

## **Gender Differences in Adolescence in Emotional Variables Relevant to Eating Disorders**

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### **ABSTRACT**

This study analyzed gender differences in diverse emotional variables relevant to eating disorders: frequency of positive and negative emotions, difficulty identifying and describing emotions and coping. Participants comprised 762 adolescents (50.8% male and 49.2% female) aged between 16 and 18. Statistical analyses (*t* tests) revealed statistically significant differences in favor of adolescent females as regards frequency of negative emotions, difficulty identifying and describing emotions, primary control engagement coping, involuntary engagement responses and wishful thinking; and in favor of adolescent males as regards frequency of positive emotions and secondary control engagement coping. In some cases, these results reveal a panorama somewhat different from that expected as regards gender differences in emotions. Further analysis of this question is required in future studies.

*Key words:* gender differences, emotional variables, adolescence, eating disorders.

Over recent years, many studies have been carried out analyzing the emotional experience of people suffering from eating disorders (Harrison, Sullivan, Tchanturia, & Treasure, 2010; Pascual, Etxebarria, & Cruz, 2011). However, fewer studies have focused on the role of emotions in the development of these disorders. What has been found in this sense is that emotional variables such as alexithymia, the frequency of positive and negative emotions and certain coping strategies play a key role in the development of disorders of this kind. Thus, a number of studies (Kiyotaki & Yokoyama, 2006; Pascual, Etxebarria, Cruz, & Echeburúa, 2011) have found that alexithymia is associated with a greater risk of suffering from an Emotional Disorder (ED). Similarly, other studies have found that the use of strategies such as avoidance, wishful thinking and rumination may foster the development of EDs (Pascual *et al.*, 2011; Troop & Treasure, 1997). The possible predictor role of the frequency of positive and negative emotions in these disorders has been less widely studied (Pascual *et al.*, 2011). The majority of studies which have focused on the role played by specific emotions in the development of eating

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disorders have analyzed depression and anxiety (Bulik, 2002; Saldaña, Tomas, & Bach-Juncadella, 1997); moreover, the studies carried out in this respect have focused mainly on analyzing the comorbidity between mood disorders and eating disorders (O'Brien & Vincent, 2003; Wilksch & Wade, 2004), and between anxiety disorders and eating disorders (Keel, Klump, Miller, McGue, & Iacono, 2005). The aforementioned study (Pascual *et al.*, 2011) analyzed the frequency with which diverse positive and negative emotions were experienced, and found that a low frequency of positive emotions and a high frequency of negative emotions were important predictors of the risk of developing an ED. In short, everything indicates that emotional variables such as the frequency with which positive and negative emotions are experienced, alexithymia and certain coping strategies play a key role in the development of disorders of this kind.

In light of the above, we believed it would be interesting to explore possible gender differences in these variables in adolescents. This paper presents a study focused on this specific question.

The analysis of gender differences in relation to these emotional variables is also interesting for another reason. Clear stereotypes exist regarding women's greater emotionality and the difficulties experienced by men in this area, especially in relation to identifying and talking about their emotions. However, we do not really know to what extent this stereotype reflects reality.

Although this question has been explored in a number of different studies (see, for example, Tucker & Friedman, 1993; Weinberg, Tronick, Cohn, & Olson, 1999), the majority focus on young people or children, and only a very few use adolescents. Since gender differences may vary substantially from one age to another, it is especially interesting to analyze gender differences in the aforementioned emotional variables in a sample of adolescents.

Furthermore, what exactly is meant by greater female emotionality? Does it mean that women tend to express what they feel more, that they feel emotions more intensely or that they are moved or affected more often? In other words, what are we actually talking about when we use the term "greater female emotionality"?, the intensity of the emotional experience, its frequency or its external expression? In general, studies distinguish fairly well between emotional expression and intensity. The same cannot be said however for emotional intensity and frequency. In numerous reviews of gender differences which are otherwise excellent (see, for example, Brody & Hall, 1993, 2000), these two variables are not sufficiently differentiated, thus giving rise to a certain amount of confusion. Indeed, when both the frequency and intensity of positive and negative emotions are studied, the *Positive and Negative Affect Schedule* (PANAS; Watson, Clark, & Tellegen, 1988) is generally used, even though, strictly speaking, this scale only assesses intensity, not frequency.

