Universidade do Minho
Escola de Psicologia

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The Influence of Sexual Orientation on the Perception of Body Parts Attraction

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The Influence of Sexual Orientation on the Perception of Body Parts Attraction

Dissertação de Mestrado Mestrado
em Cognição Humana

Trabalho efetuado sob a orientação da
Professora Doutora Joana Arantes

outubro de 2024

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A todos, o meu sincero agradecimento.

“

STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

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The Influence of Sexual Orientation on the Perception of Body Parts Attraction

Abstract

According to Buss (2003), attractiveness is linked to the "good genes" theory, which posits that we seek good genetic qualities in other humans, expressed through physical attributes, for the purposes of procreation or protection. Heterosexual males typically prefer individuals with more feminine traits, such as larger breasts and hips, and smaller waists, as these are associated with good reproductive capacity. In the case of heterosexual females, they tend to choose a partner or find a man more attractive if he has prominent shoulders and a larger chest, as these features are connected to strength and masculinity. (Buss, 2003; Cloud & Perilloux, 2015; Dagnino et al., 2012; Gangestad & Thornhill, 2008; Kenrick et al., 1993; Marković & Bulut, 2014, 2017, 2023; Puts, 2010; Schmitt, 2014.). The experiment suggests that gender, sexual orientation and the interaction between them, can lead to different responses of attraction. Mainly when theres the interaction between gender and sexual orientation, when itcomes to sexuality, it's very complex subject and has multifactors that can interfere in each perception of attraction towards body parts. (Erickson, 2010).

Keywords: Evolutive, attractiveness, perception, body, ratios

A Influência da Orientação Sexual na Perceção da Atratividade de Partes do Corpo

Resumo

De acordo com Buss (2003), a atratividade está associada à teoria dos "bons genes", que postula que procuramos boas qualidades genéticas em outros seres humanos, expressas através de atributos físicos, para fins de procriação ou proteção. Os homens heterossexuais tendem a preferir indivíduos com traços mais femininos, como seios e ancas maiores, e cinturas mais finas, uma vez que estes estão associados a uma boa capacidade reprodutiva. No caso das mulheres heterossexuais, estas tendem a escolher ou achar um homem mais atraente se ele tiver ombros proeminentes e um peito maior, pois essas características estão ligadas à força e masculinidade. (Buss, 2003; Cloud & Perilloux, 2015; Dagnino et al., 2012; Gangestad & Thornhill, 2008; Kenrick et al., 1993; Marković & Bulut, 2014, 2017, 2023; Puts, 2010; Schmitt, 2014). O experimento sugere que o género, a orientação sexual e a interação entre ambos podem levar a diferentes respostas de atração. Principalmente quando há a interação entre género e orientação sexual, no que diz respeito à sexualidade, é um assunto muito complexo e com múltiplos fatores que podem interferir em cada perceção de atração em relação a partes do corpo. (Erickson, 2010).

Palavras-chave: Evolutiva, atratividade, perceção, corpo, rácios.

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Introduction

There are noticeable differences in body morphology between genders, particularly in total body mass, weight, and height (Wells, 2007). Men and women also differ in the distribution of muscle, fat, and bones (Wang, 2001). Anatomical distinctions lead to perceptible variations in body shapes between genders (Buss, 2003). Men typically have broader shoulders, more upper-body muscle mass (arms, chest, and back), and a narrower waist, contributing to a V-shaped physique (Wang, 2001). In contrast, women generally exhibit a gynoid fat distribution, with wider hips and narrower waists, which creates the common “hourglass” figure (Wells, 2007). Sexual dimorphism, particularly differences in the size and proportions of the shoulders, waist, and hips, results in distinct body configurations: men tend to display an inverted triangle shape, and women an hourglass figure (Marković & Bulut, 2023).

From an evolutionary perspective, these physical traits are significant for partner selection, as more attractive bodies may signal superior morphological solutions (Buss, 2003). Sexual selection plays a crucial role in shaping human physique preferences, often favoring traits that indicate reproductive potential in females and strength or fitness in males (Dixson et al., 2007). Numerous studies have explored male preferences for feminine physical traits, showing that men generally favor features like larger breasts and buttocks, as well as a narrower waist, which accentuate an "S" shape (Cloud & Perilloux, 2015; Dagnino et al., 2012; Marković & Bulut, 2014, 2017, 2023). These features are associated with fertility and may be interpreted as signals of reproductive capacity (Buss, 2003; Schmitt, 2014). Men’s preferences to have a masculine appearance tend to include broad shoulders, a large chest, and a pronounced "T" shape, which are perceived as markers of strength and competitiveness (Marković & Bulut, 2023; Puts, 2010).

Female preferences, on the other hand, can vary depending on the menstrual cycle and the type of relationship they seek while looking for partners, for short-term partners, women may favor more masculine traits, while less masculine traits are often preferred for long-term relationships (Buss, 2003; Gangestad & Thornhill, 2008 Kenrick et al., 1993; Schmitt, 2014). Women generally share similar preferences with men when evaluating male attractiveness. While men tend to evaluate more masculine characteristics as more attractive, women also favor these attributes. They prefer a typical "T" shape, characterized by broad shoulders, long legs, and a masculine chest (Marković & Bulut, 2023). Interestingly, women also tend to prefer more masculinized female bodies when evaluating the ideal feminine figure, combining features like prominent shoulders with larger breasts and buttocks, reflecting both feminine and masculine traits (Marković & Bulut, 2023; Pazhoohi et al., 2023b). Some researchers suggest this trend may be linked to social role theory and gender equality (Wood & Eagly, 2012).

These preferences for male characteristics and female characteristics are consistent with the studies of Barber (1995) and Buss (2003), who suggest that sexual selection has shaped these traits over time. The

underlying drive is the search for partners who present a higher potential for reproductive success and the survival of offspring, often referred to as the selection for "good genes" (Barber, 1995; Buss 2003). Thus, the preference for partners displaying typical feminine or masculine traits reflects an evolutionary strategy aimed at identifying characteristics that signal physical fitness and reproductive capacity, ultimately contributing to the evolutionary success of the human species (Barber, 1995).

Research on physical traits related to attractiveness has often focused on heterosexual preferences. However, studies with gay men, such as that by Flave-Novak et al. (2018), found that they tend to prefer more masculine body features, though social pressure may influence their preferences. This highlights the need for more inclusive research on body preferences across different sexual orientations.

Breasts

Some studies have focused on specific traits, like breast size. Jasieńska et al. (2004) suggested that men may prefer larger breasts due to their association with higher estrogen levels and fertility. Research conducted by Marković and Bulut (2014, 2017, 2023) highlights that one of the most important physical traits for men, compared to women, is larger breasts, whereas women consider larger breasts less attractive. Gründl et al. (2009) analyzed various physical traits of the female body, and based on the results obtained, the ideal bust-to-waist ratio (BWR) considered most attractive was 1.30. However, intercultural research by Havlicek et al. (2017) found that preferences for breast size vary between cultures, with some countries favoring medium-sized breasts and others preferring larger ones. These findings challenge earlier assumptions linking breast size directly to fertility. What remains consistent across cultures, though, is the preference for firm breasts that appear younger, as youthful appearance is often tied to fertility (Havlicek et al., 2017; Valentova et al., 2016).

