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### Age differences among older adults in the use of emotion regulation strategies. What happens among over 85s and centenarians?

Igone Etxeberria<sup>a</sup>, Itziar Etxebarria<sup>b</sup>, Elena Urdaneta<sup>c</sup> & Jose Javier Yanguas<sup>a</sup>

<sup>a</sup> Matia Instituto Gerontológico, San Sebastián, Spain

<sup>b</sup> Department of Basic Psychological Processes and their Development at the Faculty of Psychology, University of the Basque Country, San Sebastián, Spain

<sup>c</sup> Basque Culinary Center, San Sebastián, Spain

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## Age differences among older adults in the use of emotion regulation strategies. What happens among over 85s and centenarians?

Igone Etxebarria<sup>a\*</sup>, Itziar Etxebarria<sup>b</sup>, Elena Urdaneta<sup>c</sup> and Jose Javier Yanguas<sup>a</sup>

<sup>a</sup>Matia Instituto Gerontológico, San Sebastián, Spain; <sup>b</sup>Department of Basic Psychological Processes and their Development at the Faculty of Psychology, University of the Basque Country, San Sebastián, Spain; <sup>c</sup>Basque Culinary Center, San Sebastián, Spain

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**Objective:** Past research on emotion regulation strategies has concluded that older adults use more passive strategies than young adults. However, we found scarce research in this field focusing on the oldest old (i.e. those aged 85 and over). The aim of this study was to analyze whether or not differences exist in the way older adults aged 85 and over (centenarians included) use emotion regulation strategies, in comparison with younger age groups (65–74 and 75–84 years old).

**Method:** Participants were 257 older adults from Spain, all aged between 65 and 104. The sample was divided into four age groups: 65–74; 75–84; 85–94; and 95–104 years old. Participants completed the Strategy Questionnaire after reading each of the vignettes designed to elicit feelings of either sadness or anger. The questionnaire measures four types of regulation strategies: *Passive*, *Express*, *Solve* and *Seek*.

**Results:** The 85–94 age group and centenarians were found to use proactive (*Express*, *Seek*) and *Solve* strategies less in comparison with younger age groups when regulating sadness and anger. In contrast, an increased use of *Passive* strategies was observed in the regulation of both emotions in the 85–94 age group. Significant differences were also found between centenarians and younger age groups in the use of *Passive* strategies for sadness, although not for anger.

**Conclusion:** Age differences were observed in the use of emotion regulation strategies, with older age groups using proactive strategies less and passive strategies more.

**Keywords:** age differences; emotion regulation; oldest old; centenarians

### Introduction

Emotion regulation is defined as the internal transactional processes through which people consciously or unconsciously modulate one or more components of their emotions by changing their own experience, behavior or expression or by altering the situation that gave rise to the emotion in the first place (Eisenberg, Fabes, Guthrie, & Reiser, 2000; Gross, 1999). In Psychology, the term is used to refer to the diverse processes that in one way or another modify (attenuate, strengthen or transform) both the external expression and the subjective experience of any positive or negative emotion (Etxebarria, 2002).

Effective emotion regulation has been deemed one of the challenges of human development. In specific terms, given that some intense emotions have the power to disrupt and interfere with multiple psychological processes, the modulation of their experience and expression (through intrapsychic and interpersonal processes) is considered vital for exploratory behavior, cognitive processes and social competence (Fox, 1994).

In the field of Gerontology, a number of authors have focused on emotion regulation in older citizens. The results indicate that aging gives rise to better emotion regulation, which in turn means a greater degree of affective optimization (Alea, Diehl, & Bluck, 2004). The latest cross-sectional studies in this field have found that the capacity for emotion regulation improves with age

(Scheibe & Carstensen, 2010); in other words, as they grow older, people are better able to avoid negative emotions. Furthermore, a trend has also been observed which indicates that regulation capacity evolves from an instrumental or environmental strategy towards a more internal type of regulation (Blanchard-Fields, Stein, & Watson, 2004; Lohani & Isaacowitz, 2014).

