.74 (.836)	,39	5.02 (.836)	<.001	<.001	0.67
Total									

^a Equal variances (or not) were assumed according to the significance of the Levene Test (p-value < .05)

*Adjustment of the significance level: consider the original p-value multiplied by 10 (because 10 comparisons were made).

3.3 Relationship between domains of SWB and Risk of Psychopathology

Table 7 presents Pearson’s correlation coefficient for the association between the global measure of SWB and each of its domains, and the punctuations for each of the dimensions of psychopathology measured in the sample (dimensional score). Almost all psychopathological dimensions show a statistically significant correlation with most domains of well-being, with the only exceptions being symptoms of somatization (which had no statistically significant correlation) and use of substances, which only showed a low negative correlation with the items regarding satisfaction with confidence felt in their current life, with what may happen later in life, and with life at school. The General Factor of Psychopathology showed a statistically significant correlation with each of the SWB domains, and with the global SWB measure.

Table 7

<i>Pearson's Correlation Coefficients Between the Psychopathology Risk Dimensions and the Domains of Subjective Well-Being.</i>										
	PWI- SC9_1	PWI- SC9_2	PWI- SC9_3	PWI- SC9_4	PWI- SC9_5	PWI- SC9_6	PWI- SC9_7	PWI- SC9_8	PWI- SC9_9	PWI-SC9 Total
ADHD-I	-.12**	-.29**	-.25**	-.30**	-.31**	-.20**	-.32**	-.32**	-.30**	-.37**
ADHD-HI	-.01	-.14**	-.15**	-.16**	-.17**	-.12**	-.16**	-.19**	-.16**	-.19**
ADHD-C	.08*	-.24**	-.23**	-.26**	-.27**	-.18**	-.27**	-.29**	-.26**	-.32**
Conduct Disorder	-.19**	-.13**	-.12**	-.12**	-.06	-.06	-.10**	-.18**	-.07*	-.15**
Oppositional Defiant Disorder	.15**	-.19**	-.20**	-.26**	-.24**	-.20**	-.24**	-.29**	-.19**	-.30**
Generalized Anxiety Disorder	-.16**	-.28**	-.32**	-.39**	-.46**	-.35**	-.30**	-.35**	-.32**	-.45**
Specific Phobia Symptoms	-.06	-.11**	-.15**	-.20**	-.28**	-.19**	-.17**	-.17**	-.15**	-.23**
Panic Attack	-.08*	-.13**	-.16**	-.24**	-.27**	-.19**	-.17**	-.18**	-.10**	-.23**
Obsessions	-.10**	-.23**	-.25**	-.36**	-.42**	-.29**	-.27**	-.30**	-.21**	-.37**
Compulsions	-.02	-.07	-.05	-.09*	-.10**	-.08*	-.07	-.04	-.03	-.08*
Traumatic Events	-.13**	-.21**	-.25**	-.36**	-.38**	-.27**	-.24**	-.30**	-.23**	-.37**
Motor Tics	-.03	-.07*	-.06	-.13**	-.15**	-.09*	-.12**	-.07*	-.03	-.12**
Vocal Tics	-.01	-.09**	-.07*	-.08*	-.10**	-.10**	-.08*	-.03	-.05	-.09**
Somatic Symptom Disorder	.00	.02	-.05	-.04	-.01	.02	.03	.02	.03	.00
Social Phobia Symptoms	-.07*	-.13**	-.12**	-.21**	-.32**	-.31**	-.21**	-.15**	-.22**	-.27**
Symptoms of Separation Anxiety Disorder	-.01	-.05	-.11**	-.14**	-.16**	-.11**	-.07*	-.09*	-.09*	-.13**

Major Depression	-.20**	-.33**	-.35**	-.43**	-.52**	-.36**	-.41**	-.39**	-.37**	-.52**
Dysthymia	-.21**	-.40**	-.39**	-.49**	-.59**	-.42**	-.43**	-.44**	-.39**	-.58**
Use of Substances	-.05	-.05	-.06	-.07*	-.04	.03	-.07*	-.09**	-.01	-.06
General Factor general of Psychopathology	-.21**	-.34**	-.35**	-.44**	-.47**	-.35**	-.38**	-.41**	-.34**	-.51**

*p-value < .05; **p-value < 0.01.

