

The Role of Spirituality in the Relationship Between Body Satisfaction and Mental Well-Being in Women and Men: A Moderated Moderation Analysis

E. M. S. Smith (s2254492)

Faculty of Behavioral, Management, and Social Sciences (BMS), University of Twente

Positive Clinical Psychology and Technology

MSc-Thesis PSY

First Supervisor: Dr. M. Schotanus-Dijkstra

Second Supervisor: Dr. M. Pieterse

February 21, 2024

Abstract

Fredrickson and Roberts' objectification theory posits that low body satisfaction, stemming from unrealistic societal beauty standards, negatively impacts mental well-being. Research suggests that spirituality could mitigate this relationship by providing an alternative outlook on the body, and sources of self-esteem and coping. This implies the potential for a moderation effect by spirituality, with gender-based distinctions potentially affecting the hypothesized model. Employing regression analysis via the Hayes PROCESS Macro for SPSS, this study conducted a secondary analysis using data from a Dutch population-based, cross-sectional online survey, the Longitudinal Internet Studies from the Social Sciences Panel. The data was obtained from three separate studies and encompassed 363 participants. Contrary to expectations, the results revealed non-significant relationships for the hypothesized moderation model, irrespective of gender. This lack of significance may be attributed to the use of one-item, non-verified measurements for spirituality and body satisfaction, along with a high, right skewness in the average age of the sample. The study contributes to the ongoing discourse on the relationship between spirituality, body satisfaction, and well-being, signaling opportunities for future research to explore additional factors and dimensions that could elucidate the understanding of the complex interplay among these three variables.

Introduction

Throughout history, human beings have consistently striven for a fulfilling existence. This pursuit of well-being has been a recurring theme in the ideologies of ancient philosophers like Aristotle and contemporary movements such as Positive Psychology. Within the realm of psychology, this objective is referred to as mental well-being, defined as "...a state of successful performance of mental functions, resulting in productive activities, fulfilling relationships with people, and the ability to adapt, to change and to cope with adversity" (US DHHS, 2001; p.4). Low well-being has been linked to a high prevalence of mental illness (Keyes, 1998; Keyes, 2005). Both pose a significant financial burden on society (Arias et al., 2022; Bloom et al., 2011), with the Dutch healthcare cost escalating from 3.54 billion in 2017 to 4.97 billion in 2023 (Vankar, 2023). Keyes (2002) proposed a comprehensive well-being model categorized into three fundamental components (Keyes, 2002; WHO, 2004): First, emotional well-being epitomizes an individual's overall affect and life satisfaction (Keyes, 2009; Watson & Tellegen, 1985). Second, social well-being represents interpersonal facets of mental well-being, including the presence of fulfilling relationships and the ability to adapt to changes (Keyes, 2002). Lastly, psychological well-being encompasses an individual's self-realization, self-acceptance, self-esteem, and self-worth (Keyes, 2002).

The relationship that an individual has with their body greatly impacts their well-being. The pervasive influence of social media platforms in the Western context exacerbates this phenomenon through aspects such as increased objectification as external appearance takes precedence as a primary measure of self-worth (Anderson & Jiang, 2018; Fredrickson & Roberts, 1997). Fredrickson and Roberts's objectification theory (1997) argues that especially women often internalize the objectification of their physic due to the female body often being depicted as solely existing for the pleasure and use of others. In societies in which a specific, often unattainable physical appearance, is emphasized, individuals are more likely to then have low body satisfaction, characterized by negative thoughts and feelings about their bodies

(Fitzsimmons-Craft et al., 2012). For instance, a YouTube survey of 1,750 young Dutch individuals (aged 16-35), discovered a significant decrease in body satisfaction. Moreover, approximately one-third of the participants expressed a willingness to adopt unhealthy lifestyles to conform to their body ideals, irrespective of gender (GGZ nieuws.nl, 2023).

