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Research Article

A Cross-Sectional Study: Impact of Age, Sex, and Social Influence on Emotional Skills of Adolescents

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Abstract

The purpose of the current study was to use a self-reporting questionnaire to appraise the emotional abilities of a sample of adolescents aged 12 to 18 and to identify if there are any disparities between men and women in these abilities. The sample size comprises 1011 adolescents between 12 and 18 years (481 women, *M*= 14.92 years, *SD* = 1.72; 530 men, *M* = 14.93 years, *SD* = 1.74), divided into seven age groups. There were significant differences in Expressing and Labeling [$F(6, 1010) = 5.141$, $p = .001$] and Managing and Regulating dimensions [$F(6, 1010) = 4.760$, $p = .001$] across different age groups. The current study adds to our understanding of how adolescents process emotions by examining their self-perception of emotional skills in real-life situations. It enhances our knowledge of the various stages of development of these skills and shows that they improve with age, with a significant influence from peers and the social environment. By identifying the development of emotional skills, we can better understand the factors associated with various emotional disorders and work toward preventing their development and persistence.

Keywords: Adolescence; emotion recognition; emotional regulation; sex differences.

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Emotions drive the development of human beings. They have an evolutionary function, guide behavior (Thompson, 2015), are fundamental to successful social interactions (Fischer & Manstead, 2016), and influencing decision-making (Damasio, 2019). For social species, the recognition of one's and others' emotions, expressing one's feelings, and regulating emotionally guided behavior are necessary to maintaining successful interpersonal relationships.

From a biological perspective, emotions are internal states characterized by behavioral patterns, with short-term physiological reactions occurring in response to internal or external stimuli, which depend on different brain systems (Damasio, 2001). The limbic system and its interaction with the prefrontal cortex are the structures responsible for handling emotional stimuli. These structures are within the temporal lobe and, the amygdala is a part of this system. The amygdala nuclei connect with the hypothalamus, hippocampus, neocortex, and thalamus (Dalgleish, 2004), it is therefore involved in all aspects of emotion processing: recognition, expression, and regulation. Recognizing emotions also requires the participation of cortical and subcortical structures (Elsayed et al., 2021; Pozzi et al., 2021; Taylor et al., 2011), that overlap when regulating emotions and are implied in social cognition (Adolphs, 2001; Nelson et al., 2005).

Adolescence is characterized by physical, hormonal, psychological, and emotional changes that have an impact on behavior. In puberty, the hormonal activation from GnRH (gonadotropin-releasing hormone), FSH (follicle-stimulating hormone), and LH (luteinizing hormone) changes the brain structure and organization (Kumar et al., 2024). For example, synaptic pruning has been described as accompanied by a thickening of the prefrontal cortex and increased myelination (Giedd et al., 1999). Sex hormones can be implied in this reorganization, in males, testosterone can influence changes in white matter density can be observed in multiple regions, some of them involved in emotional processing such as the cingulate and inferior frontal cortex, the temporal gyrus and the inferior frontal cortex. On the other hand, in females, estrogen seems to have a neuroprotector effect, stimulating

synaptogenesis, neuron outgrowth, and dendritic branching in the prefrontal cortex (Kumar et al., 2024).

The strengthening of several neural circuits and greater sensitivity of the limbic system observed influences emotional processing and regulation (Arain et al., 2013). The neural mechanisms involved in emotion regulation are strengthened during adolescence; fMRI research shows that with increasing age, the activity of frontotemporal brain regions is linked to conscious emotion regulation, especially the VLPFC, which seems to be involved in cognitive reappraisal of emotions (Guassi-Moreira et al., 2019).