Finally, Table 8 presents the multiple linear regression analysis that considered the well-being domains as predictor variables and the General Factor of Psychopathology as the dependent variable, for the total sample, and for the male and female subsamples. The three models were statistically significant (p -value $< .001$) and explained 28%, 27%, and 25% of variance of the General Factor of Psychopathology, respectively. The domains of well-being that were statistically significant when explaining the General Factor of Psychopathology in the case of male adolescents were satisfaction with “your life in school”, “how confident you feel in your current life (in general)”, and “how confident you feel about yourself”, with the former being the most important, according to the standardized beta. In the case of female adolescents, satisfaction with “how confident you feel about yourself” and “your health” were most significant (in that order of importance).

Table 8

Multiple Linear Regression Analysis of the Domains of Subjective Well-Being on the General Factor of Psychopathology in Adolescents Sample.

Dependent variable: General Factor of Psychopathology

	Global (N = 838)			Men (n = 447)			Women (n = 391)		
	Beta std.	t	p-value	Beta std.	t	p-value	Beta std.	t	p-value
Constant	-	11.79	<.001	-	7.79	<.001	-	8.68	<.001
“The things you have” PWI-SC9_1	.06	1.69	.09	.06	1.26	.21	.04	0.68	.50
“Things you want to be good at” PWI-SC9_2	-.05	-1.28	.20	-.08	-1.53	.13	-.02	-0.33	.74
“Your personal health” PWI-SC9_3	-.06	-1.47	.14	.03	0.52	.60	-.12	-2.26	<.05
“How confident you feel in your current life (in general)” PWI-SC9_4	-.13	-2.77	<.01	-.18	-2.73	<.01	-.10	-1.41	.16
“How confident you feel about yourself” PWI-SC9_5	-.24	-5.24	<.001	-.18	-2.86	<.01	-.21	-3.10	<.01
“Your relationships with other people (in general)” PWI-SC9_6	.04	0.94	.35	.05	0.86	.39	.01	0.17	.87
“What may happen later in your life” PWI-SC9_7	-.04	-0.90	.37	-.01	-0.11	.91	-.11	-1.74	.08
“Your life in school or high school” PWI-SC9_8	-.15	-3.86	<.001	-.24	-4.56	<.001	-.06	-0.89	.37

“How you use your time”	-0.8	-2.23	<.05	-0.8	-1.56	.12	-0.8	-1.42	.16
PWI-SC9_9									
R2 adjusted		.28			.27			.25	
Sig. Model		<.001			<.001			<.001	

4 Discussion and Conclusions

The results that refer to the first objective of the study (and to the first hypothesis) are in line with those of Vicente et al. (2012), who are the only ones to have obtained a representative sample of the population by using a multi-stage, stratified design. They found that the prevalence (estimated using clinical interviews) of having at least one disorder was 38.3%, which makes sense with the 48.7% found in this study, considering the scale used in the present study measured the risk of presence of psychopathology, not prevalence. The same can be said regarding comorbidity, where Vicente et al. (2012) found a prevalence of 26.6%, while in this study it was 28.1%. In addition, it was found that the highest prevalence corresponded to that of attention deficit disorders and disruptive behavior (which include the three types of ADHD, conduct disorder, and oppositional defiant disorder), reaching 37.6%. This is followed by unipolar mood disorders (major depression and dysthymia) that reach 23.4%, generalized anxiety disorder (15.3%) and substance use (12.8%). The order of these prevalences closely follows what was found by Vicente et al. (2012), the only difference being that they place anxiety disorders and mood disorders in the second and third places, respectively. This difference can be attributed to the fact that, in the prevalence section, this study considered within anxiety disorders only the category of generalized anxiety disorder, leaving out the mono-items referred to symptoms. In general terms, and despite the fact that this study only evaluated the risk of the presence of psychopathology, the prevalence was high compared to most other countries, as reported by previous studies developed in Chile (De La Barra et al., 2012; Vicente et al., 2010; Vicente et al., 2012). This supports what has been stated by Vicente et al. (2012), who argue that mental health disorders that appear during adolescence should be a priority of Chilean public health.

