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Article

How Recent World Events Affect Empathy and Socio-Emotional Competencies? The Perception of Portuguese Adolescents

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Abstract: The recent world events seem to play a significant influence in the acquisition and upgrowth of empathy and socio-emotional competencies (SEC). In this study we sought to assess how the perception of these events affects the level of socio-emotional competencies and interpersonal reactivity of Portuguese adolescents and analyze differences due to sex and relationship status on its dimensions. Participants were 230 adolescents of both sexes, living in Portugal, with ages between 16 and 18 years old, mostly female, with the secondary educational level, living in an urban area and not in a relationship. An online questionnaire was applied, with the Social and Emotional Competencies (SEC-Q) scale and the Interpersonal Reactivity Index (IRI). As results, it was found that adolescents have an above-average global interpersonal reactivity, with empathic concern and perspective taking presenting the higher values. Adolescents show a medium high average level of SEC, with the highest domains being self-awareness and social awareness and prosocial behavior. Girls showed significantly more interpersonal reactivity in empathic concern, personal distress and fantasy, and boys presented more self-awareness. As for the relationship status, adolescents not in a relationship manifest more personal distress, while those in a relationship present higher values in all dimensions of SEC. Although the perception of Portuguese adolescents does not seem to have been greatly affected by recent world events, these results can contribute to thinking about youth protection policies and designing more appropriate interventions to promote well-being in this crucial period of life, especially in times of instability.

Keywords: adolescents; social and emotional competencies; empathy; environment

1. Introduction

It is in the relation with others that children develop emotional (self) regulation, building internal models, which result in representations about themselves, their own value, and about others [1]. The context where they live in has been shown to play a prominent role, influencing the way they evaluate themselves, their self-esteem, self-concept, perception of social support, and conduct [2]. Thus, growing up with adverse experiences in childhood and adolescence has been associated with psychological, behavioral, educational, and social problems [3].

In the last years, there have been numerous adverse events that have equated this possibility of salutogenic development, such as, the COVID-19 pandemic, war, climate changes, economic and financial instability. Several studies have addressed the repercussions of this reality on the dynamics of individual functioning, more specifically, on socioemotional competencies and empathic capacity [4–8]. In the process of acquisition and development of social and emotional competencies (SEC), the context in which the individual is immersed (not only the personal or of proximity, but also the global) seems to have a significant role [9]. The pandemic due to COVID-19 created abrupt changes in lifestyle and interpersonal relationships, economic difficulties, and uncertainty about the future [10]. Several studies indicate that social isolation, lack of contact with friends and family, and uncertainty about the future had a negative impact on adolescents' SEC during the COVID-19

pandemic [11,12], leading to increased anxiety, loneliness and depression and decreased empathy and prosocial behavior [13–16]. Some studies also suggest that children and adolescents were more psychologically affected by COVID-19 than adults in certain domains, reporting higher levels of anxiety and depression [17], greater loneliness and lower levels of subjective well-being [18]. Also, war and the perceived consequences of climate change are identified as stressful events and appear to be related to SEC in adolescents. The exposure to violence has proven to have a negative impact on adolescents' mental health and social adjustment [4,19,20], negatively affecting their SEC and reflecting in a higher risk of emotional and behavioral problems [5,6,21] and less meaningful and supportive interactions with others.

Empathy plays a vital role in building and maintaining positive relationships. Considered as a multidimensional construct, which exerts influence on the behavior of the individual, the empathic capacity is distinguished between cognitive and affective dimensions [22,23]. Although some literature describes early adolescence as a critical period in empathy development and adolescence as a period when fundamental changes occur in the regulation of emotions [24], the way how this occurs is not yet fully known. However, several studies revealed that there are age-related differences in the ability to feel empathy, suggesting that empathy develops throughout adolescence [24,25] and that there are gender differences during this stage of development [26–28]. Children and adolescents with high levels of empathy tend to have fewer problematic and aggressive behaviors and more prosocial competencies and problem-solving abilities [28–31]. Children and adolescents with lower levels of empathy tend to show greater involvement in conflict situations, more aggression, and bullying behaviors [32]. While the advantages of higher empathic levels are highlighted in the literature, negative aspects are also found. For example, an association has been found between high levels of empathy and internalizing problems, specifically depression [33]. The affective and cognitive dimensions appear to be distinctly associated with behavioral results. The affective dimension is associated with a decrease in relational and overt aggression, while the cognitive dimension has been shown to be positively related to indirect forms of aggression [34]. Furthermore, in the absence of sufficient socio-emotional competencies to surpass negative mental states, high levels of affective empathy can lead to co-rumination and increase the risks of emotional overload [34,35].