Low body satisfaction in return diminishes mental well-being (Bartky, 1990; Perloff, 2014; Tylka & Sabik, 2010). To be more precise, low body satisfaction, correlates with reduced self-esteem, emotional distress, and depression, suicidal thoughts and remains a consistent risk factor for eating pathology, independent of gender (Bucchianeri et al. 2013; Dakanalis et al., 2015; Furnham et al., 2002; MHF, 2019; Stice et al., 2017; Thompson & Stice, 2001; Venegas Ayala & González Ramírez, 2018). Conversely, high body satisfaction has been associated with elevated self-esteem and higher mental well-being (Grogan, 2021; MHF, 2019). While objectification theory is mainly concerned with women, the specific and nuanced dynamics of gender and body satisfaction remain elusive due to diverse and conflicting research findings (Liyanage et al., 2021). Nevertheless, several researchers have noted that women are more susceptible to experiencing body dissatisfaction than men (Hesse-Biber et al., 2006; Jones & Morgan, 2010; White et al., 2020; Zakhour et al., 2021).

The emphasis on the physical appearance of women has resulted in the devaluation of their internal qualities (Bartky, 1990; Fredrickson & Roberts, 1997), which could be counteracted by shifting their focus back inward. For instance, Alleva et al. (2023) observed that embracing spirituality redirects an individual's focus away from outer appearance, encouraging them to perceive their bodies as part of something larger and inherently deserving of love and respect. Similar sentiments were echoed by other researchers (Hammer, 2010; Kronjee & Lampert, 2006; Rubin et al., 2003). The findings indicate that spirituality could function as a coping mechanism and/or a protective factor by providing a broader perspective on self-worth and identity.

Spirituality is a multifaceted concept underscoring the subjective inner experience and qualities; and offers a sense of purpose beyond physical appearances. In the Netherlands, spirituality primarily involves a belief in a transcendental divine entity, either as part of oneself or originating from within oneself, and is strongly associated with high emotional well-being (Berghuijs, 2014). Spirituality has been identified as a robust resource of coping and resilience against adversity. It increases self-esteem, and prosocial and psychosocial competencies, and offers alternative coping mechanisms, and newfound meaning in life (Ensz & Jankowski, 2020; Hall & Edwards, 2002; Hill & Pargament, 2003; Manning, 2013; Maton, 1989; Pargament et al., 1988; Tuck et al., 2001). Hence, spirituality may act as a buffer, mitigating the negative impact of society-induced low body satisfaction on mental well-being.

The current literature indicates a relationship between body satisfaction, mental well-being, spirituality, and gender. However, the exact model underlying this relationship is yet to be established. A nuanced understanding of the interplay between body satisfaction, spirituality, and well-being has the potential to inform the development of more effective coping strategies and thus justifies the present study.

Present Study

The primary objective of the current study was to explore the potential moderation effect of spirituality on the association between body satisfaction and mental well-being. The hypothesis (H1) posits that *the impact of body satisfaction on mental well-being is moderated by an individual's level of spirituality, suggesting that higher levels of spirituality attenuate the influence of body satisfaction on mental well-being*. Furthermore, the investigation extends to gender differences as most studies so far have focused exclusively on women (Jones & Morgan, 2010). Moreover, studies have established an influence of both body satisfaction and spirituality on female mental well-being (Alleva et al., 2023; Jones & Morgan, 2010), leading to hypothesis (H2), which states that *the expected moderation effect of H1 will be stronger in women than in men*.

Methods

Participants

Data was sourced from the Longitudinal Internet studies from the Social Sciences (LISS) panel, managed by the Centerdata at the University of Tilburg in the Netherlands. The online panel comprised nearly 5,000 Dutch households with 7,500 individuals drawn from the population registers. Representation was ensured through a true probability sampling technique. Households without access to the internet were equipped with the necessary resources (i.e., computer and internet connection) to facilitate questionnaire completion (Centerdata, 2022). The participants for this study were amalgamated from three distinct studies, with the primary criterion being participation in all three. Initially, 1807 participants from a study on well-being were merged with 976 participants from a study concerning body satisfaction. Subsequently, by incorporating the study on spirituality, the participant count was reduced to 448 individuals. Participants who opted not to answer specific items were excluded from the analysis, as were 5 outliers, resulting in a final sample size of 363 participants.

Among the participants, 47.7 % identified as female and 52.3 % as male. The age range spanned from 16 to 86 ($M = 52.2$, $SD = 17.7$). A predominant proportion of the participants had a vocational education (HBO) as their highest form of education (28.1%), followed by those with intermediate secondary education (VMBO) at 27.3%. The distribution between men and women in terms of age and educational background was similar (Table 1).