Although emotion perception, expression, and regulation are biologically rooted processes, they are further shaped by social connections (Gross, 2008). Emotions are inherent from birth, but infants acquire the ability to identify and label emotions through parental interaction and continue to do so as they mature and engage with peers (Bamijoko-Okungbaye, 2022; Buckley & Saarni, 2006; Thompson, 2015). In childhood, parents shape and advise a child's emotional responses, and the parents' regulation strategies indirectly influence the child's regulation (Silvers, 2022). Nonetheless, parents' influence diminishes during adolescence (Spear, 2000). Adolescents become more autonomous in comprehending, identifying, and handling their own and their peers' emotions. They must, therefore, acquire advanced metacognitive abilities to internalize their affective states, recognize how corresponding emotions are displayed in others, learn how to express them, and ultimately regulate their emotions (Guyer et al., 2016).

Adolescents' emotional regulation strategies are refined according to socialization experiences and intrinsic factors, such as temperament (Silvers, 2022). Nevertheless, employing these strategies becomes difficult since adolescents exhibit heightened sensitivity toward emotional stimuli. In their research, Bailen et al. (2019) discovered that subjective reports on emotional experience reveal a higher intensity and proportion of dichotomous emotional states in adolescents when compared to adults. In this regard, the perception of emotional experience varies by age. Adolescents have a marked preference for rewarding experiences and present greater emotional reactivity than adults (Burnett, et al., 2011; Hare et al., 2008). A longitudinal study of participants aged 10 to 14 years shows a decrease in the frequency of positive emotions and an increase in the frequency of negative emotions (Larson et al., 2002).

Difficulty in controlling emotions labeled as negative (such as sadness, fear, and anger), leads to problems like impulsive decision-making; poor interactions and poor formation of social relationships; marked reluctance, especially with authority figures; and in severe cases

of emotional dysregulation, psychopathologies such as anxiety, aggressive behavior, and eating disorders (McLaughlin et al., 2011; Riley et al., 2019).

Diverse studies demonstrated that adolescents with better emotional management tend to report better psychological well-being (Chernyshenko, et al. 2018; Guerra-Bustamante et al., 2019). Adolescents' emotion regulation development is influenced by caregivers and peers (Sahi et al., 2023; Silvers, 2022), so healthy social interactions are crucial to their mental health.

Is difficult to establish sex differences in emotion recognition in adolescents because studies are scarce. In adults, empirical work shows evidence of better accuracy in women than men recognizing emotions, especially negative ones (Abbruzzese et al., 2019; Rafiee & Schacht, 2023). For instance, Wingenbach et al., (2018) found higher accuracy and faster response latency in women than men in tasks that require emotion recognition of negative and positive emotions, however, the study included men and women between 16 and 45 years, but no analysis by age was made.

Similarly, Zimmermann and Iwanski (2014) reported sex differences in emotion regulation strategies with higher scores in social support-seeking and dysfunctional rumination in women than men in a sample ranging from 11 to 50 years, but no interaction was found between sex and age. Studies on sex differences in emotional skills in adolescents have had mixed results. Schoeps et al. (2018) reported that females show higher scores in perception and understanding of emotions than males, but Garaigordobil (2020) found no differences in a similar age sample.

The purpose of the current study was to use a self-reporting questionnaire to appraise the emotional capabilities of a sample of adolescents aged 12 to 18 and to identify if there are any disparities between men and women in these abilities. As a hypothesis, it is expected that emotional skills, especially emotion regulation, increase in adolescents as they grow older. In addition, it is expected that females will exhibit more proficiency in recognizing and expressing emotions than males but not in regulating them.

Method

Participants

The research sample was composed of 1011 adolescents studying in public schools in both urban and rural contexts, with ages ranging from 12 to 18 years (481 women, *M*= 14.92 years, *SD* = 1.72; 530 men, *M* = 14.93 years, *SD* = 1.74). Table 1 presents the number and

sex of participants for each age group. Financial compensation was not provided to the participants.

