

Specific Beliefs about Emotions Are Associated with Different Emotion-Regulation Strategies

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Abstract

Despite evidence pointing to the associations of maladaptive emotion regulation strategies (ERS) with psychopathology, little is known about their underlying mechanisms. Coherently with cognitive models, this study tested the hypothesis that specific beliefs about emotions may be associated with difficulties in emotion regulation and the use of different ERS (reappraisal, suppression, acceptance, rumination, avoidant coping, experiential avoidance). Consistently with the role of avoidance in the cognitive model of worry, we sought testing a mediation pattern where negative beliefs about emotions were connected to maladaptive ERS through experiential avoidance. 309 participants filled out an online questionnaire that measured beliefs about emotions, difficulties in emotion-regulation, and the tendency to adopt different ERS. Results showed that negative beliefs and high fear of emotions were associated with the use of specific ERS and avoidance coping. Fear of depressed mood and anxiety was associated with rumination and emotional avoidance, whereas emotion suppression was mainly associated with fear of anger and positive affect. Also, we found that experiential avoidance mediated the association between beliefs about emotion, rumination and emotional avoidance. Results provided evidence about the specific associations between beliefs about emotions and emotion-regulation processes, suggesting that beliefs about emotions may play a role in orienting specific ER styles.

Keywords

Beliefs about Emotions, Emotion-Regulation Processes, Experiential Avoidance, Fear of Emotion, Difficulties in Emotion-Regulation

1. Introduction

Emotion regulation (ER) is defined as a process through which individuals monitor,

evaluate and modulate their emotions to adequately respond to environmental demands and to accomplish their goals (Rottenberg & Gross, 2003; Bargh & Williams, 2007; Gross, 2013). Individuals use regulatory strategies to modify the intensity or type of their emotional experience or the emotion-eliciting event (Gross, 1998; Diamond & Aspinwall, 2003). Several theoretical models distinguish between adaptive and maladaptive ER strategies (Aldao, Nolen-Hoeksema, & Schweizer, 2010). Maladaptive strategies may have the paradoxical effect of aggravating negative affect and psychological distress and increasing the incidence of maladaptive behaviours (Selby et al., 2008). Conversely, adaptive strategies are associated with diminished negative affect and decreased arousal in response to emotional stimuli (Dan-Glauser & Gross, 2013). Generally, reappraisal and acceptance are identified as adaptive ER strategies whereas suppression and distraction are labeled as maladaptive ER strategies. However, other strategies and behaviours involved in the management of negative emotions are also associated with ER, such as rumination, experiential and behavioural avoidance, problem solving, and maladaptive coping strategies (Lazarus & Folkman, 1984; Gross, 1998; Zeman, Shipman, & Suveg, 2001; Aldao et al., 2010).

Recently, theoretical models and studies have focused on the core processes of ER. According to the process model (Gross & Thompson, 2007), cognitive and behavioural ER strategies may be activated either before (*antecedent-focused*) or after (*response-focused*) an emotion occurs. The authors distinguish five emotion regulation strategies: situation selection, situation modification, attentional deployment, cognitive change, and response modulation. *Situation selection* refers to choosing an approach or avoiding a situation; *situation modification* acts on a situation itself to modify its emotional effect; *attentional deployment* refers to focusing on specific aspects of situations; and *cognitive change* can be used to modify the meaning of a situation. *Response modulation* defines the attempt to modulate emotion responses (e.g. facial expressions), once such responses are produced. According to functional perspectives, each of these ER strategies may be used in both adaptive and maladaptive ways, depending on the context wherein a strategy is used, its precise function, the ultimate goal of the strategy, and individual beliefs (Philippot, 2013).

With regard to beliefs, appraisal is an important cognitive aspect of the process model and it is pivotal to both emotion generation and emotion regulation (Gross, 2013). A situation needs to be judged as important to the attainment of a goal in order to “activate” an emotion (Gross & Thompson, 2007). In this model, the appraisal concept involves either appraisals related to situations or appraisals related to emotional responses to such situations (Northoff et al., 2006). In particular, appraisals touching on emotional experiences necessarily involve individuals’ beliefs about emotions—both negative and positive—and about their capability of responding to such emotions. The acceptability or unacceptability of emotions—“It’s okay to have emotions” and “I shouldn’t be feeling in this way”—or their uncontrollability—“I hate myself when I’m sad!” are typical examples of concerns in this regard. According to theorists and clinicians, the first type of appraisal may activate a primary emotion (the initial emotional

reaction to, and appraisal of, a situation) that does not imply any special type of problems. On the other hand, appraisals about the primary emotion may generate a problematic reaction thereby triggering negative emotions (secondary emotional responses, such as guilt as a result of feeling sad) that exacerbate psychological distress (Greenberg & Safran, 1990; Greenberg, 2002; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Mennin & Farach, 2007). Some authors define the tendency to negatively evaluate emotional experience as “fear of emotions” (Taylor, Koch, & Crockett, 1991; Shapiro, 1995; Taylor, 1995; Williams, Chambless, & Ahrens 1997), characterized by the fear of losing control over both emotions—negative and positive—and behavioural reactions to emotions. In particular, it was observed that “fear of emotions” might interfere with the ability to manage strong emotions (Chambless & Goldstein, 1981; Heide & Borkovec, 1984; Taylor et al., 1991). In light of such findings, it is hypothesized that beliefs about the experience of unpleasant emotions and the consequent attempts to control or avoid such emotions may greatly influence both emotion regulation processes and the maintenance of psychopathology (Hayes et al., 2006; Werner & Gross, 2010).