As stated above, this study analyzed the frequency of positive and negative emotions, an aspect that has received much less attention than intensity. In fact, we have only found one other study that has analyzed gender differences in the frequency with which positive and negative emotions are experienced. In this study, Simon and Nath (2004) failed to find any statistically significant differences between the frequency with which men and women experience emotions in general. What they did find was

that men felt positive emotions more frequently than women, while women felt negative emotions more frequently than men. However, when sociodemographic variables were controlled, this difference in the frequency of negative emotions disappeared.

These data are not sufficient to enable the establishment of a precise hypothesis. If we turn our attention to studies on gender differences in relation to the *intensity* of emotions, it is again impossible to find clear support for any hypothesis. These studies suggest that women feel both positive and the majority of negative emotions more intensely, particularly in the case of *powerless* emotions (see the cited reviews by Brody & Hall, 1993, 2000). This apparently contradictory conclusion is, in fact, not contradictory at all: in the short term, the intensity of positive emotions is inversely related to that of negative ones (Diener & Emmons, 1985), but in the long term, they are both relatively independent; moreover, the intensity of positive emotional experiences is positively correlated to the intensity of negative emotions (Diener, Larsen, Levine, & Emmons, 1985). One might think that gender differences in intensity may, to a certain extent, reflect parallel differences in the *frequency* with which emotions are felt. Should we therefore assume a greater frequency of both types of emotions in women? It does not appear that such a hypothesis can be established. As regards frequency, an inverse relation between positive and negative emotions may be expected. Consequently, in this study, we do not establish any specific hypothesis regarding possible differences between male and female adolescents as regards the frequency with which they experience different kinds of emotions.

The instrument most commonly used to assess alexithymia is the *Toronto Alexithymia Scale* (TAS-20; Bagby, Parker, & Taylor, 1994). The TAS-20 consists of three factors: difficulty identifying emotions; difficulty describing emotions; and externally oriented thinking. Many different studies (Parker, Bagby, Taylor, Endler, & Schmitz, 1993; Taylor, Parker, Bagby, & Bourke, 1996) have found that men score significantly higher than women in the TAS-20. Parker, Taylor & Bagby (2003) found that men scored higher than women as regards the total TAS-20 score and in factors 2 and 3 of the same instrument, although no significant differences were found in factor 1. For their part, Larsen, Van Strien, Eisinga, & Engels (2006) found that men scored significantly higher than women only in factor 3 and failed to find significant differences in either the total TAS-20 score or the scores for factors 1 and 2. In short, according to these studies, the differences in favor of men are clear in factor 3, i.e. in externally oriented thinking, although not so clear in the other two factors.

In opposition to these studies, other authors have found that women score significantly higher than men in the TAS-20 (Haviland, Hendryx, Shaw, & Henry, 1994; Pandey, Mandal, Taylor, & Parker, 1996). Merino, Godás, & Pombo (2002) found these same results, although with the slight difference that women's scores were significantly higher than men's only in factors 1 and 2 of this instrument, i.e. in difficulty identifying and describing emotions.

Finally, other studies failed to find any significant gender differences in the TAS-20 (Joukamaa, Sohlman, & Lehtinen, 1995; Loas *et al.*, 2001). Páez *et al.* (1999) found no significant gender differences in factor 2 (difficulty describing emotions) of the TAS-20, although they did observe significant differences in factors 1 and 3 of the instrument.

In specific terms, women scored higher than men in factor 1 (difficulty identifying emotions) and men scored higher than women in factor 3 (externally oriented thinking).

As we can see, the results are not conclusive, although they do suggest that women tend to score higher than men in factor 1 (difficulty identifying emotions), and men tend to score higher than women in factor 3 (externally oriented thinking). However, the majority of these studies were carried out with adult samples (the study on alexithymia by Merino *et al.*, 2002 is an exception), and things might be different among adolescents. Whatever the case, our impression upon commencing the study was that, in general, men tend to have more difficulty than women identifying and describing their feelings.

Numerous studies have also analyzed whether or not men and women use different coping strategies. Research carried out in this area suggests that men are more likely than women to either cope directly with a problem or situation or deny it completely; women, on the other hand, are more likely to respond to problems emotionally, sharing it with family and friends (Stone & Neale, 1984). Based on a meta-analytic review of studies focusing on gender differences in coping strategies, Tamres, Janicki and Helgeson (2002) concluded that women are more inclined to use strategies which include verbal expression, specifically the search for emotional support and rumination.