The emotion regulation model proposed by Gross and John (1997, 2002) argues that diverse emotion regulation strategies are used by the same individual throughout the course of their emotional response. In general terms, attention has focused so far on the moment at which the different forms of regulation occur throughout the emotional process. The following strategies can be identified: (a) strategies focusing on antecedents, e.g. those dealing with context, situation and the meaning attached to the activation source, among others; and (b) strategies which focus on the response, e.g. the somatic changes experienced once the emotion has been completely triggered (Gross, 1998, 1999). The authors conclude that older adults may use preventive regulation mechanisms which focus more on modifying the antecedents of emotions than on altering the emotional response (Gross et al., 1997).

This same argument is defended by Carstensen's Socioemotional Selectivity Theory (2006). Carstensen suggests that as time horizons shrink, they trigger a

\*Corresponding author. Email: ietxeberrial@gmail.com

motivational change in older individuals which results in them setting themselves targets focused on emotion regulation (Carstensen, Mikels, & Mather, 2006). In this sense, older adults tend to attach greater importance to emotionally meaningful aspects, such as interpersonal relationships (Carstensen et al., 2006). In accordance with this theory, the selection of social relations that occurs with aging is a type of anticipatory regulation strategy (English & Carstensen, 2014). Emotions arise as a result of interactions with others, which is why one effective means of regulating them is to choose to interact only with those people who generate positive emotions and to avoid contact with those who do not (Gross, 1998). In this sense, the use of passive regulation strategies, such as, for example, avoidance of conflict in interpersonal situations, may be the strategy of choice for older adults, in an effort to ensure a better regulation of their emotions and, through that, a greater degree of harmony in the context of their interpersonal relations (Coats & Blanchard-Fields, 2008). Similarly, a proactive emotion regulation strategy, such as expressing one's emotions, may be counterproductive if the ultimate aim is to maintain good social relations and, in short, to enhance one's own well-being (Coats & Blanchard-Fields, 2008).

Consistently with these approaches, it has been observed that in addition to using proactive strategies less, older adults tend to use more avoidant or passive strategies, such as self-distraction or suppression (Birditt, Fingerhant, & Almeida, 2005; Blanchard-Fields & Coats, 2007; Blanchard-Fields et al., 2004; Márquez-González, Izal, Montorio, & Losada, 2008), with the aim of optimizing their interpersonal relations and avoiding interpersonal conflict.

The results cited above refer to studies conducted with people aged around 80. However, research into emotion regulation in people over the age of 85 is scarcer. One of the few references found indicates that, in comparison with sexagenarians and octogenarians, centenarians tend more to use cognitive strategies, while sexagenarians opt more for behavioral strategies in comparison with other groups (Martin, Kliegel, Rott, Poon, & Johnson, 2008). In specific terms, centenarians particularly tend 'not to worry', 'to pray' and 'to accept their health problems' (Poon, Martin, & Margrett, 2010). In short, they tend to use more passive strategies.

In conclusion then, both theoretical approaches and the scarce data which exists suggest that the oldest old use passive strategies more than proactive ones to regulate their emotions. Nevertheless, this field of study requires further research to explore in more depth which specific emotion regulation strategies are used by the oldest old, since very little is known about this aspect.

Hence, this study aims to answer the following research questions:

Do age differences exist in the use of emotion regulation strategies?

What kind of emotion regulation strategies do the oldest old use more?

## Methods

### Participants

This cross-sectional study was conducted with 257 older adults from Spain, all aged between 65 and 104. The sample was divided into four age groups: 65–74, 75–84, 85–94 and 95–104 years old.

