Introduction

Emotion regulation (ER) has mostly been studied in children and adults, underscoring its importance to various psychological outcomes such as well-being or quality of social interactions (Lopes et al., 2005; McRae, Jacobs, et al., 2012; Nelis et al., 2011). Yet, few studies have focused on how adolescents regulate their emotions and the effectiveness of this regulation. ER may be particularly important in this period of life, which is characterised by many developmental changes (e.g., biological, cognitive, social) and many new emotional experiences (e.g., in parents, peers and with romantic relationships) that often elicit negative emotions (e.g., Silk et al., 2003).

ER is defined as "the extrinsic and intrinsic processes responsible for monitoring, evaluating and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals" (Thompson, 1994, pp. 27-28). Most research has studied ER independently of individuals' goals and the situations in which they find themselves. However, recent advances have suggested that ER might be context-dependent, and that individuals' flexible use of different ER strategies depending on the situation should be investigated (Aldao et al., 2015). Based on these new insights, our aim was to develop a questionnaire assessing adolescents' ER strategies and abilities in different situations: the Contextualised Emotion Regulation Survey for Adolescents (CERSA).

From general to contextualised ER approaches

ER studies are largely based on the theoretical process model Gross proposed in 1998, defining different families of ER strategies (i.e., situation selection, situation modification, attentional deployment, cognitive change and response modulation). In particular, many of them have focused on two different ER strategies, comparing the general use of reappraisal and expressive suppression. Reappraisal is a form of cognitive strategy consisting in changing the interpretation of a

23   situation to decrease its emotional impact, whereas expressive suppression is a type of response

24   modulation strategy which involves inhibiting emotional expression (Gross & John, 2003). Studies

25   have shown that reappraisal is an adaptive strategy, whereas expressive suppression is maladaptive

26   (e.g., Dryman & Heimberg, 2018; Pepping et al., 2016). However, in Gross's process model (1998),

27   little attention was paid to what leads individuals to use one strategy rather than another, and how

28   these strategies are actually started or stopped. These limitations have been addressed by the author

29   in his extended process model (Gross, 2015), with an emphasis on valuation systems that take into

30   account the contextual aspects of ER.

31   In contrast with the idea of a general adaptiveness of ER strategies, recent models stress the

32   need to consider the context when determining the adaptiveness of such strategies (Aldao, 2013). For

33   instance, expressive suppression can sometimes be adaptive, especially when multiple strategies are

34   used to deal with an event (e.g., suppressing anger expression when receiving a bad grade from a

35   teacher and reappraising the event later) (Ford et al., 2019). The adaptiveness of ER can be related to

36   ER flexibility (Aldao et al., 2015), defined as the ability to effectively regulate emotions by selecting

37   different ER strategies from a broader repertoire, depending on the characteristics of a particular

38   situation (Bonanno & Burton, 2013; Kobylińska & Kusev, 2019). ER flexibility relies on

39   individuals' ability to understand, regard, and respond to their emotional experience (Tull & Aldao,

40   2015). Thus, when examining the use of ER strategies in a given situation, ER abilities - which refer

41   to one's beliefs about one's effectiveness at regulating emotions - should be taken into account.

42   Despite the dearth of studies on these abilities in adolescence, there is evidence of a link between

43   difficulties in ER abilities and mental health problems such as anxiety, depression or aggressive

44   behaviours (Herts et al., 2012; McLaughlin et al., 2011). Even though ER abilities and strategies are

45   distinguishable processes, theoretical frameworks suggest that they share bidirectional relationships

46   (e.g., Tull & Aldao, 2015).

Development of ER in adolescence and gender differences

48   Few studies have been conducted on ER in adolescence, and even fewer within the

49   framework of recent theories. Developmental studies reveal changes in the use of several ER

50   strategies during adolescence, with an overall increase during late adolescence in strategies that were

51   considered as adaptive in previous studies, such as distraction or reappraisal (e.g., McRae, Gross, et

52   al., 2012). In addition, gender-specific preferences in the use of ER strategies seem to emerge from

53   this period (Chaplin & Aldao, 2013). For instance, rumination (i.e., repetitive focusing on one's

54   emotions and their causes and consequences) and support seeking (i.e., looking for support when

55   experiencing emotions to regulate them) have been shown to be mostly used by girls (Nolen-

56   Hoeksema et al., 2008; Williams et al., 2018), whereas distraction (diverting one's attention away

57   from an emotional stimulus and towards other content) is mostly used by boys (Sheppes & Gross,

58   2011). Less clear is the evidence for gender differences in the use of reappraisal and expressive

59   suppression which may be linked to the different methodologies and age ranges used: while some

60   studies fail to demonstrate gender differences in the use of these strategies, others reveal a greater

61   use of expressive suppression in boys and of reappraisal in girls (Gullone et al., 2010; Nolen-

62   Hoeksema & Aldao, 2011).

63   Regulatory abilities are thought to increase with age, due to a greater awareness of

64   motivation, emotion-type or contextual factors (Zeman et al., 2006). As with ER strategies, gender

65   differences in ER abilities exist: while girls report difficulties controlling the behavioural

66   manifestation of their emotions (i.e., more dysregulated expression of their emotions), boys are more

67   likely to feel in control of their emotional experience (Bender et al., 2012; Zimmermann & Iwanski,

68   2014).

Current limitations of existing self-report measures of ER in adolescence

70   ER in childhood and adolescence is generally measured using strategy-based or ability-based

71   questionnaires in general negative contexts. However, most of these questionnaires were constructed

72   within the framework of early models of ER, and thus suffer from several limitations. Regarding

73   ability-based questionnaires, the Difficulties in Emotion Regulation Scale (DERS, Gratz & Roemer,

74   2004) comprises six subscales (strategies, goals, impulse, non-acceptance, awareness and clarity)

75   that can be summed to obtain a general marker of ER difficulties. However, as some authors have

76   pointed out (e.g., Preece et al., 2018), the awareness and clarity subscales do not fit with recent

77   definitions of ER but rather refer to components of alexithymia. Regarding strategy-based

78   questionnaires, most have focused on a small number of strategies. For example, the Emotion

79   Regulation Questionnaire for Children and Adolescents (ERQ-CA, Gullone & Taffe, 2012) is only

80   focused on two strategies, reappraisal and expressive suppression. Yet a broad repertoire of strategies

81   appears to be mobilised by adolescents (Lougheed & Hollenstein, 2012). Few other questionnaires

82   were constructed in order to measure a larger number of strategies. For instance, the Cognitive

83   Emotion Regulation Questionnaire (CERQ, Garnefski et al., 2001) enables to measure 9 strategies.

84   Nevertheless, because most of these strategies belong to the same family, namely cognitive change,

85   and are highly correlated, they classically fall into two broad categories (i.e., adapted and

86   maladaptive strategies). Therefore, the adaptiveness of ER should be measured by evaluating

87   multiple and distinct ER strategies in a given situation.

88   The development of ER strategies may also be emotion-specific (e.g., Brenning & Braet,

89   2013). Indeed, specific emotions may activate different strategies to be regulated. In that sense,

90   adolescents' use of specific ER strategies and their effectiveness vary in response to anger, fear and

91   sadness (e.g., Silk et al., 2003). Within this approach, the Children's Emotion Management Scale

92   (CEMS) is often referred to as a strategy-based questionnaire for evaluating sadness and anger

93   regulation in children (Zeman et al., 2002). Given the theoretical advances since the CEMS was

94   published, we consider this questionnaire as a mix between ER strategies and abilities (i.e., with the

95   dysregulated-expression subscale considered as an ability and inhibition as a strategy).

