

Predictors and Moderators of Quality of Life in Male Users of Anti-Aging Products

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Abstract

For most individuals, changes occurring during the aging process may cause dissatisfaction and concerns regarding body image, with implications on quality of life (QoL). The aim of this study was to assess the contribution of sociodemographic and psychological variables and the type of anti-aging products/treatments on men's QoL, as well as to evaluate the moderating role of aging perceptions in the relationship between psychological morbidity and QoL. This study used a cross-sectional design and included a sample of 111 male participants who used anti-aging cosmetic products/aesthetic treatments. Participants were assessed on body image, self-esteem, psychological morbidity, aging perceptions, traits of perfectionism, and QoL. Results suggested that psychological morbidity and perceptions of the aging process as chronic negatively contributed to QoL, and emotional representations of aging moderated the relationship between psychological morbidity and QoL. According to the findings, psychological intervention programs to improve QoL should focus on men with higher levels of psychological morbidity and more negative emotional responses to the aging process.

KEYWORDS

aging, cosmetics, psychological morbidity, quality of life

INTRODUCTION

The World Health Organization (WHO; 2015) defines “quality of life (QoL)” as the individual's perception of their life position within their culture and value systems, and in relation to their ambitions, beliefs, standards, and concerns. In a world where people are living longer and life expectancy is increasing substantially (WHO, 2015), it is central for public health organizations to focus on the individual's QoL (Ingrand et al., 2018).

Aging is a gradual, continuous process of natural changes that occur throughout life. In turn, healthy aging is a permanent process of optimizing opportunities for improving and preserving physical, social, and mental wellness, enhancing successful life-course transitions, as well as QoL (Han et al., 2015). With aging, multiple factors are related to QoL (Baernholdt et al., 2012). Social and physical changes are highly influential in general well-being (Cho et al., 2011), as several changes are experienced throughout life, including skin changes, hair loss, gray hair, and the emergence of various health conditions (Steptoe et al., 2015). Although these

changes represent normal experiences of the aging process, individuals are subject to the influence of their culture that values and emphasizes the importance of a youthful appearance (Jankowski et al., 2016). In addition, appearance is influenced by gender norms related to female and male beauty stereotypes (Alleva et al., 2018).

The operational definition of QoL includes specific domains, such as physical health, psychological health, social relationships, and environment (WHO, 2015), thus involving issues related to self/appearance and involvement, and satisfaction with life activities as work, relationships, and leisure (Bensoussan et al., 2014). Accordingly, factors such as body image and physical appearance represent major aspects of QoL (Sobanko et al., 2018). Body image, conceptualized as a multidimensional construct, includes a cognitive-affective component involving cognitions, attitudes, and feelings toward one's body—appearance schemas (Cash, Jankatdar, & Williams, 2004; Cash, Melnyk, & Hrabosky, 2004). Individuals whose appearance schemas reveal higher levels of appearance investment report more behaviors to maintain or improve their appearance (Nazaré et al., 2013), showing higher levels of

anxiety (Cash, Jakatdar, & Williams, 2004; Cash, Melnyk, & Hrabosky, 2004), more suffering due to their appearance (Cash, 2002; Cash et al., 2002), and a higher impact of appearance on QoL (Cash, Jakatdar, & Williams, 2004; Cash, Melnyk, & Hrabosky, 2004).

The importance given to physical appearance is related to higher levels of perfectionism (Swami & Mammadova, 2012; Teixeira et al., 2016), reflecting a greater concern with body image (Boone et al., 2013). According to recent findings, perfectionism is positively associated with attitudes towards one's own appearance, but negatively associated with satisfaction with appearance, satisfaction with life, and health (Labunskaya, 2019). Perfectionism is also linked with worse QoL, worse mental health outcomes, and dysfunctional cognitive patterns that lead to focus on body imperfections, which contribute to a negative body image (Limburg et al., 2017; Swami & Mammadova, 2012).

Changes and demands associated with aging may have an impact on psychological (e.g., depression, anxiety) and physical well-being leading to lower QoL (Jankowski et al., 2016), and a decrease in the individual's self-esteem (Rocha & Terra, 2013). Self-esteem and QoL are related concepts as they deal with the individual's subjective perceptions of oneself and one's life. Thus, low self-esteem scores are expected to lead to low QoL scores (Tavares et al., 2016). Likewise, self-perceptions of aging represent important predictors of physical health and QoL (Sexton et al., 2014). Aging perceptions, defined as psychological responses to the subjective perception and emotional reaction of the elderly over the threat of physical, psychological, and social aging (Gu et al., 2019), are shaped throughout life, and are influenced by experience and societal attitudes regarding aging (Sexton et al., 2016). Individuals with positive aging perceptions report higher levels of QoL (Ingrand et al., 2018). In addition, studies suggest that aging perceptions influence social behaviors, individuals' expectations, and well-being, being associated with less anxiety and depression (Yamada et al., 2017; Kiarsipour et al., 2017).

