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INFLUENCE OF THE FEAR OF DEATH ON BODY IMAGE EVALUATION

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ABSTRACT

Background: Research on the consequences of fear of death often consists of classical investigations within the sphere of social psychology. However, the aspect of body image regarding this issue remains largely unexplored.

Aim of the study: The goal of the conducted experiment was to examine the mechanisms reducing the fear of death. The respondents had two options to choose from: (1) increasing self-esteem in terms of physical attractiveness, or (2) lowering the rating of the body image presented in the photographs.

Material and methods: The study was conducted using the following tests: (1) the Memory Test, developed by Łukaszewski and Buczny; (2) the Body-Esteem Scale (BES), developed by Franzoi and Shields; (3) the UMACL Mood Adjective Checklist, developed by Mathews, Chamberlain, and Jones; and (4) the Body Shape Attractiveness Questionnaire. In this report, we present results of an analysis of 221 respondents (108 women and 113 men).

Results: Death-related thoughts influence the perception of female body attractiveness. Respondents with awareness of mortality salience rated the attractiveness of body shape as lower than respondents from the control group.

Conclusions: The present experiment confirmed the influence of fear of death on the evaluation of cultural and biological standards of female physical attractiveness, as well as, the hesitation of participants' self-esteem and mood related to sex. The lack of critical evaluation of others and a positive self-evaluation effectively protects an individual against mood deterioration, and these effects were observed among men. However, these mechanisms do not apply to women, since women reacted critically to both body shapes in the photographs and their own bodies.

KEYWORDS: fear of death, body image, ideal standard of attractiveness, self-esteem, mood

BACKGROUND

Terror management theory, created by Tom Pyszczynski, Jeff Greenberg and Sheldon Solomon [1], defines the mechanisms and consequences of experiencing mortality salience. According to the theory's assumptions, the attempt to accept mortality is the main driver of human behavior, whereas culture and self-esteem constitute effective mechanisms created by humans to face death. Both mechanisms aim to provide humans with tools to "fight" the fear of death and, as a result, provide them with the sense of a meaningful life and security [2,3]. There are two types of adaptation processes. The first type, proximal defenses, are conscious, rational attempts to remove death-related thoughts from the focal attention [4]. Distal defenses, in contrast, activate anxiety buffers by sustaining beliefs that an individual's worldview is the right one, as well as, maintaining and increasing self-esteem [5,6]. The worldview protects the individual, provided that certain conditions are met. In particular, an individual shall believe that his/her worldview as well as the standards and values that are related to it are significant and identify with a given part of culture [7]. The individual must also have high self-esteem regarding the fulfillment of cultural standards [8]. Coping with deathrelated anxiety involves mainly intergroup bias, which involves a defense of one's own views and attachment to those who share similar believes, as well as, rejection and disapproval of opposing worldviews and the people who share them [1,8–10]. Defining a worldview,



in relation to terror management theory, may concern significantly narrower issues than origin, religion, or political beliefs. It may relate to, for instance, physical attractiveness, which is a prized value in western culture [11,12].

The second buffer that defends against the fear of death is high self-esteem, defined as an evaluation of an individual's own worth. Worth determines whether an individual perceives himself as good, competent, and decent, as well as, his/her affective reaction to him/herself, which regulates mood [13]. According to Łukaszewski [14], the new category that allows for an explanation of human behavior resulting from the fear of death is mood regulation mechanisms, since it is obvious that experiencing mortality salience causes unpleasant emotions and thus, humans are naturally motivated to change them into more positive ones.

Satisfaction with appearance, self-evaluation of shape and body parameters, and finally size perception – which are all parts of body image – are absolutely subject to change in the event of experiencing mortality salience. Jamie Goldenberg and colleagues [15] showed that people who feel satisfaction with their own appearance when experiencing the arousing fear of death find their body image, which is a component of self-structure, to be more significant. Research conducted by Łukaszewski [14] showed that manipulation of mortality salience increases clear anxiety among individuals who are unsatisfied with their appearance, and are also more sensitive to death-related signals.