96   As regards the definition of ER flexibility, differentiating specific emotions and concluding

97   upon the adaptiveness of strategies without contextualisation can be misleading. For instance, a

98   negative emotion like sadness may stem from thinking about the death of a close relative or from an

99   argument with one's parents. These different situations may not trigger the use of the same ER

100   strategies, some of them being more or less adapted to the specific context (e.g., using expressive

101   suppression might be more helpful in the case of an argument than the death of a relative). In this

102   respect, the Negative Emotion Regulation Inventory (NERI, Zimmermann & Iwanski, 2014) is one

103   of the few contextualised questionnaires of ER, with seven strategies (adaptive ER, social support

104   seeking, avoidance, passivity, expressive suppression, dysfunctional rumination and dysregulation)

105   in six situations, each one evoking a specific negative emotion of sadness, fear or anger (i.e., two

106   situations per emotion). However, some subscales described as strategies comprise items which

107   could be viewed as abilities. For example, dysregulation can be described as being part of an ER

108   ability, but also comprises items that refer to the strategies of blaming others (e.g., "I blame others,

109   even if they are not responsible"). Besides, the situations proposed in this questionnaire address

110   highly diverse contexts (e.g., interpersonal relations with "renege on a promise" for anger, threatful

111   to the individual with "being alone in a dark place" for fear), making interpretation of the results

112   difficult. This issue is raised by studies that focus on ER repertoires in specific contexts, such as that

113 of Dixon-Gordon et al. (2015). In this study, participants reported their use of ER strategies across

114 achievement-related (e.g., failing a class) or social-related situations (e.g., arguing with a friend) for

115 the emotions of sadness, anxiety and anger. Interestingly, interpersonal variability in ER was higher

116 for social-related stressors than for achievement-related stressors. This finding highlights the need

117 for contextualised measures of ER, especially in adolescence, which is characterised by changes in

118 social relations, with instability in peer relations and decreased perceived support from parents

119 (Furman & Buhrmester, 2009).

120 **Aims of the present study**

121 ER in adolescence has been insufficiently investigated, especially regarding how it develops

122 and whether gender differences exist. Moreover, the few self-reported measures assessing ER in

123 adolescence such as the ERQ-CA or the CERQ do not include recent advances in the ER field (e.g.,

124 distinction between strategies and abilities, the influence of context in ER, measuring different

125 families of strategies). There is thus a need to create new measures that can assess a diversity of

126 situations eliciting different emotions and demands to capture ER flexibility. In order to address the

127 limitations existing in the literature, we developed the CERSA. This questionnaire has been

128 constructed in response to contemporary challenges in ER self-report measurement in adolescence.

129 To this end, it assesses five ER strategies (reappraisal, expressive suppression, distraction, support

130 seeking and rumination) and two abilities (controlling experience and dysregulation) in three

131 interpersonal situations that elicit specific negative emotions (sadness, fear and anger).

132 The present study had four main objectives. First, we aimed to examine the factor structure,

133 the internal consistency, as well as the construct and external validity of the CERSA. In line with the

134 number of dimensions in this questionnaire (i.e., five strategies and two abilities), a seven-factor

135 structure was expected for the three situations. To evaluate the construct validity of the CERSA, we

investigated its relation with the Cognitive Emotion Regulation Questionnaire (CERQ, Garnefski et

al., 2001). We expected that ER strategies and abilities evaluated in the CERSA would be related to

ER strategies measured in the CERQ (e.g., rumination subscales of questionnaires, reappraisal of the

CERSA with positive reappraisal of the CERQ). To evaluate the external validity of the CERSA, we

investigated its relation with the Satisfaction With Life Scale (SWLS, Diener et al., 1985) as one of

the components of the construct of well-being. Second, as we were attempting to clearly distinguish

ER strategies and abilities, we wanted to explore the links between them. Third, we assessed gender

differences for both ER strategies and abilities. For ER strategies, we expected boys to report a

greater use of distraction and expressive suppression, and girls to use more support seeking and

rumination. For ER abilities, we expected boys to report higher levels of control of emotional

experiences (Lougheed & Hollenstein, 2012) and girls to report higher levels of dysregulation.

However, we wanted to check whether these assumptions based on results obtained in a general

context, would be confirmed or balanced using a contextualised measure. In other words, we tested

the variability of gender differences between situations. Finally, we studied the variability of strategy

uses and of the abilities reported by adolescents, depending on the situation. Based on the recent

theoretical models on ER flexibility (e.g., Aldao et al., 2015), we expected the levels of all strategies

and abilities to vary according to situations.

Method

Participants

This study consisted of two samples. The first sample was composed of 852 middle and high

schoolers who only completed the CERSA. Twelve participants were excluded because at least 10%

of their questionnaire data were missing or because they did not follow the instructions given in the

questionnaire (e.g., straight liners). This resulted in a dataset of 840 adolescents (M_{age} = 14.75; SD_{age}

159    $= 1.61$, range$_{age}$ = 12-19 years, 431 males, 406 females, 3 not reported). Participants were

160   representative of the French population, with most of them Caucasian and from a middle-class

161   socioeconomic background. All participants were recruited in five French public middle and high

162   schools (63.7% middle schoolers). Data collected within this sample were used to test all hypotheses

163   except those on construct and external validity, which were tested using data collected from the

164   second sample of 318 middle schoolers who completed the CERSA, the CERQ and the SWLS. Five

165   adolescents were excluded for the same reasons stated above. This resulted in a dataset of 313

166   adolescents from two French middle schools (M_{age} = 13.63; SD_{age} = 0.85, range$_{age}$ = 12-15 years, 156

167   males, 156 females, 1 not reported).

168   **Measures and Procedure**

169   The CERSA is an 84-item French self-report measurement of both ER strategies and abilities

170   in different negative situations that may occur in adolescence. Each of the situations was created to

171   evoke a particular negative emotion (sadness, fear and anger). Compared to other questionnaires that

172   specify an emotion to adolescents, we chose to use scenarios because they (1) better reflect what

173   happens in daily life (i.e., ecological validity), (2) are widely used to activate emotions (Siedlecka &

174   Denson, 2019), and (3) allow for better comparability of adolescents' responses (i.e., participants can

175   remember very different situations when asked about a specific emotion). We focused on negative

176   emotional situations because there is a perceived increase in negative emotions in adolescence and

177   thus a higher need to regulate them (Silk et al., 2003). These situations were generated based on

178   existing contextualized measures such as the NERI (Zimmermann & Iwanski, 2014). We also asked

179   adolescents (N= 37) to describe situations inducing emotions of sadness, fear and anger. Due to

180   heterogeneity in responses, we selected the situations that (1) were the most frequently experienced

181   by the adolescents and (2) induced the intended negative emotions. These situations were written in a

person-directed manner and were designed to assess ER in an interpersonal context at school. We focused on this context because adolescents spend most of their lives in schools where they have to face negative emotions (26 hours on average in France). The sadness situation refers to the departure of a close friend who will not be in the adolescent's class or school next year. The fear situation concerns an important talk in front of comrades when the adolescent has forgotten everything they wanted to say. Finally, the anger situation is the divulgation of a secret by a close friend to peers. After the presentation of a situation, the adolescents were asked whether they had already experienced it on a three-point Likert scale (i.e., with the answers being never, once and multiple times). The validity of the situations to elicit the expected emotion was measured by asking them for the intensity rating of experienced sadness, fear and anger for each situation presented on a seven-point Likert-type scale (from 1 "not at all" to 7 "really intense"). In the questionnaire and during its presentation, the adolescents were asked to respond according to their emotions and reactions to the situation presented, as soon as this situation occurs.

For every situation, five strategies (i.e., distraction, reappraisal, expressive suppression, support seeking and rumination) and two abilities (i.e., controlling experience and dysregulation) were measured with four items each, specifically designed for adolescents. According to the extended process model (Gross, 2015), these strategies refer to different families of strategies (i.e., attentional deployment, cognitive change and response modulation). In their study, Lennarz et al., (2019) highlighted that these strategies are among the most used by adolescents when facing negative emotions. Furthermore, two of these strategies are usually considered as adaptive (reappraisal, distraction), two as maladaptive (expressive suppression, rumination) and the last one is usually not classified (support seeking). The strategies and abilities were measured with different instructions but the formulation of the items was similar in each situation. The questionnaire asked

how adolescents would react in order to measure the strategies, whereas for the abilities it asked how

they would describe themselves in the situation. The five strategies were reappraisal (e.g., "I change

the way I think about this situation"), expressive suppression (e.g., "I don't show how I feel"),

distraction (e.g., "I do something else to distract myself"), support seeking (e.g., "I look for someone

who makes me feel good") and rumination (e.g., "I can't stop myself thinking about this situation").

Each item was measured on a 7-point Likert-type scale (from 1 "Not at all like that" to 7 "Totally

like that"). The two abilities were controlling experience (e.g., "I'm able to control my feelings") and

dysregulation (e.g., "I can't control what I say or do because of my feelings"). Each item was

measured on a 7-point Likert-type scale (from 1 "Not like me at all" to 7 "Totally like me").