Table 1*Frequencies and Percentages of the Demographic Data in Total and separated by Gender*

	Total		Female		Male	
	<i>n</i>	(%)	<i>n</i>	(%)	<i>n</i>	(%)
Gender			173	(47.7)	190	(52.3)
Age						
15 - 24 years	30	(8.3)	14	(8.1)	16	(8.4)
25 - 34 years	51	(14.0)	22	(12.7)	29	(15.3)
35 – 44 years	36	(9.9)	18	(10.4)	18	(9.5)
45 – 54 years	40	(11.0)	25	(14.5)	15	(7.9)
55 – 64 years	101	(27.8)	44	(25.4)	57	(30.0)
> 65 years	105	(28.9)	50	(28.9)	55	(28.9)
Level of Education						
Primary school	31	(8.5)	18	(10.4)	13	(6.8)
VMBO	99	(27.3)	52	(30.1)	47	(24.7)
HAVO/VWO	36	(9.9)	16	(9.2)	20	(10.5)
MBO	66	(18.2)	27	(15.6)	39	(20.5)
HBO	102	(28.1)	50	(28.9)	52	(27.4)
WO	29	(8.0)	10	(5.8)	19	(10.0)

Note: VMBO = intermediate secondary education; HAVO/VWO = higher secondary education/preparatory university education; MBO = Intermediate vocational education; HBO = Higher vocational education; WO = University

Study Design

The study employed a cross-sectional design to examine the proposed moderation models. The data was merged from three distinct studies. The two separate studies on spirituality and body satisfaction were conducted in August/ September 2009, followed by the collection of the well-being data three months later in December 2009. Ethical approval was obtained from the relevant institutions overseeing each study prior to their commencement. Consent was taken from all participants, with additional parental consent being obtained where applicable. All respondents were assured that their data would be handled with confidentiality and care. At least one study offered a 5 Euro voucher as compensation. The independent variable under investigation was the participant's level of body satisfaction, while the dependent was their level of mental well-being. Spirituality was analyzed as a moderator and as an interacting moderator; gender was implemented as an interacting moderator.

Measures

Mental Well-being

Mental well-being was assessed using the Mental Health Continuum Short Form (MHC-SF), a 14-item questionnaire measuring overall mental well-being, as well as the three subscales by Keyes (2002). Emotional well-being was constructed from three items (e.g., "*In the past month, how often did you feel happy?*"), exhibiting a high level of internal consistency in this study ($\alpha = 0.94$). Social well-being was assessed using a total of five items (e.g., "*In the past month, how often did you feel that you had something to contribute to society?*") displaying strong internal consistency in this study ($\alpha = 0.90$). Psychological well-being was evaluated using six items (e.g., "*In the past month, how often did you feel that you like most parts of your personality?*") demonstrating a high internal consistency in this sample ($\alpha = 0.87$). Participants rated the items on a 6-point Likert scale ranging from 0 (*never*) to 5 (*every day*) and the mean scores were utilized for analysis (Keyes et al., 2008). The scale has been previously employed and validated in the Netherlands and has been established to be reliable (Keyes et al., 2008).

Overall mental well-being showed acceptable reliability and internal consistency with a calculated alpha coefficient of 0.82 in this sample.

Body Satisfaction

The participants' body satisfaction was assessed using a single item, selected from the original study conducted by Peter and Valkenburg (2014). Their scale was derived from the Eating Disorder Inventory. The item was: "*I feel satisfied with the shape of my body*", effectively operationalizing the overall body satisfaction construct. Previous research has shown that single-item measures can be just as valid and reliable as multi-item measures for conceptualizing one-dimensional constructs (Cook & Perri, 2004; Woods & Hampson, 2005). Moreover, in the context of body satisfaction, studies have indicated that single-item measures yield comparable results to multiple-item measures (Frederick et al., 2008; Lever et al., 2006). Participants were asked to rate their agreement with the statement on a scale ranging from 1 (*fully disagree*) to 5 (*fully agree*) with an additional response option for individuals who chose not to answer the question (*I rather do not want to answer this question*). However, it's essential to note that this specific item has not undergone verification or validation in this particular context.

Spirituality

The assessment of spiritual inclination was conducted through a single-item measure from Berghuijs' 2014 PhD thesis.: "*To what extent do you agree with: I am a spiritual person?*" Participants were prompted to indicate their agreement using a 5-point Likert scale, ranging from 1 (*no, certainly not true*) to 4 (*yes, certainly true*), with an additional choice of 5 (*I do not know*; Berghuijs, 2014). In Berghuijs' original paper (2014), spirituality was defined by aligning this item with statements provided by the participants. The present definition of spirituality in this study was adapted based on her research findings, ensuring alignment between the concept of spirituality and the perceptions of the participants within the dataset. However, it's noteworthy that this study only utilized a fraction of her original sample. Moreover, the validation or further verification of this specific item itself was not explicitly conducted.