Inclusion criteria for participating in the study were: (a) to be over 65 years of age; (b) not to be dependent in ADL (activities of daily living); (c) to have no need for round-the-clock care; and (d) not to have a mood disorder or an age-related neurodegenerative disease. For selection purposes, several screening measurement tools were applied. The Mini-Mental State Examination (Lobo, Ezquerro, Gómez-Burgada, Sala, & Seva-Díaz, 1979) was used to screen for cognitive impairment, the Goldberg Anxiety and Depression Scale (Goldberg, Bridges, Duncan-Jones, & Grayson, 1988) was used to screen for mood and anxiety disorders and finally, the Barthel Index (Mahoney & Barthel, 1965) and the Lawton Instrumental Activities of Daily Living Scale (Lawton & Brody, 1969) were used to measure ADL.

### Procedure

To recruit the younger participants (under 85s), we contacted the governing boards of social centers in towns adjacent to the city of San Sebastián. To recruit participants in the 85+ age group, and particularly centenarians, we contacted geriatric social workers from various municipalities in the province of Gipuzkoa. In the specific case of centenarians, we also contacted the social workers from all the public nursing homes and various private ones also in the province of Gipuzkoa. After an initial telephone conversation with the governing board or social workers, the researcher then contacted the participant himself or herself, and if they expressed an interest in participating, an interview was arranged. After explaining the aim of the study, participants were informed that participation was strictly voluntary, anonymous and confidential. After this, the participant's informed consent was obtained.

Participants were given the choice of being interviewed at our offices or in their own homes. Those that were able to come to the Matia Instituto Gerontológico were asked to attend a meeting at our offices in San Sebastián, Spain. However, in the case of the oldest old (85+), all preferred to conduct the interview at home due to poor health or lack of transportation. The centenarians living in Nursing Homes were interviewed in their private room.

Participants were informed of the purpose of the study and all relevant data protection issues. After obtaining their informed consent and background information, such as age, marital status, cohabitation, education level and occupation, participants were asked to fill in a questionnaire that assessed regulation strategies for two types of emotion: sadness and anger.

### Measures

The Strategy Questionnaire (Coats & Blanchard-Fields, 2008) was used to measure regulation strategies. The

original questionnaire measures two types of emotion: sadness and anger. Four vignettes are shown for each emotion and participants are asked to answer 22 items after reading each one. However, since the present study includes very old adults, we decided to adapt the questionnaire to their needs and administered only one vignette for each emotion.

Moreover, due to cultural differences, the vignettes were also adapted to our Spanish sample. To do this, we asked 100 older adults over the age of 65 about the situations that generate most sadness and anger in them in their daily lives. After analyzing the responses, we designed two vignettes, one representing sadness and the other anger. They are described below:

Sadness vignette: 'Someone with whom you have a very close relationship is suffering from a health problem. You are doing your best to help him/her but you are feeling sad.'

Anger vignette: 'There has been a misunderstanding with a person you trust. As a result, he/ she is telling people you have done things you haven't done. You feel angry about this situation.'

Participants completed the strategy questionnaire after reading each vignette. Participants responded to the items on a scale ranging from 1 (*I wouldn't do this at all*) to 4 (*I would definitely do this*). They based their ratings on the likelihood that they would use that strategy to handle the emotion (e.g. in the anger vignette, they rated the likelihood that they would use each strategy to handle their anger). An example strategy item is, 'I would talk to someone about how I feel'.

This questionnaire measures four types of regulation strategies: Passive, Express, Solve and Seek. Passive strategies include accepting the problem, avoiding the problem or suppressing one's feelings. Express strategies involve confronting the source of the problem and venting one's emotions (e.g. yelling). Solve strategies focus on solving the problem instead of regulating one's emotions. Seek strategies involve seeking emotional support or information from yourself or from other people. Express and seek strategies map onto the authors' theoretical conception of proactive emotion regulation, while solve strategies map onto direct problem solving (Blanchard-Fields & Coats, 2007; Blanchard-Fields et al., 2004). In this study, the reliability indexes for each of the factors in the sadness regulation section were: 0.87 for expressing emotions, 0.81 for seeking advice, 0.54 for passive strategies and 0.91 for problem solving. The reliability indexes for each of the anger regulation factors were: 0.87 for expressing emotions, 0.77 for seeking advice, 0.78 for passive strategies and 0.94 for problem solving.