The CERQ is a 36-item questionnaire measuring cognitive ER strategies used by adolescents

in a general negative context (Garnefski et al., 2001). Even if this questionnaire mainly refers to one

family of strategies (cognitive change), we used it because it is one of the few to measure multiple

ER strategies, it has been proven to be valid with an adolescent sample, and it is available in French

(d'Acremont & Van der Linden, 2007). The nine strategies measured in the CERQ are usually

classified as either adaptive with Acceptance (e.g., "I think that I have to accept the situation"),

Putting into Perspective (e.g., "I think that it hasn't been too bad compared to other things"), Positive

Reappraisal (e.g., "I think that the situation also has its positive sides"), Refocus on Planning (e.g., "I

think of what I can do best"), and Positive Refocusing (e.g., "I think of nicer things than what I have

experienced"); or non-adaptive with Catastrophizing (e.g., "I keep thinking about how terrible it is

what I have experienced"), Rumination (e.g., "I often think about how I feel about what I have

experienced"), Self-Blame (e.g., "I feel that I am the one to blame for it"), and Blaming Others

strategies (e.g., "I feel that others are to blame for it"). Participants were asked what they usually

227   think when experiencing negative or unpleasant events, with each item being evaluated on a 5-point

228   Likert-type scale (from 1 "almost never" to 5 "almost always").

229   The SLSW is a short 5-item questionnaire that measures satisfaction with life (Diener et al.,

230   1985). This questionnaire is available in French and has been validated with adolescent samples

231   (Blais et al., 1989; Neto, 1993). Participants were asked whether they agreed or disagreed with the

232   items (e.g., "I am satisfied with my life", "In most ways my life is close to my ideal") and responded

233   on a 7-point Likert-type scale (from 1 "strongly disagree" to 7 "strongly agree").

234   The participants from the two samples filled out the CERSA or all questionnaires during

235   school time. Written informed consent was obtained from all adolescents and their parents.

236   Participation was voluntary, not rewarded, and the adolescents were informed that they could stop

237   participating in the study at any time. Participants were told that there were no right or wrong

238   answers, and that they had to give the answer that was truest for them.

239   **Data analysis**

240   All analyses were performed using R 4.0.3 (R Core Team, 2020). The proportion of missing

241   data for the 84 items of the questionnaire in the first sample was 0.582%. In order to deal with the

242   missing data, we performed multiple imputations using the missMDA package which have the

243   advantage of having little to no weight in factor analyses (Josse & Husson, 2016). Power analyses

244   were conducted separately to estimate both samples required for (1) factor analyses (structural

245   equation models being the most demanding of our analyses in terms of number of participants) and

246   (2) correlations between the dimensions of the CERSA, the CERQ and the SLWS.

247   For the internal validity of the CERSA, linear mixed models were performed for the emotions

248   induced by each situation using the lme4 package (Bates et al., 2015). Confirmatory factor analyses

249 (CFA) were performed to assess the 7-factor structure of five strategies and two abilities, for each

250 emotion scenario, using the lavaan package (Rosseel, 2012). The goodness-of-fit of these models

251 was judged based on several fit indices: the robust χ^2/df, robust comparative fit index (robust CFI),

252 robust Tucker Lewis index (robust TLI), robust root mean square error of approximation (robust

253 RMSEA) and standardised root mean residual (SRMR). Robust χ^2/df values < 3 were judged as an

254 acceptable parsimonious fit, robust CFI and TLI values >.90 were judged to indicate an acceptable

255 incremental fit and robust RMSEA and SRMR values <.08 were judged as an acceptable absolute fit

256 (Bentler & Bonnet, 1980; Browne & Cudeck, 1993; Marsh et al., 2004). To calculate the number of

257 participants for these analyses, we followed two rules of thumbs: (1) N:q ratio being superior to 5,

258 where N is the number of cases and q the number of estimates parameters, and (2) obtaining 20

259 participants per measured variable (Bentler & Chou, 1987; Shumacker & Lomax, 2016). According

260 to our models, with 105 parameters and 28 items for 7 factors each, 525 participants were required

261 for the N:q ratio and 480 for the 20 per measured variable ratio. Data collection resulted in a higher

262 number of 840 participants which was sufficient to test our hypotheses.

263   For the construct and external validity, Pearson's correlations were performed on the manifest

264 dimensions of the CERSA, CERQ and SLWS using Hmisc package (Harrell Jr, 2019). Using

265 G*Power 3.1.9.7 (Faul et al., 2009), detecting small effects > .15 with a statistical power of .80 and α

266 = .05 required 301 participants. Thus, the obtained sample size of $N = 313$ is more than adequate to

267 test the study hypothesis.

268   For the links between ER strategies and abilities, latent correlations between factors were

269 calculated through the CFA step. However, because meaningless correlations can become significant

270 in large samples, only significant correlations with a coefficient ≥ 0.10 were interpreted.

271   Multigroup comparisons for measurement invariance across gender were conducted using the

272   semTools and lavaan packages (Jorgensen et al., 2021; Rosseel, 2012). Given the large number of

273   parameters in our models, the approach selected to reject a more constrained solution was to check

274   differences in alternative fit indices (ΔAFIs). Specifically, a model was rejected when the decrease in

275   the comparative fit index criterion (ΔCFI) was higher than .01, or when an increase in the root mean

276   square error of approximation (ΔRMSEA) was higher than .015, indicating non-invariant loadings,

277   intercepts or residuals (Chen, 2007). In order to test gender differences in the three situations, latent

278   means comparisons were performed.

279   Finally, linear mixed models and Tukey post-hoc tests were performed on the manifest

280   dimensions to compare the levels of ER strategies and abilities between the three situations, using the

281   lme4 and multcomp packages (Bates et al., 2015; Hothorn et al., 2008).

Results

Internal validity of the CERSA

284   Descriptive statistics for the reported intensity of sadness, fear and anger for each situation as

285   well as the percentage of adolescents who had experienced them at least once are presented in Table

286   1. Orthogonal contrasts were used in linear mixed models in order to test whether each situation

287   correctly induced the expected emotion (coded as 2 and the other two emotions as -1). Intercepts of

288   the participants were set as random factors to control the variance due to individual differences. The

289   hypothesis contrast was significant for the situation of sadness, $t(1658) = 38.99$, $p<.001$, $d = 1.92$,

290   fear, $t(1658) = 42.24$, $p<.001$, $d = 2.07$ and anger, $t(1658) = 51.06$, $p<.001$, $d = 2.51$.

291   <Insert Table 1 about here>

292   Confirmatory factor analyses (CFA) were performed on each situation in order to test the

293   expected seven factor structure, using maximum likelihood robust (MLR) estimator. The first 7-

294   factor model tested for the sadness situation showed an acceptable fit: $\chi^2(329) = 861.330$, $p<.001$,

295    $\chi^2/df = 2.618$, CFI = .949, RMSEA = .048[.044-.052], TLI = .941, and SRMR = .056. However, one

296   item of the distraction factor showed low standardized factor loading (i.e., .367) (Matsunaga, 2010)

297   and was then removed from further analyses. The 7-factor models tested without this item provided a

298   good fit for the three situations; sadness: $\chi^2(303) = 764.865$, $p<.001$, $\chi^2/df = 2.524$, CFI = .955,

299   RMSEA = .047[.042-.051], TLI = .950, and SRMR = .049; fear: $\chi^2(303) = 778.494$, $p<.001$, $\chi^2/df =$

300   2.569, CFI = .952, RMSEA = .048[.044-.052], TLI = .947, and SRMR = .049; and anger: $\chi^2(303) =$

301   684.902, $p<.001$, $\chi^2/df = 2.260$, CFI = .962, RMSEA = .044[.040-.048], TLI = .957, and SRMR =

302   .046. Standardised factor loadings are reported in Table 2.

303   <Insert Table 2 about here>

304   **Internal consistency of the CERSA and latent correlations between strategies and abilities**

305   **factors**

306   The internal consistency of the seven factors and latent correlations between them are

307   reported in Table 3. The internal consistency was good to excellent for the sadness (ω from .827 to

308   .916), fear (ω from .830 to .892) and anger situations (ω from .830 to .908). Significant factor

309   correlations had little to high effect sizes, with notable variations between situations. While some

310   strategy factors were positively associated in all situations like *support seeking* with *rumination* or

311   *distraction* with *reappraisal*, other strategies factors were only associated in certain situations (i.e.,

312   *expressive suppression* was positively linked to *reappraisal* only in the fear and anger situations).

