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# *Hugging as a buffer against distal fear of death*

## *Abrazar atenúa el miedo distal a la muerte*

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**Resumen:** Los abrazos pueden ser una fuente de salud, comodidad o placer, aunque estos efectos dependen del contexto en el que se produce el contacto físico (Ellingsen et al., 2016). En el presente estudio se analizó la capacidad del abrazo, para minimizar la accesibilidad del pensamiento de muerte y la ansiedad asociada a él cuando el pensamiento de muerte es significativo. La muestra estuvo compuesta por 90 participantes, 34 hombres (37,8%) y 56 mujeres (62,2%). Un diseño experimental con dos factores fue utilizado, un factor intra-sujeto de dos condiciones, tiempo (Pre-condición vs Post-condición), y un factor inter-sujeto (con abrazo vs sin abrazo). Los participantes se distribuyeron aleatoriamente equitativamente por sexo en los dos grupos, un "grupo con abrazo" (N=45) y un "grupo sin abrazo" (N=45). Todos los participantes completaron inicialmente los cuestionarios de pre-condición y 30 minutos más tarde fueron sometidos a la tarea de la saliencia de la mortalidad (SM). La inducción de la SM fue seguida por la actividad de la condición experimental. En esta sesión, los participantes en la "condición de abrazo" recibieron un abrazo que duró 20 segundos. Posteriormente volvieron a completar los cuestionarios. Los participantes del grupo "sin condición de abrazo" completaron los cuestionarios de condición al final de la tarea de SM, después de esperar 20 segundos sin hacer ninguna actividad, sentados. Los resultados sugieren que el abrazo ayuda a amortiguar la reacción emocional negativa a los pensamientos de muerte, pero sin modificar la conciencia de la gravedad de la situación.

**Palabras clave:** abrazo, contacto físico, saliencia de mortalidad.

**Abstract:** Hugging can be a source of health, comfort or pleasure, although these effects depend on the context in which the physical contact takes place (Ellingsen et al., 2016). The present study analyzed the capacity of hugging, to minimize death-thought accessibility and the anxiety associated with it when the thought of death is salient. The sample consisted of 90 participants, 34 men (37.8%) and 56 women (62.2%). An experimental design was used with two factors, a two condition intra-subject factor, time (Pre-condition vs Post-condition), and an inter-subjects factor (with hugging vs without hugging). Participants were randomly distributed equally by sex in the two groups, a 'with hugging group' (N=45) and a 'without hugging group' (N=45). All participants initially completed the pre-condition questionnaires and 30 minutes later they were subject to the mortality salience (MS) task. The MS induction was followed by the experimental condition activity. In this session, the participants in the 'hugging condition' received a hug lasting 20 seconds. Subsequently they completed the questionnaires again. The participants in the 'without hugging condition' group completed the post-condition questionnaires at the end of the MS task, after waiting 20 seconds without doing any activity, sitting. The results suggest that hugging helps to buffer the negative emotional reaction to the death thoughts but without modifying awareness of the seriousness of the situation.

**Keywords**: hugging, mortality salience, physical contact.

## Introduction

Being touched arouses positive emotions. Hugging, in particular, transmits social support (Cohen, Janicki-Deverts, Turner, & Doyle, 2015) and could therefore ameliorate the effects of threats perceived in a social setting. But it may also distract from negative emotions. Thoughts about the proximity of death affect the strategies people use to cope with the experience of death (e.g., Granek, Barbera, Nakash, Cohen, & Krzyzanowska, 2017; Zheng, Lee, & Bloomer, 2018). For people who are habitually exposed to death it may be healthy and/or useful to modify access to death thoughts or minimize the anxiety they cause, even when its presence is not immediate or direct. Research has largely centered on understanding how physical contact is processed and its psychosocial effect on interdependent relationships, behavior and decision making (Ditzen, Neumann, Bodenmann, et al., 2007; Hertenstein, Keltner, App, Bulleit, & Jaskolka, 2006; Ellingsen, Leknes, Løseth, Wessberg, & Olausson, 2016; Monroe, 2009; Ravaja, Harjunen, Ahmed, Jacucci, & Spapé, 2017). Recently Koole, Tjew, Sin and Schneider (2014) provide evidence for the effect that touch can have on reducing death anxiety. The hug is a particular way of touching especially affective. The present study analyzes the capacity of hugging, to minimize death-thought accessibility and the anxiety associated with it when the thought of death is salient.

