Revista de Psicología Clínica con Niños y Adolescentes
Vol. 9 nº. 1- Enero 2022 - pp 37-44
doi: 110.21134/rpcna.2022.09.1.4

www.revistapcna.com - ISSN 2340-8340

Revista de Psicología Clínica con Niños y Adolescentes

The influence of self-esteem and (cyber) bullying on adolescents' well-being: a question of gender?

Virgina Romero-Reignier[1], Vicente Prado-Gascó[2], & Estefanía Mónaco[2]
[1]*European University of Valencia, Spain*
[2]*University of Valencia, Spain*

Abstract

Subjective well-being consists of a subjective component (life satisfaction) and an affective component (positive and negative affect). Levels of well-being tend to decline during adolescence, which could have physical and mental health consequences. Multiple factors influence adolescent well-being, such as self-esteem, bullying and cyberbullying, as well as gender. In this paper, we study the relationship between self-esteem, bullying (face-to-face and virtual) and the affective dimension of subjective well-being in adolescence, considering the moderating effect of gender. 797 Spanish adolescents between 14 and 18 years old (54.2% girls; M_{age}=15.5; *SD*=.68) participated in the study. *The Rosenberg Self-Esteem Scale* (RSE), the *Positive and Negative Experience Scale* (SPANE), and *Cyberbullying and Peer Bullying Screening* were used. Statistical analyses were performed using the SPSS 24.0, and EQS 6.4 packages. *T*-test, bivariate correlations and structural equations (SEM) were performed. The results suggest that girls have lower levels of self-esteem ($t = 4.10$; $p < .001$) and well-being ($t = 2.46$; $p < .05$) than boys, while boys more often report being bullies ($t = 2.67$; $p < .01$) and cyberbullies ($t = 2.55$; $p = .01$), as well as victims of bullying ($t = 2.16$; $p < .05$). The variables that influence adolescents' affective well-being are self-esteem and bullying victimization. Gender moderates the influence of self-esteem on well-being. For boys, a negative assessment of themselves impacts their negative affection more strongly than girls [$\chi^2(df)= 15.69(3)$; $p < .001$]. These results highlight the need to develop effective prevention and intervention programs to promote the well-being of adolescents, taking gender differences into account.

Keywords: well-being; self-esteem; bullying; cyberbullying; adolescence; gender.

Resumen

La influencia de la autoestima y el (ciber)acoso en la dimensión afectiva del bienestar subjetivo en la adolescencia: ¿"una" cuestión de género?. El bienestar subjetivo está formado por un componente subjetivo (satisfacción con la vida) y un componente afectivo (afectos positivos y negativos). El bienestar tiende a disminuir durante la adolescencia, lo que podría tener consecuencias para la salud física y mental. Múltiples factores influyen en el bienestar de los adolescentes, como la autoestima, el acoso escolar y el género. El objetivo fue estudiar la relación entre la autoestima, el acoso (presencial y virtual) y la dimensión afectiva del bienestar subjetivo en la adolescencia, considerando el efecto moderador del género. Participaron 797 adolescentes españoles entre 14 y 18 años (54.2% chicas; $M = 15.5$; $DT = .68$). Se utilizó la Escala de Autoestima de Rosenberg (RSE), la Escala de Experiencias Positivas y Negativas (SPANE) y el Ciberbullying y el Screening de Acoso entre iguales. Los análisis estadísticos se realizaron con SPSS 24.0 y EQS 6.4. Se realizaron pruebas *t*, correlaciones bivariadas y ecuaciones estructurales (SEM). Los resultados sugieren que las chicas tienen niveles más bajos de autoestima y bienestar que los chicos, mientras que los chicos declaran con más frecuencia ser acosadores y víctimas de acoso y ciberacoso. La variable que más influye en el bienestar de los adolescentes es la autoestima positiva. La victimización reduce los sentimientos positivos y las experiencias placenteras entre los adolescentes. El género modera la influencia de la autoestima en el bienestar. En el caso de los chicos, una valoración negativa de sí mismos influye más negativamente en su bienestar que en el de las chicas. Estos resultados ponen de manifiesto la necesidad de desarrollar programas eficaces de prevención e intervención para promover el bienestar de los adolescentes, teniendo en cuenta las diferencias de género.

Palabras clave: bienestar; autoestima; acoso; ciberacoso, adolescencia; género.

Corresponding author:
Estefanía Mónaco.
Department of Personality, Assessment and Psychological Treatments.Faculty of Psychology. University of Valencia.
C/ Blasco Ibáñez 21, 46010, Spain
E-mail: estefania.monaco@uv.es

Background

Interest in the study of well-being has increased exponentially over the last two decades, given the growing concern in Western societies about the quality of life of their members (Neira et al., 2018). Although there has been a great deal of research on adults' well-being, these results cannot be generalized to other stages of the life cycle, since well-being is related to different factors depending on the developmental moment (González-Carrasco et al., 2017). Particularly, the study of Spanish adolescents' well-being is a field where progress is required (Ortuño-Sierra et al., 2019). There is not enough literature about psychological and relational factors that affect the well-being of adolescents in our culture, such as self-esteem and bullying (Zilanawala et al., 2017). Likewise, there is a need to study in greater depth those factors related to interpersonal relationships using new technologies (De la Barrera et al., 2019; Gascó et al., 2018; Hellfeldt et al., 2020).