313   Similarly, for the links between strategies and abilities, while *dysregulation* was positively linked to

314   *rumination* in all situations, it was negatively linked to *reappraisal* in the sadness and anger

315   situations, and to *distraction* and *expressive suppression* in the anger situation. Nevertheless,

316   *controlling of emotional experience* was positively or negatively linked to each strategy in all

317   situations, with one exception, namely *support seeking* in the anger situation. Finally, the links

318   between the ability factors *controlling of emotional experience* and *dysregulation* were negative in

319   all situations.

320   \<Insert Table 3 about here\>

321   **Construct and external validity of the CERSA**

322   CERSA strategies and abilities were related CERQ strategies in all situations with some

323   variations, especially in the effect sizes. As expected, the CERSA *reappraisal* subscale was

324   positively correlated with the CERQ positive refocusing, refocusing on planning, positive reappraisal

325   and putting into perspective subscales in all situations. The CERSA *rumination* subscale was

326   positively associated with the CERQ rumination, self-blame and catastrophising subscales in all

327   situations, as well as with the blaming others subscale in the sadness and anger situations. The

328   CERSA *controlling experience* subscale was positively associated with the CERQ acceptation

329   subscale in the sadness and anger situations.

330   Similarly, most dimensions of the CERSA were related to the SLWS dimension in all

331   situations. As expected, while *distraction, reappraisal* and *controlling experience* were positively

332   correlated with satisfaction with life, *rumination* and *dysregulation* were negatively correlated.

333   Expressive suppression was negatively associated with satisfaction with life in the sadness and fear

334   situations. Detailed results as well as the internal consistency of the CERQ and SLWS dimensions

335   are reported in Table 4.

336   \<Insert Table 4 about here\>

Measurement invariance and latent means comparisons for gender

337

338   Multigroup analyses were performed to examine measurement invariance across gender. We

339   did so through comparisons of multigroup models with progressively more constraints. First,

340   configural invariance was tested to examine whether the same items measured the same dimensions

341   across groups. Then, in the metric invariance step, the factor loadings were constrained to be equal

342   across groups. Next, scalar invariance was examined by specifying factor loadings and intercepts to

343   be equal across groups. Finally, strict invariance was assessed with constraining factor loadings,

344   intercepts and residuals to be equivalent across groups. The results are reported in Table 5.

345   Configural invariance models showed a good fit and were used as baseline models in each situation.

346   Metric, scalar and strict invariance models showed acceptable criteria in each situation. Thus,

347   loadings, intercepts, and residuals proved to be invariant across gender.

348   <Insert Table 5 about here>

349   Latent means comparisons were used to assess gender differences for each factor of each

350   situation in the CERSA. The latent mean values for boys were always constrained to zero, while they

351   were freely estimated for girls. The results are reported in Table 6. Gender differences in strategy and

352   ability factors showed some stability and variability across the presented situations. For the strategy

353   factors, girls reported more *support seeking* and *rumination* than boys in all situations. In contrast,

354   boys reported more *distraction* for the sadness and anger situations, as well as *reappraisal* for fear

355   and anger situations. For the ability factors, girls reported higher levels of *dysregulation* in all

356   situations. Boys demonstrated a higher level of *controlling emotional* experience than girls in all

357   situations. There was no gender difference in the use of *expressive suppression* whatever the

358   situation presented.

359   <Insert Table 6 about here>

360 **Variability in ER strategies and abilities across situations**

361   We conducted linear mixed models to check whether the mean levels of these dimensions

362 varied across the three situations. Intercepts of the participants were set as random factors to control

363 the variance due to individual differences. Tukey post-hoc tests were run to test differences between

364 each situation. Descriptive statistics (means and standard deviations) for the dimensions of the

365 CERSA, the fixed effects of the linear mixed models and the order of the situations determined by

366 Tukey post-hoc tests are reported in Table 7. All mean levels of strategies and abilities varied

367 according to the situations. For example, adolescents reported that they looked more for *social*

368 *suppor*t and demonstrated higher *dysregulation* in the anger situation while they reported a higher

369 use of *reappraisal* and presented a higher *control of emotional experience* for the sadness situation.

370   <Insert Table 7 about here>

371   **Discussion**

372   Adolescence is a period characterised by the exploration of new contexts or roles. The

373 numerous changes that occur in this period are often accompanied by negative emotions that

374 adolescents have to regulate. Although investigation into ER in adolescence is growing, there is a

375 need to develop reliable tools for research on both ER strategies and abilities in context, based on

376 situations that are meaningful to adolescents. In this article, we documented a new French self-report

377 measure of ER for adolescents, the Contextualised Emotion Regulation Survey for Adolescents

378 (CERSA), developed within the framework of the latest theoretical models on ER. All situations

379 presented in this questionnaire were written in an interpersonal context and induced the intended

380 emotions of sadness, fear or anger. We evaluated its internal structure, its construct and its external

381 validity, and we investigated relationships between strategies and abilities, gender differences as well

382 as differences in the mean levels of strategies and abilities between situations, across two samples of

383 adolescents. The CERSA demonstrated an excellent factorial structure, confirming the theoretical

384 construction of a seven-factor structure composed of five strategies and two abilities that were

385 replicated in the three situations presented. Furthermore, the dimensions evaluated in the CERSA

386 were related to the dimensions of another measure of ER, the CERQ, as well as to a measure of

387 satisfaction with life, thereby demonstrating the validity of this new questionnaire. ER strategies and

388 abilities, as well as their links showed stability and variability in the three tested situations, as did

389 gender effects. These are promising results for the study of ER flexibility in adolescence and

390 highlight the need to construct measures that take into account the contextual aspect of ER.

391   This study provides support for the hypothesis that ER strategies and abilities are

392 distinguishable processes (i.e., they did not overlap in the factor analysis) that can be assessed in the

393 same questionnaire. Furthermore, ER strategies were also associated with ER abilities, demonstrating

394 that these two aspects of ER are interrelated, as theoretically assumed (Tull & Aldao, 2015). As

395 studies on both ER strategies and abilities are scarce, this article provides new insights for further

396 studies that aim to better understand the nature of these links (i.e., with both shared and separable

397 mechanisms) and their evolution during adolescence.

398   Moreover, adolescents' use of more than one strategy to regulate the emotions driven by a

399 single event and the level of use of each strategy they mobilise depending on the situation provide

400 empirical support for studying adolescents' emotion regulation in context. Indeed, the links between

401 ER strategies varied according to the situation, indicating that the combination of strategies used by

402 adolescents may be different depending on the context they are in. These findings reinforce the

403 recent theoretical proposition of polyregulation (Ford et al., 2019). In addition, the mean level of ER

404   strategies and abilities varied according to the situation, showing that adolescents regulate their

405   emotions differently and feel more or less effective at doing so depending on the characteristics of a

406   given situation. Together, these findings highlight the need to capture ER flexibility by focusing on

407   the repertoires of strategies that adolescents can mobilise in different contexts, rather than studying

408   the separate outcomes of each strategy (Bonanno & Burton, 2013; Lougheed & Hollenstein, 2012).

409   Thus, the CERSA seems particularly adapted to implementation of the recent emerging hypotheses

410   in the ER research field.

411   Variability in the use of ER strategies was also observed in the results on gender differences.

412   In line with previous studies, some strategies were used more by boys, such as distraction or

413   reappraisal, while others, such as support seeking or rumination, were used more by girls

414   (Eschenbeck et al., 2007; Hampel & Petermann, 2005; Zimmermann & Iwanski, 2014). Surprisingly,

415   there was no gender difference in the use of expressive suppression. However, it is important to note

416   that most gender differences found in this study were dependent on the situation, indicating that

417   gender roles in ER may or may not be activated according to the situation. These results also

418   highlight the importance of measuring ER in a contextualised way to gain a better understanding of

419   how gender socialisation can lead adolescents to regulate their emotions differently. Consistent with

420   gender role theories that men's role involves being active and agentic (Tamres et al., 2002), greater

421   use of reappraisal may be made in attempts to control or change certain situations. Our results are

422   also congruent with studies showing that girls share their emotions more but ruminate more

423   (Garnefski et al., 2005; Nolen-Hoeksema, 2012), although this is not verified in every situation. This

424   point should be further investigated across different situations, for example by referring to

425   achievement-related and social-related situations (Dixon-Gordon et al., 2015). Finally, our results

426   also indicate that gender differences in ER abilities are more stable than in strategies across the

427   situations presented, further highlighting the need to differentiate and evaluate these two aspects of

428   ER in adolescence.

429   This study has some limitations that must be recognized. The CERSA was designed to assess

430   ER strategies and abilities in different negative emotional situations. Thus, it does not take into

431   account the regulation of positive emotions that are part of the development of ER (Gilbert, 2012).