Hugging can be a source of health, comfort or pleasure, although these effects depend on the context in which the physical contact takes place (Ellingsen et al., 2016). A relevant context is one in which the environment is threatening and a source of fear. In these situations the comfort of a hug, even from a stranger, may be welcome, since it offers socio-emotional support. Being touched has a generally positive effect on emotional responses (Broadwell & Light, 2004; Diamond, 2000; Grewen, Anderson, Girdler, & Light, 2003; Spapé, Harjunen, & Ravaja, 2017; Suvilehto, Glerean, & Dunbar, 2015). Contact between individuals is desirable not only because it transmits comfort, support and sympathy (Faihurst, Loken, & Grossman, 2014) but also because it can overcome sorrow or alleviate negative emotional states (Ellingsen et al., 2015; Mancini, Beaumont, Hu, Haggard, & Iannetti, 2015). Studies have shown that even short and apparently trivial physical contact signaling a positive social bond can influence emotions (Spapé et al., 2017). There is little empirical evidence to show that hugging can help people cope with threatening situations such as fear of death. The threat of death can arouse anxiety or a negative affective state.

We consider that the effect of physical contact to alleviate these negative emotional states will be twofold in a mortality salience context. On one hand, it can alleviate the state of anxiety (Lambert et al., 2014), and on the other it

can alleviate the feeling of the threat of death. By focusing the person's attention on the social support, comfort or positive emotions they feel, physical contact may distract from the unconscious death thought. The social support transmitted through hugging could activate and make more accessible the relevance of the social world without the reactive need to defend it, inhibiting the accessibility of death-related thoughts. We study the consequences of a hug received immediately after mortality, about the fear of death and well-being.

## Method

*Participants*

The sample consisted of 90 participants, 34 men (37.8%) and 56 women (62.2%); 78 participants (86.7%) had or were engaged in university education and were aged between 18 and 61 years old (M=30.99; SD=10.09). The participants were recruited to participate in a study on non-verbal behavior through the university's public mailing list. We obtained the participants' explicit consent to take part in the research, and the confidentiality and anonymity of their responses was guaranteed by assigning each participant a code to identify their responses at each stage of the study.

*Design*

To test the study hypotheses we used a design with two factors, a two condition intra-subject factor, time (Pre-condition vs Post-condition), and an inter-subjects factor (with hugging vs without hugging). The participants were randomly distributed in the two groups, a 'with hugging group' (N=45) and a 'without group' (N=45). Participants were distributed equally by sex. There were no differences between the two groups in terms of age (F=.404; p=.527), or educational level ($\chi 2$=1.538; p=.215). The dependent variables were measured on Pre-condition and Post-condition.

*Measures*

*Death Thougt Accessibility (DTA).* We assessed the degree to which implicit death thoughts were present following mortality salience induction. The participants performed the death thought accessibility (DTA) task, which consists of a word fragment completion exercise (Greenberg Pyszczynski, Solomon, Simon, & Breus, 1994; Huang & Wyer, 2015). Some of the words had two possible solutions, one related to death and the other with no relation to death. The maximum score for words associated with death was five.

*State anxiety.* This was assessed using the State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1970), on a 4-point Likert-type scale ranging from 0 (not at all) to 3 (very much). Specifically, we used the state anxiety subscale (20 items). This refers to anxiety as a transitory emotional condition and includes two dimensions: positive state anxiety

and negative state anxiety. We used two measures. The first evaluates anxiety in a positive state, obtained from the mean score of the sum of the affirmative items, such that high scores reflect low anxiety (Pre-condition: Alpha de Cronbach=.891; Post-condition: Alpha de Cronbach=.894). The second evaluates anxiety in the negative state (Pre-condition: Alpha de Cronbach=.875; Post-condition: Alpha de Cronbach=.927), following the same procedure, in which high scores represent high anxiety.

*Affective State.* This was assessed using the PANAS-X (Watson, Clark, & Tellegen, 1988), on a 7-point Likert-type scale ranging from 1 (Never) to 7 (Extremely). Evaluate the emotional state of the person using words that describe him in a transitory sense by the time he is requested. We have followed the recommendation of the authors (Watson et al., 1988) to work with two dimensions, one positive (Pre-condition: Alpha de Cronbach=.927; Post-condition: Alpha de Cronbach=.867) and one negative (Pre-condition: Alpha de Cronbach=.756; Post-condition: Alpha de Cronbach=.884).

*Fear of death.* This was assessed using a the Fear of the Anxiety Death Scale (Miaja & Moral, 2012), on a 7-point Likert-type scale ranging from 1 (strongly agree) to 7 (strongly disagree). This is a scale composed of 3 items that assess fear of death (Pre-condition: Cronbach's Alpha = .728; Post-condition: Cronbach's Alpha = .737), in which high scores indicate high fear of death (e.g. 'I am afraid of dying violently').