The aesthetic pressure from society leads to the search for possible ways to correct and modify the body as the individual ages (Twigg, 2013). Therefore, individuals may adopt more and more anti-aging cosmetic and aesthetic practices. According to previous studies conducted with women and men (Litner et al., 2008; Yildiz & Selimen, 2015), and only with women (Ferreira et al., 2016), aesthetic treatments contribute significantly to an improved QoL. The American Society of Plastic Surgeons (2020) reported that cosmetic procedures for aesthetic purposes decreased by around 14% in 2020, largely due to the pandemic. Yet, 15.6 million cosmetic procedures were performed in the USA, and 8% (1.1 million) were performed on male clients (American Society of Plastic Surgeons, 2020). In recent years, there has been an increasing demand for cosmetic products and aesthetic treatments by men, which has led to the foundation of a separate specific market for male users (Jagdeo et al., 2016). This growing adherence to cosmetics is naturally reflected in an improvement in the users' QoL (Infante et al., 2016).

Determinants of QoL have been studied for several diseases, using a general model that includes emotional, cognitive, and physical symptoms, together with a functional status (Wilson & Cleary, 1995). However, little is known about the QoL of male users of cosmetic products and procedures, mainly because their adherence to cosmetics is relatively recent compared to that of women. To bridge that gap, the present study aims to understand the influence of sociodemographic and psychological variables on the QoL of male users of cosmetic products/treatments that delay the signs of aging. From a heuristic point of view, this knowledge is important to design interventions to foster men's QoL as they age. This study relies on the conceptual model of QoL related to health that includes five health dimensions: at one extreme, the biological and physiological variables are presented and, on the other extreme, there is QoL; between the two extremes, the model includes symptoms, functionality, and general health perceptions (Wilson & Cleary, 1995). Influencing all levels are the characteristics of the individual and the characteristics of the environment. The order in which the variables appear in the model represents causal associations, and assumes that there are also reciprocal relationships (Barker, O'Hanlon, et al., 2007; Ojelabi et al., 2017) of mediation (Ojelabi et al., 2017) and moderation (Qiu et al., 2019; Ryu et al., 2009). In the original model, symptoms are defined as the patient's perception of an abnormal physical, emotional, or cognitive state, while functional status is measured by physical, social, role, and psychological functions. The present study adapted the original model by joining the two levels into one: emotional/cognitive perceptions were assessed through appearance schemas, self-esteem, and psychological morbidity; health perceptions included aging perceptions; individual characteristics were assessed through traits of perfectionism, age, use of cosmetic products/aesthetic treatments; and characteristics of the environment were assessed considering the household income and place of residence (urban or rural area).

The present study aimed to assess (i) the relationship and contribution of the sociodemographic, psychological, and cosmetic/aesthetic variables to QoL, and (ii) the moderating role of aging perceptions in the relationship between psychological morbidity and QoL. According to the Wilson & Cleary's model (1995), the perception of symptoms may influence QoL, and this influence is impacted by individual and social characteristics, as well as general health perceptions (Ojelabi et al., 2017; Qiu et al., 2019; Ryu et al., 2009). Given that an individual's perceptions of oneself and his/her life influence psychological morbidity and, consequently, QoL (Ingrand et al., 2018), this study evaluates the relationship between those constructs considering the moderating role of aging perceptions.

Based on the previous literature, two hypotheses were tested: younger men, with less schematic investment in appearance, more self-esteem, less perfectionism, lower psychological morbidity, more positive aging perceptions, and the use of more cosmetic products and beauty treatments are associated and contribute to a better QoL (H1); and aging perceptions moderate the relationship between psychological morbidity and QoL (H2).