According to Diener & Emmons (1984), subjective well-being is the feeling of vitality, interest and positive mood. It is formed by a cognitive component (what we think about our living conditions) and an affective component (what we feel in our life experience). According to Watson and Tellegen (1985), high positive affect is a state of positive emotionality, energy and activity, whereas low positive affect is a state of sadness and lethargy. High negative affect is a state of distress and unpleasant moods (e.g., anger, disgust, guilt, fear, or nervousness); whereas low negative affect is a state of calmness and security. In this paper, we will focus on the study of the affective component of subjective well-being, in order to find out how suffering or being bullied impacts on the emotional states of adolescents and how self-esteem can influence this relationship. To this end, it is relevant to review what we know about well-being in adolescence.

According to previous works, adolescents' perception of well-being is closely related to their physical and mental health (Patalay & Fitzsimons, 2018; Thomaes et al., 2017). Well-being functions as a protective factor against the development of certain psychopathologies, such as depression and anxiety, as well as other physical health problems with psychosomatic origin (Smith et al., 2018). These findings have psychosocial consequences for all the population, as the significant deployment of social and health resources dedicated to addressing the problems developed, with the consequent financial expenditure on medical and psychological care (Reinhardt et al., 2020).

During adolescence, well-being levels usually decrease comparing to childhood (González-Carrasco et al., 2017). This may be due to numerous physical, mental, emotional and social changes characteristic in adolescence, which can lead to stress, confusion and emotional instability (Fomina et al., 2020). On a psychological level, adolescence involves search for identity which is often accompanied of doubts and uncertainty, and during which self-esteem is usually affected (Masselink et al., 2018). In addition, academic pressure at school increases significantly during this period, coupled with the adolescent's concern for peer group belonging and acceptance (Godfrey et al., 2019).

Some demographic variables such as gender and age, along with psychological and relational variables, as self-esteem and peer violence relationships, seem to be some of the most important factors influencing adolescents' well-being (Gomez-Baya et al., 2018; Liu et al., 2016). Self-esteem is a person's values herself in terms of characteristics and competencies (Masselink et al., 2018). Meanwhile, bullying is intentional, harmful, and persistent abuse (whether physical, verbal, social, or psychological) by one adolescent or group of adolescents toward another (Machimbarrena & Garaigordobil, 2018). When this peer abuse is through the use of information and communication technologies, such as the Internet and/or mobile phones, it is called cyberbullying (McLoughlin, 2019). This is a growing phenomenon in today's societies given the rise of new technologies and its associated problems (Lozano-Blasco & Cortés-Pascual, 2020), so aggressive behaviors spread outside schools in uncontrollable ways (Navarro et al., 2018).

Self-esteem during adolescence is strongly affected by social relationships with peers, so both adolescents who are victims and perpetrators of bullying and cyberbullying are seriously affected (Mazzone et al., 2017). Victims of bullying report a sense of worthlessness, rejection, isolation and helplessness (Peker, 2017). On the other hand, perpetrators of bullying report having few resources to handle conflict situations and poor self-regulation and communication abilities (Garcés et al., 2020; Kurki-Kangas et al., 2019). Both victims and perpetrators of bullying and cyberbullying have significantly lower levels of self-esteem, well-being, life satisfaction and social adjustment (Machimbarrena & Garaigordobil, 2018; Mazzone et al., 2017).

The study of the relationship between bullying and cyberbullying, self-esteem and well-being in adolescence would be incomplete if gender were not considered. This issue requires more research, as there is no consensus in the literature: some studies indicate that girls have higher levels of well-being than boys, while others report the opposite and others suggest no differences (González-Carrasco et al., 2017; Liu et al., 2016; Martínez-Marín & Martínez, 2019). There is agreement in the fact that girls usually present higher negative affect (such as fear, worry and sadness) comparing with boys (Zilanawala et al., 2017). Regarding self-esteem, there is also no consensus. Some studies suggests that boys have higher levels of overall self-esteem, and in particular higher self-esteem related to their physical appearance than girls (Rueger & George, 2017). Other studies suggests that boys value their self-esteem more in terms of their personal achievements, while girls value their self-esteem in terms of peer approval (Masselink et al., 2018). With respect to bullying, some authors find that boys tend to assault more than girls, while others indicate otherwise regarding social aggressions (Kurki-Kangas et al., 2019). However, most of these studies have focused on traditional bullying, ignoring the importance of cyberbullying (Hellfeldt et al., 2020).

Considering the high prevalence of aggression between peers outside and inside Spanish classrooms (Sánchez-Quejia et al., 2016), this is a matter of urgent concern. Despite the already recognized importance of self-esteem and bullying in the well-being of adolescents, we found no studies that address this relationship in Spanish adolescents considering the moderating role of gender. The aim of the present study is twofold: first, to study the relationship between self-esteem, bullying, cyberbullying and well-being in adolescence; and second, to analyze the moderating role of gender in this relationship. The hypotheses are as follows: (H1) well-being will be positively correlated to self-esteem and negatively to bullying and cyberbullying (both victims and perpetrators); (H2) self-esteem, bullying and cyberbullying will significantly influence well-being of adolescents; (H3) there will be differences according to gender in bullying and cyberbullying behaviors among victims and aggressors); (H4) girls will have lower levels of self-esteem and higher levels of negative affect than boys; and (H5) gender will moderate the relationship between self-esteem, bullying and cyberbullying and adolescents' well-being.

Methods

Participants

797 adolescents (54.2% girls) aged from 14 to 18 years old (M_{age}=15.5; S_{Dage}=.68) participated in the study. Participants were Compulsory Secondary Education students from 8 schools in Spain, located in the Valencian Community (64%), Murcia (17%) and Palma de Mallorca (19%). 71% belonged to private schools, and 29% to public schools.