Gender

The current gender/ sex debates were not yet established in 2009. As a result, the questionnaire only offered the two options: “man” or “woman”.

Data Analysis

The data from the three independent surveys was stored by Centerdata on a secure server and downloaded by the researcher into the Statistical Package for Social Sciences (SPSS) format. The data was then prepared for analysis in IBM SPSS Statistics 27. Initial data screening and preliminary analysis of the socio-demographic data were conducted. All pertinent variables were scrutinized for missing data, outliers, assumptions of normality, and descriptive statistics. Bivariate analysis employed Pearson correlation with a significance level set at $p > 0.05$, $p > 0.01$, and $p > 0.001$. The researcher also conducted all preliminary analyses with well-being subgroups, as this offers a more nuanced understanding of the relationship between the three variables.

Subsequently, to address the research question, the analyses were performed following Hayes's (2013) Marco PROCESS via a bootstrapping method. Hypothesis H1 was tested by running the analysis using Model 1 the simple moderation model from Marco PROCESS. For hypothesis H2, a moderated moderation was run using Model 3 with two interacting moderators from the Marco PROCESS. The moderation effects will be considered true and significant if all effects including the interaction effects are found to be significant if $p > 0.05$ or the bias-corrected 95% CI around c from 5000 bootstrap re-samples are significant (excluding zero).

Results

Descriptive Statistics

Table 2 displays the relevant variables' means, standard deviations, and Pearson correlations. Body satisfaction ($M = 3.49$, $SD = 0.93$) appeared to be relatively high, however, considering the limited range of the item, the standard deviations nearing 1.00 indicated substantial

variability. In comparison, mental well-being ($M = 2.97$, $SD = 0.84$) and spirituality ($M = 2.30$, $SD = 1.00$) scored more moderately also with a standard deviation close to 1.00.

Table 2

Mean, Standard Deviation, and Correlation of the Main Variables

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.
1. Mental Well-Being	2.97	0.84						
2. Emotional Well-Being	3.69	0.96	0.74***					
3. Social Well-Being	2.33	0.95	0.87***	0.49***				
4. Psychological Well-Being	3.15	0.99	0.93***	0.59***	0.68***			
5. Spirituality	2.30	1.00	0.16**	0.08	0.13*	0.16**		
6. Body Satisfaction	3.49	0.93	0.09	0.11*	0.07	0.08	0.02	
7. Gender	-	-	0.09	0.00	0.04	0.14**	0.02	-0.22***

Note. * = Correlation is significant at the 0.05 level (2-tailed); ** = Correlation is significant at the 0.01 level (2-tailed); *** = Correlation is significant at 0.001 level (2-tailed)

Spirituality demonstrated positive correlations with mental well-being ($r = 0.16$, $p < .01$), social well-being ($r = 0.13$, $p < .05$), and psychological well-being ($r = 0.16$, $p < .01$), suggesting a favorable association with various aspects of well-being, however excluding emotional well-being ($r = 0.08$, $p > 0.05$). Conversely, body satisfaction only showed a positive correlation with emotional well-being ($r = 0.11$, $p < .05$). Additionally, a slight gender discrepancy emerged, indicating that women tend to exhibit lower body satisfaction ($r = -0.22$, $p <$

.001) and slightly higher psychological well-being ($r = 0.14, p < .01$). An unexpected finding was the absence of a significant relationship between spirituality and body satisfaction ($p > 0.05$).

Moderation Analysis

Hypothesis H1

The simple moderation analysis showed a very low explained variance ($R^2 = 0.04$). The conditional effect of body satisfaction on mental well-being was positive and significant ($B = 0.24, 95\% \text{ CI } [0.08, 0.47], p < .05$), as well as the conditional effect of spirituality on well-being ($B = 0.36, 95\% \text{ CI } [0.04, 0.69], p < .05$). However, the interaction effect of body satisfaction and spirituality was statistically insignificant ($B = -0.07, 95\% \text{ CI } [-0.16, 0.02], p > .05$). Therefore, no moderation effect of spirituality on the relation between body satisfaction and mental well-being was observed (Table 3).