TABLE 1 Instruments description

| Instrument | Brief description | Construct evaluated | Items | Brief description | Portuguese version | Present study |
|--|---|----------------------------|--|--|--|----------------------|
| Cronbach's alpha | | | | | | |
| <i>Sociodemographic and Use of Cosmetic Products and Aesthetic Treatments Questionnaire</i> | This instrument assesses participants' sociodemographic (e.g., sex, age, education, household income) and clinical characteristics (the existence of diseases associated to the use of cosmetics and treatments), as well as which cosmetic products (facial moisturizer, sunscreen, anti-wrinkle facial cream, anti-wrinkle eye cream, lip balm, hair loss product, face firming cream, thermal water, body firming cream, scrub, and depigmenting) and aesthetic treatments (facial cleansing, peeling, hair strengthening, hyaluronic acid, local fat treatments, weight loss treatments, and muscle toning) were being used/performed and how often (daily, once a week, twice a week or more, once a month, every 3 months, twice a year, annually, or never). | | | | | |
| <i>Health Status Questionnaire (SF-12v2; Ware et al., 1996; Ferreira, 2000).</i> | Health-related QoL considering the individual's perception of health in the last 4 weeks. | 12 | SF-12 provides a Physical Component Summary (PMS; 6 items) and a Mental Component Summary (MCS; 6 items). Items use different Likert scales. Higher scores indicate better physical and mental QoL. In this study, a global score was used following previous studies (e.g., Hagell et al., 2017; Hagell & Westergren, 2011). | PMS: 0.89. MCS: 0.76. | Total scale: 0.88. | |
| <i>Appearance Schemas Inventory - Revised (ASI-R; Cash, Jakatdar, & Williams, 2004; Cash, Melnyk, & Hrabosky, 2004; Nazare et al., 2013)</i> | Individual's schematic investment in appearance. | 20 | In addition to the global score, ASIR-R includes two dimensions: Self-Evaluative Salience of Appearance (12 items) and Motivational Salience of Appearance (8 items). Items are evaluated on a 5-point Likert scale, and higher scores suggest a greater schematic investment on appearance. | Total scale: 0.90. | Total scale: 0.92. | |
| <i>Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983; Pais-Ribeiro et al., 2007)</i> | Psychological morbidity. | 14 | HADS includes two subscales: Anxiety (7 items) and Depression (7 items). All items are scored on a 4-point Likert scale, and higher scores indicate more anxiety and depression symptomatology (psychological morbidity). | Total scale: 0.70 | Total scale: 0.86. | |
| <i>Frost's Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990; Amaral et al., 2013).</i> | Self-directed perfectionism. | 35 | This scale includes six subscales: Personal Standards (6 items), Concern with Mistakes (9 items), Doubts about Personal Actions (5 items), Organization (6 items), Parental Expectations (5 items), and Parental Criticism (4 items). For the total scale, higher results indicate higher levels of perfectionism. | Total scale: 0.86. | Total scale: 0.92. | |
| <i>Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965; Pechorro et al., 2011)</i> | Overall sense of self-esteem. | 10 | Items are evaluated on a 4-point Likert scale. Higher scores suggest higher self-esteem. | Total scale: 0.79. | Total scale: 0.86. | |
| <i>Brief Aging Perceptions Questionnaire (B-APQ; Sexton et al., 2014; Research version by Pereira & Vilaça, 2018)</i> | Aging perceptions. | 17 | B-APQ includes five domains: Timeline-Chronic (TLC; 3 items) that reflects the perception of the course of the aging process as chronic; Consequences-Positive (PCONS; 3 items) that refers to positive beliefs about the aging impact; Emotional Representation (ER; 3 items) indicating negative emotional responses generated by aging; Consequences and Control Negative (NCC; 5 items reverse coded) that assesses beliefs of control over negative aspects of aging; and Control-Positive (PCONTR; 3 items) that refers to the positive control about the aging process. Items are evaluated on a 5-point Likert scale. Higher scores indicate more perceptions of aging as chronic (TLC), more perceptions of positive consequences (PCONS), more negative emotional responses (ER), less negative consequences and control (NCC), and more positive control over aging (PCONTR). | Total scale: 0.79. TLC: 0.82. PCONS: 0.85. ER: 0.77. NCC: 0.81. PCONTR: 0.89. | Total scale: 0.86. TLC: 0.82. PCONS: 0.85. ER: 0.77. NCC: 0.81. PCONTR: 0.89. | |

METHODS

Participants

The sample comprised 111 men. The inclusion criteria for participation were as follows: (i) being 25 years or older (this minimum age limit was established according to the beginning period of a decrease in collagen production) (Kimball, 2015); (ii) using or having used at least one cosmetic product and/or treatment in the last 12 months; and (iii) having no disease associated with the use of cosmetic products/treatments (in order to ensure that the use of those products/treatments had only aesthetic and anti-aging purposes, and was not prescribed for medical reasons).

Procedure

This study used a cross-sectional design and was approved by the Ethics Committee for the Social and Human Sciences of the University of Minho (Reference number: CEICSH-087/2018). Participants were recruited through online social networks (e.g., Facebook, Instagram) where a link to a Google Forms survey was provided. Through the link, participants immediately had access to the study objectives, procedures, data confidentiality, the voluntary nature of their participation, and the informed consent form. Once participants expressed their consent, they were allowed to proceed to the questionnaires. Forty-six participants who did not meet all the described inclusion criteria were excluded. All ethical and deontological requirements were followed in conducting this study.

Instruments

The instruments used in the study are presented in Table 1.