Baldwin and Wesley [16] and others conducted research on the meaning of interpersonal relations and perceiving as well as judging others as a buffer that defends against existential anxiety. They showed that experiencing mortality salience does not influence the evaluation of others, but that the level of the evaluator's self-esteem clearly influences the polarization. People with a high self-esteem formulate extreme opinions, which, according to Łukaszewski [14], means striving towards equivalence (i.e., a reduction of uncertainty).

One of the most effective ways to reduce the fear of death is affiliation, especially when joining a group that fosters the maintenance of self-esteem. If, however, the group influences the self-esteem of an individual negatively, then the individual will distance him/ herself from the group [17].

It is not surprising that the self-objectification theory by Barbara Fredrickson and Ann Roberts [18] became an inspiration to widespread research. This concept assumes that people have a tendency to perceive the female body as an object that is under constant observation and evaluation, mainly in terms of sexual attractiveness. This objectification of the body is internalized by women, which results in constant monitoring and evaluation of appearance and comparing the shape of one's own body to the existing cannons of beauty [19]. In the event of mortality salience, the tendency to objectify the body increases, and this increase is particularly clear among women. Objectification of women is stronger among men from the control group, and women who experience the arousing fear of death [20]. Research on the evaluation of physical attractiveness conducted by Mark Landau and associates [21] showed that men from the control group liked pretty and sexily dressed women more in comparison to women from the control group; however, in the event of mortality salience, the rating made by men was lower and did not differ from those made by women. Further research showed differences in the evaluation of female attractiveness that depended on whether or not their sexuality was exposed. When the female image was sexual and/or provocative, female attractiveness was assessed to be significantly lower in the event of mortality salience. Landau emphasizes that, in contrast to women, men who experience the fear of death evaluate women who expose their sexuality more rigorously. Goldenberg and associates [15] claim that a negative evaluation of the female sexual image is made when the respondents recognize the animal nature of humans in women.

Extensive research shows that the most attractive female body shape is similar to the shape of the letter 'A', corresponding to the body proportions 90-69-99. However, the body proportions of models and beauty competition finalists amount to 90-60-90, and their shape is more similar to the shape of the letter 'H'. According to Andrzej Szmajke [22], the preference for the female body shape with wide hips is evolutionarily determined; however, the body shape with an equal size of breast and hips constitutes a new pattern of female attractiveness that is determined culturally.

AIM OF THE STUDY

The goal of the conducted experiment was to examine the mechanisms that reduce the fear of death.

MATERIAL AND METHODS

Respondents

A total of 221 students (108 female and 113 male) from Opole University, Opole University of Technology, and the Medical University of Opole took part in the research. All respondents were randomly assigned to the groups. Participation in the study was completely voluntary and anonymous. The average age of respondents was 20.15 years (SD = 1.37). The study protocol was approved by the Research Project Committee of the Faculty of Psychology and Humanities, and the Andrzej Frycz Modrzewski University in Cracow, Poland.

Study design and setting

The respondents had two options to choose from: 1) increasing self-esteem in terms of physical attractiveness, or 2) lowering the rating of the body image presented in the photographs. The assessment was applied to three dimensions: 1) sexual attractiveness (biological sphere), 2) fondness (social sphere), and 3) physical attractiveness, which may be evaluated based on biological ('A' shape) and social-cultural ('H' shape) criteria. It was assumed that shapes that reflect the biological pattern of attractiveness will be rated as lower, given that these significantly respond to the sphere of human sexuality.

These mechanisms seem to be more universal. Reactions to the fear of death can also reflect mood regulation mechanisms that are caused by other unpleasant emotions. An explanation of this process (for e.g., in the context of social assessment of physical attractiveness of others) can be useful, for example, in understanding non-adaptive strategies of emotional control among obese individuals.