Table 1.
Sample Distribution Categorized by Age and Sex

Age	Women *N*	Men *N*	Total *N(%)*
12	43	51	94 (9.3)
13	76	88	164 (16.2)
14	63	79	142 (14)
15	133	86	219 (21.7)
16	65	102	167 (16.5)
17	61	99	160 (15.8)
18	40	25	65 (6.4)
Total	481	530	1011 (100)

Instrument

The ESCQ-20 questionnaire (Vázquez-Moreno et al., 2022) was used to assess emotional skills. The questionnaire is a validated version of the ESQ-21 questionnaire (Schoeps et al., 2019), comprised of 20 items that assess three emotional skills: Perceiving and Understanding (When I meet someone, I know, I immediately notice their mood), Expressing and Labeling (I can list the emotions I am experiencing right now) and Managing and Regulating (I try to control my unpleasant emotions and enhance the positive ones). The questionnaire's Likert scale ranges from 1 (never) to 5 (always). The highest achievable scores by dimension are Perceiving and Understanding = 35 (PU), Managing and Regulating = 20 (MR), and Expressing and Labeling = 45 (EL). The overall score was derived by adding the scores for the three dimensions. The overall internal consistency of the instrument was α = .914 (20 items). As for its components, the reliability coefficients were α = .861 for perceiving and understanding (7 items), α = .766 for managing and regulating (4 items), and α = .894 for expressing and labeling (9 items).

Procedure

Students from both high and middle school were invited to participate in the present study. The evaluation of high school students occurred through virtual meetings, in which the investigator explained the study's objectives and provided links to the virtual application of the questionnaire. The application of the instrument was divided into two parts. The first section included a demographic questionnaire, a written consent form for parents/guardians, and an assent form for minors. The second part was the ESQ-20 questionnaire. The

evaluation of the middle school students was conducted in person. First, the investigators provided the letter of assent to the minors and the informed consent form to their parents. After the acceptance, the instrument was implemented in a group setting using paper and pencil. Adhering to the Helsinki ethical criteria, the study was conducted and submitted for approval to the ethics committee of the University in January 2022, and data was collected in June 2022.

Statistical analysis

Data analysis was conducted using SPSS Statistics for Windows, v.21. The normality of the distribution was tested using the Kolmogorov-Smirnov test with Lilliefors correction. It was found that the overall test score displayed a normal distribution, with a mean of 67.21 (*SD* 13.33), $Z = 1.025$, and $p = .24$, distributions in z scores are described in Figure 1. An analysis was conducted to determine the correlation between age and the scores for the dimensions. A one-factor ANOVA was implemented to assess score differences among age groups. Post hoc comparisons were applied to obtain the specific differences between age groups. After analyzing the differences between the scores, it was noted that the 15 yrs group showed a slight backtracking in all the scores, for a more precise analysis, the 15 yrs group was subdivided into two: those who were in middle school ($n = 74$) and those who were in high school ($n = 144$). Additionally, the participants were divided into two groups by sex, and each group was subdivided by age. The early adolescent group, aged 12 to 15 years, included 395 individuals, with 182 females and 213 males. The late adolescent group, aged 16 to 18, included 610 individuals, with 299 females and 311 males. Independent t-tests with a pre-established level of significance at 0.05 were conducted.

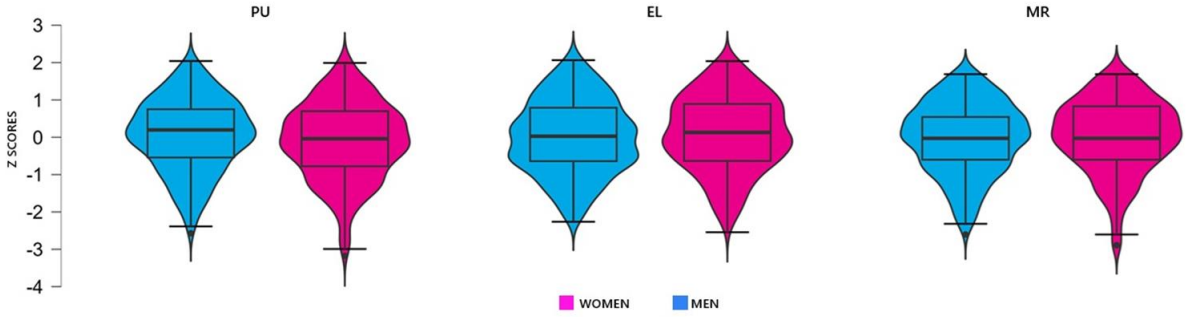

Figure 1. Scores distribution of each dimension of ESCQ-20

Results

The mean of global scores and each one of the dimensions of the questionnaire divided by sex and age, are shown in Figure 2.