Waist-to-chest

In terms of male attractiveness, waist-to-chest ratio (WCR) has emerged as a significant factor. Studies by Maisey et al. (1999) and Swami and Tové (2005) found that a WCR of around 0.7 is considered most attractive by women. Similarly, Garza et al. (2017) observed that women focused on men's upper bodies, particularly favoring a WCR of 0.7, while higher values (0.9 or more) were seen as less attractive. ´

Shoulder-to-hip ratio

Another key trait, shoulder-to-hip ratio (SHR), is also important in male attractiveness. Dijkstra and Buunk (2001) examined jealousy and attractiveness among both male and female participants, finding that rivals with higher shoulder-to-hip ratios (SHR) were perceived as more dominant both physically and socially. For men, an SHR of 1.4 was considered most attractive, while for women, an SHR of 1.2 was preferred. Pazhoohi et al. (2023a) echoed these findings in their study, where a higher SHR of 1.3 was found to be most attractive to

women. Another study by Pazhoohi et al. (2023b), using EEG to explore neural and behavioral responses to avatars, confirmed that both men and women preferred an SHR of 1.3 in male and female avatars. Consistent with these results, Marković and Bulut (2023) also found that both men and women favored a higher SHR, with women displaying a stronger preference for higher SHR in female avatars, aligning with Dijkstra and Buunk's (2001) earlier findings.

Waist and Hips

For female body attractiveness, waist-to-hip ratio (WHR) is an important indicator. Research by Singh (1993, 1995) suggested that men find a WHR of 0.7 to 0.8 most attractive, as it is perceived to signal health and fertility. Studies by Valentova et al. (2016) and Marković and Bulut (2023) supported these findings, showing a consistent preference for a low WHR in women across different cultures. In a study by Marković and Bulut (2023), participants adjusted avatars to reflect ideal body proportions, and the results indicated a preference for a WHR of approximately 0.74 for female avatars and 0.85 for male avatars, aligning with earlier findings.

Buttocks

Buttocks, though often discussed in studies on female attractiveness, are not always the primary focus compared to other traits like WHR and breast size. In their 2014 study, Marković and Bulut (2023) found that the attractiveness of buttocks was less significant than other body parts. However, more recent research (2017) showed a preference for larger buttocks in some intercultural samples. Similar studies by Dagnino et al. (2012) and Valentova et al. (2016) found that heterosexual men, particularly in Brazil, preferred larger buttocks, while lesbian women tended to prefer smaller buttocks. Research by Lewis et al. (2015) also indicated that men prioritize lumbar curvature over buttock size, associating it with reproductive fitness. A follow-up study by Pazhoohi et al. (2018) supported this, showing that men find greater lumbar curvature more attractive, while women focus more on the waist.

Despite this focus on female body traits, there is a lack of research on male buttocks and attractiveness. In their 2023 study, Marković and Bulut (2023) addressed this gap, showing that participants found larger-than-average buttocks more attractive.

The present study

This study builds upon the research conducted by Marković and Bulut (2023), with key modifications to the stimuli and participants to address gaps in previous work. More specifically, the avatars' heads have been removed to avoid facial bias in attractiveness judgments, and the sample has been expanded to include gay, lesbian, and bisexual individuals,. This is a crucial step in addressing the lack of research that explores the perceptions of attractiveness within LGBTQ+ communities, as prior studies have predominantly focused on

heterosexual preferences (Pazhoohi et al., 2023a; Valentova et al., 2016). The main objective of this study is to determine whether sexual orientation influences participants' evaluations of body attractiveness, thereby enriching our understanding of how diverse orientations shape beauty standards.

The first hypothesis posits that men, regardless of sexual orientation, will exhibit a stronger preference for more accentuated feminine traits in female bodies, such as a higher waist-to-hip ratio (WHR), compared to female participants (Markovic & Bulut, 2023; Singh, 1993). This aligns with evolutionary theories suggesting that men are more attuned to physical markers of fertility, such as a low WHR, which is often linked to reproductive health (Singh, 1993; Jasienska et al., 2004). The second hypothesis predicts that sexual orientation will not significantly influence the perceived attractiveness of specific body parts. The third hypothesis proporses that bisexual, homosexual, and heterosexual men will generally agree on which stimuli are perceived as the most attractive for the evaluated body part. Similarly, bisexual, homosexual, and heterosexual women are expected to show consensus on the most attractive body proportions.

Method

Participants

A total of 639 participants were recruited via social media platforms, including Facebook and Instagram. The sample consisted of both males and females with different sexual orientations. Among the male participants, 78 identified as heterosexual (M = 27.08 years), 175 as homosexual (M = 28.78 years), and 35 as bisexual (M = 25.63 years). Among the female participants, 314 identified as heterosexual (M = 27.29 years), 18 as homosexual (M = 27.56 years), and 19 as bisexual (M = 23.68 years).

Stimuli

The stimuli were created using DAZ Studio 4.2, a 3D scene creation and rendering software used to produce high-quality images and videos, in conjunction with Measure Metrics for DAZ Studio, which allowed for accurate measurements of the avatars to ensure realistic representations. For this study, a total of 18 stimuli were created, equally divided between male (Figure 1) and female (Figure 2) images, to examine variations in specific body ratios and physical traits. For the female stimuli, three different Waist-to-Hip Ratios (WHR) were used: 0.5, 0.7 and 0.9. Additionally, three different breasts sizes were created – small, medium, and large – as well as three buttock sizes – small, medium, and large. For the male stimuli, three different Waist-to-Chest Ratios (WCR), were developed: 0.5, 0.7 and 0.9. In addition, three Shoulder-to-Hip ratios (SHR) were included: 1.2, 1.4, and 1.6. Lastly, three different buttock sizes were also made for the male stimuli: small, medium and large. Prior to conducting the main study, a pre-selection process was carried out by a separate group of participants to determine the suitability of the figures used as stimuli.