Instruments

The Rosenberg Self-Esteem Scale (CSR; (Rosenberg, 1965); Spanish sample validation by (Vázquez-Morejón et al., 2004)) was used to assess self-esteem. This scale is composed of 10 items with a 5-points scale (1= Strongly Disagree; 5= Strongly Agree). In order to avoid the possible effect of social desirability, five items are written in their positive form, shaping the positive self-esteem scale (e.g., "In general, I am satisfied with myself") and the other five in their negative form, shaping the negative self-esteem scale (e.g. "Sometimes I think I'm no good for anything"). The instrument has shown good psychometric properties (α =.86) in the Spanish validation, and good reliability in the present study (α =.85).

The Scale of Positive and Negative Experiences (SPANE; Diener et al., 2010); translated and validated in Spanish by Prado-Gascó et al., 2020) was used to assess well-being. The scale is composed of 12 items, 6 referring to positive experiences and 6 to negative or worrying experiences. Participants are asked to rate how often they have experienced positive and negative feelings during the past month on a 5-points Likert scale (1 = Never; 5 = Always). It has two dimensions (positive and negative affect), which are grouped into a global hedonic balance measure (e.g., "During the past month I felt sad"). The scale showed good psychometric properties in its original version, with α between .81 and .89. This study confirms its good psychometric properties (α =.84 for positive affect; α =.79 for negative affect).

The Cyberbullying and Screening tool was used to measure bullying and cyberbullying (Garaigordobil, 2013), aimed at adolescents between 12 and 18 years. It assesses peer violence in four different forms (physical, verbal, social and psychological). It has two scales: (I) Bullying Scale, composed by 12 items with a 3-points Likert scale (0 = Never; 3 = Always); and (II) Cyberbullying Scale, composed by 45 items with a 3-point Likert scale (0 = Never; 3 = Always). It provides information in relation to victimization (number of victimization behaviors suffered in the last year, e.g., "Have you been assaulted or harassed with verbal aggression in the past year?" for bullying victimization; e.g., "They have shared and/or manipulated photos or videos of me or my family without my permission" for cyberbullying victimization) and perpetration (number of aggressive bullying behaviors perpetuated towards others in the last year; e.g., "Have you assaulted or harassed another student with physical aggression in the last year?" for bullying perpetration; e.g. "I have made calls and not answered" for cyberbullying perpetration) in bullying and cyberbullying behaviors. This instrument reports good psychometric properties (α between .88 and .91). In this study, high reliability is observed for both the bullying scale (α = .83 for victimization and α = .79 for aggression) and the cyberbullying scale (α = .92 for victimization and α = .90 for aggression).

Procedure

This study complied with the fundamental principles of the Declaration of Helsinki (World Medical Association, 2013), emphasizing the anonymization of the data collected, confidentiality and non-discrimination of participants. All procedures were reviewed and approved the Ethics Committee of Human Research of the University of Valencia.

We used a convenience sample. The participating schools in this study were selected randomly from a larger project developed by the research team in which 42 schools participated. These schools were contacted by sending a formal letter introducing the project and proposing the schools' participation and their option to accept or reject the proposal. The courses evaluated were those considered by the management team of each school.

Informed consent forms were drawn up and signed by the adolescents' parents or legal guardians, who had previously been adequately informed about the investigation process. Only adolescents with authorization participated in the study. The data were then collected in the classroom by means of questionnaires. Each evaluation lasted approximately 45 minutes, in which each student answered the battery of questionnaires individually and autonomously, with the supervision of their teacher and a trained psychologist. Finally, the data obtained were processed statistically.

Data analysis

For statistical analysis we used SPSS (Statistical Package for the Social Sciences, Version 24) and EQS (Structural Equation Modeling Software, Version 6.2). Descriptive analyses were used to explore data, *t* tests were performed to study gender differences in the variables studied, as well as Pearson correlations to observe the relationship between the variables among boys and girls separately. The path analysis was developed to study the influence of self-esteem, bullying and cyberbullying on well-being. The invariance of the instrument was also calculated as a function of gender, along with the moderating role of gender in the relationship between self-esteem and bullying and well-being.

The structural equations were performed using the estimation provided by the estimator of ML with the Satorra-Bentler robust correction (S-B χ^2) (Satorra & Bentler, 1994), in order to correct the absence of multivariate normality. The absence of normality was analyzed using Mardia's coefficient. The adequacy of the models were tested using the significance of chi-squared (χ^2) and of the robust Satorra-Bentler correction (S-B χ^2) (Satorra & Bentler, 1994), $\chi 2$ ratio and its degrees of freedom ($\chi 2$ /df), as well as the S-B $\chi 2$ and its degrees of freedom, with values of less than five considered acceptable, the non-normed fit index (NNFI), the comparative fit index (CFI), the incremental fit index (IFI) (for these indicators, values ≥ 0.90 were considered a good fit (MacCallum & Austin, 2000) and the root mean- square error of approximation (RMSEA) (these ratings were required to be ≤.08 to be considered a good fit (Browne & Cudeck, 1993).

Prior to the calculation of the moderation, it is first necessary to evaluate the invariance of the measuring instrument, at least in terms of ensuring the "Equal form" of the instrument and "Equal factor loadings". To this end, it is necessary first to calculate the model for each of the subsamples (boys and girls), and then to calculate a multigroup model that considers boys and girls and assumes with restriction equal variance between the factors or dimensions of the model in both groups.

It is then necessary to calculate a new model in which new restrictions are included, e.g., that the factor loadings of each item on its factor are equal in both variables (Aldás, 2013). Subsequently, a test was performed that evaluated the significance of the change in $\chi 2$ and S-b $\chi 2$ comparing both models, this calculation was performed in the case of the S-b $\chi 2$ using the SBDIFF program (Crawford & Henry, 2003), based on the method developed by Satorra & Bentler (2001).

Finally, a new model must be calculated that includes as a constraint the fixing of the paths or effect of some factors on others, and apply the Lagrange test (LM, Lagrange Multiplier test), to determine if the release of any of the constrictions (fixing effect of one factor on another) produces a significant change in the X2 (Aldás, 2013).