Considering the second objective of this study (and the second hypothesis), the results found in this study show that there are statistically significant gender differences between the means of 10 of the 20 psychopathology dimensions evaluated. Women obtained a higher score in all dimensions that presented statistically significant differences. These gender differences are consistent with those reported by previous research conducted in Chile (Haquin et al., 2004; Vicente et al., 2010; Vicente et al., 2012). The fact that female adolescents have worse mental health than their peers has been commonly associated with different factors, specifically, unequal access to resources, the presence of barriers to opportunities for development and social participation, low levels of empowerment with respect to decision-making, devaluing their social status due to gender biases, gender violence, and greater propensity to drop out of school (Barra et al., 2006; Kapungu & Petroni, 2017; Kapungu et al., 2018). Considering all the above, the hypothesis raised by Kapungu and Petroni (2017) makes sense, with it being that the rigidity of social norms, accompanied by gender-based discrimination, limits the perceived control that adolescents have over their lives and their future, having a particularly important effect on the mental health of adolescent women. The fact that female adolescents have presented higher scores in the dimensions of ADHD-I, follows what has been found in other studies conducted in Chile (De La Barra et al., 2012; Vicente et al., 2012), and marks a point of differentiation with what is generally found in other countries, with the exception of the results found in Norway (Lundervold et al., 2016). It would be advisable to conduct research that addresses this particularity of the Chilean context. Likewise, the fact that no gender differences were found in the substance use dimension is

related in a sense to the contradictory evidence that previous studies have shown which has no clear trend (De La Barra et al., 2012; Vicente et al., 2010; Vicente et al., 2012).

Regarding subjective well-being, it was found that male adolescents showed higher levels of well-being in the global PWI-SC9 measure, this difference being statistically significant (p -value $< .001$). Likewise, male adolescents presented higher levels of subjective well-being in the nine domains evaluated, with the difference being statistically significant for all, except for the one referring to satisfaction with “the things you have”, “what may happen later in your life” and “Your life in school or high school”. It is necessary to address this problem in future research, in order to identify the psychosocial variables that produce such marked differences in the Chilean context.

Finally, considering the third objective of this study (and the third hypothesis), the results of the multiple regression analysis show that satisfaction with “how confident you feel about yourself” was the only domain of subjective well-being that was significant in explaining the risk of psychopathology for both women and men, being the most important domain for female adolescents, as hypothesized. Apparently, this would be a crucial domain of life for Chilean adolescents, since previous studies (Alfaro et al., 2013; Bilbao-Ramírez et al., 2016) have shown that this field is one of the main ones explaining global satisfaction with life for this population. In addition, this domain of well-being, which refers to confidence with respect to the individual self (not regarding external threats), is closely related to concepts such as self-esteem and self-efficacy, which are also negatively related to psychopathology (Di Giunta et al., 2018). Future interventions with adolescents should consider this domain an essential element, common to both adolescent men and women.

The fact that, for male adolescents, the item of satisfaction with “life in school or high school” was the most important in explaining the risk of psychopathology, could be related to the context of physical violence in school. Several studies have shown that, during adolescence, men suffer more physical victimization than women (Astor et al., 2002; López et al., 2009; Postigo et al., 2009), which is closely related to adolescent mental health (Baier et al., 2018; Hysing et al., 2019). The fact that satisfaction with “how confident you feel in your current life” was the only other domain of well-being that was significant exclusively for men, could be explained by the levels of interpersonal violence experienced by this group outside of school. According to the IHME (2019), in 2017, in Chilean adolescents between ages 15 and 19, interpersonal violence was the cause of 16.47% of deaths by men, while only 3.85% for women. Thus, considering the levels of violence inside and outside of school, it makes sense to think that for male adolescents, satisfaction with school life and confidence in their current life have such an important effect on their mental health.