Figure 1 - Stimuli of female body parts

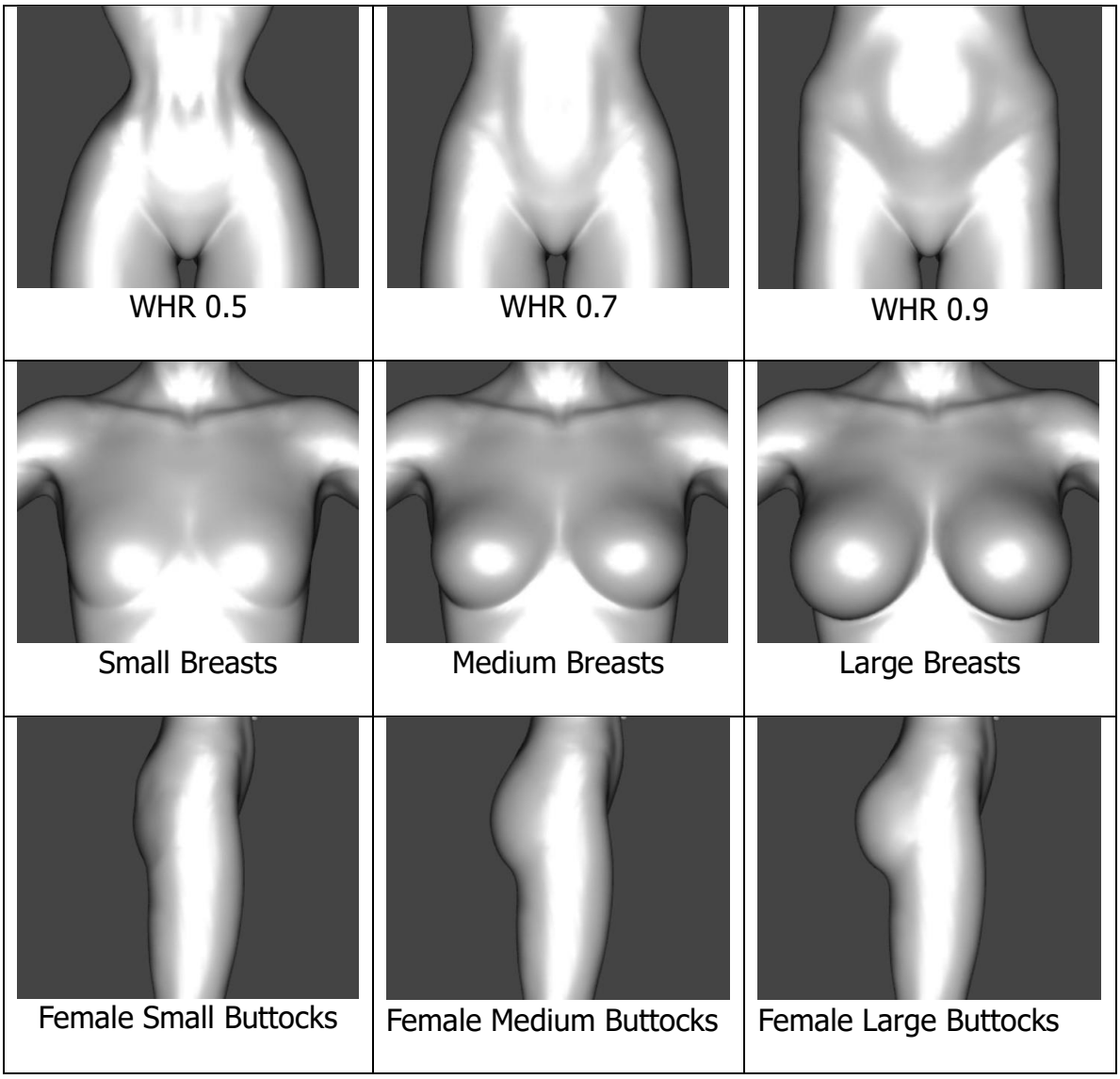
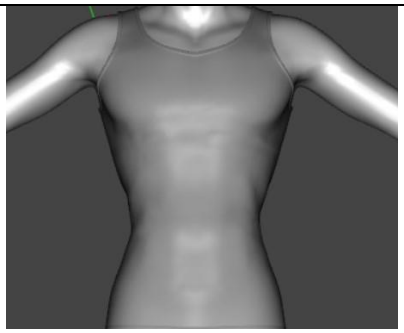
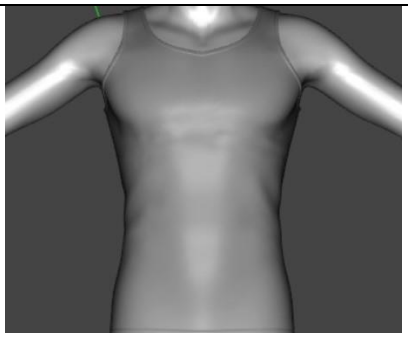
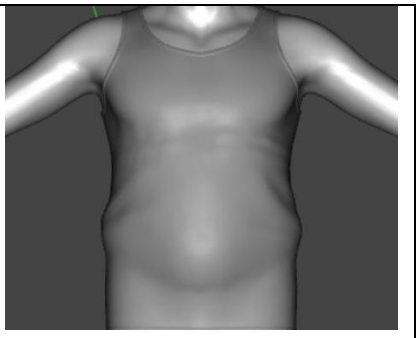
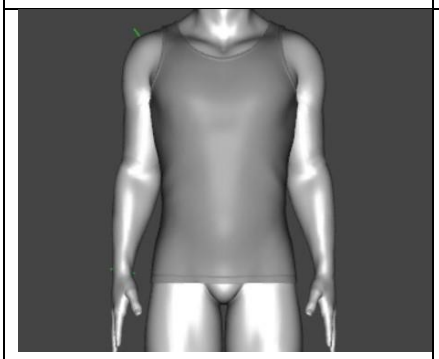
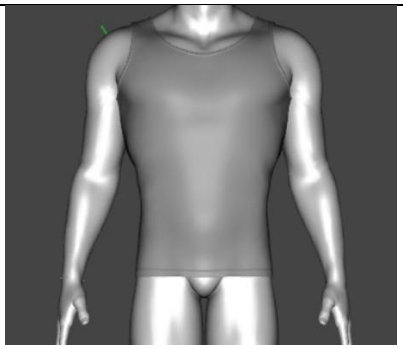
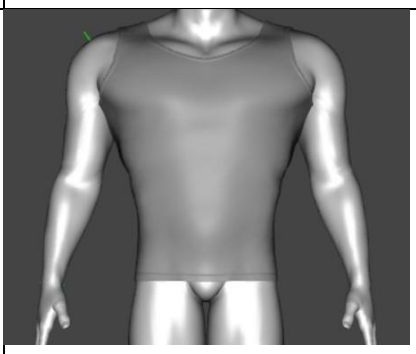
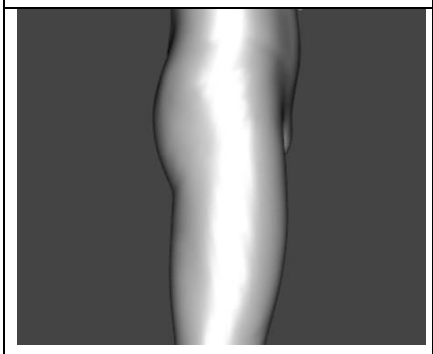
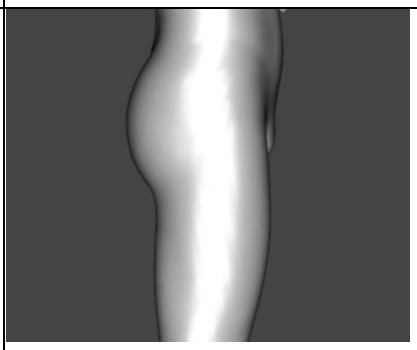
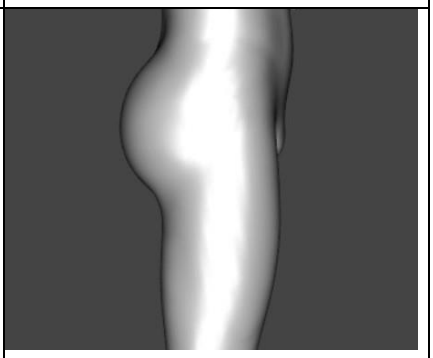


Figure 2 Male Body Parts

 WCR 0.5	 WCR 0.7	 WCR 0.9
 SHR 1.2	 SHR 1.4	 SHR 1.6
 Male Small Buttocks	 Male Medium Buttocks	 Male Large Buttocks

Procedure

A link was sent to the participants, inviting them to complete an online questionnaire. Participants' responses were recorded anonymously on an Internet webpage using Qualtrics software. Prior to completing the questionnaire, participants were asked to consent to participate in the study through an informed consent form, which provided a brief explanation of the study and included the contact information of the principal investigator, allowing participants to easily reach out with any questions or requests for clarification. The informed consent also assured participants of the confidentiality, anonymity, and security of their data. The questionnaire protocol included a sociodemographic section that allowed framing and characterizing the participants' profiles (age, nationality, gender, sexual orientation). In the task section of the questionnaire, participants were asked to evaluate different figures and body ratios on a scale from 1 (not attractive) to 10 (very attractive).

Data analysis

The data collected in this study were analyzed using the Statistical Package for Social Sciences (SPSS, v. 29). A total of six repeated-measures analyses of variance (ANOVAs) were conducted, one for each body part: breasts, female buttocks, Shoulder-to-Hip Ratio (SHR), male buttocks, Waist-to-Chest Ratio (WCR), and Waist-to-Hip Ratio (WHR). Each body part was presented with three different size variations. The analyses included gender (male/female) and sexual orientation as between-subjects factors, and the three size variations of each body part as within-subject factors. To assess differences between groups, post-hoc Tukey's tests were performed. Additionally, paired sample t-tests were used to evaluate potential differences within groups.

A criterion of $p < .05$ was used for significance tests.