Results

Descriptive and mean differences

In the observed results (Table 1), the participants present a medium/high self-esteem (M = 37.45, SD = 7.2), considering that the answers can range between 10 and 50. The prevalence rates of bullying and cyberbullying in our sample are low, considering that the maximum scores on these scales are 12 for bullying and 45 for cyberbullying. In both face-to-face and virtual bullying, the level of victimization is slightly higher than that of aggression. Finally, the adolescents obtained a higher score for positive affection than for negative affection, obtaining an intermediate score in the well-being balance (M= 8.29, SD= 7.33), a scale that ranges between -30 and 30 points.

The boys also have a significantly higher level of self-esteem than the girls (t = 4.10; $p \leq .001$; d = .29). The male adolescents also have a higher incidence of bullying than the girls, both as victims (t = 2.16; $p \leq .05$; d = .16) and as aggressors (t = 2.67; $p \leq .01$; d = .20). The boys also report more cyberbullying than the girls (t = 2.55; $p \leq .01$; d = .19). Finally, the girls suffer significantly more negative affection than the boys (t = -2.42; $p \leq .05$; d = -.17), and a lower degree of well-being (t = 2.46; $p \leq .05$; d = .18).

Table 1. Gender differences in the studied variables

	Total M (SD)	Boys M (SD)	Girls M (SD)	*t*	Cohen's d
Self-esteem	37.45 (7.20)	38.60 (6.90)	36.52 (7.24)	4.10***	.29
Bullying					
Victim	1.20 (1.95)	1.37 (2.19)	1.06 (1.74)	2.16*	.16
Aggressor	1.08 (1.81)	1.25 (1.98)	.90 (1.58)	2.67**	.20
Cyberbullying					
Victim	2.14 (4.76)	2.31 (5.46)	2.03 (4.15)	.80	.06
Aggressor	1.45 (5.17)	2.00 (6.25)	1.01 (4.13)	2.55**	.19
Well-being	8.29 (7.33)	8.99 (7.33)	7.70 (7.31)	2.46*	.18
Positive affect	22.91 (4.20)	23.18 (3.99)	22.68 (4.32)	1.66	.12
Negative affect	14.62 (4.55)	14.19 (4.76)	14.99 (4.35)	-2.42*	-.17

** $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$*

Bivariate correlations

The relationship between the variables was subsequently studied using Pearson's bivariate correlations for the total sample of participants (Table 2) and as a function of gender (Table 3).

Considering the total sample, it appears that self-esteem correlates moderately, positively and significantly with well-being (r= .43; p≤.01) and at a low level, negatively and significantly with being a victim of bullying (r= -.16; p≤.01). As can be seen in the correlations according to gender (Table 3), among boys the correlation between low self-esteem and being a victim of bullying is somewhat stronger (r = -.24; $p \leq .01$) than for girls (r = -.10; $p \leq .05$). Unlike girls, low self-esteem in boys is significantly related to cyberbullying (r = -.13; $p \leq .05$), which is a low correlation.

In terms of well-being, in the total sample of participants there is a low, negative and significant correlation with being a victim of bullying (r= -.17; p ≤ .01), and with cyberaggression (r= -.07; p ≤ .05). The relationship between well-being and victimization is slightly stronger for boys (r = -.22; $p \leq .01$) than for girls (r = -.13; $p \leq .01$). If we consider gender, we observe that the relationship between well-being and cyberaggression is only significant in the case of boys (r = -.12; $p \leq .05$), and not for girls.

Table 2. Pearson's correlations between the variables for the total sample

	SEF-EST	BULL-V	BULL-A	CYB-V	CYB-A	WELL-B
SEF-EST	1					
BULL-V	-.16**	1				
BULL-A	.00	.38**	1			
CYB-V	-.03	.32**	.32**	1		
CYB-A	-.05	.28**	.42**	.64**	1	
WELL-B	.43**	-.17**	-.05	-.06	-.07*	1

** $p \leq .05$; ** $p \leq .01$; Note. SELF-EST: Self-esteem; BULL-V: Bullying victim; BULL-A: Bullying aggressor; CYB-V: Cyberbullying victim; CYB-A: Cyberbullying aggressor; WELL-B: Well-being.*

Table 3. Pearson's correlations according to gender

	SEF-EST	BULL-V	BULL-A	CYB-V	CYB-A	WELL-B
SEF-EST	1	-.10*	.06	.00	.03	.42**
BULL-V	-.24**	1	.32**	.36**	.17**	-.13**
BULL-A	-.07	.42**	1	.32**	.41**	-.01
CYB-V	-.06	.29**	.32**	1	.46**	-.04
CYB-A	-.13*	.34**	.44**	.75**	1	-.03
WELL-B	.44**	-.22**	-.10	-.08	-.12*	1

** p≤.05; ** p≤.01. Note: The scores of female participants are presented above the diagonal, and male participants below it. SELF-EST: Self-esteem; BULL-V: Bullying victim; BULL-A: Bullying aggressor; CYB-V: Cyberbullying victim; CYB-A: Cyberbullying aggressor; WELL-B: Well-being.*

Path analysis model

Finally, the influence of self-esteem (positive and negative) and bullying and cyberbullying (victim and aggressor) on levels of well-being (positive and negative affection) was analyzed using path analysis.

In this analysis, the two factors of the affective component of subjective well-being (positive affect and negative affect) were considered as dependent variables. The two self-esteem factors (positive self-esteem and negative self-esteem), the two bullying factors (bullying victim and bullying perpetrator) and the two cyberbullying factors (cyberbullying victim and cyberbullying perpetrator) were considered as independent variables.