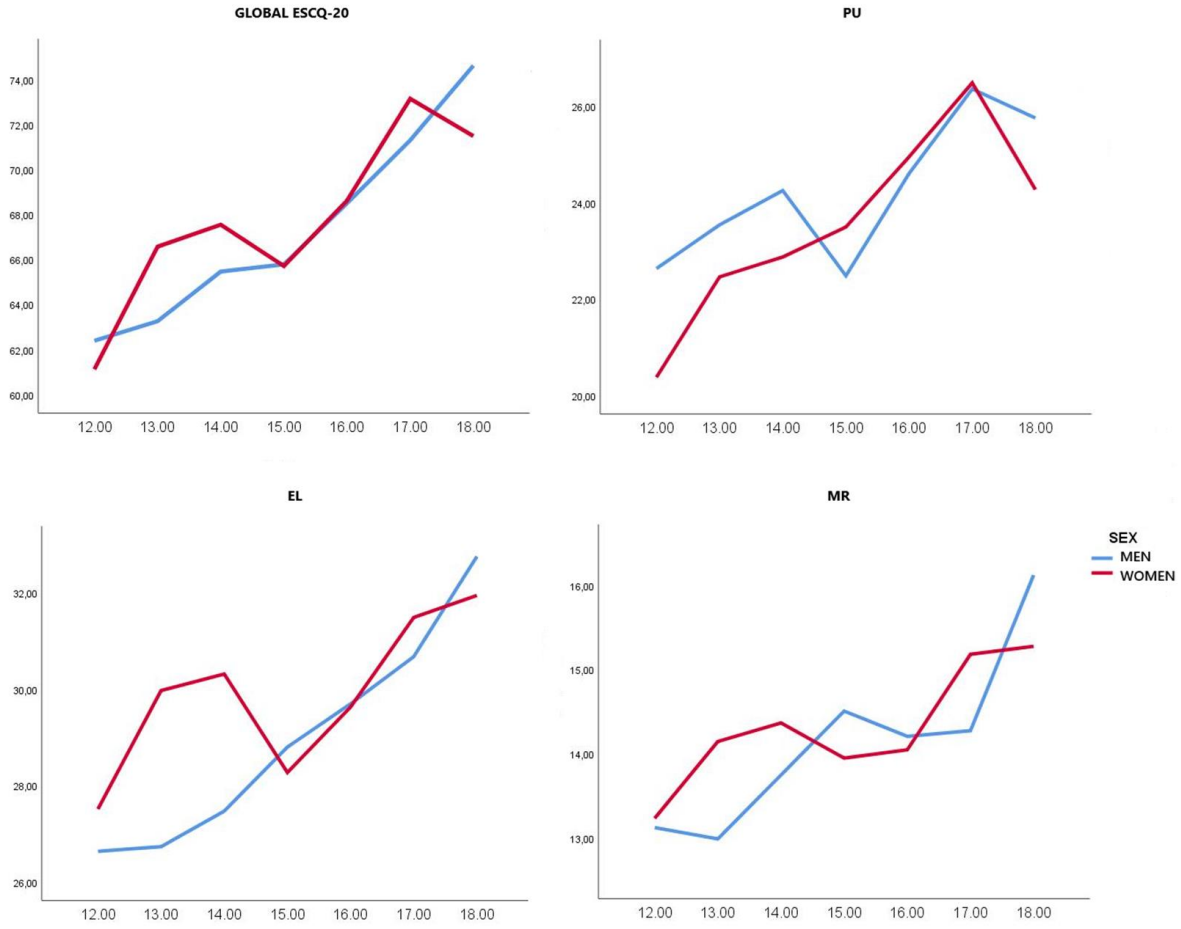

Figure 2. Mean scores of ESCQ-20 by age and sex

The sample was divided into quartiles, defining scores below the first quartile (25%) as "low", scores between the second and third quartiles (26-75%) as "normal", and scores above the fourth quartile as "high". Data is presented in Appendix A. The percentage of participants was lower in the first and fourth quartiles than in the normal range. Correlation analysis showed that both the overall score and each of the dimensions had a positive association with age (Overall, $r(1009) = .225$, $p < .01$; PU, $r(1009) = .220$, $p < .01$; EL, $r(1009) = .160$, $p < .01$ and MR, $r(1009) = .156$, $p < .01$).