432   While ER strategies and abilities assessed in the CERSA were related to the CERQ dimensions and

433   to satisfaction with life, further studies with larger samples and other measures classically associated

434   with ER, such as different aspects of well-being, could strengthen these results. The CERSA

435   comprises one scenario per emotion in order to evaluate adolescents' ER. A potential risk of using a

436   limited number of scenarios is to confuse the effects related to the situation itself and the emotion felt

437   by the adolescents. Moreover, as might be expected in everyday situations, some adolescents

438   reported feeling mixed emotions. Thus, further studies using multiple situations per emotion are

439   required to understand how adolescents regulate a specific emotion. Furthermore, the situations

440   presented have focused on interpersonal contexts in school which are important in the development

441   of ER. Further studies should be conducted by transposing CERSA situations in other contexts that

442   are relevant to adolescents' emotional life (e.g., adolescent-family interactions at home, academic

443   achievements) in order to get a better understanding of their ER flexibility.

Conclusion

445   This study focused on the construction and the validity of the CERSA. This new tool has

446   proven to be valid and its use should provide promising insights for studying ER in a more

447   contextualised way in adolescence. Our results demonstrate that ER strategies and abilities are both

448   distinguishable and interconnected, as was theoretically assumed by Tull and Aldao (2015).

449   Furthermore, the mean levels of strategies and abilities reported by adolescents varied according to

450   the situations. Similarly, some gender differences in ER strategies and abilities were situation-

451   dependent. Further research is needed to replicate our results in other samples of adolescents using

452   the CERSA. Given the importance of ER flexibility development in adolescence, studies should also

453   focus on its links with psychological outcomes.

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Tables

Table 1

Descriptive statistics on the reported emotions for each situation and percentage of adolescents who have experienced them at least one time

	Sadness	Fear	Anger	% of occurring
Situations	*M (ET)*	*M (ET)*	*M (ET)*	
Sadness situation	5.25 (1.50)	2.45 (1.66)	2.38 (1.70)	62.38
Fear situation	1.82 (1.45)	5.26 (1.66)	3.13 (2.05)	77.62
Anger situation	3.50 (2.11)	3.11 (2.06)	6.08 (1.35)	69.29

Table 2

Standardised factor loadings from Confirmatory Factor Analysis with maximum likelihood robust (MLR) estimator for the 81 remaining items of the CERSA

	Standardised Factor Loadings		
	Situations		
Factor/Items	Sadness	Fear	Anger
Distraction			
S1 – F19 – A19	.785	.934	.924
S8 – F20 – A18	.840	.896	.942
S13 – F3 – A7	.860	.650	.755
Reappraisal			
S2 – F10 – A16	.689	.794	.867
S7 – F18 – A6	.735	.848	.753
S15 – F13 – A20	.843	.829	.895
S19 – F16 – A2	.853	.808	.653
Expressive suppression			
S10 – F4 – A13	.828	.704	.802
S11 – F6 – A12	.881	.819	.873
S12 – F8 – A10	.819	.765	.789
S14 – F11 – A3	.888	.850	.605
Support seeking			
S4 – F14 – A8	.613	.681	.743
S6 – F17 – A14	.709	.704	.804
S16 – F9 – A17	.895	.889	.854
S20 – F5 – A1	.799	.803	.655
Rumination			
S3 – F1 – A11	.794	.797	.795
S5 – F12 – A9	.686	.583	.717
S9 – F7 – A15	.811	.807	.803
S17 – F2 – A5	.774	.771	.643
Controlling experience			
S21 – F27 – A26	.721	.899	.825
S23 – F25 – A21	.724	.609	.554
S26 – F21 – A24	.654	.643	.683
S28 – F28 – A28	.835	.888	.889
Dysregulation			
S22 – F22 – A25	.609	.717	.859
S24 – F26 – A27	.826	.831	.828
S25 – F24 – A23	.831	.815	.891
S27 – F23 – A22	.790	.798	.788

Note. Items numbers with S for sadness, F for fear and A for anger situations of the CERSA

Table 3

Factor correlations and McDonald's ω for CERSA situations

Sadness situation

Factors	S1	S2	S3	S4	S5	A1	A2
S1 Distraction	-						
S2 Reappraisal	.250***	-					
S3 Expressive suppression	.109**	.012	-				
S4 Support seeking	.162***	.165***	-.253***	-			
S5 Rumination	.003	-.161***	.058	.432***	-		
A1 Controlling experience	.119**	.364***	.222***	-.294***	-.537***	-	
A2 Dysregulation	.086*	-.170***	-.009	.326***	.662***	-.681***	-
McDonald's ω	.866	.864	.916	.846	.852	.827	.854

Fear situation

Factors	S1	S2	S3	S4	S5	A1	A2
S1 Distraction	-						
S2 Reappraisal	.396***	-					
S3 Expressive suppression	.253***	.153***	-				
S4 Support seeking	.029	.222***	-.213***	-			
S5 Rumination	.011	.008	.028	.306***	-		
A1 Controlling experience	.232***	.297***	.263***	-.113**	-.340***	-	
A2 Dysregulation	.072	.004	.003	.272***	.521***	-.530***	-
McDonald's ω	.873	.892	.867	.854	.830	.857	.869

Anger situation

Factors	S1	S2	S3	S4	S5	A1	A2
S1 Distraction	-						
S2 Reappraisal	.462***	-					
S3 Expressive suppression	.268***	.188***	-				
S4 Support seeking	.197***	.105*	-.089*	-			
S5 Rumination	-.120**	-.210***	-.017	.352***	-		
A1 Controlling experience	.344***	.400***	.362***	-.084	-.426***	-	
A2 Dysregulation	-.177***	-.205***	-.132**	.209***	.624***	-.710***	-
McDonald's ω	.908	.873	.854	.851	.830	.834	.906

Note. $p < .05$***, $p < .01$***, $p < .001$***. S for strategy and A for ability factors

Table 4

Correlations between CERSA, CERQ and SWLS dimensions with McDonald's ω for CERQ and SWLS dimensions

Sadness situation										
Dimensions	Self-B	Accept	Rumin	Pos Refoc	Refoc Plan	Pos Reap	Put Persp	Catas	B-Others	Satis L
Distraction	-.123*	.173**	-.087	.379***	.188***	.251***	.187***	-.045	.016	.226***
Reappraisal	.032	.355***	-.007	.288***	.437***	.466***	.346***	.055	.008	.275***
Expressive suppression	.271***	.116*	.272***	-.043	.066	-.015	.006	.176**	.065	-.232***
Support seeking	.092	.093	.173***	.237***	.163**	.185**	.117*	.057	.051	.052
Rumination	.373***	.039	.581***	-.129*	-.110	-.148**	-.065	.448***	.150*	-.413***
Controlling experience	-.235***	.118*	-.305***	.253***	.339***	.317***	.166**	-.169**	-.004	.392***
Dysregulation	.278***	.032	.396***	-.048	-.083	-.165**	-.046	.366***	.205***	-.385***
Fear situation										
Dimensions	Self-B	Accept	Rumin	Pos Refoc	Refoc Plan	Pos Reap	Put Persp	Catas	B-Others	Satis L
Distraction	.000	.100	-.050	.298***	.113*	.134*	.110	.064	.105	.389***
Reappraisal	-.060	.221***	-.061	.323***	.428***	.407***	.262***	.038	.065	.159**
Expressive suppression	.177**	.173**	.173**	.008	.096	.058	.103	.103	.016	-.126*
Support seeking	.019	.112*	.144*	.218***	.236***	.210***	.123*	.134*	.095	.065
Rumination	.269***	.111*	.417***	-.048	-.079	-.080	.011	.357***	.108	-.230***
Controlling experience	-.265***	.016	-.295***	.257***	.298***	.266***	.115*	-.182**	.054	.339***
Dysregulation	.310***	.084	.382***	-.098	-.114*	-.129*	-.077	.382***	.189***	-.335***
Anger situation										
Dimensions	Self-B	Accept	Rumin	Pos Refoc	Refoc Plan	Pos Reap	Put Persp	Catas	B-Others	Satis L
Distraction	-.122*	.104	-.196***	.330***	.152**	.194***	.143*	-.056	.021	.247***