Table 4. Invariance analysis

Individual simple solutions	χ^2 (gl)	S-B χ^2 (gl)	$\Delta\chi^2$ (Δ gl)	*p*	Δ S-B χ^2 (Δ gl)	*p*	RMSEA (90% IC)	NNFI	CFI	IFI
Boys (n=357)	519.57	444.40					.027	.97	.97	.97
	-362	-362					(.017, .035)			
Girls (n=422)	615.48	554.89					.037	.94	.95	.95
	-362	(362)					(.031, .043)			
Invariance of the measure										
Equal Form	1136.99	995.17					.032	.95	.96	.96
	-729	-729					(.027, .037)			
Equal Factor loading	1176.52	1023.12	39.53	.01	28.30	.17	.032	.95	.96	.96
	-751	-751	-22		-22		(.027, .037)			

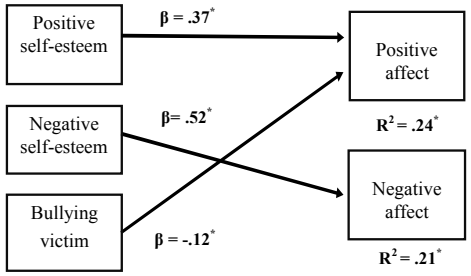
Note. S-B=Satorra Bentler; df= degrees of freedom; RMSEA = Root Mean-Square Error of Approximation; IC= Confidence interval RMSEA; NNFI = Non-Normed Fit Index; CFI = Comparative Fit Index; IFI = Incremental Fit Fix; CFI, NNFI, IFI (≥.90); χ2/ df (≤5.0); RMSEA ≤ .80.

Table 5. Moderation of gender on the effect of self-esteem, bullying and cyberbullying on well-being

	All sample		Multi-group model						
			Boys		Girls		$\Delta\chi^2$	df	p
	β	t	β	t	β	t			
Positive self-esteem over positive affect	.37*	4.82	.29*	2.46	.48*	4.74	26.41	10	.004
Negative self-esteem over negative affect	.52*	6.36	.66*	5.06	.43*	4	15.69	3	.001

** p≤.05; ** p≤.01*

Figure 1. Influence of self-esteem, bullying and cyberbullying on well-being.



** p < .05. χ^2 (df)=713.13 (362); S-B χ^2(df)=626.65(362); NNFI= .95; CFI=.96; IFI= .96; RMSEA (CI 95%)=.03 (.028;.036).*

The results obtained [χ^2 *(df)* = 713.13 (362); *S-B* χ^2 *(df)* = 626.65 (362); *NNFI* = .95; *CFI* = .96; *IFI* = .96; *RMSEA (CI 95%)* = .03 (.028; .036)] suggest a suitable fit of the model under study. Likewise, positive self-esteem (β = .37; p ≤ .05) and being a victim of bullying (β = -.12; p ≤ .05) explain 24% (*R2* = .24) of the positive affection variance, while negative self-esteem (β = .52; p ≤ .05) explains 21% (*R2* = .21) of the negative affection variance. Committing aggression or cyber-aggression or being a victim of cyber-aggression does not significantly predict well-being in any of its forms.

The moderating effect of gender

Prior to the calculation of gender moderation, the invariance of the measuring instrument for male and female participants was studied to check the equivalence of all measures and structural parameters in both samples.

When calculating invariance (Table 4), it was possible to assume Equal Form [χ^2 (gl)= 1136.99 (729); *S-B* χ^2 (gl) = 995.17 (729); *RMSEA* (90% CI) = .032 (.027, .037); *NNFI* = .95; *CFI* = .96; *IFI* = .96] and Equal Factor Loadings [χ^2 (gl)= 1176.52 (751); *S-B* χ^2 (gl) = 1023.12 (751); $\Delta\chi^2$ (Δ gl) = 39.53 (22); *p* = .01; Δ S-B χ^2 (Δ gl) = 28.30 (22); *p* = .17; *RMSEA* (90% CI) = .032 (.027, .037); *NNFI* = .95; *CFI* = .96; *IFI* = .96), which ensures the metric invariance of the instrument according to gender.

This was followed by an analysis of the moderating effect of gender on the effect of self-esteem and bullying on well-being (Table 5). Based on the results obtained, it appears that gender has a moderating effect on the influence of positive self-esteem on positive feelings, and on the influence of negative self-esteem on negative feelings. However, gender does not have a moderating effect on the influence of bullying on well- being.

The influence of positive self-esteem on positive feelings is significantly greater for girls *(β =.48, p ≤.05)* than for boys *(β =.29, p≤.05)*, while the influence of negative self- esteem on negative feelings is significantly greater for boys *(β =.66, p≤.05)* than for girls *(β =.43, p≤.05)*. Furthermore, for girls, both constructs (positive and negative self-esteem) similarly predict well-being, while in the case of boys greater differences are observed: negative self-esteem predicts well-being more strongly than positive self- esteem.

Discussion

Differing from traditional research focused on the study of shortcomings and difficulties, the study of well-being is focused on favoring positive development and health promotion of our society (Reinhardt et al., 2020). This perspective helps researchers to understand the best way to prevent psychosocial problems, as well as how to address them by genuinely effective interventions (Gomez-Baya et al., 2018). Although a great deal of research has been carried out on well-being in adults, the literature on the Spanish adolescent population is scarce (Sánchez-Quejia et al., 2016). Considering that adolescence is a stage when well-being usually decreases (González-Carrasco et al., 2017), the objective of this was to study the relationship between self-esteem, bullying and cyberbullying and well-being in Spanish adolescents, considering the moderating role of gender.