Differences by Age

In all dimensions, there was a significant rise in questionnaire scores related to age: Perceiving and Understanding (PU), F (6,1004) = 11.990, p =.001; Expressing and Labeling (EL), F (6,1004) = 5.141, p =.001; Managing and Regulating (MR), F (6,1004) = 4.760, p = .001; as well as in the overall score F (6,1004) = 9.194, p =.001. Statistical data are presented in Table 2

Table 2.

Differences between scores by age

Variables	F (gl)	η^2	Effect Size (f)	Statistical power 1- (β)
PU	11.990 (6, 1004)**	.067	0.267	1.000
EL	5.141 (6, 1004)**	.030	0.175	0.995
MR	4.760 (6, 1004)**	.028	0.169	0.991

Note. 001**, Perceiving and Understanding (PU), Expressing and Labeling (EL), Managing and Regulating (MR), f = .25 - effect size medium (PU), f = .10 - effect size small (EL and MR)

Differences among age groups in each dimension were revealed through multiple comparisons. The overall score showed that 12-year-olds differed from 16-year-olds (p = .001), 17-year-olds (p = .001), and 18-year-olds (p = .001), but not from the other age groups. Similarly, 13-year-olds differed only from the 17- and 18-year-old groups (p = .001 and p= .02 respectively). The 14-year-olds differed only from the 17-year-old group (p = .004), and the 15-year-olds differed from the 17-year-old group (p = .0001).

For PU, it was observed that the score of the 12-year-old group differed from the 16- (p = .001), 17- (p = .001), and 18-year-old groups (p = .03), while the 13- and 14-year-olds only differed from the 17-year-old group (p = .001 in both cases). The 16-year-old group differed from the 15-year-old group (p = .04). Similarly, EL showed differences between the 12-year-olds and the 17- and 18-year-old groups (p = .003 and p = .01, respectively). The 13-year-olds differed from the 17-year-old group (p = .03). The 14- and 16-year-old groups showed no differences with any other group, while the 15-year-old group differed only from the 17-year-old group (p = .03). For the RM dimension, the results showed that the 12-year-old group scored lower than the 17- and 18-year-old groups (p = .01 and p = .005 respectively).

Backtracking in all scores was observed at the age of 15, and for the dimension of PU at the age of 18, neither, however, was statistically significant. However, after a more detailed analysis, it was found that the scores of the 15-year-old group differ by the effect of the scholar level (Figure 3, with lower scores in students in middle school (MS) than those in high school (HS). The differences were significant only in the PU dimension (MS, M = 22.3, SD = 4.9; HS, M = 23.8, SD = 5.0; t(216) = 2.035, p = .04) and in the overall questionnaire (MS, M = 63.1, SD = 11.9; HS, M = 67.0, SD = 12.5; t(216) = 2,254, p = .02).

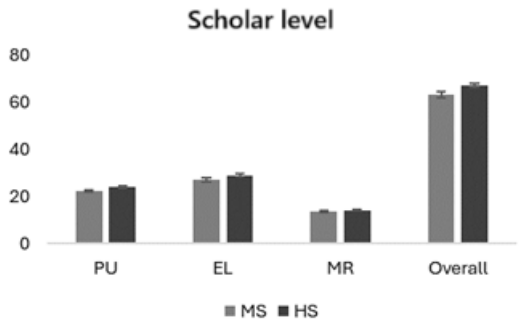

Figure 3. Differences by effect of scholar level in the 15-year-old group (Middle school - MS, High School - HS)

Differences by sex

Sex-specific differences were observed solely in the early adolescence cohort. In the PU dimension, men scored higher than women (p = .008), while in the EL and MR dimensions, women scored better than men (p = .001 and p = .04, respectively). In the late adolescence cohort, no differences were observed between men and women (Table 3).