## Results

To compare the emotion regulation strategies used by the four different age groups for each of the emotions studied (sadness and anger), an analysis of variance (ANOVA) was conducted, followed by *post hoc* Tukey multiple

Table 1. Descriptive statistics in different age groups related to the use of regulation strategies.

Regulation strategy	Age range	<i>n</i>	<i>M</i>	<i>SD</i>
<i>Sadness</i>				
Proactive: Express	65–74	75	15.57	4.93
	75–84	80	12.95	4.80
	85–94	69	11.06	4.57
	95–104	31	9.13	3.75
Proactive: Seek	65–74	75	13.91	3.58
	75–84	80	12.85	3.98
	85–94	69	10.46	3.71
	95–104	31	8.10	3.27
Passive strategies	65–74	75	14.17	3.20
	75–84	79	15.25	3.86
	85–94	69	16.57	4.03
	95–104	31	17.77	4.01
Solve	65–74	75	11.76	3.97
	75–84	80	10.75	3.87
	85–94	68	8.26	4.13
	95–104	31	6.03	2.97
<i>Anger</i>				
Proactive: Express	65–74	75	16.48	4.55
	75–84	80	14.89	4.17
	85–94	69	11.62	4.60
	95–104	31	10.23	4.16
Proactive: Seek	65–74	75	12.51	3.55
	75–84	80	11.64	3.42
	85–94	69	9.72	3.39
	95–104	31	8.16	3.52
Passive strategies	65–74	74	12.92	4.77
	75–84	80	13.68	5.04
	85–94	68	15.79	5.09
	95–104	31	15.03	6.17
Solve	65–74	75	11.76	3.97
	75–84	80	10.75	3.87
	85–94	68	8.26	4.13
	95–104	31	6.03	2.97

comparison tests. The descriptive statistics are given in Table 1 (sadness regulation strategies, Table 1 around here).

### *Sadness*

In the variable *proactive strategy: Express*, the ANOVA revealed a significant effect,  $F(3, 251) = 18.44$ ,  $p < 0.000$ , indicating that emotional expression tends to decrease with age. The *post hoc* test revealed significant differences between the 85–94 group and the youngest age group (65–74), and tendential differences between the 85–94 and the 75–84 groups (see Table 2, Table 2 around here). Significant differences were found between centenarians and the 65–74 and 75–84 groups, although not between centenarians and the 85–94 group.

Regarding the variable *proactive strategy: Seek*, the ANOVA revealed a significant effect,  $F(3, 251) = 23.26$ ,  $p < 0.000$ , indicating that people tend to seek advice less as they get older. The *post hoc* test revealed differences between the 85–94 group and the centenarian group, and

Table 2. Means comparison between different age groups regarding the use of regulation strategies.

Regulation strategy	Age range		p
	Sadness		
Proactive: Express	65–74	75–84	0.003
		85–94	0.000
		95–104	0.000
	75–84	85–94	0.068
		95–104	0.001
		85–94	0.226
Proactive: Seek	65–74	75–84	0.291
		85–94	0.000
		95–104	0.000
	75–84	85–94	0.001
		95–104	0.000
		85–94	0.018
Passive strategies	65–74	75–84	0.282
		85–94	0.001
		95–104	0.000
	75–84	85–94	0.149
		95–104	0.009
		85–94	0.444
Solve	65–74	75–84	0.370
		85–94	0.000
		95–104	0.000
	75–84	85–94	0.001
		95–104	0.000
		85–94	0.042
<i>Anger</i>			
Proactive: Express	65–74	75–84	0.113
		85–94	0.000
		95–104	0.000
	75–84	85–94	0.000
		95–104	0.000
		85–94	0.460
Proactive: Seek	65–74	75–84	0.404
		85–94	0.000
		95–104	0.000
	75–84	85–94	0.005
		95–104	0.000
		85–94	0.161
Passive strategies	65–74	75–84	0.798
		85–94	0.005
		95–104	0.221
	75–84	85–94	0.062
		95–104	0.596
		85–94	0.903
Solve	65–74	75–84	0.370
		85–94	0.000
		95–104	0.000
	75–84	85–94	0.001
		95–104	0.000
		85–94	0.042

between both these groups and the other two younger age groups (although not between the two younger age groups themselves).