In the case of women, the other domain of life that was significant for the model was the one regarding satisfaction with “your health”. This may be related to the decrease in health-related quality of life, which according to some studies (Michel et al., 2009; Arrospide et al., 2019), affects women from childhood to adolescence, but not men, and that could have an effect on the mental health of this group.

It is interesting to note that the domain corresponding to satisfaction with “your relationships with people” is not significant when explaining the General Factor of Psychopathology (neither for the total sample nor separating it by gender). This could be explained following the argument of Alfaro et al. (2013), who were able to observe that this domain of well-being was not relevant for Chilean adolescents in explaining global satisfaction with life, arguing that this “may account for the processes of social change in the context of the process of modernization that has taken place in Chilean society, with high incidence of disengaging and breaking up of traditional community ties” (p. 25).

Considering the results discussed, it seems clear that there are interventions that can consider transversal gender elements in their design, while there are others that should consider a design that separates the objectives for the male and female adolescent population. For example, one could consider a general intervention for adolescents that addresses the domain of self-confidence. On the other hand, specific interventions could be designed for male adolescents that would address issues related to their school life and

the security they feel in their current life, while interventions could be designed for female adolescents that would address the satisfaction they have regarding their personal health.

The present study has some limitations. In the first place, as it is a cross-sectional study, we cannot consider that the domains of subjective well-being explain or predict psychopathology, we can only analyze whether they are associated or not. Longitudinal studies could allow us to analyze which variable predicts or causes the other in this relationship, in order to design interventions that target the cause of the problem. On the other hand, being a quantitative study, it does not have the scope to analyze the experience of adolescents, which is a central element when we seek to understand intrinsically subjective phenomena (such as mental health and well-being). Analyzing this phenomenon from a qualitative perspective will provide elements to design interventions more adjusted to the needs of adolescents. Lastly, another limitation of this study to mention is the fact of considering the measurement of subjective well-being separated by domains, considering that the instrument used was originally conceived to assess subjective well-being at a global level. We believe that this should not cause major problems, since, at the time of validating the instrument, its creators identified the items that 1) contributed loads to the latent variable of subjective well-being and 2) did not overlap with each other when explaining the variance of the latent variable. Even so, we wanted to mention this point as a limitation.

Although some mental health studies have been carried out in Chilean adolescents in the last fifteen years, it is necessary to deepen the investigation of this phenomenon in the sense of consolidating the information on prevalence, as well as linking the mental health of this social group with other psychosocial variables, especially gender. This would allow for rational planning of resources for mental health (Vicente et al., 2010), as well as for the design of preventive interventions and treatments (Barra et al., 2006; De la Barra, 2009; Montt & Chavez, 1996) and their evaluation (De La Barra et.al., 2012). The same is true in the case of subjective well-being, which may be understood as a complementary variable to mental health. Addressing issues based on a greater understanding of these phenomena will ensure favorable development conditions that allow adolescents to exercise their right to develop in an environment that promotes their mental health and well-being (UNICEF, 1989; WHO, 2018). Future lines of research in the field should consider these mentioned elements.

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6 Author Contributions

Conceptualization, A.R., A.M.S., C.C., and D.P.; Methodology, A.R., J.C.O. and A.M.S.; Data analysis, A.R. and J.T.V.; Results writing J.T.V.; Discussion, A.R. and J.C.O.; Conclusions, J.C.O., C.C.; References, D.P.; Review and Editing, I.A. All authors reviewed the manuscript.

7 Additional Information

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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