Various theories have generated specific hypotheses about the beliefs that people may have about their emotions and considered their clinical and theoretical relevance. For example, according to mentalisation theory (Fonagy & Target, 2003), emotions may be perceived as uncontrollable, or dangerous and inexplicable, and people may not be able to represent and understand them. These beliefs, in turn, may influence the emotion regulation processes (Swenson, Sanderson, Dulit, & Linehan, 2001; Bateman & Fonagy, 2004; Manser et al., 2012). Biosocial theory suggests that beliefs about emotions and the tendency to avoid them lead to problems controlling emotions and maintaining distress (Linehan, 1993; Hayes et al., 1996). According to this perspective, some significant beliefs hold that emotions are invalid, overwhelming, shameful, painful, or inaccessible (Swenson et al., 2001), and can cause difficulties in regulating emotions (Linehan, 1993).

Analogously to observations on the relationships between emotional avoidance, beliefs about emotions, and emotion dysregulation (Linehan, 1993), it has recently been argued that experiential avoidance—the tendency to escape private experiences, such as emotions—may be understood as a function of emotion dysregulation (Hayes et al., 1996; Boulanger, Hayes, & Pistorello, 2010). Iverson et al. (2012) showed that both emotional dysregulation and experiential avoidance were positively associated with BPD symptom severity. The central role of avoidance in the development of regulatory strategies is stated also in Borkovec’ model (Borkovec et al., 2004), according to which worry is a regulatory strategy used by individuals that tend to avoid intense emotions. Nevertheless, the specific relationship between experiential avoidance, emotion-regulation and beliefs about emotions, has not yet been examined in the literature. Therefore, we hypothesized that experiential avoidance would be associated with the use of ER strategies in individuals that have negative beliefs about emotions.

At present, few studies focused on the link between emotion beliefs and ER. Tamir et al. (2007) have examined the beliefs about the controllability of emotions and their implications. In particular, they have considered the implicit theory of emotion, which

postulates that emotions may have a fixed or malleable nature. They have observed that people who view emotions as fixed had lower well-being, greater depressive symptoms and lower social adjustment (Tamir, John, Scrivastava, & Gross, 2007). Accordingly to metacognitive theories, other authors have recently developed the Belief About Emotions Questionnaire (BAEQ; Manser et al., 2012), designed to measure and evaluate seven types of beliefs about emotions: “overwhelming and uncontrollable”; “shameful”; “irrational”; “invalid and meaningless”; “useless”; “damaging”; and “contagious”. Moreover, in healthy subjects, authors found that specific beliefs about emotions as being uncontrollable, dangerous and shameful, were related to BDP symptoms, dysregulation behaviours, and specific coping styles.

The relationship between beliefs about emotions and ER strategies has been not frequently examined, so the aim of the present study is to investigate this specific relationship. Consistently with the literature (Aldao et al., 2010; Wells, 2008; Clark & Beck, 2009), the aim of the present study was to investigate the associations between negative beliefs about emotions and the adoption of maladaptive regulation strategies (i.e. rumination, suppression, emotional avoidance, and avoidant coping). We expected that individuals with negative beliefs about emotions would choose maladaptive ER strategies. Moreover, we examined if specific beliefs may characterize specific emotion-regulation styles. We hypothesized that different ER strategies would be suited according to the type of emotion to be regulated, to the beliefs about emotions, and consequently, to the goal pursued by the individual.

Moreover, consistently with the role of avoidance in the cognitive model of worry (Borkovec et al., 2004; Cooper et al., 2013), we hypothesized that experiential avoidance would mediate the association between emotion beliefs and ER strategies. We expected an indirect effect of beliefs about emotions on emotion regulation strategies, and we hypothesized this effect would be mediated by the unwillingness to remain in contact with aversive private experiences, i.e., experiential avoidance (Hayes, Strosahl, & Wilson, 1999) and by the difficulties a person experiences in regulating emotions (Gratz & Roemer, 2004). Secondly, we hypothesized these two potential mediators could also operate in sequence. **Figure 1** represents the conceptual schema we used for the mediation patterns.