Empirical research has shown that empathy in adolescence is a strong predictor of positive social competencies in adulthood, including communication competencies, conflict resolution, and collaboration [36] and more engagement in prosocial behaviors, including altruism, helpfulness, and cooperation [28,37,38]. Emotional awareness is also considered as an important factor for adaptive empathic reactions, while emotional dysregulation can cause distress when witnessing others' negative feelings [39].

Taking into consideration the discussion held, the following objectives were defined: to know how the perception of recent world events affects the level of socio-emotional competencies and interpersonal reactivity of Portuguese adolescents and analyze differences due to sex and relationship status on the dimensions of inter-personal reactivity and social and emotional competencies.

2. Materials and Methods

2.1. Participants

In this research participated 230 adolescents of both sexes living in Portugal, with ages between 16 and 18 years old. Three inclusion criteria were defined: be an adolescent (age between 16 and 18 years old), be currently attending school/training course and living in Portugal for more than a year (according to permanent resident status). Most participants were Portuguese (93.0%), female (63.9%), were in the secondary educational level (65.2%), lived in an urban area (61.3%) and were not in a relationship (56.5%), as shown in Table 1.

Table 1. Sociodemographic characteristics of the sample (N=230).

	n	%
Gender		
Male	83	36.1
Female	147	63.9
Age		
16	79	34.3
17	75	32.6
18	76	33.1
Nationality		
Portuguese	214	93.0
Other	16	7.0
Relationship status		
Not in a relationship	130	56.5
In a relationship	100	43.5
Educational level		
3rd cycle	45	19.6
Secondary	150	65.2
Professional Course	35	15.2
Residence		
Rural area (< 2,000 residents)	32	13.9
Semi-urban area (>2,000 < 5,000 residents)	57	24.8
Urban area (> 5,000 residents)	141	61.3

Note: n—number of participants; %—percentage. Source: Elaborated by the authors

2.2. Instruments

Sociodemographic characterization was analyzed taking as reference the variables sex, nationality, relationship status, educational level, and place of residence.

Socio-emotional competencies were evaluated through the Social and Emotional Competencies Questionnaire (SEC-Q), proposed by Zych et al. [40] and adapted by Lobo [41] to the Portuguese population. Consisting of 16 items divided into four di-mensions: a) self-awareness (4 items), b) self-management and motivation (3 items), c) social-awareness and prosocial behavior (6 items), and d) decision making (3 items), it evaluates SEC from the individual’s own perception, considering the events of the last 12 months.

The self-awareness dimension refers to items such as, “I know how to label my emotions” and “I can differentiate one emotion from another”, while the self-management and motivation dimension mentions items such as, “I know how to motivate myself” and “I have my goals clear”, the social awareness and prosocial behavior dimension presents items such as, “I pay attention to the needs of others” and “I usually listen in an active way”, and finally, the decision making dimension includes items such as, “I make decisions analyzing carefully possible consequences” and “I do not make decisions carelessly”.

SEC are evaluated according to the degree to which the respondents agree or disagree with the statement presented, in a 5-point Likert scale with a range from 1 (strongly disagree) to 5 (strongly agree). The compute values for each dimension were calculated and the resulting mean average extracted. Higher mean scores in any of the dimensions reflect higher levels of the competencies that are being assessed. SEC-Q presented good psychometric qualities in two samples, one with 643 university students ($\alpha = 0.87$) and another with 2.139 adolescents ($\alpha = 0.80$) [40]. In the present study the Cronbach alpha was similar ($\alpha = 0.85$). The Portuguese version of this instrument do not establish norms or classes, although refers values between 2.9 and 3.2 for the mean values of the scales and total score. However, advise the interpretation of the scores taking the mean value of the scale (which runs from 1 to 5) as an intermediate point [41]. Therefore, values below 2.5 or above 3.5 should be considered as below (medium low) or above the mean (medium high).