Table 4

Correlations between CERSA, CERQ and SWLS dimensions with McDonald's ω for CERQ and SWLS dimensions

Reappraisal	-.016	.187***	-.115*	.256***	.348***	.402***	.227***	-.028	-.055	.214***
Expressive suppression	.219***	.245***	.144*	.037	.137*	.144*	.101	.148**	.026	-.024
Support seeking	.036	.126*	.114*	.247***	.225***	.229***	.147**	.103	.121*	.036
Rumination	.429***	.111*	.566***	-.121*	-.102	-.151**	-.052	.407***	.246***	-.414***
Controlling experience	-.262***	.110*	-.342***	.268***	.362***	.345***	.197***	-.199***	-.030	.428***
Dysregulation	.278***	-.007	.459***	-.048	-.159**	-.230***	-.121*	.358***	.256***	-.426***
McDonald's ω	.826	.705	.876	.837	.781	.719	.709	.705	.787	.929

Note. $p < .05$ ***, $p < .01$ ***, $p < .001$ ***. CERQ dimensions: Self B for Self-Blame, Accept for Acceptation, Rumin for Rumination, Pos Refoc for Positive Refocusing, Refoc Plan for Refocus on Planning, Put Persp for Putting into Perspective, Catas for Catastrophising, B Others for Blaming Others. SWLS dimension: Satis L for Satisfaction with Life.

Table 5

Summary of Multi-group Comparisons for Invariance across gender of CERSA situations

Model	χ^2 Robust (*df*)	CFI Robust	RMSEA Robust (90%CI)	SRMR	S-B $\Delta\chi^2$ (Δdf)	ΔCFI Robust	ΔRMSEA Robust	ΔSRMR
Sadness situation								
Configural Model	1150.291*** (606)	.947	.050 (.046-.054)	.053	--	--	--	--
Metric Model	1185.863*** (626)	.946	.050 (.045-.054)	.056	35.205* (20)	-.001	.000	.003
Scalar Model	1207.150*** (646)	.946	.049 (.045-.053)	.056	18.790 (20)	.000	-.001	.000
Residual Model	1248.084*** (673)	.944	.049 (.045-.053)	.056	43.769* (27)	-.002	.000	.000
Fear situation								
Configural Model	1090.498*** (606)	.951	.048 (.043-.053)	.054	--	--	--	--
Metric Model	1117.536*** (626)	.951	.048 (.043-.052)	.054	25.322 (20)	.000	-.001	.001
Scalar Model	1174.948*** (646)	.947	.048 (.043-.053)	.055	61.683*** (20)	-.003	.001	.001
Residual Model	1198.254*** (673)	.947	.048 (.043-.052)	.055	31.565 (27)	-.001	-.001	.000
Anger situation								
Configural Model	1006.056*** (606)	.960	.044 (.037-.047)	.052	--	--	--	--
Metric Model	1026.688*** (626)	.961	.044 (.036-.046)	.053	17.752 (20)	.000	-.001	.001
Scalar Model	1063.689*** (646)	.959	.044 (.036-.046)	.053	34.845** (20)	-.002	.000	.000
Residual Model	1126.999*** (673)	.954	.045 (.039-.048)	.053	56.238*** (27)	-.005	.002	.001

Note. $p < .05^*$, $p < .01^{**}$, $p < .001^{***}$. CFI = comparative fit index, TLI = Tucker Lewis index, RMSEA = root mean square error of approximation, CI = confidence interval, SRMR = Standardized Root Mean Square Residual

Table 6

Latent mean comparisons between gender groups for each factor of the CERSA

Factors/Situations	Latent ΔM	Latent *SD*	*Z*	*p*	*d*
Sadness situation					
S1 Distraction	- 0.309	1.597	2.672	.008	0.193
S2 Reappraisal	- 0.100	1.341	1.005	.315	0.075
S3 Expressive suppression	- 0.009	1.881	0.066	.948	0.005
S4 Support seeking	0.659	1.315	6.455	<.001	0.501
S5 Rumination	0.838	1.699	6.234	<.001	0.493
C1 Controlling experience	- 0.681	1.434	5.987	<.001	0.475
C2 Dysregulation	0.335	1.313	3.675	<.001	0.255
Fear situation					
S1 Distraction	- 0.175	1.916	1.216	.224	0.091
S2 Reappraisal	- 0.244	1.623	2.034	.042	0.150
S3 Expressive suppression	- 0.153	1.569	1.354	.176	0.098
S4 Support seeking	0.520	1.504	4.355	<.001	0.346
S5 Rumination	0.291	1.664	2.341	.019	0.175
C1 Controlling experience	- 0.700	1.854	5.380	<.001	0.377
C2 Dysregulation	0.216	1.352	2.248	.025	0.160
Anger situation					
S1 Distraction	- 0.325	1.995	2.318	.020	0.163
S2 Reappraisal	- 0.565	1.499	4.844	<.001	0.361
S3 Expressive suppression	- 0.060	1.857	0.457	.648	0.032
S4 Support seeking	0.938	1.657	7.232	<.001	0.566
S5 Rumination	0.720	1.648	5.504	<.001	0.437
C1 Controlling experience	- 0.438	1.646	3.584	<.001	0.266
C2 Dysregulation	0.439	1.913	3.240	.001	0.230

Note. S for strategy and A for ability factors

Table 7

Fixed effects from mixed linear models with situations as predictors for emotion regulation strategies and abilities

	Sadness situation	Fear situation	Anger situation					
Strategies	*M (SD)*	*M (SD)*	*M (SD)*	*F*	*p*	*Marginal R^2*	*Conditional R^2*	*Order*
Distraction	3.94 (1.82)	3.48 (1.93)	3.50 (1.95)	25.51	< .001	.012	.392	S > F, A
Reappraisal	3.67 (1.67)	3.43 (1.77)	2.85 (1.61)	90.98	< .001	.040	.449	S > F > A
Expressive suppression	4.17 (1.97)	3.83 (1.84)	3.88 (1.82)	13.67	< .001	.006	.430	S > F, A
Support seeking	3.49 (1.77)	3.64 (1.82)	3.72 (1.85)	8.57	< .001	.003	.592	A, F > S
Rumination	3.56 (1.81)	3.16 (1.70)	4.07 (1.79)	106.06	< .001	.043	.492	S, A > F
Abilities								
Controlling experience	4.26 (1.59)	4.33 (1.64)	3.82 (1.61)	47.76	< .001	.020	.496	S, F > A
Dysregulation	2.87 (1.65)	2.57 (1.61)	3.57 (1.91)	151.05	< .001	.056	.535	A > S > F

Note. S for sadness, F for fear and A for anger situations of the CERSA

Appendices

Table A.1

Summary of the results of linear mixed models with orthogonal contrasts for the three emotions (hypothesis contrast and residual contrast) for each situation

Contrasts/Situation	Estimate	SD	df	T	p	d
Sadness situation						
Hypothesis contrast	4.940	0.127	1658	38.99	$< .001$	1.92
Residual contrast	0.657	0.073	1658	8.98	$< .001$	0.44
Fear situation						
Hypothesis contrast	5.195	0.123	1658	42.24	$< .001$	2.07
Residual contrast	1.680	0.071	1658	23.66	$< .001$	1.16
Anger situation						
Hypothesis contrast	6.661	0.131	1658	51.06	$< .001$	2.51
Residual contrast	0.757	0.075	1658	10.05	$< .001$	0.49

Note. *SD = Standard deviation, df = degrees of freedom, d = Cohen's d*

Table A.2

Summary of Exploratory Factor Analysis results for the CERSA sadness situation using ordinary least square extraction method and promax rotation