Based on the studies reviewed and the considerations made, this study aims to test the hypothesis that adolescent boys have greater difficulties identifying and verbalizing their emotions than adolescent girls, while for their part, girls tend to have more involuntary engagement responses (particularly rumination responses) than boys as a coping strategy. The study also aims to explore differences between adolescent girls and boys as regards the frequency with which they experience positive and negative emotions, as well as other possible gender differences in the coping strategies used (in addition to that outlined above).

## METHOD

### *Participants*

Participants comprised 762 adolescents (50.8% boys and 49.2% girls) from diverse secondary schools in Basque Country and Navarra, aged between 16 and 18. The *M* age was 16.74 and the *SD* .71. There were no statistically significant age differences between boys and girls.

### *Measures*

*The Scale of Frequency of Positive and Negative Emotions.* To analyze the frequency of positive and negative emotions, the Scale of Frequency of Positive and Negative Emotions was created *ad hoc*. This scale comprises a series of adjectives which, in total, refer to 22 negative emotions (e.g. sad) and 20 positive ones (e.g. satisfied). Participants were asked to rate on a 6-point scale the frequency with which they experienced the feeling described in each item (1= *never*, 6= *always*). Although from a theoretical

and conceptual perspective the Scale of Frequency of Positive and Negative Emotions clearly has a two-dimensional structure, we deemed it necessary to verify the empirical fit of this structure by means of a Confirmatory Factorial Analysis, using version 8.72 of the LISREL program. As expected, this analysis revealed that the scale is made up by two different factors: one which refers to positive emotions, and one which refers to negative ones. We can therefore state that the two-factor model fits our data, since as can be observed in the fit indexes of the model presented below, the *Root Mean Square Error of Approximation* (RMSEA) can be considered acceptable (lower than .08), as can the *Comparative Fit Index* (CFI) (greater than .95). Significant chi-squared:  $\chi^2$  (817,  $N= 1108$ )= 6077.75,  $p= .000$ . In relation to the absolute fit, the *Goodness of Fit Index* (GFI) was .79 and the *Standardized Root Mean Square Residual* (SRMR) .066. As regards the weighted parsimony fit, the RMSEA was .076. Finally, in relation to the comparative fit, the CFI was .97. Both subscales had good internal consistency coefficients: the  $\alpha$  of the Scale of Frequency of Positive Emotions was .91 and that of the Scale of Frequency of Negative Emotions was .87.

*Toronto Alexithymia Scale (TAS-20)* (Bagby *et al.*, 1994). To assess difficulty identifying and describing emotions, we used an abbreviated version of the TAS-20 (Bagby *et al.*, 1994); specifically, we used the 12 items corresponding to the first two factors: difficulty identifying emotions (e.g. “When I am upset, I don’t know if I’m sad, frightened or angry”) and difficulty describing emotions (e.g. “It is difficult for me to find the right words for my emotions”). We did not include the third factor (externally oriented thinking) because, apart from not being exactly what we were trying to assess, a number of cross-cultural studies (Páez *et al.*, 1999; Taylor, Bagby, & Parker, 2003) have found that this factor is the one which generates most problems when carrying out and obtaining optimum values from the initial confirmatory factorial analysis (considering all three factors); this is consistent with the low reliability indexes obtained by this factor in various different studies (Bagby *et al.*, 1994; Martínez-Sánchez, 1996). Participants were asked to indicate on a 5-point scale (1= *strongly disagree*, 5= *strongly agree*) the extent to which they agreed or disagreed with each of the items. The subscales used in this study obtained good internal consistency indexes both in the original study (Bagby *et al.*, 1994) and in the one presented here: the  $\alpha$  of the first subscale was .80 and that of the second one was .75.

*Responses to Stress Questionnaire (RSQ)* (Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000). To assess coping strategies, an adaptation of the RSQ (Connor-Smith *et al.*, 2000) was used. This version consisted of 47 items grouped into 5 factors: 1) Primary control engagement coping, which includes Problem Solving (e.g. “I try to think of different ways to change the problem or fix the situation”), Emotional regulation (e.g. “I keep my feelings under control when I have to, then let them out when they won’t make things worse”) and Emotional Expression (e.g. “I let my feelings out”); 2) Secondary control engagement coping, which includes Positive Thinking (e.g. “I tell myself that everything will be all right”), Cognitive Restructuring (e.g. “I tell myself that it doesn’t matter, that it isn’t a big deal”), Distraction (e.g. “I keep my mind off problems”) and Acceptance (e.g. “I just take things as they are, I go with the flow”); 3) Disengagement Coping, which includes Avoidance (e.g. “I try to stay away from people or things that make me feel upset or remind me of the problem”), Denial (e.g. “I act like the problems never happened”) and Wishful Thinking (e.g. “I wish that someone would just come and get me out of the mess”); 4) Involuntary Engagement responses, which includes Rumination (e.g. “I can’t stop thinking about