Results

Waist-to-Hip Ratio

Figure 3 shows the perceived attractiveness of the different Waist-to-Hip Ratios (WHR) (0.5, 0.7, and 0.9) across gender and sexual orientations. A repeated measures ANOVA, with WHR as a within-subject factor and sexual orientation and gender as between-subject factors revealed a significant main effect for WHR, $F(1.934, 1102.487) = 94.869$, $p < .001$). This indicates significant differences in perceived attractiveness based on WHR. Paired sample *t*-tests showed that the 0.7 WHR ($M = 5.97$, $SD = 2.80$) was perceived as significantly more attractive than both the 0.5 WHR ($M = 3.82$, $SD = 2.72$), $t(595) = -17{,}468$, $p < .001$, and the 0.9 WHR ($M = 3.72$, $SD = 2.37$), $t(601) = 21{,}025$, $p < .001$,. No significant difference was found between the 0.5 and 0.9 WHRs, $t(601) = 0{,}843$, $p = 0.40$.

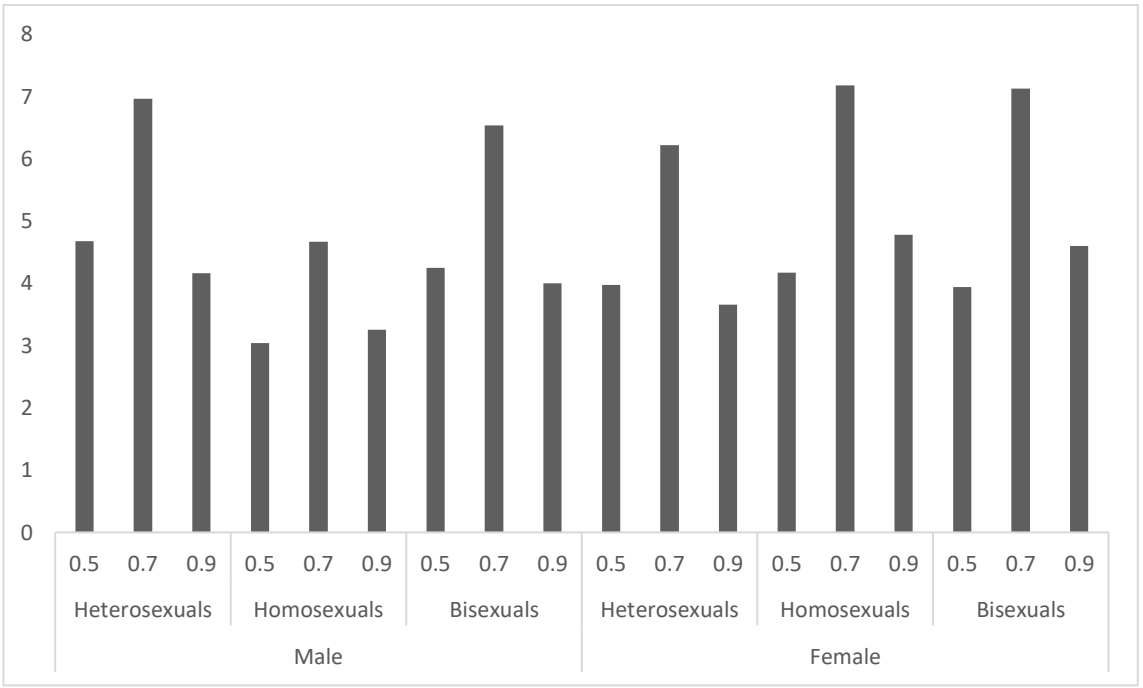
The interaction between WHR and gender was not significant, $F(1,570) = 2.904$, $p = 0.089$), suggesting that the effect of WHR on perceived attractiveness is consistent across genders. Similarly, the interaction between WHR and sexual orientation was not significant, F (2,570) = 1.297, p =0.274), indicating that sexual orientation did not significantly alter the effect of WHR.

Furthermore, the three-way interaction between WHR, gender, and sexual orientation was significant, $F(2,570) = 8.620$,$p < 0.01$), meaning that the combined effect of gender and sexual orientation does significantly influence perceptions of attractiveness based on WHR.

The ANOVA further showed no significant main effect of gender, $F(1.934,1102.487) = 2.005$, $p = 0.137$, or sexual orientation, $F(3.868,1102.487) = 1.913$, $p = 0.108$. Additionally, there was no significant interaction between gender and sexual orientation, $F(3.868, 1102.487) = 1.043$, $p = 0.383$, indicating that the combination of the factors does not significantly influence perceived attractiveness.

Figure 3

Average perceived attractiveness of the different WHR, separately for males and females, as well as for the different sexual orientations.



Breasts

Figure 4 shows the perceived attractiveness of the different sizes of breasts (small, medium, and large) across gender and sexual orientations. A repeated measures ANOVA, with breast sizes as a within-subject factor and sexual orientation and gender as between-subject factors revealed a significant main effect for breast size, $F(1.804, 1030.176) = 39.245$, $p < 0.001$). This indicates significant differences in perceived attractiveness based on breast sizes. Paired sample *t*-tests showed that small breasts ($M = 4.53$, $SD = 2.59$) were perceived as significantly less attractive than both the medium breasts ($M = 5.64$, $SD = 2.95$), $t(599) = -2{,}656$, $p < .001$, and the large breasts ($M = 5.43$, $SD = 3.090$), $t(601) = 8{,}121$, $p < .001$,. A significant difference was also found between medium and large breasts, $t(602) = -11{,}978$, $p < .001$, showing that medium breasts were perceived as more attractive than large breasts.

The interaction between breast sizes and gender was not significant, $F(1{,}571) = 2.305$, $p = 0.130$), suggesting that the effect of breast size on perceived attractiveness is consistent across genders. In contrast, the interaction between breast size and sexual orientation was significant, $F\ (2{,}571) = 3.538$, $p = 0.030$), suggesting that sexual orientation

significantly alters the effect of breast size on perceived attractiveness.

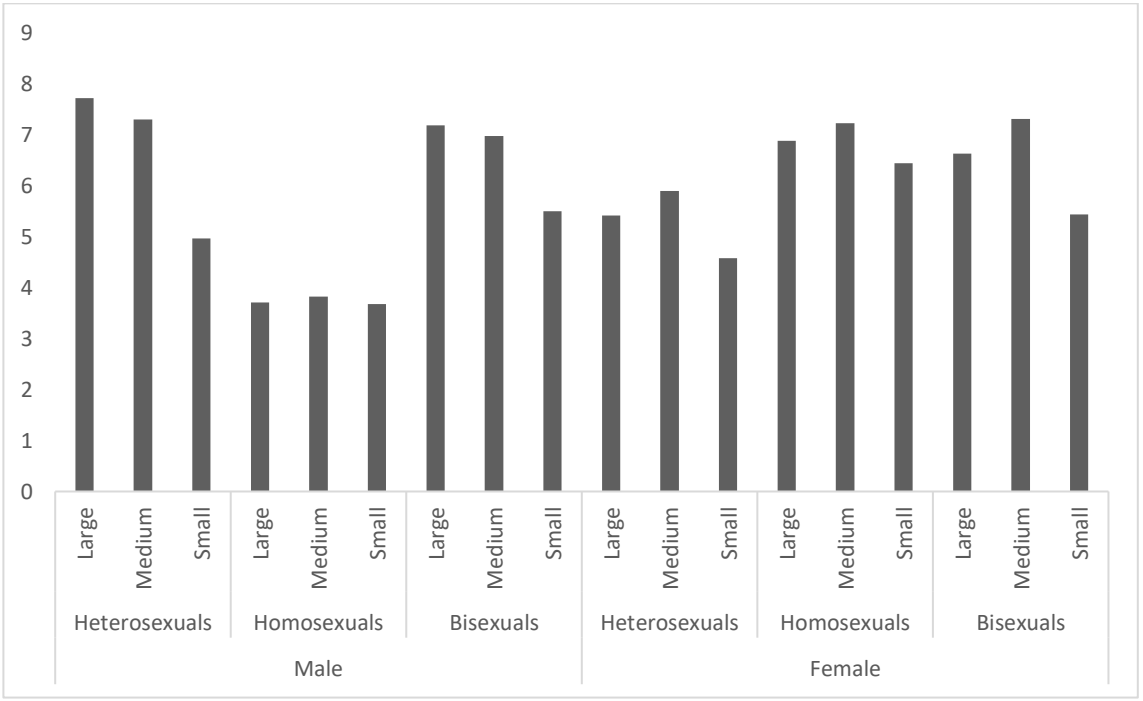
The three-way interaction between breast size, gender, and sexual orientation was significant, $F(2,571) = 20.641, p < 0.001$), meaning that the combined effect of gender and sexual orientation does significantly influences perceptions of attractiveness based on breast size.