Table 3.
Sex-related differences between the two age groups

Group	Dimension	Men *M (SD)*	Women *M (SD)*	*t*	*p*	*D*
Early adolescence	PU	23.59 (5.53)	26.10 (5.42)	2,684	.008	.27
	EL	26.98 (7.69)	29.51 (7.68)	3,259	.001	.32
	MR	13.30 (3.29)	14.00 (3.52)	2,054	.04	.20
Late adolescence	PU	24.67 (5.04)	24.52 (5.44)	353	.72	-
	EL	30.00 (7.61)	29.71 (8,12)	461	.64	-
	MR	14.46 (3.31)	14.39 (3.69)	229	.60	-

Discussion

The current investigation had two objectives. The primary goal was to expose variations in emotional abilities among teenagers aged 12 to 18 using a self-report questionnaire. The secondary goal was to investigate any sex-associated differences in the scores. In general, it was observed that the emotional abilities scores increase with age, and the results coincide with those expected according to the theories of adolescent brain development and maturation.

However, post hoc comparisons revealed that the differences by age group are presented in leaps. Although a progressive increase in scores is observed as age increases, these differences only become significant when there is a jump of two or more years in age.

In addition, a decrease in scores on all dimensions was observed at the age of 15 years, which, although not reaching statistical significance, could have relevance for understanding adolescent behavior. A more detailed analysis shows that the 15-year-old group was made up of adolescents in different school grades. The group with 15-year-old participants who were in middle school scored lower on social-emotional skills than those with the same age but who were in high school. These results have been interpreted in favor of the influence of the environment on the development of emotional skills. Young adolescents who study with slightly older adolescents seems to acquire behavioral repertoires from the older adolescents. Therefore, more experienced peers have a positive influence on the development of social-emotional skills. Considering that peers are an important influence in adolescence (Spear, 2000), the behavior of adolescents with relatively better social-emotional skills could have a modeling effect on the other members of the group. In this regard, variations in the acquisition of socioemotional skills have a strong social component since in addition to biological factors, the family environment, parents' socioemotional skills, cognitive characteristics and, parenting styles are factors that influence the recognition, expression and, regulation of emotions (Kumar et al., 2024). Hence, peer influence may be beneficial when the dominant model is positive for behavioral learning, which presents a window of opportunity for intervention models.

The data presented are consistent with the neurobiological approach to emotional development, which emphasizes the development of brain systems and their processing, particularly the prefrontal medial cortex which plays a crucial role in emotional regulation (Thompson, 2015).

It was observed that the emotional abilities of adolescents in the 12-year-old group differed from those of the older groups, exhibiting lower scores across all dimensions. The differences are highest when compared with the 16-year-old group. These changes may be related to the strengthening of specific brain pathways (Arain, et al., 2013; Giedd et al., 1999), which influence emotion recognition in others and emotional regulation skills. Studies have shown that the ability to recognize emotions in others improves during adolescence, regardless of the sensory modality. According to Lawrence et al. (2015), recognition of anger on faces improves in adolescents at this stage, but complex emotions such as social emotions are not recognized accurately until adulthood (Meinhardt-Injac et al., 2020). Other

studies have focused on affective prosody, showing that adolescents reach the level of adults in affective recognition of nonverbal auditory stimuli between the ages of 14 and 15 (Grosbras et al., 2018).

Differences were observed between the younger and older groups in the domains of Expressing and Labeling and Perceiving and Understanding emotions. Both skills are evolutionarily relevant since social behavior is mediated by the recognition of the emotions of others, while its deficit is accompanied by difficulties in interpersonal relationships (Libralon & Romero, 2013). Prospective studies have found that correctly labeling emotions even in early childhood is associated with better emotion regulation (Elsayed et al., 2021). The higher scores observed in the older age group suggest that improvement in these abilities happens in early adolescence and sets a foundation for successful social relationships.