Empathy was evaluated through the Interpersonal Reactivity Index (IRI), developed by Davis [22] and adapted by Limpo et al. [42] to the Portuguese population. IRI is a self-reported scale that assesses empathy in its cognitive and affective dimensions. The original version is composed of 28 items, but the Portuguese version is composed of only 24 items. Through these items an attempt is made to evaluate thoughts and feelings experienced by individuals in various situations. The items are divided into four subscales, with six items each: a) Perspective Taking, which reflects the tendency to adopt the other's point of view (e.g., "sometimes I try to understand my friends better by imagining their perspective of seeing things"); b) Empathic Concern, that measures the ability to experience feelings of concern and compassion for others (e.g., "I often have feelings of tenderness and concern for people less fortunate than myself"); c) Personal Distress, that assesses feelings of discomfort, anxiety and apprehension in strained interpersonal contexts (e.g., "in emergency situations, I feel uncomfortable and apprehensive"); and d) Fantasy, that evaluates a person's propensity to place him/herself in fictional situations (e.g., "I easily become involved in the feelings of the characters in a novel").

The answers are evaluated on a five-point Likert scale, where zero corresponds to "does not describe me well" and four "describes me very well". Cognitive empathy is measured through the Perspective Taking subscale, and affective empathy is obtained by adding and averaging the remaining three subscales. The quotation is made by adding up these values by subscale and making the average, and in the inverted items the quotations are also inverted (0 becomes 4, 3 becomes 1, and so on). Higher scores in any of the dimensions reflect higher levels of the competencies that are being assessed.

In the Portuguese version, applied to a sample of 487 university students, the mean values referred by the authors for the subscales and total score were 2.63 (SD=0.57) for the Perspective Taking, 2.47 (SD=0.62) for Empathic Concern, 1.92 (SD=0.70) for Personal Distress, 2.22 (SD=0.69) for Fantasy and 2.19 (SD=0.53) for the total score. The internal consistency of the subscales proved to be adequate (with a range of $\alpha = 0.73$ for the Perspective Taking subscale and 0.84 for the Fantasy subscale). In the present study, the global Cronbach alpha was 0.80 [with a min $\alpha = 0.74$ for the Empathic Concern subscale and a max $\alpha = 0.89$ for the Fantasy subscale].

2.3. Procedure

After approval by the ethics committee of our university, the study was disseminated through social networks (Facebook, LinkedIn, and Instagram). A total of 269 adolescents between 16 and 18 expressed their interest in participating in the study. After obtaining their informed consent (Portuguese legislation waives guardians or legal representatives' authorization after one turned 16), a Google Forms link was sent (restricted to one response per IP address), with SEC-Q and IRI questionnaires. Data collection was carried out over a period of three months (July and September 2022). After this, 230 completed responses were received and validated.

2.4. Statistical Analysis

Statistical analysis was performed using the Statistical Package for the Social Sciences (IBM, SPSS Statistics, version 28.0 of Windows). First, the descriptive values for both the IRI and the SEC-Q were calculated, in their individual dimensions and full-scale scores. A multivariate analysis of variance was then performed, with the four dimensions of each of the instruments as dependent variables with sex and relationship status as factors. We used a full factorial model, acquainting for both main effects as well as interaction effects.

3. Results

3.1. Descriptive Values

The interpersonal reactivity in our sample was slightly above the mean values ($M=2.4$; $SD=0.5$), with empathic concern ($M=2.8$; $SD=0.7$) and perspective taking ($M=2.7$; $SD=0.7$) presenting the highest means, while personal distress was the subscale with the lowest value ($M=1.8$; $SD=0.8$). We can also

see that the perception of socio-emotional competencies may be considered as a medium high level ($M=3.9$; $SD=0.5$), with the social awareness and prosocial behavior ($M=4.0$; $SD=0.5$) and the self-awareness ($M=3.9$; $SD=0.6$) being the dimensions with the highest mean scores (see Table 2).

Table 2. Descriptive values of the dimensions of IRI and SEC-Q (N=230).

	Min	Max	Mean	SD
IRI				
Perspective Taking	.2	4.0	2.7	.7
Empathic Concern	.7	4.0	2.8	.7
Personal Distress	.0	4.0	1.8	.8
Fantasy	.0	4.0	2.2	.9
IRI Total	1.2	3.6	2.4	.5
SEC-Q				
Self Awareness	1.8	5.0	3.9	.6
Self-management and Motivation	1.0	5.0	3.8	.7
Social Awareness and Prosocial Behavior	1.0	5.0	4.0	.5
Decision Making	1.0	5.0	3.7	.9
SEC-Q Total	1.2	5.0	3.9	.5

Note: IRI—Interpersonal Reactivity Index; SEC-Q—Social and Emotional Competencies Questionnaire. Source: Elaborated by the authors

3.2. Multivariate Analysis

A multivariate analysis of variance (MANOVA) was performed to analyze the effect of sex and relationship status on the dimensions of interpersonal reactivity and social and emotional competencies. Type III sum of squares was used with a full factorial model.