Hypothesis H2

The moderated moderation analysis also showed a very low explained variance and a low insignificant f-statistic ($R^2 = 0.05, F(1,358) = 2.75, p > .05$). All conditional effects and interactions were found to be insignificant, with the conditional effect of body satisfaction on mental well-being being $B = 0.27$ (95% CI [-0.07, 0.60], $p < .05$), and spirituality on well-being was $B = 0.39, 95\% \text{ CI } [-0.08, 0.85], p < .05$). The interaction of body satisfaction and spirituality was $B = -0.08$ (95% CI [-0.21, 0.05], $p > .05$) and the interaction of body satisfaction, spirituality and gender was $B = 0.04$ (95% CI [-0.15, 0.23], $p > .05$). Therefore, no moderation effect of spirituality on the relation between body satisfaction and mental well-being and no moderated moderation by gender was observed.

Discussion

This study aimed to investigate the association between body satisfaction and mental well-being by testing if spirituality is acting as a moderator and if this relationship varies

between men and women. However, the results showed that spirituality did not moderate the relationship between body satisfaction and mental well-being and that this absence remained true irrespective of gender. Moreover, spirituality and mental well-being significantly positively correlated with each other before and during the application of the moderation model, while body satisfaction solely correlated significantly and positively with mental well-being when controlled for spirituality through simple moderation. All correlations were insignificant when conducting the moderated moderation.

When contextualizing the findings within the broader literature, conflicting evidence emerges. A relationship between body satisfaction and mental well-being was expected (Grogan, 2021; MHF, 2019; Thompson & Stice, 2001), however, in this sample the relationship only appeared when controlling for spirituality during the H1 moderation. A statistical explanation can be almost certainly ruled out as the sample only excluded 5 participants when analyzing the model. It might be that spirituality hides the relationship between body satisfaction and well-being. With the reasons for this phenomenon remaining unclear, possibilities for further research emerge.

Furthermore, some studies suggest that spiritual beliefs heightened body satisfaction (Mahoney et al., 2005), while others found a decrease (Hall & Boyatzis, 2016). Specific facets of spirituality, such as body-focused practices (Yoga), and a more religious inclination, such as the belief in the divine and the divinity of the own body, appear to have the strongest positive effect on body satisfaction (Alleva et al., 2020; Boyatzis et al., 2007; Mahoney et al., 2005). Berghuijs (2014) did not find any such aspects in the definition of spirituality in the original sample partly used in this paper. Thus, this sample might have a definition of spirituality excluding body satisfaction-related aspects of spirituality.

In contrast, the relationship between spirituality and well-being is seen as highly correlated in this sample and the literature. McEntee et al. (2013), who empirically revised Keyes's well-being model (2002) found it to be a "natural home for spirituality" (p.141). However,

intricacies surrounding the definition and measurement of spirituality may contribute to a violation of validity such as discriminant validity. Traditionally linked to monotheistic inclinations, contemporary spirituality definitions, and scales aim to encompass a broader spectrum, from religious fulfillment to general well-being and happiness (Koenig, 2008). Koenig (2008) argues that these definitions and instruments have moved to positive traits and well-being measurements instead of spirituality. In the original sample from Berghuijs (2014), the participants also showed a strong bias toward emotional well-being as part of their definition of spirituality. Additionally, a systematic review by Monod et al. (2011) identified while spirituality scales all claim to measure overall spirituality, the instruments often cover sub-aspects, such as spiritual coping and spiritual well-being instead. Hence, the established strong correlations in this study and the literature could also be based on invalid definitions and measurements of spirituality. Additional questions around this topic are also raised by the non-existing correlation between spirituality and emotional well-being in this study.

Moreover, one plausible explanation for the findings, especially the insignificant moderation and moderated moderation, may be attributed to the use of single-item measures for both spirituality and body satisfaction. While research indicates that single-item measures can be reliable and valid for one-dimensional constructs, (Cook & Perri, 2004; Frederick et al., 2008; Lever et al., 2006; Woods & Hampson, 2005), it is essential to note that spirituality is defined as a multidimensional construct (Berghuijs, 2014), possibly omitting specific nuances related to spirituality. Moreover, the absence of verification for these two items introduces uncertainty regarding their validity and reliability.