The ANOVA also showed significant main effect of gender, $F(1.804, 1030.76) = 33.248$, $p = 0.044$, and sexual orientation, $F(3.608,1030.176) = 6.512$, $p < .001$. Furthermore, it also showed a significant interaction between gender and sexual orientation, $F(3.608, 1030.176) = 4.109$, $p = 0.004$, suggesting that the interaction of the factors does have a significant impact on perceived attractiveness.

Post-hoc Tukey tests revealed that heterosexual participants rated the perceived attractiveness of the different breast sizes significantly lower, large ($M = 5.43$; $SD = 3.090$), medium ($M = 5.64$; $SD = 2.946$), small ($M = 4.57$; $SD = 2.608$) compared to homosexual participants ($p < .001$). However, no significant differences were found between heterosexual and bisexual participants, nor between homosexual and bisexual participants ($p > .05$).

Figure 4

Average perceived attractiveness of the different breast sizes, separately for males and females, as well as for the different sexual orientations.



Female Buttocks

Figure 5 shows the perceived attractiveness of the different sizes of buttocks (small, medium, and large) across gender and sexual orientations. A repeated measures ANOVA, with buttocks sizes as a within-subject factor and sexual orientation and gender as between-subject factors revealed a significant main effect for buttocks sizes, $F(1.903, 1086.486) = 189.094$, $p < 0.001$). This indicates significant differences in perceived attractiveness based on buttocks sizes. Paired sample t-tests showed that small buttocks ($M = 3.28$, $SD = 2.65$) were perceived as significantly less attractive than both the medium buttocks ($M = 6.29$, $SD = 2.511$) and the large buttocks ($M = 6.14$, $SD = 2.65$), $p < 0.001$. There were no significant differences found between medium and large buttocks $p = 0.120$.

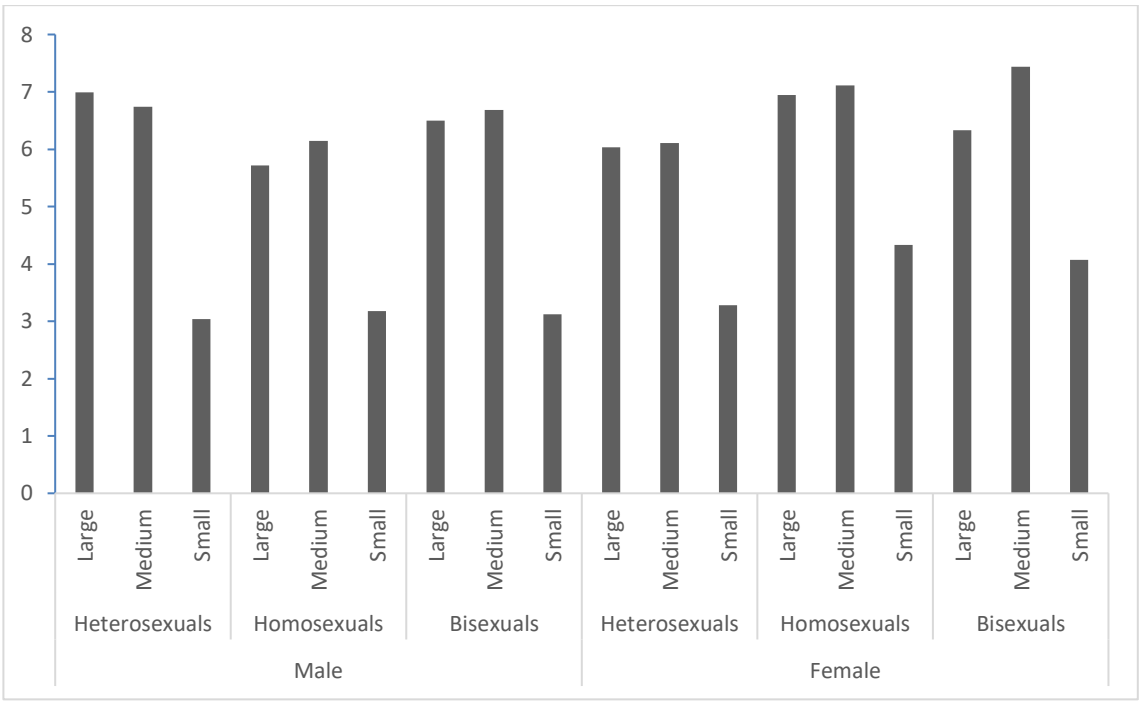
The interaction between buttock sizes and gender was not significant, $F(1,571) = 2.298$, $p = 0.130$), suggesting that the effect of buttock size on perceived attractiveness is consistent across genders. Also, the interaction between buttock size and sexual orientation was not significant, $F(2,571) = 0.652$, $p = 0.521$), implying that sexual orientation did not significantly alter the effect of buttock size on perceived attractiveness.

Additionally, three-way interaction between breast size, gender, and sexual orientation was significant, $F(2,571) = 4.271$,$p < 0.001$), meaning that the combined effect of gender and sexual orientation does significantly influence perceptions of attractiveness based on buttock size.

The ANOVA main effect of gender, showed no significant, $F(1.903, 1086,486) = 2.045$, $p = 0.132$, or sexual orientation, $F(3.608, 1086,486) = 2.045$, $p = 0.184$, and also significant interaction between gender and sexual orientation, $F(3.608, 1086,486) = 0.820$, $p = 0.507$, suggesting that the interaction of the factors doesn't have a significant impact on perceived attractiveness of buttock sizes.

Figure 5

Average perceived attractiveness of the different buttock sizes, separately for males and females, as well as for the different sexual orientations.



Shoulder to Hip Ratio

Figure 6 shows the perceived attractiveness of the different Shoulder-to-Hip Ratios (WHR) (1.2, 1.4, and 1.6) across gender and sexual orientations. A repeated measures ANOVA, with SHR as a within-subject factor and sexual orientation and gender as between-subject factors revealed a significant main effect for SHR, $F(1.823, 1048.007) = 53.166$, $p < .001$). This points out significant differences in perceived attractiveness based on SHR. Paired sample t-tests showed that the 1.2 SHR ($M = 6.46$, $SD = 2.546$) was perceived as significantly more attractive than both the 1.4 SHR ($M = 5.72$, $SD = 2.699$) and 1.6 SHR ($M = 4.12$, $SD = 2.734$), $p < 0.001$. Furthermore, the 1.4 SHR was perceived as more attractive than the 1.6 SHR but less attractive than the 1.2 SHR. Significant differences were found between all three SHR ratios, $p < .001$.