Data analysis

Data were analyzed using SPSS, Version 25.0. Descriptive statistics were used to characterize the sample. Pearson's correlation coefficients were calculated to obtain the variables that correlated significantly with QoL ($p < .05$). When the variables did not meet the assumptions for parametric tests, Spearman correlation coefficients were considered. Hierarchical linear regression analysis (Enter Method) was used to test the variables that contributed to QoL. Necessary assumptions to run the analysis were made (tolerance $> .1$ and VIF < 10 ; Field, 2009). Only the variables that correlated significantly with QoL ($r > .30$; $p < .05$) were included in the regression analysis (Field, 2009). Due to the high correlation between psychological morbidity and QoL, psychological morbidity was placed in the first block of the regression analysis (Model 1) in order to be controlled (Howitt & Cramer, 2017). Thus, cosmetic products (hair loss product) were included in the second block (Model 2), and the remaining psychological variables (psychological morbidity, self-esteem, timeline-chronic [TLC], and emotional representation [ER] subscales) were added in the third block (Model 3).

Assumptions to perform the moderation analysis were tested (normality of the data; correlations between independent and dependent variables; correlations between moderating and dependent variables; and non-correlations between moderating and independent variables). The TLC subscale was not included in the moderation analysis due to its significant correlation with psychological morbidity ($r > .30$). Macro Process for SPSS, Version 2.16.1, and the Johnson-Neyman technique (JN) were used to perform the moderation analysis. JN was used to determine the transition point in which aging perceptions (ER and consequences and control negative [NCC] subscale) were enough to detect a difference in the relation between psychological morbidity and QoL ($p < .05$) (Johnson & Fay, 1950; Preacher & Hayes, 2008).

RESULTS

Sample description

In total, 111 male users of cosmetic products and aesthetic treatments in the last 12 months participated in this study. Table 2 presents the sample characteristics.

TABLE 2 Sociodemographic characteristics of the sample ($N = 111$)

| | <i>n</i> (%) | Mean (<i>SD</i>) | Min. | Max. |
|---------------------------|--------------|--------------------|------|------|
| Age | | 39.7 (12) | 25 | 73 |
| Marital status | | | | |
| Single | 52 (46.8) | | | |
| Married/civil partnership | 35 (31.5) | | | |
| Divorced | 6 (5.4) | | | |
| Widowed | 3 (2.7) | | | |
| Education (years) | | 16.04 (4.1) | 6 | 25 |
| Residential area | | | | |
| Urban | 81 (73) | | | |
| Rural | 30 (27) | | | |
| Income | | | | |
| <1 minimum wage | 11 (9.9) | | | |
| 2–3 minimum wages | 59 (53.2) | | | |
| >4 minimum wages | 41 (36.9) | | | |
| Professional situation | | | | |
| Active | 90 (81.1) | | | |
| Not active | 21 (18.9) | | | |
| Household | | 2.14 (1.2) | 0 | 5 |
| <2 inhabitants | 68 (61.2) | | | |
| 3 inhabitants | 25 (22.5) | | | |
| 4 inhabitants | 17 (15.3) | | | |
| >5 inhabitants | 1 (0.9) | | | |
| Weight (kg) | | 80.05 (13) | 55 | 135 |
| Height (cm) | | 174.6 (6.8) | 160 | 190 |

TABLE 3 Pearson/Spearman correlations between sociodemographic variables, psychological variables, use of cosmetic products and aesthetic treatments and quality of life