2. Materials and Methods

2.1. Sample and Procedure

Three hundred and nine participants (57.2% female) filled out an online questionnaire. Participants were enrolled through Mechanical Turk and received a payment for filling out the questionnaire. The questionnaires were administered in a single session and they were completed in 30 minutes. Age ranged from 18 to 73 years ($M = 37.1$, $SD = 13.3$). The sample consisted of 72.8% White Caucasian, 10.3% African American, 6.4% Asian, 2.2% Other, 0.3% preferring not to state. The majority of the participants were employees (51.7%) and had completed a higher vocational or university education (56.31%). In the past, 40.4% of participants had received psychotherapy (type of the

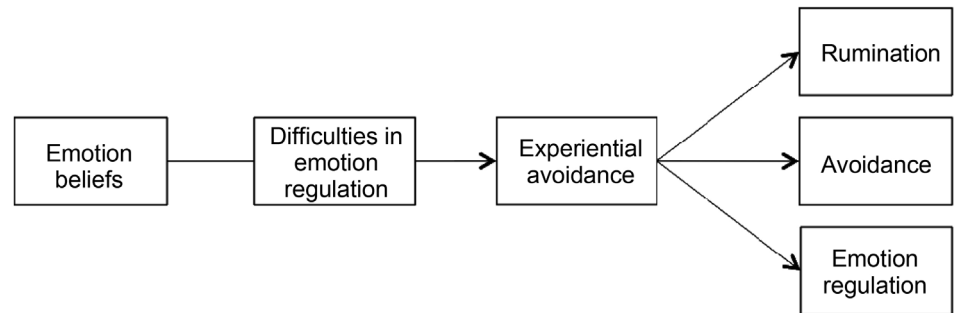


Figure 1. Conceptual schema of mediation patterns.

therapy not specified) or psychological counseling and 30% of participants had taken medication for psychological problems. At the time, 14% of the sample were using psychopharmacological drugs and 9.3% were receiving psychotherapy.

This study was carried out in accordance with the recommendations of “School of Cognitive Psychotherapy S.r.l. Ethics Committee”, and of “Italian code (D.lgs. June 30th 2003, n. 196)”. All subjects gave written informed consent in accordance with the Declaration of Helsinki.

2.2. Measures

2.2.1. Sociodemographic and Personal Information

Participants were asked to complete a sociodemographic form that included items regarding age, gender, education, employment, marital status, and the experience of psychotherapy and psychopharmacological drug use.

2.2.2. Beliefs about Emotions

1) The *Affective Control Scale* (ACS; Williams et al., 1997). This scale was designed to assess fear of losing control over emotions or fear of behavioural reactions to emotion. The scale comprised four dimensions: fear of anger (8 items; $\alpha = 0.75$), depression (8 items; $\alpha = 0.90$), anxiety (13 items; $\alpha = 0.89$), and positive emotion (13 items; $\alpha = 0.86$) (ranging from 1 “very strongly disagree” to 7 “very strongly agree”).

2) The *Beliefs about Emotions Questionnaire* (BAEQ; Manser et al., 2012) was designed to measure beliefs about emotions and consisted of 43 items. A five point scale (from 1 “strongly disagree” to 5 “strongly agree”) measured the strength of the belief. The items in the scale reflected themes identified from an in-depth review of the literature as being important perceptions of emotions for those with difficulties regulating their emotions. The questionnaire comprised six dimensions, consisting of beliefs about emotions presented in terms of response options: Overwhelming and Uncontrollable (9 items; $\alpha = 0.87$); Shameful and Irrational (10 items; $\alpha = 0.91$); Invalid and Meaningless (7 items; $\alpha = 0.42$); Useless (8 items; $\alpha = 0.77$); Damaging (5 items; $\alpha = 0.39$); and Contagious (4 items; $\alpha = 0.08$).

2.2.3. Emotion-Regulation Processes

3) *Difficulties in Emotion Regulation Scale* (DERS; Gratz & Roemer, 2004). The

DERS is a 36-item self-report questionnaire that assesses clinically relevant difficulties in ER with an emphasis on negative emotions. Items are scored on six scales, labeled as Lack of Emotion Awareness (6 items; $\alpha = 0.85$), Lack of Emotional Clarity (5 items; $\alpha = 0.85$), Difficulties Controlling Impulsive Behaviours When Distressed (6 items; $\alpha = 0.87$), Difficulties Engaging in Goal-Directed Behaviour when Distressed (5 items; $\alpha = 0.89$), Non-acceptance of Negative Emotional Responses (6 items; $\alpha = 0.92$), and Limited Access to Effective ER Strategies (8 items; $\alpha = 0.91$). Items are scored on a 5-point scale (1 “almost never”, 5 “almost always”).

4) The *Emotion Regulation Questionnaire* (ERQ; Gross & John, 2003) is a 10-item questionnaire which consists of two scales corresponding to two different emotion regulation strategies: *cognitive reappraisal* (6 items; $\alpha = 0.88$) and *expressive suppression* (4 items; $\alpha = 0.80$). Instructions ask the subject “some questions about your emotional life, in particular, how you control (that is, regulate and manage) your emotions.” The 10 items are rated on a 7-point-Likert scale from 1 “strongly disagree” to 7 “strongly agree”.

5) The *Stress Reactive Rumination Scale* (SRRS; Robinson & Alloy, 2003) assesses three cognitive tendencies in response to major life stressors: the tendency to focus on the negative attributions and inferences that characterises the negative inferential style (9 items; $\alpha = 0.90$); the tendency to focus on hopeless cognitions (5 items; $\alpha = 0.94$); and the tendency to focus on active coping strategies and problem-solving solutions (7 items; $\alpha = 0.83$). The 25 items are rated on a 10-point-Likert scale (from 0 “not focus on this at all”, to 100 “focus on this to a great extent”).