Furthermore, the advanced age of the study participants, with a mean age of 52.2, introduces another potential factor influencing the analyses. One explanation for these differences could be that as an individual ages, other variables start to affect or overwrite the influence of body satisfaction on well-being. For example, previous studies suggest that while body satisfaction tends to be stable over time, other factors such as body appreciation increased and

attachment to physical appearance declined (McCabe & Ricciardelli, 2004; Pliner et al., 1990). Notably, body appreciation and body satisfaction, though correlated, represent distinct facets of body image, with the former receiving less attention in past research (Quittkat et al., 2019). Recent findings already showed that body appreciation was positively associated with mental well-being in a sample of young adults (Urke et al., 2021). Further research into the effects of body appreciation at a later age could give a more nuanced understanding if it counteracted the effects of low body satisfaction in this sample.

Besides the lack of moderation, the study also revealed a disparity between men and women, with women exhibiting lower levels of body satisfaction but higher levels of psychological well-being. While lower body satisfaction in women aligns with previous expectations (Jones and Morgan, 2010), the finding of higher psychological well-being challenges traditional assumptions. It was expected that low body satisfaction leads to lower psychological well-being since lower body satisfaction in women is linked to diminished self-esteem and self-worth, thereby impacting psychological well-being (Keyes, 2002; Tylka & Sabik, 2010). This suggests that factors beyond body satisfaction contribute to gender differences in well-being, such as an inclination toward personal growth that is higher in women than men, and a component of psychological well-being (Matud et al., 2019).

Strengths and Limitations

The current study is characterized by several commendable strengths, foremost among them being the considerable sample size and the utilization of a true probability sampling technique. This robust sampling approach significantly bolsters the generalizability of the study's findings. Moreover, as a secondary analysis, no further data had to be collected, leading to no additional strain on participants. Nevertheless, it is crucial to acknowledge certain limitations that warrant careful consideration in the interpretation of the results.

One primary limitation stems from the reliance on existing data and items, leading to the utilization of non-verified, single-item measurements for two variables. Research shows

that one-item body satisfaction measurements are just as valid as multi-item scales (Frederick et al., 2008; Lever et al., 2006). However, in contrast to the findings in this study, other research found significant relationships between body satisfaction and mental well-being, indicating low criterion validity and a violation of the reliability of the body satisfaction item (Grogan, 2021; MHF, 2019). Moreover, the spirituality item appears to have high face validity while more reliable measurements such as content validity can be seen as low due to a single item being used for a multidimensional construct. Both measurements compromise the reliability of the data and underscore the need for caution in drawing definitive conclusions. Further, the skewness of the sample's age distribution affects the generalizability for younger age groups. Lastly, the data was obtained almost 14 years ago. Given the evolution of guidelines and understandings related to terminologies such as gender and sex, which were not as comprehensive at the time, the data lacks updated information. Today, more nuanced considerations regarding individuals who do not identify strictly as male or female allow for a more detailed exploration of specific groups, which could impact the interpretations drawn from the data.

Future recommendations

The study results raise the question about the practical applications of spirituality. The strong positive correlation between spirituality and mental well-being underscores the potential utility of integrating spirituality into health-related contexts. It is already implemented within diverse healthcare settings to promote mental well-being, such as positive psychology, psychotherapy, and caregiving (Barton & Miller, 2015; Charzyńska et al., 2018). However, it's essential to note that the concept of spirituality, as defined within this study, appears to be less effective in attenuating the relationship between non-pathological body dissatisfaction on overall well-being. However, the findings do conflict with existing literature, consequently further research is recommended for a more nuanced understanding of this domain.

For future investigations, employing more comprehensive measurement tools, diversifying the sample, and exploring additional variables could enhance the depth of knowledge.

The adoption of established scales for all variables, such as those evaluated by Monod et al. (2011) for spirituality or the Body Satisfaction Scale (Slade et al., 1990) for body satisfaction, could significantly improve the psychometric properties and robustness of the study findings. Researchers may also benefit from considering more current body image scales, such as those presented by Jalali-Farahani et al. (2022), which encompass various aspects next to body satisfaction like body appreciation, introducing additional variables that can be controlled. This strategic approach would contribute to a more nuanced and comprehensive understanding of the relationships under investigation.