Multivariate tests revealed that both sex (Wilks' $\lambda = .812$, $p < .001$) and relationship status (Wilks' $\lambda = .879$, $p < .001$) presented significant main effects, while no significant interaction between the effects of sex and relationship status was observed (Wilks' $\lambda = .955$, $p = .242$).

The descriptive values for the dimensions considered are shown in Table 3.

Table 3. Means (SD) of the dimensions of the IRI and SEC-Q by sex and relationship status.

	Male		Female		Total			
	Without (n=47)	With (n=36)	Without (n=83)	With (n=64)	Male (n=83)	Female (n=147)	Without (n=130)	With (n=100)
IRI								
Perspective Taking	2.6 (.7)	2.7 (.7)	2.7 (.8)	2.8 (.9)	2.6 (.7)	2.8 (.8)	2.7 (.7)	2.8 (.8)
Empathic Concern	2.6 (.6)	2.5 (.7)	3.0 (.8)	3.0 (.8)	2.6 (.7)	3.0 (.7)	2.8 (.7)	2.9 (.8)
Personal Distress	1.7 (.7)	1.3 (.7)	2.0 (.7)	1.9 (.7)	1.5 (.7)	2.0 (.7)	1.9 (.7)	1.7 (.8)
Fantasy	1.8 (.9)	1.8 (1.0)	2.4 (.9)	2.3 (.9)	1.8 (.9)	2.4 (.8)	2.2 (.9)	2.1 (.8)
SEC-Q								
Self Awareness	3.9 (.6)	4.1 (.6)	3.8 (.5)	3.9 (.5)	4.0 (.6)	3.8 (.5)	3.8 (.6)	4.0 (.6)
Self-management and Motivation	3.6 (.7)	4.2 (.7)	3.7 (.7)	3.8 (.7)	3.9 (.8)	3.7 (.7)	3.6 (.7)	4.0 (.7)
Social Awareness and Prosocial Behavior	3.8 (.6)	4.1 (.5)	3.9 (.4)	4.1 (.4)	3.9 (.6)	4.0 (.5)	3.8 (.5)	4.1 (.5)
Decision Making	3.6 (.8)	3.7 (.9)	3.5 (.8)	3.8 (.9)	3.3 (.7)	3.9 (.8)	3.6 (.9)	3.8 (.9)

Note: IRI—Interpersonal Reactivity Index; SEC-Q—Social and Emotional Competencies Questionnaire; Without/With—Relationship Status (Without/with partner). Source: Elaborated by the authors.

In Table 4 we can see that sex has a significant effect in three of the interpersonal reactivity dimensions—empathic concern, personal distress, and fantasy—with females presenting higher means in all of these dimensions, while self-awareness is the only socio-emotional competence that differs by sex, with higher values in males. Significant differences in interpersonal reactivity according to relationship status occurs only in personal distress, which is higher in the participants without a partner. In the socio-emotional competencies, all dimensions differ significantly (see Table 4), with self-awareness, self-management and motivation, social awareness and prosocial behavior and decision making presenting higher values in the participants with a partner. No significant effects were found for the interaction of sex with relationship status.

Table 4. Results of the Between-Subjects Effects of the Multivariate Analysis of IRI and SEC-Q by Sex and Relationship Status.

	Sex			Relationship Status			Sex x Relationship Status		
	MS	F (1,226)	p	MS	F (1,226)	p	MS	F (1,226)	p
IRI									
Perspective Taking	.97	1.73	.190	.52	.92	.339	.00	.01	.941
Empathic Concern	9.49	18.06	<.001	.00	.00	.953	.51	.96	.327
Personal Distress	10.42	19.79	<.001	4.78	9.08	.003	.68	1.28	.259
Fantasy	13.70	18.62	<.001	.39	.53	.468	.39	.53	.467
SEC-Q									
Self Awareness	2.02	6.08	.014	1.37	4.14	.043	.31	.93	.336
Self-management and Motivation	1.21	2.28	.133	6.63	12.49	<.001	1.41	2.66	.105
Social Awareness and Prosocial Behavior	.24	.94	.334	5.21	20.21	<.001	.06	.25	.619
Decision Making	0.48	0.67	.414	6.11	8.44	.004	2.09	2.89	.091

Note: MS—Mean Squares; IRI—Interpersonal Reactivity Index; SEC-Q—Social and Emotional Competencies Questionnaire. Source: Elaborated by the authors.