6) The *Acceptance and Action Questionnaire-II* (AAQ-II; Bond et al., 2011) is a 10-item questionnaire developed to measure psychological inflexibility and experiential avoidance ($\alpha = 0.91$). Participants were asked to rate the trueness of the sentences, ranging from 1 “never true” to 7 “always true”.

7) The *Need for Affect Scale* (NAS; Maio & Esses, 2001) is a 26-item scale that measures the need to avoid and the need to approach emotion with two separate subscales. The subscale scores can range from -39 to $+39$, with higher scores reflecting greater emotional approach and greater emotional avoidance. In this study, we focused only on the avoidance subscale (13 items; $\alpha = 0.92$).

2.2.4. Coping Style

8) The *Coping Orientation to Problems Experienced* (COPE; Carver, Scheier, & Weintraub, 1989) scale measures how often people undertake a specific coping process when facing difficult or stressful situations. The items, with responses ranging from 1 “I usually don’t do this at all” to 4 “I usually do this a lot”, referred to five major independent dimensions: Social Support, Positive Attitude, Problem Solving, Turning to Religion and Avoidance Strategies. For the purposes of this study, we exclusively focused on the dimension of Avoidance Strategies, which comprised four subscales, i.e.: denial (4 items; $\alpha = 0.78$), behavioural disengagement (4 items; $\alpha = 0.81$), mental disengagement (4 items; $\alpha = 0.52$), drug and alcohol abuse (4 items; $\alpha = 0.45$).

2.3. Statistical Analyses

In order to test the relationship between beliefs about emotions, difficulties in emotion regulation and ER strategies, a series of zero order correlations was performed. Data analyses were performed through Statistica 8 (StatSoft. Inc., USA) and SPSS 20. A series of mediation analyses were also run to test the mediation hypothesis. To carry out the multiple mediation analyses, we used the macro PROCESS for SPSS (Hayes, 2013). More specifically, we adopted Model 6 which permits the testing of the significance of the indirect effects through independent mediators (DERS and AAQ) as well as through their sequence (DERS → AAQ) using bootstrapping sampling.

3. Results

Table 1 shows means and standard deviations for all the variables of interest.

3.1. Correlations

Given the high number of tests relevant for the current investigation, we adopted a conservative p value < 0.00025 . This conservative cut off should maintain the overall Type I error rate below 0.05. Consistently with our hypothesis, both BAEQ and ACS scales demonstrated significant correlations with difficulties in emotion-regulation, regulation strategies and coping styles (see **Table 2(a)** & **Table 2(b)**). Specific beliefs about emotions (*Uncontrollable*, *Irrational*, *Damaging* and *Contagious*-BAEQ scales) and difficulties in emotion regulation (DERS subscales) were positively correlated, except for the absence of correlation with BAEQ 3 and 4 (*Invalid* and *Useless* subscales) (see **Table 2(a)**). Beliefs about emotions (BAEQ scores) were negatively correlated with adaptive ERS (*reappraisal*, *acceptance*, and *active problem solving*), and positively correlated with maladaptive ERS (*suppression*-ERQ, *rumination*-SRRS, *emotional avoidance*-NAS and *avoidant coping*-COPE) (see **Table 2(a)**).

The fear of emotions (ACS scores) was correlated with both the difficulties in emotion-regulation (DERS) and the considered emotion-regulation strategies (see **Table 2(b)**). Fear of emotions (ACS) was positively and strongly correlated with *emotional avoidance*-NAS (0.67), *rumination* (0.63), *hopelessness rumination* (0.69), and *Avoidant coping*-COPE (0.54). Conversely, the fear of emotions was negatively correlated with *reappraisal* (−0.30) and *acceptance* (−0.76).

In line with our hypothesis, specific beliefs about emotions were related to different difficulties in emotion regulation. *Non-acceptance* of emotional responses (DERS 1 subscale) was strongly correlated with the belief that emotions are *Irrational* (0.76) (see the data marked in **Table 2(a)**). *Impulse control difficulties* (DERS 3) were strongly correlated with the fear of *Anger* (0.61), and the fear of *Positive Affect* (0.65). The fear of *Depressed Mood* and *Anxiety* were positively correlated with *Limited access to emotion regulation strategies* (*Strategies*-DERS 5) (DM: 0.80; A: 0.70), *Avoidance* (DM: 0.60; A: 0.57), and *Rumination* (DM: 0.59; A: 0.60) (see the data marked in **Table 2(b)**). Moreover, emotional *suppression* (ERQ) was mainly related to fear of *Anger* (0.32) and *Positive affect* (0.31). Finally, the tendency to have negative secondary reaction to distress

Table 1. Means and standard deviations for the current level of beliefs about emotions, difficulties in emotion-regulation, and emotion-regulation strategies of the sample.