Items	Factor Loadings							h²
	Dist	Rea	Suppr	Support	Rum	Control	Dys	
Strategies items								
SQ1	.82							0.61
SQ8	.88							0.72
SQ13	.87							0.74
SQ18								0.24
SQ2		.67						0.48
SQ7		.73						0.54
SQ15		.84						0.71
SQ19		.88						0.75
SQ10			.83					0.69
SQ11			.89					0.79
SQ12			.82					0.66
SQ14			.89					0.79
SQ4				.59				0.41
SQ6				.75				0.52
SQ16				.92				0.80
SQ20				.81				0.64
SQ3					.91			0.69
SQ5								0.48
SQ9					.98			0.76
SQ17					.54			0.60
Abilities items								
SQ21						.72		0.54
SQ23						.74		0.54
SQ26						.75		0.54
SQ28						.76		0.68
SQ22							.69	0.42
SQ24							.71	0.66
SQ25							.87	0.70
SQ27							.78	0.64
Eigen values	2.21	2.52	2.97	2.41	2.18	2.36	2.69	
% of variance	0.08	0.09	0.11	0.09	0.08	0.08	0.10	
Cum. % of variance	0.08	0.17	0.28	0.37	0.45	0.53	0.62	

Note. Dist = distraction, Rea = reappraisal, Suppr = expressive suppression, Support = support seeking, Control = controlling experience, Dys = dysregulation, Cum. = Cumulative. Only factor loadings > .40 are reported here

Table A.3

Summary of Exploratory Factor Analysis results for the CERSA fear situation using ordinary least square extraction method and promax rotation

Items	Factor Loadings							h²
	Dist	Rea	Suppr	Support	Rum	Control	Dys	
Strategies items								
FQ19	.95							0.84
FQ20	.94							0.81
FQ3	.66							0.44
FQ15	.58							0.44
FQ10		.78						0.64
FQ18		.85						0.72
FQ13		.81						0.69
FQ16		.83						0.66
FQ4			.72					0.50
FQ6			.84					0.69
FQ8			.72					0.58
FQ11			.85					0.72
FQ14				.74				0.53
FQ17				.71				0.53
FQ9				.91				0.77
FQ5				.78				0.60
FQ1					.87			0.67
FQ12					.41			0.43
FQ7					.84			0.66
FQ2					.79			0.60
Abilities items								
FQ27						.90		0.76
FQ25						.69		0.46
FQ21						.68		0.52
FQ28						.88		0.74
FQ22							.81	0.57
FQ26							.69	0.68
FQ24							.86	0.69
FQ23							.77	0.65
Eigen values	2.57	2.72	2.48	2.50	2.22	2.56	2.54	
% of variance	0.09	0.10	0.09	0.09	0.08	0.09	0.09	
Cum. % of variance	0.09	0.19	0.28	0.37	0.45	0.54	0.63	

Note. Dist = distraction, Rea = reappraisal, Suppr = expressive suppression, Support = support seeking, Control = controlling experience, Dys = dysregulation, Cum. = Cumulative. Only factor loadings > .40 are reported here

Table A.4

Summary of Exploratory Factor Analysis results for the CERSA's anger situation using ordinary least square extraction method and promax rotation

Items	Factor Loadings							h²
	Dist	Rea	Suppr	Support	Rum	Control	Dys	
Strategies items								
AQ19	1.01							0.85
AQ18	1.01							0.87
AQ7	.74							0.61
AQ4								0.36
AQ16		.88						0.72
AQ6		.83						0.61
AQ20		.92						0.78
AQ2		.65						0.45
AQ13			.84					0.67
AQ12			.91					0.77
AQ10			.78					0.60
AQ3			.59					0.38
AQ8				.72				0.55
AQ14				.83				0.67
AQ17				.84				0.73
AQ1				.67				0.44
AQ11					.91			0.70
AQ9					.53			0.54
AQ15					.85			0.66
AQ5					.53			0.45
Abilities items								
AQ26						.49		0.60
AQ21						.60		0.44
AQ24						.81		0.63
AQ28						.57		0.72
AQ25							.96	0.76
AQ27							.79	0.68
AQ23							.96	0.80
AQ22							.72	0.61
Eigen values	2.55	2.73	2.47	2.40	2.16	1.85	3.47	
% of variance	0.09	0.10	0.09	0.09	0.08	0.07	0.12	
Cum. % of variance	0.09	0.19	0.28	0.37	0.44	0.51	0.63	

Note. Dist = distraction, Rea = reappraisal, Suppr = expressive suppression, Support = support seeking, Control = controlling experience, Dys = dysregulation, Cum. = Cumulative. Only factor loadings > .40 are reported here

A.5. *Contextualised Emotion Regulation Survey for Adolescents (CERSA)*

<u>Situation 1</u> **: Pendant la récréation, tu apprends que ton/ta meilleur(e) ami(e) va déménager et ne sera plus dans ta classe ni dans ton établissement scolaire l'année prochaine.**

Est-ce que tu as déjà vécu cette situation ? □ Jamais □ Une fois □ Plusieurs fois

Indique les émotions que cette situation te ferait ressentir. **Pour cela,**

Entoure pour chaque émotion proposée le nombre qui correspond à ce que tu ressentirais de 1 « pas du tout » à 7 « Très fortement ».

	Pas du tout						Très fortement
Peur	1	2	3	4	5	6	7
Tristesse	1	2	3	4	5	6	7
Colère	1	2	3	4	5	6	7

Face à cette situation, comment réagirais-tu ? Pour chacune des réactions proposées, entoure le chiffre qui te correspond le plus de : 1 « Pas du tout comme ça » à 7 « Tout à fait comme ça ».

	Pas du tout comme ça						Tout à fait comme ça
Je m'occupe l'esprit en faisant quelque chose d'autre.	1	2	3	4	5	6	7
J'essaie de voir la situation sous un autre angle.	1	2	3	4	5	6	7
Je n'arrête pas de penser à ce que j'ai ressenti dans cette situation.	1	2	3	4	5	6	7
Je cherche quelqu'un qui me calme.	1	2	3	4	5	6	7
Cette situation me met dans un tel état que je ne peux pas me concentrer sur autre chose.	1	2	3	4	5	6	7
J'en parle à quelqu'un en qui j'ai confiance.	1	2	3	4	5	6	7
Je change ma façon de penser la situation.	1	2	3	4	5	6	7
Je fais autre chose pour me distraire.	1	2	3	4	5	6	7
Je pense sans cesse aux émotions que cette situation a provoquées en moi.	1	2	3	4	5	6	7
Je ne montre pas mes sentiments.	1	2	3	4	5	6	7
Je fais attention à ne pas montrer ce que je ressens.	1	2	3	4	5	6	7
Je fais comme si de rien n'était devant les autres.	1	2	3	4	5	6	7

Rappel de la situation 1 : Pendant la récréation, tu apprends que ton/ta meilleur(e) ami(e) va déménager et ne sera plus dans ta classe ni dans ton établissement scolaire l'année prochaine.

	Pas du tout comme ça						Tout à fait comme ça
J'essaye de me changer les idées en faisant autre chose.	1	2	3	4	5	6	7
Je ne laisse rien voir de ce que je ressens.	1	2	3	4	5	6	7
Je pense à d'autres façons d'interpréter la situation.	1	2	3	4	5	6	7
Je cherche du soutien autour de moi.	1	2	3	4	5	6	7
Je reste bloqué(e) sur ce qu'il s'est passé.	1	2	3	4	5	6	7
Je n'y pense pas et j'essaie d'oublier.	1	2	3	4	5	6	7
J'essaie de changer ma manière de voir la situation.	1	2	3	4	5	6	7
Je demande de l'aide ou des conseils dans mon entourage.	1	2	3	4	5	6	7

Face à cette même situation, comment te décrirais-tu ? Pour chacune des propositions, entoure le chiffre qui te correspond le plus de : 1 « Pas du tout comme moi » à 7 « Tout à fait comme moi ».

	Pas du tout comme moi						Tout à fait comme moi
J'arrive à maîtriser mes émotions.	1	2	3	4	5	6	7
Je dis ou je fais des choses qui dépassent ma pensée.	1	2	3	4	5	6	7
J'arrive à trouver des solutions pour gérer la situation.	1	2	3	4	5	6	7
Je me laisse déborder par mes émotions au point de ne plus savoir ce que je fais.	1	2	3	4	5	6	7
Mes émotions me font dire et faire n'importe quoi.	1	2	3	4	5	6	7
Je pense pouvoir gérer la situation.	1	2	3	4	5	6	7
Je n'arrive pas à contenir mes réactions même si elles ne sont pas adaptées.	1	2	3	4	5	6	7
Je suis capable de contrôler mes émotions.	1	2	3	4	5	6	7

Situation 2 : Tu dois faire un exposé oral très important devant ta classe. Pendant la récréation, juste avant de le passer, tu as l'impression d'avoir oublié tout ce que tu avais préparé.