First hypothesis was confirmed by our results. There is a significant relationship between self-esteem, bullying, cyberbullying and well-being. Adolescents who reported weaker self-esteem had fewer positive experiences and more negative experiences, and also reported a lower level of affective well-being. Being a victim of bullying was in turn related to lower levels of well-being. For males, cyberbullying was also associated with lower levels of well-being. These results appear to be consistent with the literature (Godfrey et al., 2019).

Regarding self-esteem and bullying, some authors consider low self-esteem to be the common point between aggressors and victims (Mazzone et al., 2017). However, in our results we observe differences between genders. In boys, low self-esteem was related to being both a victim of bullying and a perpetrator of cyberbullying. In girls, low self-esteem was not related to being a perpetrator of bullying or cyberbullying, although it was related to being a victim of bullying. We also observed that boys showed more intense relationships than girls between bullying victimization and well-being. This could be due to the fact that boys are more sensitive to conflicts or negative relational situations, because they may have fewer interpersonal resources for dealing with them (Ortuño-Sierra et al., 2019).

Second hypothesis stated that having high self-esteem and not participating in or being a victim of bullying and/or cyberbullying would significantly predict the well-being of adolescents. This hypothesis was partially fulfilled by the results. The variable that most strongly influences adolescents' well-being is performing a positive self-esteem, this means a positive assessment of themselves. Meanwhile, performing a negative self-esteem (a negative assessment of themselves) influences the manifestation of negative affects and unpleasant experiences (Rueger & George, 2017).

Face-to-face victimization also significantly influences well-being, reducing positive affect and pleasant experiences of bullied adolescents. In other words, our results suggest that suffering bullying worsens well-being, but perpetuate do not. A possible explanation to these results may be that aggressors probably are not aware of the impact of their aggressions on the victim. Aggression may not generates negative emotions in perpetuators if they experience it only as a way of get attention and approval of their peer group (Godfrey et al., 2019). Regarding to victimization or perpetration of cyberbullying, it does not seem to influence adolescents' well-being in our results. One possible explanation is the invisibility of cyberbullying, as many adolescents believe that the only way to suffer peer violence is through physical aggressions (Hellfeldt et al., 2020).

Third hypothesis was confirmed by our results. There are gender differences in bullying and cyberbullying behaviors, in both victims and aggressors. The results obtained seem to corroborate some previous studies (Kurki-Kangas et al., 2019) which suggest that boys are more often aggressors and victims of bullying and cyberbullying than girls. This may be because girls may avoid more successfully conflict situations by seeking alternatives to aggression, since they have higher levels of empathy (Martínez-Marín & Martínez, 2019).

Fourth hypothesis was also confirmed by our results. Our results were in line with our expectations, as the female adolescents show lower self-esteem, reported more negative affect and lower well-being than their male peers, while boys had more positive affect and pleasant experiences. This may be because adolescence is an evolutionary period during which girls are especially vulnerable to social and media pressure on women about the aesthetic and gender canons that society urges them to follow, lowering their levels of self-esteem (Du et al., 2017). Other explanation is related with self-report instruments used. Girls may express more easily their negative emotions of fear, anxiety, sadness or anger, due to a difference in gender socialization as regards the permissiveness of communicating this type of emotional experiences (Reinhardt et al., 2020).

The last hypothesis suggested that gender would moderate the relationship between studied variables (self-esteem, bullying and cyberbullying) on well-being, particularly in girls. According to the data, gender only moderates the influence of self-esteem on well-being, but does not moderates the relationship between peer violence and well-being. For the girls, valuing themselves positively affected their level of positive affection (calm and energy along with pleasant emotional experiences) more intensely than among the boys. It was the other way around for the boys, since valuing themselves in a negative way affected their negative affection (negative emotional experiences of anxiety, fear, sadness, anger, along with unpleasant emotional experiences) more strongly than among the girls (Fomina et al., 2020). This means that negative self-esteem has a greater impact on male adolescents' well-being. These results could be explained by the social rigid stereotypes imposed about gender that begin to take effect from adolescence, leading to less variability in emotional and communicational resources for dealing with negative psychological states in boys (Garcés et al., 2020).

Despite the interest of this study, it is not without some limitations, as the convenience choice of the sample and the use of self-reports. It would be of interest in future investigations to consider objective measures or measures from hetero reports that would complement the data obtained in the self-reports (Diener et al., 2010). Also, we consider the importance of include longitudinal data in order to study the evolution of variables over time and establish more accurate predictions (Zilanawala et al., 2017). Another limitation of the study, which is common when analyzing bullying, is the limited number of victims and aggressors of bullying and cyberbullying who participated in our research. It is difficult to affirm if these low levels of victimization and perpetration found in our results are a true reflection of reality, or if it is a bias caused by the adolescents' social desirability when answering questionnaires (Sánchez-Quejia et al., 2016). In any case, in future research we propose to expand the sample of adolescents suffering and perpetuating bullying, and particularly cyberbullying, considering the recent popularization of technologies among adolescents (Navarro et al., 2018). In addition, it would be of interest to study bullying in greater depth, separating according to the type of aggression (physical, verbal, social and psychological) (Garaigordobil, 2013).

In addition, we consider the use of a global self-esteem measure such as the Rosenberg Self-Esteem Scale to be a limitation. Previous studies have recommended opting for multidimensional self-esteem measures instead of global self-esteem scales, in order to achieve greater richness and deeper understanding (Marshal et al., 2006). Therefore, in future research it would be essential to expand the battery of questionnaires used, complementing them with other measures of self-esteem and subjective well-being.