4. Discussion

This study aimed to assess how the perception of recent world events affects the level of socio-emotional competencies and interpersonal reactivity of Portuguese adolescents and analyze differences due to sex and relationship status on the dimensions of interpersonal reactivity and social and emotional competencies.

Data analysis showed that the participants have a medium level of interpersonal reactivity (slightly above reference values), with higher competencies in empathic concern and perspective taking. These results seem to suggest that Portuguese adolescents are proficient in the ability to experience feelings of compassion and concern for others and tend to adopt the other’s point of view. In fact, median levels of empathic concern and perspective taking, and reduced levels of personal distress seem to indicate the probability that in the future these adolescents will exhibit less problematic and aggressive behaviors and more prosocial competencies and problem-solving abilities, as evidenced in the literature [28–31].

Also, in the socio-emotional competencies domain, results show that the adolescents present an overall medium-high level of perception, with self-awareness and social awareness and prosocial behavior presenting the highest scores. According to Zych et al. [40], good levels of SEC enable individuals to comprehend and manage emotions and social interactions and develop prosocial behaviors, facilitating healthy interpersonal relationships, the reduction of risk behaviors and, consequently, the promotion of health and personal well-being.

As for the impact that current events have on socio-emotional and empathic competencies of the adolescents, although this relationship is widely evidenced in the literature—with several studies

indicating how events such as the pandemic of COVID-19 had a negative impact on adolescents' SECs, leading to decreased empathy and pro-social behavior [13–16]—this has not been verified in the present study. In fact, the results revealed that Portuguese adolescents, even in a macrosocial context of instability, have medium-high values of SEC (particularly regarding self-awareness and social awareness and prosocial behavior) and medium values of empathy (mainly when it comes to empathic concern and perspective taking), seemingly maintaining an internal locus of control, characterized by SEC and empathic capacity directed towards understanding and supporting other(s). However, these results may be influenced by the fact that this study took into consideration only older adolescents (16–18 years), who, as highlighted in the literature [24,25], tend to have higher levels of SEC and empathic abilities when compared with earlier adolescents (13–15 years).

Regarding the effect of sex and relationship status on the dimensions of empathy and socio-emotional competencies, the results revealed that both sex and relationship status had significant main effects, however with no significant interaction between them. Female adolescents showed consistently higher scores in affective empathy than did male adolescents. Specifically, female adolescents reported more empathic concern, more personal distress and fantasy. Unlike affective empathy, cognitive empathy—that has been associated with perspective taking processes—does not show any sex differences. These results are consistent with previous studies that report higher scores in female than in male adolescents [36,43–45], either in all the four IRI subscales [22] or in some of the four IRI subscales [46,47]. This may be due to differences in general emotional responsiveness [48], with females been described as more able than males in recognizing other people's emotions, as well as more perceptive and empathetic [49], but also related with physiological maturity—female have more oxytocin, which is positive to emotional empathy, while male have more testosterone, which is negative related to cognitive empathy—and gender roles—while the orientation of woman's gender role is focused on others, the orientation of man's gender role is focused on justice and equity, which has no relation to empathy [50]. Still according to these last authors, after acquiring the gender role, man and woman have differences in empathy and especially in affective empathy.

Several studies have shown sex differences in socio-emotional competencies during adolescence [51–54].

However, in the present study, self-awareness was the only socio-emotional competence that differed by sex, with higher values in males. Emotional self-awareness is considered a prerequisite for the development of self-other differentiation and an important factor in the performance of individuals in daily activities [46]. In their study, Trentini et al. [46] found significant differences between sexes, with girls reporting greater difficulty in identifying feelings than boys. In girls, difficulty in identifying feelings can affect their ability to differentiate between their own emotions and those of others, which can lead to more aversive, self-centered responses when confronted with the suffering of others. On the other hand, in boys, more self-awareness can mitigate personal distress when confronted with the discomfort of others [46]. The fact that there were no significant differences between the sexes in the other SEC dimensions (although the scores in the social awareness and prosocial behavior and decision making were higher among female adolescents) is an aspect that deserves further investigation in future studies.