An improvement in the ability to recognize, label, and understand emotions coincides with admission to high school. This improvement could be associated with the greater necessity for autonomous development in the social environment, considering the higher level of independence adolescents attain in high school. Navigating in a social environment requires multiple skills, some of which seem to overlap. For example, the recognition and comprehension of emotions in others is described as an emotional ability but is also implied in empathy (Lane & Smith, 2021). In this regard, the empathy model of Feshbach and Kuchenbecker (1974) described that the recognition and understanding of emotions are part of the cognitive component of empathy. Studies assessing empathy in adolescents similarly found that scores increase with age (Allemand et al., 2015; Villadangos et al., 2016), and more importantly, that empathy in adolescence is a predictor of social competencies in adulthood (Allemand et al., 2015). Emotional abilities influence interpersonal relationships and emotional well-being in the long term.

It is possible to suggest that emotional abilities that facilitate the understanding of emotional states and their correct labeling and expression contribute to the development of empathy and thus facilitate the establishment of successful relationships with peers. The strengthening of these skills in older age groups coincides with the conditions of adolescent socialization. Young people between the ages of 12 and 15 are still under greater control and mediation of social relations by adults, both parents and teachers, and therefore lack the social independence attained in high school, with its lower level of adult control and supervision. Likewise, in late adolescence, young people acquire greater autonomy from their parents, and their decision-making is increasingly influenced by their peers.

The changes observed in the Emotion Regulation and Management scores are congruent with the behavioral changes associated with brain maturation observed in the neurotypical population. As previously described, emotional regulation depends on the maturation of specific areas of the prefrontal cortex, specifically the VLPFC. Given that the final structures to mature are the anterior regions of the brain (De Faria et al. 2021), it is natural that regulatory strategies improve in later adolescence.

Regarding the second aim of this study, sex differences were observed only in the early adolescence group. Males scored higher in Perceiving and Understanding, while females scored higher in both Expressing and Labeling, and Managing and Regulating. These results are inconsistent with empirical studies, which have shown an advantage for women in emotion recognition (Baptista-Menezes et al., 2017). This advantage was reported in adults and explained by the social role of women as caregivers, which is posited to require greater sensitivity in detecting facial emotions. However, it is worth noting that those studies use stimuli that elicit basic emotions (joy, anger, fear, sadness, and disgust), whereas social emotions (e.g., shame, frustration, pride) present greater complexity in their recognition. The instrument in the current study refers to emotion recognition skills in a social context, so the results may not be comparable.

Our results differ from other studies where no sex-related differences were observed (Garaigordobil., 2020). These discrepancies may be related to methodological aspects, such as the conformation of the groups and the instrument used for the emotional assessment. On the other hand, Schoeps et al. (2018) report that females show higher scores in perception and understanding of emotions than males in a sample from 12 to 15 years old. The results of the present work differ from those of Schoeps and collaborators; however, the discrepancies may be attributed to sociocultural differences between the two samples and variations in developmental abilities. Estévez et al. (2016) have shown differences in the educational, social, and emotional environment between Mexicans and Spanish adolescents. Differences included a normalization of aggressive behavior in Mexican schools and a collective scope of family socialization in Mexico versus an individualistic scope in Spain. A higher level of empathy was observed in Spanish adolescents, which suggests that differences in the family and scholastic environments also influence the development of emotional abilities.

Sex differences in emotional experience have also been described by Kumar et al. (2024) who mention that adolescent girls experience higher intensities of positive and negative emotions compared to boys, this gender difference in subjective emotional experience was

partly explained by socialisation, whereas women are encouraged to show and talk about their emotions, men value suppression and control of their emotional states.

Another factor to consider is that the present study was completed when the students were returning to school after at least two years of virtual education due to COVID-19. Normal development of emotional abilities was affected because of the lack of face-to-face social stimulation.