	M (SD)
ACS-Total score	3.2 (0.9)
ACS-Anger	3.5 (1.0)
ACS-Positive affect	2.8 (0.9)
ACS-Depressed mood	3.3 (1.4)
ACS-Anxiety	3.3 (1.0)
BAEQ 1-Uncontrollable	25.3 (7.6)
BAEQ 2-Irrational	21.7 (8.1)
BAEQ 3-Invalid	21.5 (3.5)
BAEQ 4-Useless	25.8 (5.6)
BAEQ 5-Damaging	12.6 (3.8)
BAEQ 6-Contagious	12.0 (2.6)
DERS-Total score	82.5 (26.3)
DERS 1-Nonacceptance	13.3 (6.2)
DERS 2-Goals	14.1 (5.1)
DERS 3-Impulse	12.5 (5.3)
DERS 4-Aware	14.2 (4.9)
DERS 5-Strategies	18.0 (7.7)
DERS 6-Clarity	10.2 (3.9)
ERQ-Reappraisal	30.1 (6.3)
ERQ-Suppression	14.8 (5.0)
AAQ-II-Acceptance	48.2 (12.6)
SRRS-Negative Inferential Style-Rumination Scale	50.9 (19.3)
SRRS-Hopelessness Rumination Sub-scale	22.0 (13.8)
SRRS-Active Problem Solving Sub-scale	50.5 (13.1)
NAS-Avoidance	45.2 (0.9)
COPE-Avoidant coping	29.8 (7.8)

Note: ACS (Affective Control Scale); BAEQ (Beliefs About Emotions Questionnaire); DERS (Difficulties in Emotion Regulation Scale); ERQ (Emotion Regulation Questionnaire); AAQ-II (Acceptance and Action Questionnaire); SRRS (Stress Reactive Rumination Scale); NAS (Negative Affect Scale); COPE-Avoidant coping (Mental disengagement; Behavioural Disengagement; Denial; Substance Use).

(DERS 1) was positively correlated with all ACS subscales: fear of *Anger* (0.55), *Positive Affect* (0.54), *Depressed Mood* (0.52) and *Anxiety* (0.52) (see the data marked in **Table 2(b)**).

We ran a moderate regression to test the role of “receiving a psychotherapy”

(comprising approximately 40% of the sample) in the relationship between beliefs (ACS and BAEQ scores) and difficulties regulating emotions (DERS scores). The model was not significant ($p > 0.05$).

3.2. Mediation Analyses

In the previous section we established the association between BAEQ, ACS and the dependent variables. In this part of the study, we sought to further test whether DERS and AAQ could mediate such associations. Thus, we tested several mediation models in which DERS and AAQ were entered as independent mediators. In addition to this, we also tested whether these potential mediators could also operate in sequence. In other words, we tested whether BAEQ and ACS affected DERS which, in turn, affected AAQ, which finally affected the dependent variable. The two tests differ only on the independent variable used (BAEQ and ACS). The results are reported in **Table 3(a)** and **Table 3(b)**.

Table 2. (a) Correlations between Beliefs about Emotions Questionnaire scores (BAEQ) and Difficulties in Emotion Regulation Scale (DERS), and emotion-regulation strategies; (b) Correlations between Affective Control Scale scores (ACS) and Difficulties in Emotion Regulation Scale (DERS), and emotion-regulation strategies.

(a)

	BAEQ 1 Uncontrollable	BAEQ 2 Irrational	BAEQ 3 Invalid	BAEQ 4 Useless	BAEQ 5 Damaging	BAEQ 6 Contagious
DERS-Total score	0.75*	0.75*	0.15	0.06	0.62*	0.41*
DERS 1-Nonacceptance	0.55*	0.76*	0.15	0.00	0.51*	0.32*
DERS 2-Goals	0.71*	0.40*	0.23*	0.01	0.47*	0.40*
DERS 3-Impulse	0.71*	0.62*	0.12	0.00	0.57*	0.34*
DERS 4-Awareness	0.22*	0.48*	-0.06	0.28*	0.27*	0.18
DERS 5-Strategies	0.78*	0.63*	0.19	0.02	0.59*	0.37*
DERS 6-Clarity	0.44*	0.64*	0.01	-0.01	0.45*	0.28*
ERQ-Reappraisal	-0.26*	-0.17	0.02	-0.17	-0.15	-0.05
ERQ-Suppression	0.21*	0.45*	0.11	0.16	0.25*	0.03
AAQ-II-Acceptance	-0.75*	-0.57*	-0.17	-0.04	-0.59*	-0.32*
SRRS-Negative Inferential Style-Rumination Scale	0.68*	0.47*	0.21	-0.03	0.46*	0.41*
SRRS-Hopelessness Rumination Sub-scale	0.68*	0.53*	0.19	0.01	0.51*	0.30*
SRRS-Active Problem Solving Sub-scale	-0.24*	-0.17	0.04	-0.19	-0.19	-0.06
NAS-Avoidance	0.69*	0.70*	0.28*	0.18	0.56*	0.32*
COPE-Avoidant coping	0.46*	0.59*	0.07	0.00	0.47*	0.26*

*Significant at the 0.00025 level. Note: COPE-Avoidant coping (Mental disengagement; Behavioural Disengagement; Denial; Substance Use).