The interaction between SHR and gender was significant, $F(1,575) = 23.609$, $p <$

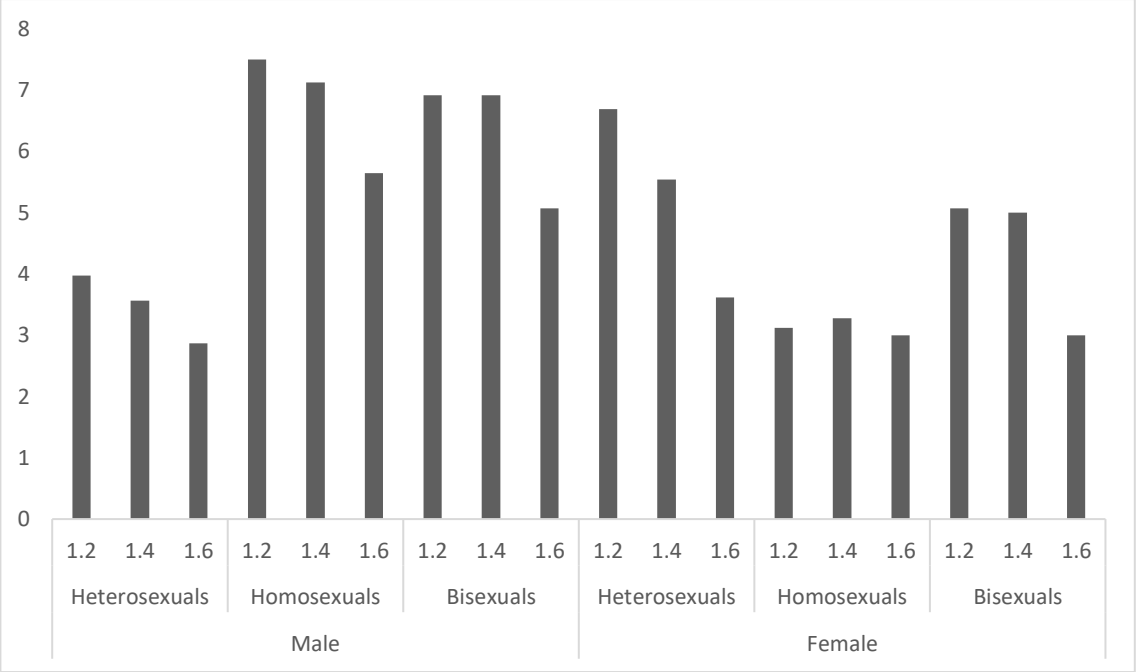
0.001), indicating that the effect of SHR on perceived attractiveness is consistent across genders while, the interaction between SHR and sexual orientation was significant, F (2,575) = 4.800, p < 0.001), indicating that sexual orientation did significantly alter the effect of SHR.

The three-way interaction between SHR, gender, and sexual orientation was significant, F(2,575) = 59.732, p < 0.001), meaning that the combined effect of gender and sexual orientation does significantly influence perceptions of attractiveness based on SHR.

The ANOVA further showed no significant main effect of gender, F(1.934,1102.487) = 2.005, p = 0.137, or sexual orientation, F(3.868,1102.487) = 1.913, p = 0.108. Additionally, there was no significant interaction between gender and sexual orientation, F(3.868, 1102.487) = 1.043, p = 0.383, indicating that the combination of the factors does not significantly influence perceived attractiveness.

Figure 6

Average perceived attractiveness of the different SHR, separately for males and females, as well as for the different sexual orientations.



Waist to chest Ratio

Figure 7 shows the perceived attractiveness of the different Shoulder-to-Hip Ratios (WCR) (0.5, 0.7, and 0.9) across gender and sexual orientations. A repeated measures

ANOVA, with WCR as a within-subject factor and sexual orientation and gender as between-subject factors revealed a significant main effect for WCH, $F(1.937, 111.662) = 89.398$, $p < .001$). This points out significant differences in perceived attractiveness based on WCR. Paired sample t-tests showed that the 0.7 WCR ($M = 5.63$, $SD = 2.560$) was perceived as significantly more attractive than both of the 0.5 WCR ($M = 4.67$, $SD = 2.545$) and the 0.9 ($M = 2.86$, $SD = 1.957$), $p < .001$. Additionally, the 0.5 WCR was perceived as more attractive than the 0.9 WCR. Significant differences were found between all three WCR, $p < .001$.

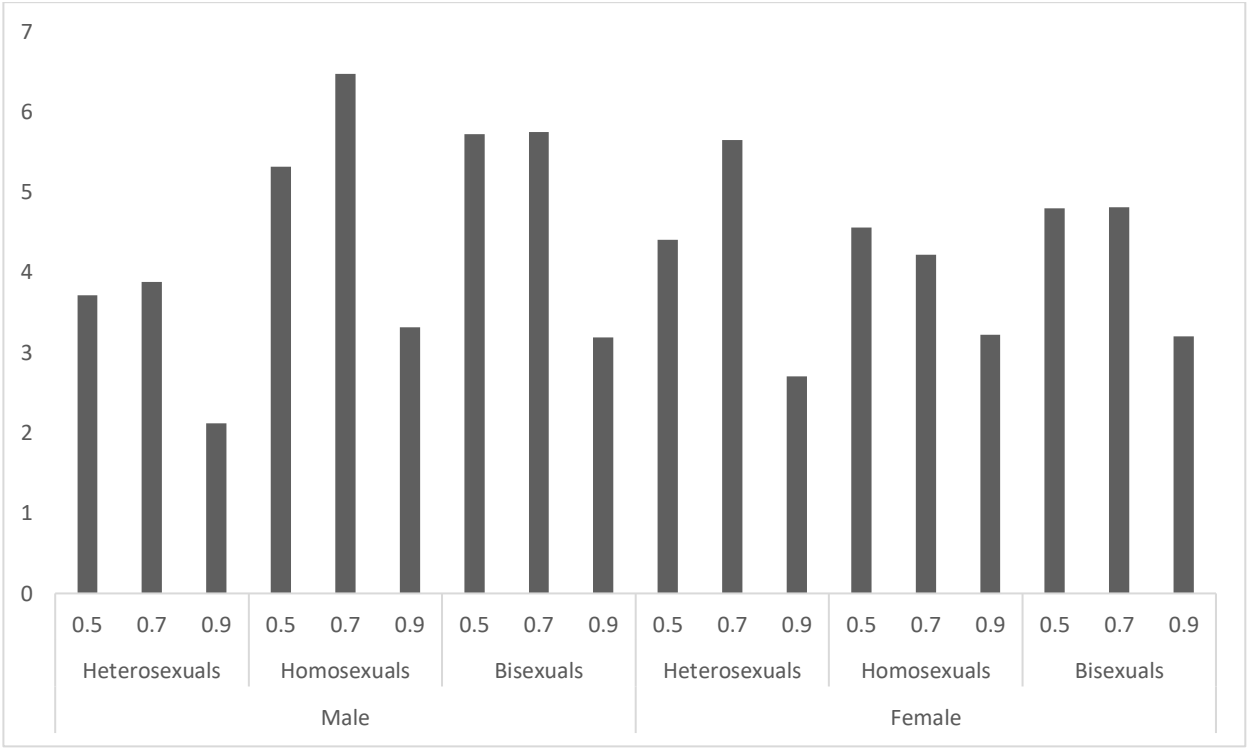
The interaction between WCR and gender was not significant, $F(1,574) = 0.673$, $p = 0.413$), showing that the effect of WCR on perceived attractiveness is consistent across genders. The interaction between WCR and sexual orientation was significant, $F(2,574) = 7.227$, $p = 0.001$), indicating that sexual orientation did significantly alter the effect of WCR.

The three-way interaction between WCR, gender, and sexual orientation was significant, $F(2,574) = 10.438$, $p < .001$), meaning that the combined effect of gender and sexual orientation does significantly influence perceptions of attractiveness based on WCR.