In relation to *passive strategies*, the ANOVA also revealed a significant effect,  $F(3, 250) = 8.84$ ,  $p < 0.000$ , indicating that passive strategies tend to increase with age. The *post hoc* test revealed significant differences

between the 85–94 group and the 65–74 one, although not between the former group and the 75–84 one. Significant differences were also found between centenarians and the 65–74 and 75–84 groups, although not between centenarians and the 85–94 group.

Finally, as regards the *Solve* variable, the ANOVA revealed a significant effect,  $F(3, 250) = 21.26$ ,  $p < 0.000$ , indicating that people tend to try and solve their problems less as they get older. The *post hoc* test revealed significant differences between the 85–94 group and the two younger age groups. Centenarians differed significantly from all younger age groups.

To conclude, on the whole, the data indicate that, in comparison with younger age groups, those aged between 85 and 94 tend to have less recourse to the proactive strategies expressing emotions and seeking advice, and are less likely to try to solve their problems as a means of handling emotions of sadness. They do, however, tend to use passive strategies more than their younger counterparts in the 65–74 age group.

Those in the oldest age group have less recourse to the proactive strategies expressing emotion and seeking advice than the 65–74 and 75–84 groups, and also tend to use problem solving less as well. They do tend to use passive strategies more though, at least in comparison with the 65–74 and 75–84 groups.

### Anger

The following are the results obtained for the different groups in relation to anger regulation strategies. The descriptive statistics of the anger regulation strategies are given in Table 1.

In the variable *proactive strategy: Express*, the ANOVA revealed a significant effect,  $F(3, 251) = 23.21$ ,  $p < 0.000$ , indicating that emotional expression tends to decrease with age. The *post hoc* Tukey test revealed significant differences between the 85–94 group and the two youngest age groups (see Table 2). Significant differences were also found between centenarians and the 65–74 and 75–84 groups, although between centenarians and the 85–94 group.

In the variable *proactive strategy: Seek*, the ANOVA revealed a significant effect,  $F(3, 251) = 15.63$ ,  $p < 0.000$ , indicating that people tend to seek advice less as they get older. The *post hoc* test revealed significant differences between the 85–94 group and the two younger age groups. As with the previous strategy, significant differences were observed between centenarians and those in the 65–74 and 75–84 age groups, although not between the two oldest groups.

Regarding *passive strategies*, the ANOVA revealed a significant effect,  $F(3, 249) = 4.27$ ,  $p = 0.006$ , indicating that passive strategies tend to increase with age. The *post hoc* Tukey test revealed significant differences between the 85–94 group and the 65–74 one, and tendential differences between the 85–94 group and the 75–84 one. No significant differences were found between centenarians and any of the other three age groups.

Finally, as regards the *Solve* variable, the ANOVA revealed a significant effect,  $F(3, 250) = 21.26, p < 0.000$ , indicating that people tend to try and solve their problems less as they get older. The *post hoc* test revealed significant differences between the 85–94 group and the two younger age groups. Centenarians differed significantly from all younger age groups.

Thus, in light of the results outlined above, it can be concluded that people aged between 85 and 94 are less inclined to use proactive strategies (expressing emotions and seeking advice) to regulate anger than their counterparts in younger age groups. In other words, they are less likely to engage in direct confrontation with the emotion in question. Moreover, the results also indicate that they are less likely to try and solve their problems. Nevertheless, the use of passive strategies (acceptance, suppression and avoidance) increases in this age range, at least in comparison with the 65–74 age group (and tendentially also with the 75–84 one).

Centenarians are less inclined to use both proactive strategies (expressing emotions and seeking advice), at least in comparison with the 65–74 and 75–84 age groups, and are also less likely to try and find a solution to their problems. However, and curiously enough, no significant differences were observed between this group and any of the other age groups in relation to the use of passive strategies.