Based on the theoretical assumptions and research studies that have been carried out previously, the following hypothesis were adopted: 1) the experimental group will evaluate the presented female silhouettes more critically than the control group; 2) male participants from the experimental group will assess in a particularly negative way the body shapes linked with female sexuality (i.e., type 'A' body shape) on the sexual attractiveness assessment; and 3) female participants from the experimental group will assess in a particularly negative way the female silhouettes in the cultural dimensions (i.e., type 'H' body shape), and in their responses related to liking and physical attractiveness. Finally, 4) the experimental group will evaluate physical attractiveness higher than the control group.

Procedure

The respondents were informed that they would participate in two independent studies. The first one covered memory and the second one covered female physical attractiveness. Initially, the participants were asked to become familiar with the instructions regarding the study on the memory processes. Members of the experimental group read an extract about euthanasia affecting the fear of death, whereas participants from the control group read an emotionally neutral paper. Next, all participants filled out a proper memory test that involved writing adjectives that appeared in the previously read extracts.

Afterwards, the picture *All is vanity* by Charles Allan Gilbert was displayed on a projector to participants, and participants were instructed to indicate the image that they first noticed. The picture presented a skull and a woman's reflection in the mirror simultaneously. Next, photographs of six female body shapes wearing bikinis were displayed, one by one. Three of the photographs illustrated the biological criteria of female attractiveness ('A' shape), and the other three illustrated the social-cultural standard ('H' shape). The respondents were asked to evaluate each of the silhouettes using three scales: 1) sexual attractiveness (biological sphere), 2) fondness (social sphere) and 3) physical attractiveness. Finally, satisfaction with one's own body and mood was measured among the respondents.

Methods

The following tools were used in the research: 1) Memory Test by Łukaszewski and Buczny, 2) Body-Esteem Scale (BES) by Franzoi and Shields [23], 3) the UMACL Mood Adjective Checklist by Mathews, Chamberlain, and Jones, and 4) the Body Shape Attractiveness Questionnaire, which was designed for the purposes of this experiment. The memory test was used to manipulate the awareness of mortality salience. Individuals from the experimental group were reminded about their own mortality by reading an extract about euthanasia. Individuals from the control group read an extract about the stock exchange and stocks, thereby remaining emotionally neutral. The second part of the experiment was a proper memory test. The respondents wrote adjectives which appeared in the previously read extract. The body shape attractiveness questionnaire including a seven degree scale that allowed the respondents to rate the six photographs that represented the female body shapes 'A' and 'H' using the following descriptions: "She is enticing" (i.e., sexual attractiveness), "I like her" (i.e., fondness), and "she is attractive" (i.e., physical attractiveness).

Data analyses

The analysis of obtained data started with the evaluation of the effectiveness of the experimental procedure used, i.e. establishing if the extract of euthanasia activated death-related thoughts effectively. The measure used to establish the degree of mortality salience was noticing the skull first vs. seeing other objects and not noticing the skull in the *All is vanity* picture. A large portion of respondents in the experimental group (wherein death-related thoughts were activated) saw the skull at the first glance (94.11%). In the control group, in contrast, a significant number of respondents saw other objects that were not related to death first and did not notice the skull (84.31%).

The analysis for each variable was conducted in the same manner: (1) a Multivariate Analysis of Variance (MANOVA) with two factors: group (experimental vs. control) and sex (women vs. men); and (2) a one-way ANOVA (experimental vs control group) for females and males, separately.

RESULTS

The evaluation of body shape sexual attractiveness

The analysis of average answers to the question, "To what extent are the presented body shapes sexually attractive", showed that there were no differences between groups, as well no difference in the evaluations made by women and men. There was, however, a significant difference between the evaluation of sexual attractiveness of body shape 'A' (M=5.28) vs. body shape 'H' (M=4.03; F(1,194) =216.41; p<0.001; η ²=0.53).