The ANOVA further showed no significant main effect of gender, $F(1.937,1111.662) = 1.965$, $p = 0.42$, or sexual orientation, $F(3.873,1111.662) = 0.789$, $p = 0.569$. However, there was significant interaction between gender and sexual orientation, $F(3.873, 1111.662) = 6.183$, $p < .001$, indicating that the combination of the factors does significantly influence perceived attractiveness.

Figure 7

Average perceived attractiveness of the different WCR, separately for males and females, as well as for the different sexual orientations.



Male Buttocks

Figure 8 shows the perceived attractiveness of the different buttock sizes (small, medium and large) across gender and sexual orientations. A repeated measures ANOVA, with buttock sizes as a within-subject factor and sexual orientation and gender as between-subject factors revealed a significant main effect for buttock size, $F(1.832, 1045.534) = 212.554$, $p < .001$). This points out significant differences in perceived attractiveness based on buttock sizes. Paired sample t-tests showed that large buttock size ($M = 6.89$, $SD = 2.498$) was perceived as significantly more attractive than medium buttock size ($M = 5.69$, $SD = 2.442$) and small buttock size ($M = 3.42$, $SD = 2.256$) $p < .001$ for all comparisons. Moreover, medium buttock size was perceived as significantly more attractive than small buttock size, $p < .001$.

The interaction between male buttock size and gender was not significant, $F(1.571,571) = 3.099$, $p = 0.079$), showing that the effect of buttock size on perceived

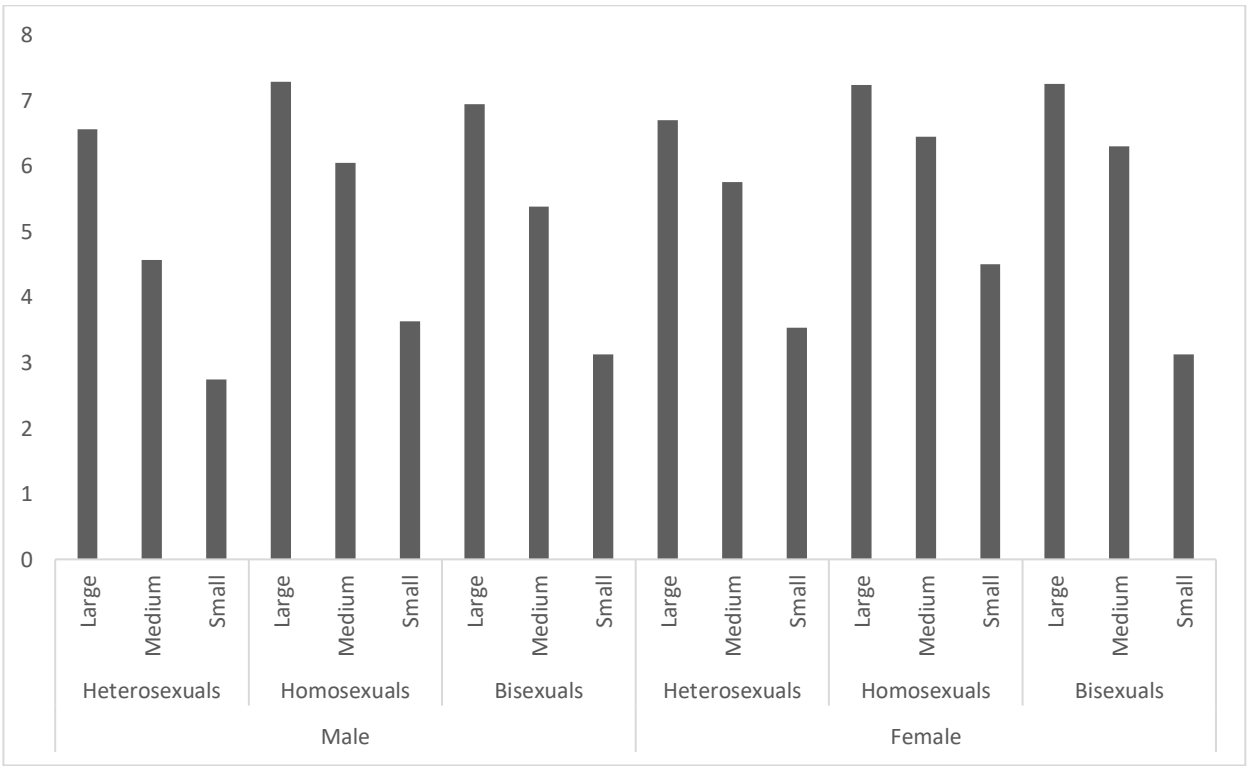
attractiveness is consistent across genders. However, the interaction between buttock size and sexual orientation was significant, F (2,571) = 4.554, p = 0.011), indicating that sexual orientation did significantly alter the effect of buttocks size on perceived attractiveness.

The three-way interaction between buttocks size, gender, and sexual orientation was not significant, F(2,571) = 0.435, p = 0.647), meaning that the combined effect of gender and sexual orientation does significantly influence perceptions of attractiveness based on male buttock sizes.

The ANOVA further showed no significant main effect of gender, F(1.831,1045.534) = 1.444, p = 0.237, or sexual orientation, F(3.662,1045.534) = 0.723, p = 0.576. As well, there was no significant interaction between gender and sexual orientation, F(3.662, 1045.534) = 0.635, p = 0.576, indicating that the combination of the factors does not significantly influence perceived attractiveness

Figure 8

Average perceived attractiveness of the different male buttock sizes, separately for males and females, as well as for the different sexual orientations.



Discussion

The main purpose of this experiment was to understand how sexual orientation influences the perception of attractiveness across different body parts. This remains a topic of ongoing discussion in science, as researchers continue to explore whether sexual orientation affects how individuals perceive the attractiveness of others, including both same- and opposite-gender individuals. We aimed to examine the influence of gender and sexual orientation on attractiveness, addressing the gaps in research regarding sexual orientation within the context of evolutionary psychology. To achieve this, we used stimulus that had previously been applied in studies with heterosexual populations (Markovic & Bulut, 2023, have already been standardized for what is commonly considered attractive. These stimuli included different ratios and sizes of male Shoulder-to-Hip Ratio (SHR) and Waist-to-Chest Ratio (WCR), as well as female Waist-to-Hip Ratio (WHR) and breast sizes, in addition to both male and female buttocks. Participants from different genders and sexual orientations were asked to evaluate the attractiveness of these body parts through a questionnaire. .

The first hypothesis suggested that men rank the ideal female body type as having large breasts, a smaller waist, and larger buttocks, while women would tend to prefer a more natural, average body. However, the results showed no significant differences between males and females, indicating that gender does not seem to affect the perception of attractiveness for the three female body parts (WHR, buttocks, and breast sizes). Both genders generally preferred the idealized body, which emphasize more pronounced feminine features, leading to faster gender categorization and higher attractiveness ratings. (Markovic & Bulut, 2019). Contrary to the notion that unrealistic body proportions, such as those of a Barbie doll, are less attractive (Einon, 2012), our findings align with the study by Dixson et al. (2015), which demonstrated that both men and women rated medium to larger breasts as more attractive, with only minor differences in their evaluations. This raises an important question: is there a preference for an exaggeratedly feminine body type? In this case, the most feminine body parts – such as larger breasts, a smaller WHR (6.8), and larger buttocks – were more accentuated, yet remained within the boundaries of the ideal WHR of 0.7 (Markovic & Bulut, 2017). These findings suggest that men may prioritize physical attributes linked

to reproductive success, choosing partners who possess traits associated with higher attractiveness, in line with the "good genes" theory. This theory posits that attractiveness is related to health and fertility, which would benefit offspring (Buss, 1989; Buss & Barnes, 1986). This evolutionary perspective reinforces the idea that men are more focused on selecting partners whose physical traits signal reproductive health and genetic quality.