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---------------------|---------|---------|---------|--------|---------|--------|--------|--------|---------|--------|--------|---------|--------|--------|---------|--------|------|
| 1. QoL | - | | | | | | | | | | | | | | | | |
| 2. Age | -.261** | - | | | | | | | | | | | | | | | |
| 3. Prof. situation | -.249** | .162 | - | | | | | | | | | | | | | | |
| 4. Income | .146 | .313** | -.153 | - | | | | | | | | | | | | | |
| 5. Education | .120 | .018 | .019 | .476** | - | | | | | | | | | | | | |
| 6. Residential area | -.043 | -.036 | .057 | .061 | -.137 | - | | | | | | | | | | | |
| 7. Household | .086 | -.114 | -.244** | -.001 | -.189* | .250** | - | | | | | | | | | | |
| 8. Marital status | .029 | .223* | .209 | .216* | .027 | -.102 | .392** | | | | | | | | | | |
| 9. Psych. morbidity | -.755** | .087 | .227* | -.164 | -.071 | .011 | -.079 | -.020 | - | | | | | | | | |
| 10. App. schemas | -.151 | .015 | -.153 | .047 | -.161 | -.030 | .013 | -.129 | .044 | - | | | | | | | |
| 11. Perfectionism | -.133 | -.021 | -.091 | .095 | -.045 | .077 | -.030 | -.137 | .160 | .317** | - | | | | | | |
| 12. Self-esteem | .331** | .004 | -.187* | .200* | .250** | -.028 | -.151 | -.076 | -.311** | -.081 | -.086 | - | | | | | |
| 13. TLC | -.513** | .374** | .176 | .078 | .046 | -.014 | -.128 | -.045 | .369** | .266** | .312** | -.324** | - | | | | |
| 14. PCONS | -.066 | .277** | .009 | .335** | .257** | -.037 | -.110 | -.006 | -.062 | .153 | .140 | .327** | .083 | - | | | |
| 15. PCONTR | .051 | -.244** | -.022 | .023 | .212* | .111 | -.116 | -.194* | .040 | -.085 | .085 | .228* | -.129 | .427** | - | | |
| 16. NCC | -.279** | .200* | .144 | .039 | -.161 | -.048 | -.159 | -.057 | .201* | .226* | .403** | -.433** | .409** | -.141 | -.258** | - | |
| 17. ER | -.394** | .201* | .067 | .061 | -.249** | -.020 | -.047 | -.025 | .241* | .390** | .369** | -.437** | .579** | -.155 | -.288** | .702** | - |
| Mean | 66.03 | 39.70 | 1.19 | 15.71 | | | | | 3.06 | 9.89 | 100.20 | 18.40 | 7.79 | 12.15 | 11.49 | 14.29 | 8.25 |
| SD | 12.66 | 11.99 | .39 | 3.62 | | | | .71 | 6.03 | 17.91 | 4.99 | 2.68 | 2.00 | 2.28 | 2.28 | 3.67 | 2.66 |

Abbreviations: App. schemas; ER, Emotional Representations subscale; NCC, Negative Consequences and Control subscale; PCONS, Positive Consequences subscale; PCONTR, Positive Control subscale; Psych. morbidity, Psychological Morbidity; TLC, Timeline-Chronic subscale.

* $p < .05$.

** $p < .01$.

TABLE 4 Variables that contribute to quality of life

| Variables | Model 1 | | | Model 2 | | | Model 3 | | |
|-------------------------------------|-------------|------|----------|-------------|------|----------|-------------|------|----------|
| | B | EP B | ß | B | EP B | ß | B | EP B | ß |
| Psych. morbidity | -1.59 | .132 | -.755*** | -1.53 | .128 | -.727*** | -1.36 | .133 | -.646*** |
| Hair loss product | | | | -4.88 | 1.56 | -.191** | -2.68 | 1.60 | -.105 |
| Self-esteem | | | | | | | .055 | .168 | .021 |
| TLC | | | | | | | -.833 | .357 | -.176* |
| ER | | | | | | | -.437 | .361 | -.092 |
| R ² (R ² Aj.) | .570 (.566) | | | .606 (.599) | | | .653 (.636) | | |
| F for change in R ² | 144.7*** | | | 9.79** | | | 4.70** | | |

Abbreviations: ER, Emotional Representations subscale; Psych. morbidity, Psychological Morbidity; TLC, Timeline-Chronic subscale.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Regarding cosmetic products, the products used on a daily basis were facial moisturizer (30.6%), sunscreen (24.3%), body moisturizer (21.6%), anti-wrinkle facial cream (20.5%), anti-wrinkle eye cream (17%), lip balm (17%), hair loss product (12.5%), face firming cream (9.8%), thermal water (7.1%), body firming cream (6.3%), scrub (6.3%), and depigmenting (1.8%). Hair color was used once a month by 6.3% of the sample. In relation to the efficacy of the products' photoprotection, although 25.9% ($n = 29$) of participants used day cream, they could not identify the sun photoprotection factor (SPF). Regarding sunscreen, 15.2% ($n = 17$) used sunscreen with SPF 50+ on a daily basis.

Aesthetic treatments were performed mostly annually: 8% performed cleansing facial treatments, 1.8% facial peelings, 11.6% hair strengthening, 1.8% hyaluronic acid, 5.4% local fat treatments, and 10.7% weight loss treatments. Cellulite/flaccidity treatments were used by 2.7% of the sample once a week, as well as muscle toning treatments (1.8%) which were also carried out once a week.

Relationship between sociodemographic variables, psychological variables, use of cosmetic products/aesthetic treatments, and QoL

Age ($r = -.26$; $p < .01$) and professional situation ($r = -.25$; $p < .05$) were negatively correlated with QoL. In terms of psychological variables, psychological morbidity ($r = -.76$; $p < .01$), TLC ($r = -.51$; $p < .01$), NCC ($r = -.28$; $p < .01$), and ER ($r = -.39$; $p < .01$) correlated negatively with QoL, while self-esteem was positively correlated with QoL ($r = .33$; $p < .01$) (Table 3). Participants' residential area, marital status, education, household, monthly income, appearance schemas, perfectionism, PCONS, and PCONTR subscales did not correlate significantly with QoL.