Conclusion

In light of the study's outcomes, no evidence in line with the proposition that spirituality serves as a mitigating factor against the negative effects of body satisfaction on mental well-being was found, with the results being the same for women and men. Nevertheless, the appearance of a significant relationship between body satisfaction and mental well-being during moderation indicates that spirituality does affect the relationship in an unknown way. Therefore, the findings invite a re-evaluation and further research into the current understanding of the interplays between mental well-being, body satisfaction spirituality, and gender. Furthermore, spirituality as a variable is currently in need of further investment regarding its scientific definition and measurements. However, the variable seems to carry an inherent complexity complicating a clear scientific definition. As researchers, we are often compelled to unravel intricate phenomena by breaking them down into more manageable components. While this is necessary for replicability, it might also take away from the depths and uniqueness of spirituality, allowing us to only witness the effects of specific aspects of spirituality.

References

- Alleva, J. M., Tylka, T. L., van Oorsouw, K., Montanaro, E., Perey, I., Bolle, C., ... & Webb, J. B. (2020). The effects of yoga on functionality appreciation and additional facets of positive body image. *Body Image, 34*, 184-195. <https://doi.org/10.1016/j.bodyim.2020.06.003>
- Alleva, J. M., Tylka, T. L., Martijn, C., Waldén, M. I., Webb, J. B., & Piran, N. (2023). "I'll never sacrifice my well-being again:" The journey from negative to positive body image among women who perceive their body to deviate from societal norms. *Body Image, 45*, 153-171. <https://doi.org/10.1016/j.bodyim.2023.03.001>
- Anderson, M., & Jiang, J. (2018). Teens, social media & technology 2018. *Pew Research Centre, 31*(2), 1673-1689. <http://publicservicesalliance.org/wp-content/uploads/2018/06/Teens-Social-Media-Technology-2018-PEW.pdf>
- Arias, D., Saxena, S., & Verguet, S. (2022). Quantifying the global burden of mental disorders and their economic value. *EClinicalMedicine, 54*. e101675. Doi:10.1016/j.eclinm.2022.101675
- Bartky, S. L. (1990). *Femininity and domination: Studies in the phenomenon of oppression*. New York: Routledge.
- Barton, Y. A., & Miller, L. (2015). Spirituality and positive psychology go hand in hand: An investigation of multiple empirically derived profiles and related protective benefits. *Journal of Religion and Health, 54*(3), 829–843. <https://doi.org/10.1007/s10943-015-0045-2>
- Berghuijs, J.T. (2014). *Quaestiones Infinitae* [Doctoral thesis, Utrecht University]. Utrecht University. https://www.researchgate.net/messages/attachment/3124333_New%20Spirituality%20and%20Social%20Engagement%20book.pdf

- Bloom, D. E., Cafiero, E., Jané-Llopis, E., Abrahams-Gessel, S., Bloom, L. R., Fathima, S., et al. (2011). *The global economic burden of non-communicable diseases*. New York: World Economic Forum.
- Boyatzis, C. J., Kline, S., & Backof, S. (2007). Experimental evidence that theistic-religious body affirmations improve women's body image. *Journal for the Scientific Study of Religion*, 46(4), 553-564. <https://doi.org/10.1111/j.1468-5906.2007.00377.x>
- Bucchianeri, M. M., Arikian, A. J., Hannan, P. J., Eisenberg, M. E., & Neumark-Sztainer, D. (2013). Body dissatisfaction from adolescence to young adulthood: Findings from a 10-year longitudinal study. *Body Image*, 10(1), 1–7. <https://doi.org/10.1016/j.bodyim.2012.09.001>
- Centerdata (2022). *About the Panel*. LISS Panel Centraldata Research Institute. <https://www.lissdata.nl/about-panel>
- Charzyńska, E., Gruszczyńska, E., & Heszen, I. (2018). Forgiveness and gratitude trajectories among persons undergoing alcohol addiction therapy. *Addiction Research & Theory*, 26(4), 282–293. <https://doi.org/10.1080/16066359.2018.1429595>
- Cook, C. L., & Perri, M. (2004). Single-item vs multiple-item measures of Stage of Change in compliance with prescribed medications. *Psychological Reports*, 94, 115–124. <http://dx.doi.org/10.2466/pr0.94.1.115-124>
- Dakanalis, A., Carrà, G., Calogero, R., Fida, R., Clerici, M., Zanetti, M. A., & Riva, G. (2015). The developmental effects of media-ideal internalization and self-objectification processes on adolescents' negative body-feelings, dietary restraint, and binge eating. *European child & adolescent psychiatry*, 24, 997-1010. <https://link.springer.com/article/10.1007/s00787-014-0649-1>
- Ensz, S., & Jankowski, P. J. (2020). Religiousness and rape myth acceptance: Risk and protective effects. *Journal of Interpersonal Violence*, 35(7–8), 1671–1693. <https://doi.org.ezproxy2.utwente.nl/10.1177/0886260517698281>