## Discussion

According to previous research, age-related differences exist in relation to the use of emotion regulation strategies. Some authors have found that older adults are less inclined to use proactive emotion regulation strategies, i.e. strategies that involve directly confronting negative emotions (Blanchard-Fields & Coats, 2007; Blanchard-Fields, Stein, & Watson, 2004), and are more inclined to use either passive or preventive strategies (English & Carstensen, 2014; Gross et al., 1997). Moreover, older adults tend to express certain emotions, such as anger, to a lesser extent than their younger counterparts (Coats & Blanchard-Fields, 2008).

The results of this study are consistent with these findings in older adults, since in our sample, the 85–94 age group claimed they would use proactive strategies (*Seek* in both sadness and anger regulation and *Express* in anger regulation) and problem solving (*Solve*) less than those in the two younger age groups. Moreover, at least in comparison with the 65–74 group, they claimed they would also use emotional expression in sadness regulation less and *Passive Strategies* (acceptance, suppression and avoidance) in general more.

In the specific case of centenarians, previous studies found that people aged 100 and over tend to engage less in behaviour-based coping and more in cognitive coping strategies (Martin, Kliegel, Rott, Poon, & Johnson, 2008). Furthermore, studies such as the one conducted by Poon, Martin and Margrett (2010) found that centenarians tend to use passive regulation strategies such as acceptance

and prayer more (*Passive Strategies*), and emotion-centered coping strategies (*Proactive Strategies*) less.

The results of this research project corroborate these previous findings. The centenarians in our sample claimed to use *Solve* less as a means of regulating both sadness and anger, in comparison with the three younger groups, and to use proactive strategies (*Express* and *Seek*) less also for both sadness and anger, at least in comparison with the 65–74 and 75–84 age groups. We also observed an increased use of *Passive Strategies* (avoidance, acceptance and suppression) in this group as a means of regulating sadness, in comparison with the two younger groups mentioned above. However, this greater use of passive strategies was not found in relation to anger.

We will discuss this last result (for which no hypothesis had been formulated) later on, but first let us analyze the general results.

These results make sense since, in comparison with those over the age of 85, sexagenarians and septuagenarians are more likely to still be able to participate in a range of social and other activities (Martin, Poon, Kim, & Johnson, 1996); for those aged 85 and over, on the other hand (and especially centenarians), functional, sensorial and cognitive limitations may have a negative effect on the use of proactive and problem solving strategies, all of which seem to require greater cognitive and functional capacity (Ochsner & Gross, 2005; Martin et al., 2008). In other words, different regulation strategies may be applied more successfully at different times of life (e.g. Opitz, Rauch, Terry, & Urry, 2012; Isaacowitz & Blanchard-Fields, 2012).

Some authors have postulated that when someone considers the situation with which they are faced as being susceptible to change, they tend to use active coping strategies. However, the critical events of aging may be perceived by older adults as occurrences beyond their control, or as situations which cannot be changed through intervention. This would explain why the oldest old tend to prefer passive rather than active strategies. Passive coping or regulation may be considered adaptive when the situation cannot be changed, and the only alternative is to accept it (Baltes & Freund, 2003). This makes sense in very old adults and centenarians, since cognitive and functional constraints may pose problems when attempting to change the situation.

In short, we can conclude that from 85 years of age onwards, people tend to opt less for proactive strategies when regulating their emotions; in other words, they tend to choose not to directly confront the emotions and seek a solution to their problems. At the same time, an increase in passive strategies is observed during this period, which is clearer in the case of sadness than in relation to anger.

This conclusion is consistent with recent studies in the field of neuroscience, which have found that older adults (mean age: 65.8) give in less to negative emotions (regret) than their younger counterparts (Brassen, Gamer, Peters, Gluth, & Büchel, 2012), since they perceive themselves as having fewer resources at their disposal to redress the negative effects of these emotions. A lesser degree of

involvement is understood as a protective mechanism as well as a strategy for maintaining emotional well-being, which in turn may be viewed as a means of fostering resilience.