*Anxiety before death.* This was assessed using a the Fear of the Anxiety Death Scale (Miaja & Moral, 2012), on a 7-point Likert-type scale ranging from 1 (strongly agree) to 7 (strongly disagree). It is a scale composed of 9 items (Pre-condition: Alpha de Cronbach=.890; Post-condition: Alpha de Cronbach=.855) in which high scores indicate great anxiety about death (e.g. 'coffins make me anxious').

*Procedure*

The experimental study was performed individually. Half the participants were subject to the hugging condition and half were not. The researcher receives the participants individually in a room. The procedure is performed with each participant independently. All participants initially completed the pre-condition questionnaires and 30 minutes later they were subject to the mortality salience (MS) task. To induce MS and evaluate death-thought accessibility we asked two open questions adapted from Greenberg et al. (1994): 'briefly describe the emotions that the thought of your own death arouses in you', and secondly, 'write down, as specifically as you can, what would happen if you were physically dead.' As an innovative aspect in this study, participants were presented with a drawing of a tombstone on which they were asked to write their name and the date of their death.

The MS induction was followed by the experimental condition activity. In this session,

the participants in the 'hugging condition' received a hug lasting 20 seconds. Subsequently they completed the questionnaires again. The person who hugs is an assistant outside the investigation. Another assistant timed the embraces to ensure they lasted no less than 20 seconds and then asked the participant giving the hug to finish. The participants in the 'without hugging condition' group completed the post-condition questionnaires at the end of the MS task, after waiting 20 seconds without doing any activity, sitting. The pre and post condition questionnaires were the same in both cases. This research was approved by the Institutional Review Board (IRB) and performed with approved protocol and informed consent process (2436). Confidentiality of personally-identifiable information has been maintained for privacy safeguards.

## Results

Firstly, we perform a MANOVA to analyze if there are differences between both groups at the time Precondition. Secondly, we obtain the post-pre differential condition scores of the dependent variables and perform a MANOVA analyzing the effect of the groups on the exchange scores.

The MANOVA comparing both groups (with hugging vs without hugging) in Pre-condition indicates that there are no significant differences between both groups ($F=.436$; $df=7$; $p = .877$; $\omega 2 = .036$). This indicates that the groups initiate the tasks proposed in each condition without relevant differences between them. The MANOVA that compares both conditions in the differential scores that evaluate the Post-Pre change based on gender indicates that there are no differences attributable to the male-female differences ($F=1.349$; $df=1$; $p = .245$; $\omega 2 = .089$). When we test the Post-Pre condition change the MANOVA indicates that there are significant differences between both groups ($F=13.283$; $df=7$; $p < .000$; $\omega 2 = .531$). The Levene test of equality of variance errors is only fulfilled in the DTA post-pre variable, and STAINEG post-pre. For its part, the Box M indicates the variance matrices of the dependent variables are different for each group ($M = 52.036$; $p = .012$).

The observed values indicate that there has been a significant change in the set of scores that may be associated with the hug condition, in the sense of improving the negative affective state and the fear of the participants (Table 1). Negative affective states and anxiety decrease after the hug compared to the group that has not been hugged. The fear of death increases in both groups but increases less in the embraced group, and access to thoughts of death decreases significantly in the embraced group**.**

**Table 1.**

MANOVA with hugging (N=45) and without hugging (N=45)

| | *M* | *SD* | *F* | *p* | $\omega^2$ |
|---|---|---|---|---|---|
| STAI POS Change | | | .862 | .356 | .010 |
| Post-Pre | .31 | .72 | | | |
| With hugging | .47 | .94 | | | |
| Without hugging | | | | | |
| STAI NEG Change | | | 42.425 | <.001 | .325 |
| Post-Pre | -.11 | .79 | | | |
| With hugging | .98 | .79 | | | |
| Without hugging | | | | | |
| PNASPOS Change | | | 1.247 | .267 | .014 |
| Post-Pre | .51 | 1.54 | | | |
| With hugging | .99 | 2.12 | | | |
| Without hugging | | | | | |
| PNASNEG Change | | | 12.471 | .001 | .124 |
| Post-Pre | -.74 | 1.17 | | | |
| With hugging | .35 | 1.70 | | | |
| Without hugging | | | | | |
| DEATH FEAR ATTITUDE Change | | | 6.677 | .011 | .071 |
| Post-Pre | .41 | 1.58 | | | |
| With hugging | 1.50 | 2.32 | | | |
| Without hugging | | | | | |
| DEATH ANXIETY ATTITUDE Change | | | 1.493 | .225 | .017 |
| Post-Pre | .27 | 1.41 | | | |
| With hugging | .70 | 1.89 | | | |
| Without hugging | | | | | |
| DTA Change Post-Pre | | | 8.413 | .005 | .087 |
| With hugging | -.76 | 1.30 | | | |
| Without hugging | -.06 | 1.39 | | | |