In this regard, life experiences such as peer relationships, academic pressure, and romantic relationships increase stress in some adolescents, influencing their emotions and behaviors (Kumar et al., 2024). The constraints imposed by the pandemic increased stress levels in the population with a negative impact on their mental health. Given the socialisation requirements of adolescents for the acquisition of behavioural repertoires, they may be impaired by a lack of socialisation. However, it is difficult to determine whether the differences we observed are an effect of long quarantine, given the lack of studies and normative values related to the development of emotional skills in the population.

The present work found no differences in regulation between men and women in the older age groups. Stoica et al. (2021) found that in adults, during the suppression of negative stimuli, women perceive greater distress than men in terms of the ability to suppress stimuli. While no differences were observed between males and females, the related cortical routes are different. The use of the cingulate-opercular network is observed in women, and increased processing of posterior ventral regions of attention is observed in men (Stoica et al., 2021), so regulation strategies seem to depend on different circuits and neural networks in men and women, although behaviorally, no differences are found. Considering the study of Stoica, the differences in emotional regulation between men and women are observed at the physiological level and in the strategies used, so they are not observed in the regulation as a final process nor in the subjective appreciation of the regulation skills, as it occurred in our study.

The results are based on the adolescents' subjective perception of their emotional abilities, given the congruence with data from empirical studies, we conclude that their self-assessments were adequate. The contributions of this work to the study of the development of emotions can be summarized in the identification of variations in the different socioemotional skills of adolescents concerning their age. The study has limitations, one of which is the use of a cross-sectional model. The precise identification of the development of these skills could be made more accurate using a longitudinal model that considers temperamental aspects, symptomatology associated with emotional problems, and the social

environment. Moreover, no information was collected regarding anxiety, depression, or any other type of disorder among the participants, it is therefore suggested that these variables be controlled for in subsequent studies.

Conclusions

The present study contributes to the understanding of emotional processing in adolescents by considering the self-perception of emotional skills in ecological environments. It contributes to the knowledge of the stages of development of these skills and demonstrates that these skills increase with age and have an important influence from social context, especially from their peers. Identifying the development of emotional skills allows clarification of factors related to different emotional disorders to avoid their development and persistence. Finally, assessing emotional skills through a questionnaire allows for a better diagnosis in educational environments.

It could be concluded that emotional skills improve with age, although it would be an important next step to follow the development of these abilities in a longitudinal study. Regarding sex differences, the results do not allow to conclude whether there is a difference in the acquisition of emotional skills between men and women.

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Competing Interests

The authors have declared that no competing interests exist.

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Appendix

ESCQ-21 Questionnaire Classification by Age Group.

	Age							
Overall	12	13	14	15	16	17	18	total
Low	22.3%	24.4%	23.9%	21.5%	23.4%	22.5%	23.1%	232
Normal	55.3%	51.8%	52.8%	54.8%	51.5%	56.3%	53.8%	543
High	22.3%	23.8%	23.2%	3.7%	25.1%	21.3%	23.1%	236
PU								1011
Low	24.5%	24.4%	23.2%	24.2%	19.8%	16.9%	23.1%	224
Normal	51.1%	53.0%	52.8%	57.1%	55.7%	61.9%	55.4%	563
High	24.5%	22.6%	23.9%	18.7%	24.6%	21.3%	21.5%	224
EL								1011
Low	23.4%	22.0%	23.2%	21.9%	22.2%	24.4%	23.1%	230
Normal	53.2%	53.0%	57.0%	54.3%	57.5%	53.1%	56.9%	555
High	23.4%	25.0%	19.7%	23.7%	20.4%	22.5%	20.0%	226
MR								1011
Low	19.1%	18.3%	23.2%	18.3%	22.8%	18.1%	23.1%	203
Normal	60.6%	62.8%	63.4%	67.1%	58.1%	60.0%	56.9%	627
High	20.2%	18.9%	13.4%	14.6%	19.2%	21.9%	20.0%	181
Total	94	164	142	219	167	160	65	1011

Note. PU: Perceiving and Understanding, EL: Expressing and Labeling, MR: Managing and Regulating