Evaluating the fondness of body shape

The analysis of the evaluation of body shape fondness showed a difference between the experimental (*M*=4.65) and control groups (*M*=4.89; *F*[1,194]=4.17; *p*<0.05; η^2 =0.02), but a lack of significant differences in the evaluation of shape fondness between men and women. There was, however, a significant interaction effect (*F*[1,194]=4.52; *p*<0.05; η^2 =0.02), such that women whose fear of death was activated liked the presented body shapes less than men in the control group, and vice versa. Men from the experimental (M=4.78)and control groups (M=4.77) like the body shapes to the same degree (p>0.05). The observed overall difference between the experimental (M=4.52) and control groups (*M*=5.01; *F*[1,94]=8.93; *p*<0.05; η^2 =0.09) was observed among women. The average evaluation of body shape 'A' among women from the experimental group (M=5.1) was poorer than among women from the control group (M=5.54; p<0.05). Similarly, evaluation of body shape 'H' among women was poorer in the experimental (M=3.94) as compared to the control group (*M*=4.48; *p*<0.05).

The evaluation of body shape physical attractiveness

There were significant differences in terms of the evaluation of body shape physical attractiveness between the experimental (M=4.68) and control groups (M=4.95; F[1,194]=5.09; p<0.05; η ²=0.03), but there were no differences in ratings between women and men. Differences, however, were observed between the experimental group (M=4.62) and the control group in women only (M=5.03; F[1,94]=9.73; p<0.05; η ²=0.08). On average, evaluation of the female body shape 'A' was poorer in the experimental group (M=5.22) than in the control group (M=5.56; p<0.05). Similarly, evaluation of body shape 'H' was poorer in women in the experimental group (M=4.04) as compared to women in the control group (M=4.6, p<0.05).

Body image

The analysis of average evaluation in terms of body esteem among women, as measured with the BES, showed a lack of differences between groups. However, there was a statistically significant difference among particular BES subscales (F[2,93]=28.52; p<0.001; $\eta^2=0.38$), as well as, an interaction effect between BES and group (F[2,93]=4.95; p<0.05; $\eta^2=0.10$).

There were several differences in terms of selfesteem related to body parts and functioning. Women from the experimental group rated lower satisfaction with life strength (M=3.5), energy (M=3.65), and health (M=3.59) as compared to women from the control group (M=4.10; M=4.24, and M=4.10, respectively; p<0.05).

The analysis of average evaluation in terms of body esteem among men showed a lack of differences between groups, among particular BES subscales, and a nonsignificant effect of BES and the group interaction. Differences in terms of body part and function esteem were observed. The experimental group rated the satisfaction with arms (M=3.97) and legs (M=3.95) higher in comparison to the control group (mean scores respectively: M=3.57, M=3.57; p<0.05), and higher satisfaction with the strength of muscles ($M_{experimental group}$ =3.88, $M_{control group}$ =3.5; p=0.07) but lower satisfaction with libido than the control group ($M_{experimental group}$ =4.17, $M_{control group}$ =4.52; p=0.06).

Mood evaluation

The analysis of main effect of mood indicators showed a lack of statistically difference between the experimental and control groups, but it showed differences among women and men (F[1,191]=3.89; p<0.05, η^2 =0.02) and an interaction between group and gender (F[1,191]=8.56; p<0.05, η^2 =0.04).

The average rate of hedonic tone in the female experimental group (M=2.86) was lower than in the control group (M=3.18; p<0.05; η^2 =0.04). Similarly, the average rate of tense arousal in the experimental group (M=2.33) was higher than in the control group (M=2.12; p<0.05; η^2 =0.06). The average rate of energetic arousal in the experimental group (M=2.77) was lower than in the control group (M=3.12; p<0.001; η^2 =0.09).

DISCUSSION

The obtained results confirmed the hypothesis that death-related thoughts influence the perception of female body attractiveness. Respondents with an awareness of mortality salience rated the attractiveness of body shapes lower than respondents from the control group. These differences were observed in two out of three examined dimensions. Similar results, determined by sexual intentions, were also obtained in previous research [21,14]. Of note, the body shapes presented in this study were dressed in bikinis and revealed the physical body. Thus, it may be assumed that the body shapes were sexually provocative, which could evoke sexual associations. Grabe and associates [20] showed that an objectifying perception of self was increased among women who were exposed to terror of fear of death relative to women who do not think about death. Men experienced an opposite effect. However, that research study did not confirm the hypothesis that female body shapes are rated lower by men than women from the experimental group.