Regarding the usage of cosmetic products, significant relationships were found between anti-hair loss product ($r = -.30$; $p < .01$), facial moisturizer ($r = -.24$; $p < .05$), and QoL. On the contrary, sunscreen ($r = -.037$; $p = .70$), body moisturizer ($r = -.027$; $p = .77$), anti-wrinkle facial

cream ($r = .028$; $p = .77$), anti-wrinkle eye cream ($r = .033$; $p = .73$), lip balm ($r = -.057$; $p = .55$), face firming cream ($r = -.038$; $p = .69$), hair color ($r = -.150$; $p = .11$), thermal water ($r = 0.104$; $p = .28$), body firming cream ($r = .142$; $p = .17$), scrub ($r = .003$; $p = .98$), and depigmenting ($r = -.084$; $p = .38$) did not correlate with QoL. No statistically significant associations were found between the use of aesthetic treatments and QoL.

Variables that contributed to QoL

Model 1 was statistically significant, $F(1, 109) = 144.70$, $p < .001$, with psychological morbidity alone ($\beta = -.755$, $t = -12.029$, $p < .001$) contributing significantly to QoL, and explaining 57% of the variance. After adding hair loss product, Model 2 was significant $F(1, 108) = 9.792$, $p = .002$. Hair loss product was significant ($\beta = -.191$, $t = -3.129$, $p = .002$), and psychological morbidity maintained their significance ($\beta = -.727$, $t = -11.898$, $p < .001$), overall explaining 61% of the variance. When the remaining psychological variables were entered (Model 3), only psychological morbidity ($\beta = -0.646$, $t = -10.181$, $p < .001$) and TLC ($\beta = -.176$, $t = -2.333$, $p = .022$) contributed significantly to QoL, and the model was significant, $F(3, 105) = 4.708$, $p = .004$, explaining 65% of the variance (Table 4).

The moderating role of aging perceptions in the relationship between psychological morbidity and QoL

ER moderated the relationship between psychological morbidity and QoL, $F(3, 107) = 50.750$, $p < .001$, $\beta = -.1961$, CI 95% $[-.2855, -.1067]$, $t = -4.347$, $p < .001$, explaining 66% of the variance. The negative relationship between psychological morbidity and QoL was stronger when the standardized value of ER was 4.16 above the average ($\beta = -.4969$, $p = .050$), corresponding to 91% of the sample (Figure 1). Thus, the relationship was significant when men reported

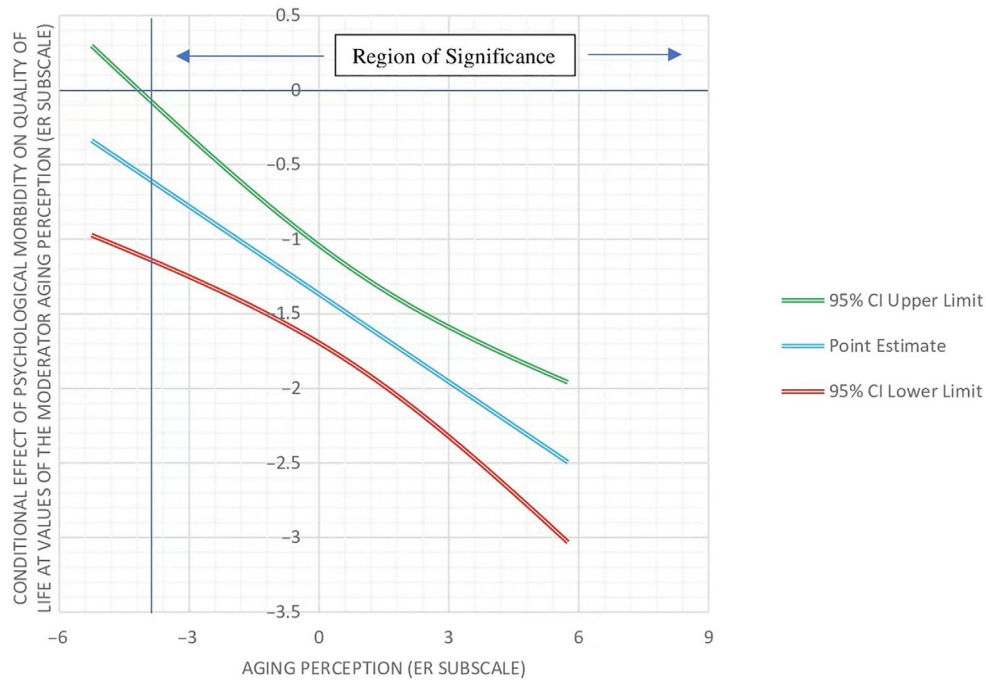


FIGURE 1 Moderating role of aging perceptions (ER subscale) in the relationship between psychological morbidity and QoL.

lower negative emotional responses ($\beta = -0.8466$, 95% CI $[-1.296, -0.3974]$, $t = -3.737$, $p = .003$), as well as higher negative emotional responses ($\beta = -1.888$, 95% CI $[-2.242, -1.536]$, $t = -10.614$, $p < .001$) to aging, although stronger in the latter situation.