Despite these limitations, our results have implications both at the research level and in the professional practice of psychologists and educators. We believe it is important to develop effective and scientifically validated intervention programs to promote adolescents' well-being, both inside and outside school (Machimbarrena & Garaigordobil, 2018). This study suggests that one way to promote well-being would is to carry out interventions for improve adolescents' self-esteem with a special focus on gender issues (Du et al., 2017). In addition, there is a clear need to address cases of aggression between adolescents, both intervention as prevention, paying particular attention to boys (Mazzone et al., 2017). Taking into account the influence of gender

seems particularly important when designing and implementing psychological interventions for adolescents, in order to increase their effectiveness (Peker, 2017). In short, investing resources in promoting adolescent well-being is a way to prevent the development of physical and mental health problems, and to contribute to a more cooperative, tolerant and altruistic society (Reinhardt et al., 2020).

Conflicts of interest

The authors have no conflict of interests.

Funding details

Predoctoral Grant "Atracció de Talent" (UV-INV_PREDOC17F1-540334). Universitat de València.

Acknowledgements

The authors would like to thank the schools for their participation in this research, both the management team, teachers, and students.

References

Aldás, J. (2013). La invarianza del instrumento de medida. *Métodos De Investigación Social y De La Empresa*, 421-446.

Browne, M. V., & Cudeck, R. (1993). *Testing structural equation models*. SAGE.

Crawford, J. R., & & Henry, J. D. (2003). The depression anxiety stress scales (DASS): Normative data and latent structure in a large non-clinical sample. *British Journal of Clinical Psychology, 42*(2), 111-131.

De la Barrera, U., Schoeps, K., Gil-Gómez, J.-A., & Montoya-Castilla, I. (2019). Predicting adolescent adjustment and well-being: the interplay between socio-emotional and personal factors. *International Journal of Environmental Research and Public Health Article*, *16*, 4650-4667. https://doi.org/10.3390/ijerph16234650

Diener, E., & Emmons, R. A. (1984). The independence of positive and negative affect. *Journal of Personality and Social Psychology, 47*(5), 1105–1117. https://doi.org/10.1037/0022-3514.47.5.1105

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. won, Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, *97*(2), 143–156. https://doi.org/10.1007/s11205-009-9493-y

Du, H., King, R. B., & Chi, P. (2017). Self-esteem and subjective well-being revisited: The roles of personal, relational, and collective self-esteem. *PLoS ONE*, *12*(8), 1–17. https://doi.org/10.1371/journal.pone.0183958

Fomina, T., Burmistrova-Savenkova, A., & Morosanova, V. (2020). Self-regulation and psychological well-being in early adolescence: A two-wave longitudinal study. *Behavioral Sciences*, *10*(3). https://doi.org/10.3390/bs10030067

Garaigordobil, M. (2013). *Cyberbullying: Screening of bullying among equals*. TEA Ediciones.

Garcés, M., Santoya, Y., & Jiménez, J. (2020). Influencia de la comunicación familiar y pedagógica en la violencia escolar. *Comunicar*, *28*(63), 77–86. https://doi.org/10.3916/C63-2020-07

Gascó, V. P., Villanueva, L. V., & Plumed, A. G. (2018). Trait emotional intelligence and subjective well-being in adolescents: The moderating role of feelings. *Psicothema*, *30*(3), 310–315. https://doi.org/10.7334/psicothema2017.232

Godfrey, E. B., Burson, E. L., Yanisch, T. M., Hughes, D., & Way, N. (2019). A bitter pill to swallow? Patterns of critical consciousness and socioemotional and academic well-being in early adolescence. *Developmental Psychology*, *55*(3), 525–537.

Gomez-Baya, D., Mendoza, R., Gaspar, T., & Gomes, P. (2018). Responses to positive affect, life satisfaction and self-esteem: A cross-lagged panel analysis during middle adolescence. *Scandinavian Journal of Psychology*, *59*(4), 462–472. https://doi.org/10.1111/sjop.12450

González-Carrasco, M., Casas, F., Malo, S., Viñas, F., & Dinisman, T. (2017). Changes with Age in Subjective Well-Being Through the Adolescent Years: Differences by Gender. *Journal of Happiness Studies*, *18*(1), 63–88. https://doi.org/10.1007/s10902-016-9717-1

Hellfeldt, K., López-Romero, L., & Andershed, H. (2020). Cyberbullying and psychological well-being in young adolescence: the potential protective mediation effects of social support from family, friends, and teachers. *International Journal of Environmental Research and Public Health*, *17*(1). págs 45-61 https://doi.org/10.3390/ijerph17010045

Kurki-Kangas, L., Marttunen, M., Fröjd, S., & Kaltiala-Heino, R. (2019). Sexual Orientation and Bullying Involvement in Adolescence: The Role of Gender, Age, and Mental Health. *Journal of School Violence*, *18*(3), 319–332. https://doi.org/10.1080/15388220.2018.1488136

Liu, W., Mei, J., Tian, L., & Huebner, E. S. (2016). Age and Gender Differences in the Relation Between School-Related Social Support and Subjective Well-Being in School Among Students. *Social Indicators Research*, *125*(3), 1065–1083. https://doi.org/10.1007/s11205-015-0873-1

Lozano-Blasco, R., & Cortés-Pascual, A. (2020). Problematic Internet uses and depression in adolescents: A meta-analysis. *Comunicar*, *28*(63), 103–113. https://doi.org/10.3916/C63-2020-10

MacCallum, R. C., & Austin, J. T. (2000). Applications of Structural Equation Modeling in Psychological Research. *Annual Review of Psychology*, *51*, 201–226.

Machimbarrena, J. M., & Garaigordobil, M. (2018). Bullying y cyberbullying: diferencias en función del sexo en estudiantes de quinto y sexto curso de educación primaria. *Suma Psicológica*, *25*(2), 102–112. https://doi.org/10.14349/sumapsi.2018.v25.n2.2

Marsh, H. W., Craven, R. G., & Martin, A. J. (2006). What is the nature of self-esteem? Unidimensional and multidimensional perspectives. *Self-esteem: Issues and Answers*, 1, 16-25.