what I did or said”) and Impulsive action (e.g. “Sometimes I act without thinking”); and 5) Involuntary disengagement responses, which includes Inaction (e.g. “I just freeze, I can’t do anything”) and Escape (e.g. “I just have to get away. I can’t stop myself”). Participants were asked to think of a habitual situation of anxiety and then to indicate on a 4-point scale the frequency with which they act in the way described in each item (1= *never*, 4= *often*). In both the original study (Connor-Smith *et al.*, 2000) and the present one, good internal consistency coefficients were obtained (the Cronbach alphas obtained in the present study were: .71 in the first factor, .80 in the second, .77 in the third, .67 in the fourth and .68 in the fifth).

### *Procedure*

Both students and their parents were given a letter describing the study in broad terms. Before responding to the questionnaires, participants had to give their own and their parents’ informed consent. The questionnaires were administered in the classroom during lesson time. Instructions were given as to how to complete the questionnaire, and participants were reminded that all the information given was anonymous and confidential. The time required for completing the questionnaires was approximately half an hour.

## **RESULTS**

To analyze gender differences in the variables included in the study, *t* tests were carried out. Also, the effect size was calculated using Cohen’s *d*. The results are presented in Table 1.

As shown in Table 1, the differences were statistically significant in the majority of the variables: frequency of positive emotions, frequency of negative emotions, difficulty identifying emotions, difficulty describing emotions, primary control engagement coping, problem solving, emotional regulation, emotional expression, secondary control engagement coping, positive thinking, cognitive restructuring, acceptance, wishful thinking, involuntary engagement responses, rumination and impulsive action. In accordance with the criteria established by Cohen (1992), we can say that the effect size was fairly large in the frequency of positive emotions, emotional expression, involuntary engagement responses and rumination variables.

Adolescent boys scored significantly higher than adolescent girls in frequency of positive emotions, secondary control engagement coping, positive thinking, cognitive restructuring and acceptance, while girls scored significantly higher than boys in frequency of negative emotions, difficulty identifying emotions, difficulty describing emotions, primary control engagement coping, problem solving, emotional regulation, emotional expression, wishful thinking, involuntary engagement responses, rumination and impulsive action.

Table 1. Gender differences in the variables.

	Boys		Girls		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Frequency of positive emotions*	4.16	.66	3.8	.68	7.4	.001	.54
Frequency of negative emotions*	2.49	.58	2.69	.54	-4.9	.001	.36
Difficulty identifying emotions*	17.36	5.09	18.73	5.58	-3.5	.001	.26
Difficulty describing emotions	14.25	3.69	14.78	4.29	-2.12	.03	.13
Primary Control Engagement Coping*	2.63	.43	2.8	.43	-5.35	.001	.4
Problem Solving*	2.8	.53	2.93	.56	-3.28	.001	.24
Emotional Regulation*	2.61	.5	2.72	.49	-2.78	.006	.22
Emotional Expression*	2.49	.64	2.79	.63	-6.31	.001	.47
Secondary Control Engagement Coping*	2.72	.37	2.64	.43	2.75	.006	.2
Positive Thinking*	2.72	.54	2.63	.56	2.14	.033	.16
Cognitive Restructuring*	2.7	.49	2.58	.56	3.34	.001	.23
Distraction	2.56	.52	2.57	.54	-.44	.66	.02
Acceptance*	2.97	.62	2.84	.62	2.75	.006	.21
Disengagement Coping	2.17	.44	2.18	.42	-.4	.691	.02
Avoidance	2.3	.54	2.3	.54	-.02	.984	0
Denial	1.94	.56	1.87	.57	1.79	.074	.12
Wishful Thinking*	2.3	.6	2.43	.63	-2.94	.003	.21
Involuntary Engagement Responses*	2.32	.5	2.63	.48	-8.52	.001	.63
Rumination*	2.35	.64	2.78	.61	-9.11	.001	.69
Impulsive Action*	2.29	.58	2.5	.59	-4.73	.001	.36
Involuntary Disengagement Responses	1.99	.46	2.06	.46	-1.83	.067	.15
Inaction	1.98	.52	2.04	.52	-1.38	.168	.12
Escape	2.01	.6	2.08	.62	-1.47	.142	.11

\*. values that differ significantly between boys and girls.