(b)

	ACS Total	ACS Anger	ACS Positive affect	ACS Depressed mood	ACS Anxiety
DERS-Total score	0.83*	0.67*	0.67*	0.73*	0.71*
DERS 1-Nonacceptance	0.63*	0.55*	0.54*	0.52*	0.52*
DERS 2-Goals	0.58*	0.48*	0.35*	0.55*	0.57*
DERS 3-Impulse	0.77*	0.61*	0.66*	0.64*	0.66*
DERS 4-Aware	0.41*	0.36*	0.43*	0.31*	0.31*
DERS 5-Strategies	0.80*	0.60*	0.59*	0.80*	0.70*
DERS 6-Clarity	0.63*	0.53*	0.60*	0.50*	0.49*
ERQ-Reappraisal	-0.30*	-0.18	-0.23*	-0.27*	-0.32*
ERQ-Suppression	0.29*	0.32*	0.31*	0.23*	0.17
AAQ-II-Acceptance	-0.76*	-0.56*	-0.50*	-0.73*	-0.74*
SRRS-Negative Inferential Style-Rumination Scale	0.63*	0.49*	0.41*	0.59*	0.60*
SRRS-Hopelessness Rumination Sub-scale	0.69*	0.47*	0.47*	0.69*	0.66*
SRRS-Active Problem Solving Sub-scale	-0.26*	-0.15	-0.16	-0.29*	-0.24*
NAS-Avoidance	0.67*	0.62*	0.48*	0.60*	0.57*
COPE-Avoidant coping	0.54*	0.38*	0.48*	0.48*	0.47*

*Significant at the 0.00025 level.

More specifically, **Table 3(a)** reports all the indirect effects through DERS, AAQ and their sequence for BAEQ, whereas **Table 3(b)** reports the same indirect effects but with ACS as the independent variable. Both BAEQ and ACS were used as measures of beliefs about emotions. The inspection of 95% confidence intervals in **Table 3(a)** revealed a significant overall mediation (i.e., the sum of all indirect effects) for all the dependent variables considered: ERQ suppression, SRRS rumination, SRRS hopelessness, Avoidant Coping, NAS avoidance. The unique indirect effect of BAEQ through DERS was significant for ERQ suppression, SRRS hopelessness, and Avoidant Coping, and not significant for SRRS rumination and NAS avoidance. The unique indirect effect of BAEQ through AAQ was significant for SRRS rumination, SRRS hopelessness and NAS avoidance but not significant for ERQ suppression and Avoidant Coping. Also the sequential indirect effect of BAEQ through DERS followed by AAQ was tested. The analysis revealed that the sequence of DERS and AAQ mediated the effect of BAEQ on SRRS rumination, SRRS hopelessness and NAS avoidance. No indirect sequential effect emerged on ERQ suppression and Avoidant coping.

The same mediational analyses were carried out considering ACS as the independent variable, and DERS, AAQ and the sequence DERS → AAQ as mediators. Results are

Table 3. (a) The indirect effects through DERS, AAQ and their sequence for BAEQ; (b) The indirect effects through DERS, AAQ and their sequence for ACS.

(a)				
Dependent Variables	Indirect Effects	Estimate	95% Bootstrap CI	
			Lower	Upper
ERQ-Suppression	TOTAL	0.19	0.05	0.32
	Ders	0.14	0.01	0.29
	AAQ	0.02	-0.02	0.08
	Ders→AAQ	0.03	-0.04	0.11
SRRS-Rumination	TOTAL	0.38	0.26	0.49
	Ders	0.03	-0.09	0.13
	AAQ	0.14	0.07	0.22
	Ders→AAQ	0.21	0.14	0.29
SRRS-Hopelessness	TOTAL	0.48	0.38	0.58
	Ders	0.14	0.03	0.27
	AAQ	0.13	0.07	0.22
	Ders→AAQ	0.20	0.14	0.28
Avoidant Coping	TOTAL	0.44	0.30	0.57
	Ders	0.46	0.35	0.58
	AAQ	-0.01	-0.06	0.03
	Ders→AAQ	-0.02	-0.08	0.05
NAS-Avoidance	TOTAL	0.16	0.03	0.29
	Ders	-0.03	-0.15	0.09
	AAQ	0.07	0.03	0.14
	Ders→AAQ	0.11	0.06	0.19

(b)				
Dependent Variables	Indirect Effects	Estimate	95% Bootstrap CI	
			Lower	Upper
ERQ-Suppression	TOTAL	0.41	0.25	0.57
	Ders	0.29	0.12	0.42
	AAQ	0.07	-0.00	0.17
	Ders→AAQ	0.05	0.00	0.12
SRRS-Rumination	TOTAL	0.40	0.26	0.55
	Ders	0.03	-0.10	0.15
	AAQ	0.23	0.15	0.34
	Ders→AAQ	0.15	0.08	0.23
SRRS-Hopelessness	TOTAL	0.43	0.32	0.57
	Ders	0.10	-0.01	0.23
	AAQ	0.20	0.13	0.31
	Ders→AAQ	0.13	0.07	0.21
Avoidant Coping	TOTAL	0.50	0.32	0.67
	Ders	0.52	0.39	0.66
	AAQ	-0.01	-0.08	0.07
	Ders→AAQ	-0.01	-0.06	0.04
NAS-Avoidance	TOTAL	0.55	0.37	0.72
	Ders	0.23	0.10	0.38
	AAQ	0.19	0.10	0.30
	Ders→AAQ	0.12	0.07	0.21