The NCC subscale of aging perceptions did not moderate the relationship between psychological morbidity and QoL, $F(3, 107) = 32.377$, $p \leq .001$, $\beta = -.0238$, 95% CI $[-.1056, .0579]$, $t = -.5784$, $p = .564$.

DISCUSSION

One of the main goals of this study was to analyze the relationship and contribution of sociodemographic, psychological, and cosmetic products/treatments variables with QoL. Older men reported lower QoL, as expected, since as individuals age their perception of QoL becomes more negative (Ciconelli et al., 2015). In men, aging is associated with depressed mood, irritability, and dissatisfaction with their body image, leading to worse QoL (Beutel et al., 2010). The results also suggested that, in males, being professionally inactive was negatively associated with QoL. Employment is an essential part of an adult's life, providing not only income but also a sense of engagement, role identification, and physical and mental stimulation (Noh et al., 2015). Therefore, unemployment is considered a possible source of adverse consequences for QoL, with a negative impact on physical, psychological, and emotional well-being (Noh et al., 2015). The negative influence of unemployment may even be stronger for men who care about their appearance and use cosmetic products and treatments since it requires some economic investment. The remaining socio-demographic

variables, including income and education, did not correlate with QoL, probably because 87% of the sample had moderated to higher incomes and were highly educated (Alcañiz & Solé-Auró, 2018).

Regarding the use of cosmetics, the entire sample used cosmetic products and half of the sample used both cosmetic products and treatments. Only hair loss and facial moisturizer correlated with QoL. In general, when visible physical changes impact psychological and physical well-being, leading to impaired QoL, cosmetics may have a restoring effect on QoL (Ferreira et al., 2016; Rudolph et al., 2019). Male hair loss increases exponentially between the ages of 30 and 40 years (Budd et al., 2000), having a significant effect on QoL (Kranz et al., 2019). Face moisturizer, frequently used by women and men from all age groups, has been reported as appealing because skin is the most noticeable sign of aging, and health and appearance are a fundamental part of overall well-being (Buranasirin et al., 2019). Given that exposure to UV radiation is considered to be one of the most important factors responsible for premature skin aging and skin diseases, male users of cosmetic products and treatments were expected to adopt sunscreen products, however only 24% reported using this product. Roberts et al. (2021) also found that only 18% of men used daily sunscreen, while one of the most frequently used skincare products was moisturizer (32%). This low adherence may be related to sunscreen advertising being marketed more toward women, and associated with more fragile skin, thus being gendered as feminine (Roberts et al., 2021).

Psychological morbidity was negatively associated with QoL, also contributing to lower QoL. This result is in line with the literature, as most studies conducted with both male and female participants emphasize the negative effect of

psychological distress (e.g., depression, anxiety) on QoL (e.g., Anguzu et al., 2021; Hohls et al., 2021; Ingrand et al., 2018). Considering that men with physical appearance issues are at great risk for anxiety and depression disorders (Barnes et al., 2020), it makes sense that psychological distress, reported by male users of cosmetic products and treatments who are possibly struggling with body image issues, contributes to impaired QoL.

Self-esteem also correlated positively with QoL (Ingrand et al., 2018; Tavares et al., 2016). The relationship between cosmetic usage and self-esteem has been robustly established. For example, Mintel (2017) found that almost three quarters of 2000 male and female users of beauty products agreed that looking good made them feel confident. Although research on self-esteem and QoL of male users of cosmetics products or treatments is scarce, it is known that enhanced appearance may improve self-esteem and, consequently, contribute to improved QoL.