## DISCUSSION

In short, the results obtained indicate that, among adolescents, boys tend to experience positive emotions more frequently than girls, while girls tend to experience negative emotions more frequently than boys. Furthermore, female adolescents have greater difficulty than male adolescents identifying and describing what they feel. Also, adolescent girls report more involuntary engagement responses (impulsive action and, particularly, rumination), primary control engagement coping strategies (problem solving, emotional regulation and, particularly, emotional expression) and wishful thinking coping strategies than adolescent boys, while boys tend to use more secondary control engagement coping strategies (positive thinking, cognitive restructuring and acceptance, but not distraction).

It is worthwhile pointing out that the greater frequency of positive emotions in males observed in this study was also observed in the only other study found which analyzed this question directly, i.e. the one conducted by Simon and Nath (2004) on a sample of adults. We had not established any specific hypothesis in this sense, and have yet to find a clear explanation for this greater frequency of negative emotions in adolescent girls and positive ones in adolescent boys. In any case, this result suggests that adolescence, which is itself generally a difficult stage, may be even more difficult

for girls, at least in our current context. Could it be that not only are girls under more pressure to achieve certain, often unrealistic, beauty ideals (with all the frustration and internal conflicts that this may generate, as suggested by studies on eating disorders), but also that they tend to set themselves higher goals in a number of different areas? This may be particularly true in the educational field, as the result of a context in which women are coming into their own, and feel obliged to demonstrate their worth in fields in which, until recently, they were very much regarded as second class. Or is it simply that parents demand more responsibility and commitment from girls than from boys, from whom they accept (and even expect) less responsible behavior? All of these questions deserve to be studied in greater detail.

As regards alexithymia, the results do not coincide with our hypothesis. Our results show that it is not male adolescents, as we had supposed, but rather female adolescents who have greater difficulty identifying and describing what they feel. Of course, it is true that our hypothesis was based more on pure intuition than on the results of previous studies and in fact, bearing in mind the greater frequency of negative emotions in adolescent girls, the result obtained is not actually that surprising. If, as the majority of studies (Brody & Hall, 1993, 2000) have found, these negative experiences tend also to be more intense in women than in men, and, as revealed by the results of this present study, adolescent girls also tend to ruminate more, it is only logical to assume that the emotional experience of female adolescents will be more complex than that of their male counterparts, and therefore more difficult to identify precisely and verbalize adequately.

Nevertheless, the results relating to alexithymia should be interpreted with a certain degree of caution, since in this variable the effect size was fairly small, especially as regards factor 2 (difficulty describing emotions). Whatever the case, what is clear is that our results fail (at least in adolescence) to support the stereotype that men have more difficulty than women identifying and talking about their emotional experiences.

As regards coping strategies, the results obtained supported our original hypothesis: adolescent girls did indeed tend to show more involuntary engagement responses (particularly rumination responses) than adolescent boys. Furthermore, although we had not formulated a hypothesis in this respect, it is worth highlighting the greater use of wishful thinking coping strategies by girls. Nevertheless, bearing in mind that the effect size in this variable was fairly small, this question requires further research. The more frequent use of problem solving and emotional regulation strategies by girls also deserves special attention, since it again contradicts society's preconceived notions. According to our data, when faced with anxiety-producing situations, girls tend (more than boys) to respond actively and directly, try to solve problems and do something to change the situation, as well as trying to control what they feel.

The study's main limitation is the fact that the data were gathered using self-reports. Self-reports provide a much shallower analysis than other types of instruments such as, for example, interviews, and the responses given may be influenced by aspects such as social desirability and gender stereotypes. However, in relation to the latter aspect, which is particularly relevant in our case, we believe that the specific items which made up the scales used were not particularly likely to activate this kind of stereotypes.



Whatever the case, we should be cautious when drawing conclusions. However, it would be imprudent not to take note of the general conclusion indicated by our results, i.e. that adolescent girls, more than adolescent boys, have a characteristic profile which predisposes them to developing EDs (Kiyotaki & Yokoyama, 2006; Pascual *et al.*, 2011; Troop & Treasure, 1997): high frequency of negative emotions, low frequency of positive emotions, alexithymia and a tendency to use coping strategies such as rumination and wishful thinking. It is hardly surprising, then, that women also have a greater tendency to suffer these kinds of disorders.

Further studies are required to confirm the gender differences observed in this study; and in any case, special attention should be paid to these differences in the emotional education of adolescents.

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