Our results prompt us to question the hitherto dominant idea in Gerontology and Psychology regarding the desadaptive nature of passive strategies (Day & Livingstone, 2001; Gaab, Rohleder, Nater, & Ehlert, 2005; Penley, Tomaka, & Wiebe, 2002). When someone believes there is nothing they can do to change the situation, having recourse to these strategies may in fact be the most adaptive choice possible. Very old adults modify the way in which they handle different situations in order to adapt to them, even though this may involve using strategies that at first appear desadaptive (Greve & Staudinger, 2006).

This prompts us to ask whether perhaps, among the oldest old, well-being may be maintained by using passive strategies (avoidance, acceptance and suppression) or, at least, by using proactive strategies (expressing emotions and seeking advice) to a much lesser extent. The results of this present study raise the question of whether proactive strategies are really adaptive at all ages and in all circumstances, suggesting that, among the oldest old, passive strategies may perhaps be more adaptive in relation to maximizing well-being. This means that a proactive approach may not always be the most desirable option in human development.

Before discussing the limitations of the study, we would like to add a brief comment on one specific result, for which no hypothesis had been formulated. We are referring to the greater use of passive strategies to regulate sadness but not anger found in centenarians in comparison with the under 85 age groups. We believe that this result may be partly explained by the nature of the anger story posed, which probably provoked fairly intense feelings of anger. The tendency to act in reaction to anger does not exactly facilitate passive strategies; indeed, quite the opposite. Thus, for example, in the circumstances described in the story, acceptance would probably require a major effort (i.e. a large expenditure of energy) that may be too much for centenarians. In any case, this is a result that is worth exploring in more depth in the future.

The study has a number of limitations that should be taken into consideration when interpreting the data. The first is related to the cross-sectional nature of the design, which makes it difficult to interpret the differences found. Bearing in mind that the sample group comprised an age range of 65–104, it is logical to assume that people of different ages will be influenced not only by processes of developmental change, but also by the fact of belonging to different generations. Some authors have suggested that cohort effects may explain the differences found in relation to both emotional experience and subjective well-being (Felton, 1987; Klerman & Weissman, 1989). According to Felton, sociocultural processes play a key role in forming and maintaining the affective experience. The political and social changes of the twentieth century have had a major influence on the attitudes, beliefs, political opinions, etc. of older adults. Thus, the age differences

observed may in fact be due to age-related changes, but they may also be the result of other factors, such as those associated with cohort effects. We should, therefore, be cautious when interpreting the results.

Another of the study's obvious limitations is the fact that the sample comprised only older adults or the oldest old not in a state of ADL dependence, and with no cognitive impairment. In other words, it only comprised older adults aging in a satisfactory way. Although this was considered necessary due to the characteristics of the instruments used and the aim of the study itself, future research may wish to include a more representative sample of older adults and the oldest old.

Furthermore, while we consider the size of the sample of over 85s to be sufficient, a larger group would have been preferable (particularly for the centenarian group). Needless to say, however, it is far from easy to find large samples in this age group.

To conclude, we can state that age differences do exist in the use of emotion regulation strategies to regulate sadness and anger. The oldest old, including centenarians, tend to use proactive strategies and problem solving less to regulate their emotions; in other words, they are less inclined to directly confront their emotions and actively seek solutions to their problems. They do, however, use passive strategies more, at least to regulate sadness. Everything suggests that the critical events of aging (particularly at very advanced ages) are perceived by older adults as things they cannot change, or as situations over which they have little or no influence. This probably explains the choice of passive rather than proactive strategies among the oldest old. These results prompt us to question whether proactive strategies are really adaptive at all ages and in all circumstances. The fact that passive strategies are so prevalent in healthy very old people suggests that the choice of passive strategies could perhaps be a more adaptive means of optimizing emotional well-being.

#### Disclosure statement

No potential conflict of interest was reported by the authors.

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