In contrast to our hypothesis, we did not observe differences in terms of devaluation of body shapes 'A' and 'H' after experiencing mortality salience. In particular, we assumed that the evaluation of body shape 'A' represents a biological pattern of beauty, which determines factors such as sexuality and the animal nature of humans, and body shape 'H' represents a social and cultural standard of beauty, which refers to the widely comprehended worldview as a way to reduce the fear of death. These assumptions were not confirmed. According to the theory of social comparison, negative evaluation of others is an effective way to maintain self-esteem. This pattern does not appear to apply in the event of mortality salience. Evaluation of one's own body among women, as measured with the BES, was statistically lower when they were experiencing the fear of death. Surprisingly, participants from the experimental group did not show an enhancement in selfevaluation of body image, although previous research suggests that an enhancement is very effective for protecting against the fear of death [5].

It is interesting that the research conducted by Łukaszewski [14] - who, using identical methods and procedures (as described above) except for one difference (i.e., did not include an evaluation of female body shapes) - clearly showed that body esteem, as measured by the BES, increased among both men and women who experienced mortality salience. In our research, we observed an increase in terms of selfevaluation of physicality only among men, and only on select dimensions. Men who were subjected to the experimental manipulation with the fear of death did not show a more critical evaluation in terms of female body shape attractiveness, nor did they show a more positive self-evaluation in terms of select dimensions of body image. There were not any statistically significant differences in the three dimensions of the UMACL scale among men from the experimental vs. the control group. Thus, it may be said that lack of a critical evaluation of others and a positive self-evaluation effectively protects an individual against mood deterioration in the event of experiencing mortality salience. These mechanisms did not apply to women,

REFERENCES

- Greenberg JL, Solomon S, Pyszczynski T. Terror management theory of self-esteem and cultural worldviews: empirical assessments and conceptual refinements. J Exp Soc Psychol 1997; 29(C): 61–139.
- Rosenblatt A, Greenberg JL, Solomon S, Pyszczynski T, Lyon D. Evidence for terror management theory: I. The effects of mortality salience on reactions to those who violate or uphold cultural values. J Pers Soc Psychol 1989; 57(4): 681–690.
- Baka Ł. Lęk przed śmiercią a jakość życia. Perspektywa teorii opanowania trwogi. Psychologia Jakości Życia 2005; 4(1): 107–125. (In Polish).
- 4. Adamczyk M. Mechanizmy opanowywania trwogi przed śmiercią
 krytyczny przegląd literatury i analiza wyników. Psychologia Jakości Życia 2006; 5(1): 101–117. (In Polish).
- Bodner E, Bergman YS. The utility of a positive body image among community-dwelling older adults who perceive death to be near and fear it. Research On Aging 2019; April 28.
- Pyszczynski T, Greenberg JL, Solomon S, Arndt J, Schimel J. Why do people need self-esteem? A theoretical and empirical review. Psychol Bull 2004; 130(3): 435–468.
- Konarzewski K. Czy teoria opanowania trwogi sprawdza się w przedszkolu? Czasopismo Psychologiczne 2003; 9(1): 31–40. (In Polish).

since they reacted critically to both body shapes in the photographs and their own bodies. Women did not use any of the methods that have been reported in the scientific literature to reduce the fear of death. Women from the experimental group obtained different results than women from the control group, which suggests that they experienced negative emotions (see [13]).

It seems that making a superior social comparison with a relevant object (e.g., a young attractive woman) in the event of mortality salience increases objectification of the female body, which is observed and evaluated negatively and, in turn, escalates negative emotions.

In this case, the fear of death solidified and increased the phenomena that have been described in the context of body image among women, namely: dissatisfaction with appearance, sensitivity to social comparison with the ideal of beauty, or finally, experiencing negative emotions in relation to their own body [24].