reported in **Table 3(b)**. As in the previous analysis, overall indirect effect was significant for all the dependent variables: ERQ suppression, SRRS rumination, SRRS hopelessness, Avoidant Coping, NAS avoidance. The unique indirect effect of DERS was significant on ERQ suppression, Avoidant coping and NAS avoidance, whereas it was not significant on SRRS rumination, and SRRS hopelessness. The unique indirect effect of AAQ was significant on SRRS rumination, SRRS hopelessness and NAS avoidance but not on ERQ suppression and Avoidant coping. Finally, the sequential indirect effect was significant on ERQ suppression, SRRS rumination, SRRS hopelessness, and NAS avoidance but not on Avoidant coping.

4. Discussion

The present study was driven by recent findings about the relationship between beliefs about emotions, behaviours associated with emotion dysregulation, and specific ER processes (Tamir et al., 2007; Manser et al., 2012; De Castella et al., 2013). In particular, we aimed to investigate the association of beliefs about emotions with maladaptive ER strategies and difficulties regulating emotion. Results supported the hypothesis that beliefs about emotions are associated with specific ER processes.

We observed that high fear of emotions and beliefs that emotions were uncontrollable irrational and damaging were associated with difficulties regulating emotions, in particular, with the tendency to have a negative secondary reaction to distress, with lack of emotional clarity, and with difficulties in engaging in goal-directed behaviours. The belief that emotions are uncontrollable was associated with higher use of rumination and emotional avoidance and lower use of acceptance, reappraisal and problem solving. This result is consistent with findings of other studies showing that people who considered emotions as uncontrollable were less likely to use adaptive emotion-regulation strategies, such as cognitive reappraisal, in their daily lives (Tamir et al., 2007; De Castella et al., 2013).

Our findings were consistent with our hypothesis about the specific association between beliefs about emotions and regulation strategies. For example, it would be assumed that the beliefs, strategies and behaviours were generally related in ways that might be expected, such that those who believed their emotions to be threatening, would be more likely to avoid emotional experiences (ER strategy), and, consequently, would have less clarity about their emotions (difficulty in ER).

Secondly, we tested the idea that specific beliefs were associated with different regulation styles. Fear of specific emotions (depressed mood, anxiety, anger and positive affect) (as measured by ACS) was correlated with the use of different ER strategies. Negative beliefs about the uncontrollability of depressed mood and anxiety were associated with higher use of rumination and emotional avoidance, and with a limited access to ER strategies. Whereas emotion suppression was mainly associated with the belief that anger and positive affect may have consequences on the control over own actions, and impulse control difficulties. In line with our findings, these specific associations might be explained by the idea that individuals regulate their behaviours according to differ-

ent goals and values (Carver & Sheier, 1998), thus ER strategies could be oriented by specific goals. For example, rumination would be an attempt to find a solution in response to the fear of being overcome by depression; emotional avoidance could be a strategy oriented by the belief that anxiety is uncontrollable and motivated by the goal to avoid loss of control; moreover, anger and positive emotions seem to be mainly associated with the fear to lose control, and difficulties in regulating impulses and behaviours. Thus, suppression of these emotions would be motivated by the fear to lose self-control and by the goal to avoid negative judgment or to cause damages or pain to others. These results were in line with several clinical observations. First, emotion avoidance is a regulation strategy that plays a role in maintaining both anxiety and mood disorders. For example, it can be used as a regulation strategy for the purpose of avoiding acute episodes of fear or to regulate sadness (Campbell-Sills & Barlow, 2007). Secondly, these findings confirm the idea that rumination is an attentional strategy for reducing emotional discomfort (Papageorgiou & Wells, 2001; Watkins & Baracaia, 2001; Gross & Thompson, 2007). Finally, our results are consistent with findings of other studies that observed that suppression was used to regulate many negative emotions, such as anger, and to decrease the subjective experience of positive emotions (Gross & Levenson, 1997; Gross, 1998).