The TLC, ER, and NCC subscales of aging perceptions correlated significantly with QoL, as estimated, since self-perceptions of aging are important predictors of physical health, mortality, and QoL (Sexton et al., 2014). Aging perceptions include beliefs about one's own aging and expectations for the future, and, therefore, may be perceived as positive (e.g., focused on aging benefits like increased wisdom and life experience) or negative (e.g., focused on beliefs that illness and social isolation are inevitable; Sexton et al., 2014). Being highly and chronically aware of one's age, evaluated through the TLC subscale, not only correlated but also contributed to impaired QoL. In fact, perceiving the aging process as chronic is related to the concept of "age identification," and this has been associated with inactivity and poor health (Barker, Pankhurst, & Robinson, 2007). The relationship between negative emotional reactions to aging (ER subscale) and worse QoL makes sense because emotional reactions to aging, such as worry, anxiety, depression, anger, and sadness, are predictors of worsening health and impaired QoL (Barker, Pankhurst, & Robinson, 2007; Demakakos et al., 2007; Kiarsipour et al., 2017). A negative correlation was found between the beliefs of more control over negative events (NCC) and QoL. Younger adults, as the majority of participants in this study, are expected to perceive more control over aspects of aging compared to elders, which should be reflected in improved QoL (Sexton et al., 2014). However, while the anti-aging industry offers more and more products and treatments designed to prevent, slow, reverse, or compensate for aging-related changes, male and female beauty standards are becoming ever more demanding. Also, by combining aging consequences and control dimensions, the NCC subscale might integrate distinct views between those dimensions, resulting in a weak negative correlation between NCC and QoL. Nevertheless, this association should be further investigated using bigger samples of male users of cosmetic products and treatments in order to clarify this relationship.

No significant relationships were found between schematic investment in appearance and QoL, contrary to what is suggested in previous studies conducted with men and women

(Mellor et al., 2010; Nazaré et al., 2013). Appearance-related self-schemas are central to body image experiences in everyday life and, in adults, there are marked gender differences in body dissatisfaction and body evaluation, which are higher and more negative in women (Nazaré et al., 2013). Also, this finding may be associated with the cultural stereotypes that define beauty ideals more rigidly for women, putting greater pressure on women to correspond to unrealistic beauty standards imposed by society (Nazaré et al., 2013). Perfectionism and QoL also did not correlate, contrary to what was expected, since perfectionism has been associated with considerations for aesthetical surgery in women (Swami & Mammadova, 2012), as well as more dissatisfaction with appearance (Labunskaya, 2019), greater psychological morbidity (Limburg et al., 2017) and, consequently, worse QoL in both men and women. Although studies on perfectionism regarding physical appearance are often focused on females, men, in general, tend to report less perfectionist high expectations towards physical appearance (Simon et al., 2022), which may be reflected in this result.

When male users showed more negative reactions to aging (ER subscale), the relationship between higher levels of psychological morbidity and worse QoL was stronger. This finding emphasizes the importance of undesirable emotional responses caused by aging as a strong predictor of higher levels of psychological morbidity and lower QoL (Ingrand et al., 2018; Ramos et al., 2012; Sneed & Whitbourn, 2005). In contrast, NCC did not moderate the relationship between psychological morbidity and QoL. As indicated above, NCC captures beliefs about personal ways of managing one's experience of aging, as well as the impact of aging on one's life, thus, it is not possible to discern about the independent influence each dimension may have. In addition, the absence of this moderation effect supports the idea of aging perceptions as multidirectional, involving the "coexistence of gains and losses" (Barker, Pankhurst, & Robinson, 2007). In this case, results highlight the relevance of negative emotions in the aging process and its contribution to male users' QoL.

Although the present study focused on only three levels of the original Wilson & Cleary (1995) model (emotional/cognitive perceptions, health perceptions, and QoL), the model proved to be adequate to assess QoL in the present sample. The results confirmed emotional/cognitive perceptions (psychological morbidity) as a significant predictor of QoL, and health perceptions (aging perceptions) as a moderator between emotional/cognitive perceptions and QoL. Overall, H1 and H2 were partially corroborated.

LIMITATIONS AND FURTHER IMPLICATIONS

This study has some limitations that should be acknowledged, in particular, the sample size, some sample specificities, the exclusive use of self-report measures, and the study cross-sectional design that does not allow for causal inferences. Further research should use larger samples of male participants, as

well as more balanced samples in terms of users of cosmetic products versus aesthetic treatments, and also include participants' different education levels, and more diverse monthly incomes. The use of longitudinal designs, in future studies, will allow to evaluate changes in psychological variables over time, as men age.

Since the cosmetic industry has traditionally been perceived as feminine, research on QoL of male users is in its early stage. Therefore, more quantitative and qualitative studies are needed to understand the motivations and effects on QoL of the usage of cosmetic products and aesthetic treatments by men. As the cosmetic market is mainly gendered based on normative sexual dualism, and gender stereotypes are fading at an increasing rate, gearing towards gender-neutrality (Hämäläinen, 2019), it is very relevant that future studies include gender dimensions, namely, sexual orientation and gender identity.

CONCLUSION

According to the results, psychological intervention programs directed to male users or those interested in cosmetic products and procedures should focus on men with higher levels of psychological morbidity and more awareness of the aging process, emphasizing the reduction of negative emotional responses to the aging process, in order to promote positive aging and, therefore, QoL.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

ETHICS STATEMENT

This study was approved by the Ethics Committee for the Social and Human Sciences of the University of Minho (Reference nr. CE.CSH 087/2018). All participants signed an informed consent form.

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