CONCLUSIONS

The present experiment confirmed the influence of fear of death on the evaluation of cultural and biological standards of female physical attractiveness, as well as, the hesitation of participants' self-esteem and mood related to sex. The lack of critical evaluation of others and a positive self-evaluation effectively protects an individual against mood deterioration, and these effects were observed among men. However, these mechanisms do not apply to women, since women reacted critically to both body shapes in the photographs and their own bodies.

- Greenberg JL, Pyszczynski T, Solomon S, Simon L, Breus M. Role of consciousness and accessibility of death-related thoughts in mortality salience effects. J Pers Soc Psychol 1994; 67(4): 627–637.
- 9. Pyszczynski T, Wicklund RA, Floresku S, Koch H, Gauch G, Solomon S, et al. Whistling in the dark: exaggerated consensus estimates in response to incidental reminders of mortality. Psychol Sci 1996; 7(6): 332–336.
- Arndt J, Greenberg J, Pyszczynski T, Solomon S. Subliminal presentation of death reminders leads to increased defense of the cultural worldview. Psychol Sci 1997; 8(5): 379–385.
- Głębocka A. Niezadowolenie z wyglądu a rozpaczliwa kontrola wagi. Kraków: Wydawnictwo Impuls; 2009. (In Polish).
- 12. Goldenberg JL, McCoy SK, Pyszczynski T, Greenberg JL, Solomon S. The body as a source of self-esteem: the effect of mortality salience on identification with one's body, interest in sex, and appearance monitoring. J Pers Soc Psychol 2000; 79(1): 118–130.
- 13. Lambert AJ, Eadeh FR, Peak SA, Scherer LD, Schott JP, Slochower JM. Toward a greater understanding of the emotional dynamics of the mortality salience manipulation: revisiting the "affectfree" claim of terror management research. J Pers Soc Psychol 2014; 106(5): 655–678.

- **14.** Łukaszewski W. Udręka życia. Jak ludzie radzą sobie z lękiem przed śmiercią. Sopot: Smak Słowa; 2010. (In Polish).
- 15. Goldenberg JL, Cox CR, Pyszczynski T, Greenberg JL, Solomon S. Understanding human ambivalence about sex: The effects of stripping sex of meaning. J Sex Med 2002; 39(4): 310–320.
- 16. Baldwin MW, Wesley R. Effects of existential anxiety and self-esteem on the perception of others. Basic Appl Soc Psych 1996; 18(1): 75–95.
- Dechesne M, Janssen J, van Knippenberg A. Derogation and distancing as terror management strategies: the moderating role of need for closure and permeability of group boundaries. J Pers Soc Psychol 2000; 79(6): 923–932.
- Fredrickson BL, Roberts TA. Toward understanding women's lived experiences and mental health risks. Psychol Women Q 1997; 21(2): 173–206.
- 19. Morris KL, Goldenberg JL, Heflick NA. Trio of terror (pregnancy, menstruation, and breastfeeding): an existential function of literal self-objectification among women. J Pers Soc Psychol 2014; 107(1): 181–198.

- 20. Grabe S, Routledge C, Cook A, Andersen C, Arndt J. In defense of the body: The effect of mortality salience on female body objectification. Psychol Women Q 2005; 29(1): 33–37.
- 21. Landau MJ, Greenberg JL, Martens A, Solomon S, Goldenberg JL, Gillath O, et al. The Siren's call: terror management and the threat of men's sexual attraction to women. J Pers Soc Psychol 2006; 90(1): 129–146.
- 22. Szmajke A, Sokołowska L. Ile jest ideałów kobiecego piękna? Obrazowo-spostrzeżeniowy i liczbowo-wyobrażeniowy wzorzec atrakcyjności kształtu kobiecego ciała. In: Kolańczyk A, Wojciszke B, ed. Motywacje umysłu. Sopot: Wydawnictwo Smak Słowa; 2010: 65-82. (In Polish).
- 23. Franzoi SL, Klaiber JR. Body use and reference group impact: with whom do we compare our bodies? Sex Roles 2007; 56(3–4): 205–214.
- 24. Cohen R, Blaszczynski A. Comparative effects of Facebook and conventional media on body image dissatisfaction. J Eat Disord 2015; 3(1): 1–11.

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