## Discussion/Conclusion

The present study explored the possibilities of hugging as a buffer against fear of death. When hugs were given to individuals who felt threatened by mortality salience, we observed that hugging mitigates anxiety about death and the distal feeling of threat brought about by this thought. When mortality salience is activated, it seems that hugging is able to buffer the negative emotional effect of this experience.

Death is an inevitable part of life. However, neither death thoughts nor feeling threatened by them are inevitable. The study shows that the effect of mortality salience can be reduced by using hugs as a buffer. The results of this study suggest that hugging may be an appropriate strategy for reducing fear and anxiety aroused by death thoughts in contexts of high mortality salience. In certain settings it can be healthy to inhibit the threat of death thoughts. For example, people who accompany those in the final stages of their life or their family members have active and salient death thoughts. A hug can help people who are coping with mortality salient situations by inhibiting these thoughts, which are lodged in the unconscious. Social support can reduce the stress brought on by these experiences and situations (Taylor, 2011). People who are constantly in the presence of death thoughts may benefit from social support, and hugging one of the main ways in which that support is communicated (Light et al., 2005). Health professionals are not always given adequate training to cope with patient death. If death thoughts are not dealt with appropriately, professionals' confidence in the way they deal with death may be undermined, which can affect the quality of the care they give (Zheng & Bloomer, 2017). Those who are in close proximity to experiences of death must live with the consciousness of their own mortality and the anxiety associated with it. The hugging strategy may help to ameliorate the difficulties of coping with death thoughts embedded in the long-term memory of a professional or of patients and family members. Fear of death and the deceased, and the emotional component involved in the

process of dying, can be modified, thereby facilitating a better and more appropriate contact with terminal patients and their families. Professionals exposed to patient death tend to resolve their thoughts of death through proximal defense alternatives, such as thoughts that help to reduce or avoid the fear these thoughts arouse (e.g. Blasiak, 2010; Hinderer, 2012; Zheng et al., 2018; McKenzie, Brown, Mak, & Chamberlain, 2017). However, little research has been carried out on how to reduce unconscious death thoughts reflected in the way we defend the moral values of our social worldview.

The study has certain limitations. First, the design did not allow us to study the duration of the buffer effect on the fear of death. Finally, to generalize the results, the study should be replicated with an appropriate sample in a professional setting. Context might modify the buffering effect of hugging on death thoughts, and the results of this study, obtained in a professionally neutral context, are insufficient to guarantee the inhibition of such thoughts in other contexts.

Future studies could explore how to create spaces where hugging is encouraged among professionals who work in death-related areas, and with relatives and/or patients. For some people, hugging is too intimate a form of physical contact to engage in without prior preparation. Future studies should therefore differentiate between 'sincere' and automatic hugs. We decided on a 20-second hug for our analysis as we deemed this to be sufficient time to receive the supportive effect transmitted through the physical contact. We considered that a regular quick automatic hug would not have the same effect in the distal management of mortality salience. This is one aspect of hugging in relation to the experience of death that deserves more thorough analysis. Additionally, this study revealed that hugging modified emotional reactions to situations of fear, such as fear of death. Research into hugging could examine more deeply the effect physical contact can have on the way individuals deal with threatening social situations, and whether the mechanism triggered by these effects is transmitting social support or is a behavior that distracts attention away from the fear. Longitudinal studies could also usefully analyze different time periods to clarify the persistence of the hug's buffering effect on the death thought over time. People defend their social worldview as a way of emotionally distancing themselves from the fear of death thoughts. This affective distance might be projected in high mortality salient situations, which in a hospital setting could lead to lower emotional quality of the care given. Hugging may enhance the way patients are treated, and future research should explore what form this effect might take.

In sum, the results suggest that hugging helps to buffer the negative emotional reaction to the death thoughts but without modifying awareness of the seriousness of the situation.

These results contribute to the literature, first by exploring how to cope with the indirect and contextual threat from death thoughts, and second by showing how physical contact as a distal strategy can reduce the threat of such thoughts.

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