Martínez-Marín, M. D., & Martínez, C. (2019). Subjective well-being and gender-typed attributes in adolescents: The relevance of emotional intelligence. *Australian Journal of Psychology*, *71*(3), 296–304. https://doi.org/10.1111/ajpy.12247

Masselink, M., Van Roekel, E., & Oldehinkel, A. J. (2018). Self-esteem in Early Adolescence as Predictor of Depressive Symptoms in Late Adolescence and Early Adulthood: The Mediating Role of Motivational and Social Factors. *Journal of Youth and Adolescence*, *47*(5), 932–946. https://doi.org/10.1007/s10964-017-0727-z

Mazzone, A., Camodeca, M., Cardone, D., & Merla, A. (2017). Bullying Perpetration and Victimization in Early Adolescence: Physiological Response to Social Exclusion Angela. *International Journal of Developmental Science*, *11*, 121–130.

McLoughlin, L. T. (2019). Understanding and measuring coping with cyberbullying in adolescents: exploratory factor analysis of the brief coping orientation to problems experienced inventory. *Current Psychology Current Psychology, 40, 4300-4310*. https://doi.org/10.1007/s12144-019-00378-8

Navarro, R., Larrañaga, E., & Yubero, S. (2018). Differences between Preadolescent Victims and Non-Victims of Cyberbullying in Cyber-Relationship Motives and Coping Strategies for Handling Problems with Peers. *Current Psychology*, *37*(1), 116–127. https://doi.org/10.1007/s12144-016-9495-2

Neira, I., Bruna, F., Portela, M., & García-Aracil, A. (2018). Individual Well-Being, Geographical Heterogeneity and Social Capital. *Journal of Happiness Studies*, *19*(4), 1067–1090. https://doi.org/10.1007/s10902-016-9840-z

Ortuño-Sierra, J., Aritio-Solana, R., Chocarro de Luis, E., Nalda, F. N., & Fonseca-Pedrero, E. (2019). Subjective well-being in adolescence: New psychometric evidences on the satisfaction with life scale. *European Journal of Developmental Psychology*, *16*(2), 236–244. https://doi.org/10.1080/17405629.2017.1360179

Patalay, P., & Fitzsimons, E. (2018). Development and predictors of mental ill-health and wellbeing from childhood to adolescence. *Social Psychiatry and Psychiatric Epidemiology*, *53*(12), 1311–1323. https://doi.org/10.1007/s00127-018-1604-0

Peker, A. (2017). An Examination of the Relationship Between Self-Control and Cyber Victimization in Adolescents. *Eurasian Journal of Educational Research*, *67*, 1–15.

Prado-Gascó, V. J., Romero-Reignier, V., Mesa-Gresa, P., & Górriz, A. B. (2020). Subjective Well-Being in Spanish adolescents: Temporary stability and Psychometric properties of the scale of positive and negative experiences (SPANE). *Unpublished Manuscript.*

Reinhardt, M., Horváth, Z., Morgan, A., & Kökönyei, G. (2020). Well-being profiles in adolescence: Psychometric properties and latent profile analysis of the mental health continuum model-A methodological study. *Health and Quality of Life Outcomes*, *18*(1), 1–10. https://doi.org/10.1186/s12955-020-01332-0

Rosenberg, M. (1965). Rosenberg self-esteem scale (RSE). *Measures Package*, *61*(52), 18–30.

Rueger, S. Y., & George, R. (2017). Indirect Effects of Attributional Style for Positive Events on Depressive Symptoms Through Self-Esteem During Early Adolescence. *Journal of Youth and Adolescence*, *46*(4), 701–708. https://doi.org/10.1007/s10964-016-0530-2

Sánchez-Quejia, I., García-Moya, I., & Moreno, C. (2016). Trend Analysis of Bullying Victimization at School. *American School Health Association*, *87*(6), 457–464.

Satorra, A., & Bentler, P. M. (1994). Corrections to test statistics and standard errors in covariance structure analysis. In A. von Eye & C. C. Clogg (Eds.), *Latent variables analysis: Applications for developmental research* (pp. 399–419). SAGE Publications Inc.

Smith, E. M., Reynolds, S., Orchard, F., Whalley, H. C., & Chan, S. W. (2018). Cognitive biases predict symptoms of depression, anxiety and wellbeing above and beyond neuroticism in adolescence. *Journal of Affective Disorders*, *241*, 446–453. https://doi.org/10.1016/j.jad.2018.08.051

Thomaes, S., Sedikides, C., van den Bos, N., Hutteman, R., & Reijntjes, A. (2017). Happy To Be "Me?" Authenticity, Psychological Need Satisfaction, and Subjective Well-Being in Adolescence. *Child Development*, *88*(4), 1045–1056. https://doi.org/10.1111/cdev.12867

Vázquez-Morejón, A. J., García-Bóveda, R., & Vázquez-Jiménez, R. (2004). Rosenberg self-esteem scale: reliability and validity in Spanish clinical population. *Psychology Notes*, *22*(2), 247–255. https://doi.org/https://doi.org/10.1037/t39445-000

World Medical Association. (2013). World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects. *Journal of American Medical Association (JAMA)*, *310*(20), 2191–2194.

Zilanawala, A., Sacker, A., & Kelly, Y. (2017). Longitudinal Latent Cognitive Profiles and Psychosocial Well-being in Early Adolescence. *Journal of Adolescent Health*, *61*(4), 493–500. https://doi.org/10.1016/j.jadohealth.2017.05.008