The tendency to have a negative secondary reaction to distress, measured by the Non-Acceptance scale of DERS, was strongly correlated with higher negative beliefs about emotions, in particular, with the belief that emotions are irrational. In other terms, the idea about irrationality of emotions was associated with feelings of guilt, shame, embarrassment, and weakness in reaction to emotional experience. From a clinical perspective, if an individual believes that emotions are irrational, experiencing emotions could be an aversive event, because potentially leading to being judged an irrational person. Thus, self-concept might be negatively affected, and this could be considered an example of secondary problem. We sustain that beliefs about emotions are instrumental in determining a secondary emotional response that might exacerbate and maintain the primary reaction and the consequent regulation attempts (Ellis, 2003; Clark & Beck, 2010; Greenberg & Safran, 1990; Greenberg, 2002; Hayes et al., 2006; Mennin & Farach, 2007). Considering an emotion as unacceptable or aversive, can affect the way a person regulates the emotional state. For example, people suffering from social phobia tend to worry about the negative consequences of their anxiety in social contexts, such as that of being judged stupid. From a clinical perspective, this evaluation is considered responsible of the persistence of anxiety (primary problem; Clark & Beck, 2010). Consistently with this assumption, a sub-scale of DERS considers the tendency to have a negative secondary or non-accepting reaction to one's own distress (i.e. beliefs that emotions are shameful) as a specific difficulty in the emotion regulation process. In line with our findings, we assume the existence of a vicious circle, by which the fear of emotions and their associated beliefs maintain or exacerbate both emotional responses and the difficulties in ER, which, in turn, reinforce both beliefs about emotions and the use of unhelpful attempts to regulate emotional reactions, such as by, for

example, experiential and behavioural avoidance.

Results showed that high fear of emotions and beliefs that emotions are uncontrollable, irrational and damaging are related with specific behaviours, such as those involved in avoidant coping (i.e., behavioural disengagement, denial, substance use and mental disengagement). Concerning the role of experiential avoidance, mediation findings showed that people who had negative beliefs about emotions, difficulties regulating emotions, and a tendency to experiential avoidance, used specific ER strategies, such as rumination and avoidant style (i.e. suppression, emotional avoidance, and substance use). We may assume that these people tended to avoid the emotional experiences using cognitive and behavioural strategies. This is in line with the idea that experiential avoidance may be understood as a function of emotion regulation that does not simply refer to internal experiences (feeling emotions strongly), but also to the associated overt behavioural response (Boulanger et al., 2010). Finally, the mediation results demonstrated that experiential avoidance might have a role in the association between beliefs about emotions and rumination. To explain this interrelation we hypothesized the same mechanisms indicated in Borkovec' model (2004) and Alloy and colleagues (2000), which states that ruminative worrying is a form of emotional avoidance that plays a role in the maintenance of anxiety in generalized anxiety disorder (GAD) and mood disorders. Thus, individuals that consider emotions as aversive or unpleasant (negative beliefs) tend to avoid them, and in order to manage emotion-related experiences they use ER strategies such as rumination, an ongoing cognitive activity contributing to long-term distress or even psychopathology.

Generally, the current study represents a wider framework toward understanding the important role beliefs about emotions play in the understanding of emotion dysregulation, as delineated by several theories, researches and clinical observations (Gross & Thompson, 2007; Werner & Gross, 2010). In line with our results, we assume that beliefs about specific emotions may affect the choice and the maintenance of different ER strategies. Individuals' behaviour regulation has been demonstrated to be affected by personal goals/values (Carver & Sheier, 1998), thus a similar influence might be hypothesized for emotion regulation too. We sustain that also ER is motivated by personal goals connected with specific beliefs. For example, a person might want to control anxiety in order to demonstrate he/she is strong, or rational, or able to manage his/her own reactions. Different people might have different goals, thus the same ER strategy may be adaptive in some cases but maladaptive in others. Given the correlational nature of our data, it is impossible to establish cause-effect implications; therefore we could only discuss associations among our variables. Cause-effect hypotheses might be tested in future studies.

The present data may have important clinical implications for the etiology and the treatment of clinical disorders, specifically for difficulties in coping with emotions. Working with beliefs about emotions is a fundamental part of cognitive and behavioural psychotherapies (Linehan, 1993; Wells, 2008; Clark & Beck, 2009; Leahy, 2015). Moreover, clarifying the specific beliefs and goals underlying different emotion-regula-

tion styles could help to understand the specific mechanisms orienting ER. For example, it would be useful to distinguish between adaptive and maladaptive regulation styles, depending on unavailability of goals that individuals want to pursue (Philippot, 2013). Future research could investigate these functional links through experimental manipulations.

Several limitations need to be acknowledged. First, it is important to consider that the cross-sectional nature of the current study makes it impossible to establish causal relationships between variables. Beliefs about emotions may also reflect existing difficulties in ER, and it is probable that they constitute a maintenance factor.

A limitation relates to measurement. The strong correlation between BAEQ and DERS may, in part, be explained by similar content between the items in the respective questionnaires. For example, the DERS item “When I’m upset, I become embarrassed for feeling that way” or “When I’m upset, I have difficulty controlling my behaviours” are similar to the BAEQ item “When I start feeling upset I cannot control it” or “It is embarrassing to feel upset”. It is probable that some items of DERS measure beliefs about emotions.

Finally, the data collected in this study came from a non-clinical sample. We investigated a community sample to avoid any confusing correlations that could have emerged in clinical samples from spillover effects or collateral by-products (Kashdan et al., 2006).

5. Conclusion

Our study merely provides preliminary data, therefore, calling for further development. Future research might disentangle the interplay among goals-beliefs-ER strategies, as well as the consequences in terms of psychopathology. In effect, experimentally manipulating individuals’ goals and beliefs would provide evidence for the role these processes play in orienting the emotion-regulation processes, and also in the field of psychopathology.

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