As for relationship status, significant differences in interpersonal reactivity occurs only in personal distress, which is higher in adolescents without a relationship. In the socio-emotional competencies, all dimensions differ significantly, with self-awareness, self-management and motivation, social awareness and prosocial behavior and decision making presenting higher values in adolescents in a relationship. Although these correlations are not easily corroborated by the literature (a lack of empirical evidence bearing on this issue leaves the role played by empathic and socio-emotional competencies understanding in adolescent romantic relationships unknown), several studies with adolescent population evidenced that competencies such as empathy lead to more positive peer relations, including better friendship quality, higher status within peer networks, and better romantic functioning [55] and that romantic relationships contribute to the development of a positive self-concept and greater social integration, been associated with higher rates of self-esteem, safety, satisfaction with life, positive affect, and achievement of personal and relational goals

[56]. However, it is important to remember, as stressed by these last authors [56] that the romantic development of adolescents does not take place in 'a social vacuum' and that is vital to know adolescents' social contexts (which provide support and emotional understanding) and their contribution for the well-being of adolescents, namely on their development of socio-emotional competencies and empathic abilities.

5. Conclusions

The results show that Portuguese adolescents have an above-average global empathic capacity, with higher competencies in terms of empathic concern and perspective taking and lower competencies in terms of personal distress. As for the perception of SEC, they presented an overall medium-high level, with social awareness and prosocial behavior and self-awareness being the dimensions with the highest scores.

Results also showed that both sex and relationship status had significant main effects on socio-emotional competencies and empathic abilities, though with no significant interaction between them. Female adolescents showed more emphatic concern, personal distress and fantasy, while male adolescents exhibited higher values of self-awareness. As for relationship status, on the other hand, results showed that personal distress is higher in adolescents not in a relationship. Participants with a relationship also showed higher values in all SEC dimensions.

Although the perception of Portuguese adolescents does not seem to have been greatly affected by recent world events, these results can contribute to thinking about youth protection policies and designing more appropriate interventions to promote well-being in this crucial period of life, especially in times of instability.

Limitations and Suggestions for Future Studies

Although the study provides information on the level of SEC and empathy of Portuguese adolescents facing the current world events and of the differences related to sex and relationship status in those domains, some limitations should be considered when interpreting the results.

The difficulty in defining SEC in the literature may have meant that some domains indicated by some authors were not included, which could lead to a less robust interpretation of the results.

Another limitation refers to the study design. The decision to disseminate the questionnaire through social networks, although it facilitated access to a larger sample, made its control more difficult. Also, the fact that this study evaluated the perception of adolescents at a specific moment does not allow us to understand the evolution of the socio-emotional competencies and empathic abilities and the effect that the current world events on them, over time. Furthermore, when considering only later adolescents we are unable to understand the evolution in SEC and empathic abilities throughout this phase of development. According to Napolitano et al. [57], SEC is important due to the role it plays in many social transitions that permeate adolescence, so it would be interesting in future studies to compare SEC and empathic abilities in the different periods of adolescence. Also, the fact that there are no normative values for the Portuguese adolescent population for the SEC-Q (only adults) did not allow for a more discussed and sustained analysis. This would be a relevant future study.

Another limitation of this study is that empathy and SEC were measured using self-report questionnaires. While questionnaires are a common way to measure these concepts, it is possible that participants' responses were influenced by factors such as self-image or the desire to provide socially desirable responses. According to Bouffard and Narciss [58], people by nature tend to overestimate various positive aspects of themselves and their lives, which act as an essential adaptive mechanism for healthier functioning, by improving their well-being, mental health and personal and social functioning. So, in order to obtain more robust results, it would be interesting to complement the SEC-Q self-report measure with another type of assessment, such as parents and close friends. Future studies may consider concurrently using hetero-evaluation measures by other players to validate these results.

Another limitation derived from the fact that we didn't use other sociodemographic and contextual variables to assess how the perception of recent world events affects the level of socio-emotional competencies and interpersonal reactivity of Portuguese adolescents. Thus, dynamic relations among these variables should be studied in future.

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