The second hypothesis suggests that sexual orientation does not significantly influence the perception of attractiveness regarding different body parts. Based on the results, there were partially significant differences, with breast size, SHR and WCR, and female buttocks showing no significant differences across sexual orientations. Homosexuals, heterosexuals, and bisexual's participants all consistently rated a WHR of 0.7 as the most attractive, showing consistency across sexual orientations. According to Singh (1993), the 0,7 WHR is considered the most attractive as it signifies fertility and reproductive health. Although homosexual individuals do not engage in biological reproduction within same-sex relationships, the concept of kin altruism plays a role, where homosexual individuals support the survival and success of their relatives as a form of evolutionary maintenance (Erickson, 2010). Based on this, it can be speculated that the consistency in WHR preferences among homosexual individuals, similar to those of different sexual orientations, might reflect an evolutionary intention to contribute to the survival and continuation of the human species through indirect means. This behavior mirrors the reproductive motives found in heterosexual and bisexual individuals seeking opposite-sex partners (Buss, 2003). Regarding breast size, the results were statistically significant, suggesting that sexual orientation may influence how breast size is perceived. Multiple studies, across different cultures, have demonstrated that larger breasts are not universally regarded as the most attractive (Singh & Young, 1995). Therefore, this finding implies that there are other factors beyond sexual orientation that contribute to these preferences. In summary, these results suggest that while sexual orientation may influence the perception of attractiveness for certain body ratios, the current literature lacks sufficient evidence to conclude that sexual orientation alone has a significant impact on these perceptions. Other factors, such as cultural influences and individual preferences, likely play a role as well.

The final hypothesis suggested that bisexual, homosexual, and heterosexual men

would agree on which stimuli are perceived as the most attractive for the evaluated body part. Similarly, it was expected that bisexual, homosexual, and heterosexual women would also agree on the most attractive stimuli. However, the significant differences found in the results do not support this hypothesis. Research indicates that homosexual men are generally more attracted to masculine figures, though their preferences can be shaped by factors beyond evolutionary influences. For instance, Swami and Tovee (2008) found that homosexual men tend to prefer men with lower WCR, creating the classic V-shaped figure (Wang,2001) – a preference also shared by heterosexual women. Other studies suggest that homosexual men's attraction to masculinity can be influenced by early life experiences, such as bullying, or by cultural pressures within the LGBTQ+ community, where masculinity may be idealized (LMSW, 2011). Thus, it is not solely the interaction between sexual orientation and gender that affects perceptions of attractiveness but also the broader social and cultural context. For instance, Valentova et al. (2016) noted that homosexual women tend to prefer different body types, such as smaller breasts and larger WHR, which do not align with the preferences of heterosexual men. According to evolutionary psychology, a higher WHR is often associated with less favorable health and fertility outcomes (Buss, 2033). Valentova's (2016) study also highlighted that cultural context and personal relationships, such as comparisons with maternal figures, can influence perceptions of attractiveness. In her study, some participants chose body figures resembling their mothers, showing how personal experiences shape these preferences.

This complexity leads to a reflection on the intricate interaction between gender, sexual orientation, and the external environment in shaping perceptions of attraction. These factors create nuanced responses to attractiveness, supporting the idea that sexuality is a multifaceted construct influenced by a variety of elements, as Erickson (2010) also suggests.

Limitations and future studies

Despite the significant insights gained from this study, several limitations should be acknowledged. First, the use of avatars without heads in the stimuli, while intentional to avoid facial bias, may limit the ecological validity of the findings. In real-world settings, facial features play an important role in attractive judgments, and future studies should consider integrating full-body stimuli, including facial characteristics, to

provide a more holistic understanding of attractiveness perception. Second, the study primarily focused on the visual aspect of attractiveness without considering other influential factors such as voice, personality, or behavior, which are also integral to attractiveness in interpersonal relationships. Future research could adopt a multimodal approach, incorporating both visual and auditory stimuli, to examine how different senses contribute to overall perceptions of attractiveness across sexual orientations and genders. Another limitation is the reliance on self-reported questionnaires for assessing participants' perceptions of attractiveness. Self-report measures are susceptible to social desirability bias, particularly when addressing sensitive topics such as sexual orientation. Future studies could benefit from using more objective measures, such as eye-tracking technology or neuroimaging, to gather data on real-time preferences and attentional biases during the evaluation of stimuli. Lastly, the sample in this study consisted of participants from a relatively narrow age range and cultural background, primarily composed of university students. Given that cultural norms and life experiences significantly shape perceptions of attractiveness, future studies should aim to include more diverse samples, both in terms of age, culture, and background, to examine how these factors interact with sexual orientation and gender in shaping attractiveness preferences.

Conclusion

This study sought to investigate how sexual orientation and gender influence the perception of attractiveness across various body parts, filling a gap in the literature regarding LGBTQ+ populations within evolutionary psychology. The results demonstrated that while certain body features, such as the Waist-to-Hip Ratio (WHR), were consistently rated as attractive across sexual orientations, other features, such as breast size, showed significant variability, suggesting that attractiveness is influenced by a combination of evolutionary and social factors. The findings suggest that sexual orientation plays a role in shaping preferences for masculine and feminine body traits, but these preferences are also shaped by cultural expectations, early life experiences, and social influences. Importantly, the study emphasizes that perceptions of attractiveness are not solely dictated by sexual orientation, as commonly assumed in evolutionary models, but are rather a complex interplay of biological and contextual factors. This research contributes to a more nuanced understanding of how gender and

sexual orientation intersect in shaping body preferences. It highlights the need for further exploration into how these perceptions are influenced by societal pressures and individual experiences, ultimately suggesting that attractiveness is a far more complex construct than previously thought. Future studies should continue to broaden this understanding, exploring how factors such as cultural diversity, personal experience, and non-visual stimuli contribute to the perception of attractiveness across different populations.

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Universidade do Minho

Conselho de Ética

Comissão de Ética para a Investigação em Ciências Sociais e Humanas (CEICSH)

Identificação do documento: CEICSH 159/2024

Título do projeto: *O impacto da orientação sexual na atratividade corporal*

Equipa de Investigação: Maria João Machado da Silva e Rodrigo Botelho Couto, Mestrado em Cognição Humana, Universidade do Minho; Joana Arantes (Orientadora), Escola de Psicologia, Universidade do Minho

PARECER

A Comissão de Ética para a Investigação em Ciências Sociais e Humanas (CEICSH) analisou o processo relativo ao projeto de investigação acima identificado, intitulado *O impacto da orientação sexual na atratividade corporal*.

Os documentos apresentados revelam que o projeto obedece aos requisitos exigidos para as boas práticas na investigação com humanos, em conformidade com as normas nacionais e internacionais que regulam a investigação em Ciências Sociais e Humanas.

Face ao exposto, a Comissão de Ética para a Investigação em Ciências Sociais e Humanas (CEICSH) nada tem a opor à realização do projeto nos termos apresentados no Formulário de Identificação e Caracterização do Projeto, que se anexa, emitindo o seu parecer favorável, que foi aprovado por unanimidade pelos seus membros.

Braga, 18 de outubro de 2024.

O Presidente da CEICSH

Assinado por: **EMANUEL PEDRO VIANA BARBAS DE ALBUQUERQUE**
Num. de Identificação: 07089799 Data: 2024.10.18 11:45:18 +0100

(Emanuel Pedro Viana Barbas Albuquerque)

Anexo: Formulário de identificação e caracterização do projeto

Anexo: Formulário de identificação e caracterização do projeto