Est-ce que tu as déjà vécu cette situation ?   □ Jamais   □ Une fois   □ Plusieurs fois

Indique les émotions que cette situation te ferait ressentir. **Pour cela,**

Entoure pour chaque émotion proposée le nombre qui correspond à ce que tu ressentirais de 1 « pas du tout » à 7 « Très fortement ».

	Pas du tout						Très fortement
Peur	1	2	3	4	5	6	7
Tristesse	1	2	3	4	5	6	7
Colère	1	2	3	4	5	6	7

Face à cette situation, comment réagirais-tu ? Pour chacune des réactions proposées, entoure le chiffre qui te correspond le plus de : 1 « Pas du tout comme ça » à 7 « Tout à fait comme ça ».

	Pas du tout comme ça						Tout à fait comme ça
Je n'arrête pas de penser à ce que j'ai ressenti dans cette situation.	1	2	3	4	5	6	7
Je reste bloqué(e) sur ce qu'il s'est passé.	1	2	3	4	5	6	7
J'essaye de me changer les idées en faisant autre chose.	1	2	3	4	5	6	7
Je ne montre pas mes sentiments.	1	2	3	4	5	6	7
Je demande de l'aide ou des conseils dans mon entourage.	1	2	3	4	5	6	7
Je fais attention à ne pas montrer ce que je ressens.	1	2	3	4	5	6	7
Je pense sans cesse aux émotions que cette situation a provoquées en moi.	1	2	3	4	5	6	7
Je fais comme si de rien n'était devant les autres.	1	2	3	4	5	6	7
Je cherche du soutien autour de moi.	1	2	3	4	5	6	7
J'essaie de voir la situation sous un autre angle.	1	2	3	4	5	6	7
Je ne laisse rien voir de ce que je ressens.	1	2	3	4	5	6	7
Cette situation me met dans un tel état que je ne peux pas me concentrer sur autre chose.	1	2	3	4	5	6	7

Rappel de la situation 2 : Tu dois faire un exposé oral très important devant ta classe. Pendant la récréation, juste avant de le passer, tu as l'impression d'avoir oublié tout ce que tu avais préparé.

	Pas du tout comme ça						Tout à fait comme ça
J'essaie de changer ma manière de voir la situation.	1	2	3	4	5	6	7
Je cherche quelqu'un qui me calme.	1	2	3	4	5	6	7
Je n'y pense pas et j'essaie d'oublier.	1	2	3	4	5	6	7
Je pense à d'autres façons d'interpréter la situation.	1	2	3	4	5	6	7
J'en parle à quelqu'un en qui j'ai confiance.	1	2	3	4	5	6	7
Je change ma façon de penser la situation.	1	2	3	4	5	6	7
Je m'occupe l'esprit en faisant quelque chose d'autre.	1	2	3	4	5	6	7
Je fais autre chose pour me distraire.	1	2	3	4	5	6	7

Face à cette même situation, comment te décrirais-tu ? Pour chacune des propositions, entoure le chiffre qui te correspond le plus de : 1 « Pas du tout comme moi » à 7 « Tout à fait comme moi ».

	Pas du tout comme moi						Tout à fait comme moi
Je pense pouvoir gérer la situation.	1	2	3	4	5	6	7
Je dis ou je fais des choses qui dépassent ma pensée.	1	2	3	4	5	6	7
Je n'arrive pas à contenir mes réactions même si elles ne sont pas adaptées.	1	2	3	4	5	6	7
Mes émotions me font dire et faire n'importe quoi.	1	2	3	4	5	6	7
J'arrive à trouver des solutions pour gérer la situation.	1	2	3	4	5	6	7
Je me laisse déborder par mes émotions au point de ne plus savoir ce que je fais.	1	2	3	4	5	6	7
J'arrive à maîtriser mes émotions.	1	2	3	4	5	6	7
Je suis capable de contrôler mes émotions.	1	2	3	4	5	6	7

Situation 3 : Pendant la récréation, tu entends qu'un(e) ami(e) discute avec d'autres personnes de quelque chose que tu lui avais demandé de garder secret.

Est-ce que tu as déjà vécu cette situation ?   □ Jamais   □ Une fois   □ Plusieurs fois

Indique les émotions que cette situation te ferait ressentir. **Pour cela,**

Entoure pour chaque émotion proposée le nombre qui correspond à ce que tu ressentirais de 1 « pas du tout » à 7 « Très fortement ».

	Pas du tout						Très fortement
Peur	1	2	3	4	5	6	7
Tristesse	1	2	3	4	5	6	7
Colère	1	2	3	4	5	6	7

Face à cette situation, comment réagirais-tu ? Pour chacune des réactions proposées, entoure le chiffre qui te correspond le plus de : 1 « Pas du tout comme ça » à 7 « Tout à fait comme ça ».

	Pas du tout comme ça						Tout à fait comme ça
Je demande de l'aide ou des conseils dans mon entourage.	1	2	3	4	5	6	7
Je pense à d'autres façons d'interpréter la situation.	1	2	3	4	5	6	7
Je ne laisse rien voir de ce que je ressens.	1	2	3	4	5	6	7
Je n'y pense pas et j'essaie d'oublier.	1	2	3	4	5	6	7
Je reste bloqué(e) sur ce qu'il s'est passé.	1	2	3	4	5	6	7
Je change ma façon de penser la situation.	1	2	3	4	5	6	7
J'essaye de me changer les idées en faisant autre chose.	1	2	3	4	5	6	7
Je cherche quelqu'un qui me calme.	1	2	3	4	5	6	7
Cette situation me met dans un tel état que je ne peux pas me concentrer sur autre chose.	1	2	3	4	5	6	7
Je fais comme si de rien n'était devant les autres.	1	2	3	4	5	6	7
Je n'arrête pas de penser à ce que j'ai ressenti dans cette situation	1	2	3	4	5	6	7
Je fais attention à ne pas montrer ce que je ressens.	1	2	3	4	5	6	7

Rappel de la situation 3 : Pendant la récréation, tu entends qu'un(e) ami(e) discute avec d'autres personnes de quelque chose que tu lui avais demandé de garder secret.

	Pas du tout comme ça						Tout à fait comme ça
Je ne montre pas mes sentiments.	1	2	3	4	5	6	7
J'en parle à quelqu'un en qui j'ai confiance.	1	2	3	4	5	6	7
Je pense sans cesse aux émotions que cette situation a provoquées en moi.	1	2	3	4	5	6	7
J'essaie de voir la situation sous un autre angle.	1	2	3	4	5	6	7
Je cherche du soutien autour de moi.	1	2	3	4	5	6	7
Je fais autre chose pour me distraire.	1	2	3	4	5	6	7
Je m'occupe l'esprit en faisant quelque chose d'autre.	1	2	3	4	5	6	7
J'essaie de changer ma manière de voir la situation.	1	2	3	4	5	6	7

Face à cette même situation, comment te décrirais-tu ? Pour chacune des propositions, entoure le chiffre qui te correspond le plus de : 1 « Pas du tout comme moi » à 7 « Tout à fait comme moi ».

	Pas du tout comme moi						Tout à fait comme moi
J'arrive à trouver des solutions pour gérer la situation.	1	2	3	4	5	6	7
Je n'arrive pas à contenir mes réactions même si elles ne sont pas adaptées.	1	2	3	4	5	6	7
Mes émotions me font dire et faire n'importe quoi.	1	2	3	4	5	6	7
Je pense pouvoir gérer la situation.	1	2	3	4	5	6	7
Je dis ou je fais des choses qui dépassent ma pensée.	1	2	3	4	5	6	7
J'arrive à maîtriser mes émotions.	1	2	3	4	5	6	7
Je me laisse déborder par mes émotions au point de ne plus savoir ce que je fais.	1	2	3	4	5	6	7
Je suis capable de contrôler mes émotions.	1	2	3	4	5	6	7