- Frederick, D. A., Peplau, A., & Lever, J. (2008). The Barbie mystique: Satisfaction with breast size and shape across the lifespan. *International Journal of Sexual Health, 20*, 200–211. <http://dx.doi.org/10.1080/19317610802240170>.
- Fredrickson, B. L., & Roberts, T. A. (1997). Objectification theory: Toward understanding women's lived experience and mental health risks. *Psychology of Women Quarterly, 21*(2), 173–206. doi:10.1111/j.1471-6402.1997.tb00108.x.
- Fitzsimmons-Craft, E. E., Harney, M. B., Koehler, L. G., Danzi, L. E., Riddell, M. K., & Bardone-Cone, A. M. (2012). Explaining the relation between thin-ideal internalization and body dissatisfaction among college women: The roles of social comparison and body surveillance. *Body image, 9*(1), 43-49. <https://doi.org/10.1016/j.bodyim.2011.09.002>
- Furnham, A., Badmin, N., & Sneade, I. (2002). Body image dissatisfaction: Gender differences in eating attitudes, self-esteem, and reasons for exercise. *The Journal of Psychology, 136*(6), 581-596. <https://doi.org/10.1080/00223980209604820>
- GGZ nieuws.nl. (2023). Brandpunt+: ontevredenheid over eigen lichaam onder jongeren groeit. <https://www.ggznieuws.nl/brandpunt-ontevredenheid-over-eigen-lichaam-onder-jongeren-groeit/>
- Grogan, S. (2021). *Body Image: Understanding Body Dissatisfaction in Men, Women and Children* (4th ed.). Routledge.
- Hall, M. E. L., & Boyatzis, C. J. (2016). God in the body: Charting the course of research on religiosity and the body. *Mental Health, Religion & Culture, 19*(1), 1-7. <https://doi.org/10.1080/13674676.2015.1130467>
- Hall, T. W., & Edwards, K. J. (2002). The Spiritual Assessment Inventory: Atheistic model and measure for assessing spiritual development. *Journal for the Scientific Study of Religion, 41*, 341–357. <https://doi.org/10.1111/1468-5906.00121>

- Hammer, O. (2010). Chapter Three. I Did It My Way? Individual Choice And Social Conformity In New Age Religion. In *Religions of Modernity*. 49-67. Brill.
DOI: <https://doi.org/10.1163/ej.9789004184510.i-273.19>
- Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis* (2nd ed.). The Guilford Press New York London.
- Hesse-Biber, S., Leavy, P., Quinn, C. E., & Zoino, J. (2006). The mass marketing of disordered eating and eating disorders: The social psychology of women, thinness, and culture. *Women's Studies International Forum*, 29, 208–224.
doi:10.1016/j.wsif.2006.03.007.
- Hill, P. C., & Pargament, K. I. (2003). Advances in conceptualization and measurement of religion and spirituality. Implications for physical and mental health research. *American Psychologist*, 58(1), 64–74. <https://psycnet.apa.org/record/2003-88375-019>
- Jalali-Farahani, S., Amiri, P., Zarani, F., Zayeri, F., & Azizi, F. (2022). Development and validation of the body image scale for youth (BISY). *Journal of Eating Disorders*, 10(1), 136. <https://doi.org/10.1186/s40337-022-00657-z>
- Jones, W., & Morgan, J. (2010). Eating disorders in men: A review of the literature. *Journal of Public Mental Health*, 9(2), 23-31. <https://www.emerald.com/insight/content/doi/10.5042/jpmh.2010.0326/full/html>
- Keyes, C. L. M. (1998). Social well-being. *Social Psychology Quarterly*, 61(2). 121-140.
<https://doi.org/10.2307/2787065>
- Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of health and social behavior*, 43(2). 207-222. https://www.jstor.org/stable/pdf/3090197.pdf?casa_token=rTgtJsvTxicAAAAA:EdYksylAlHtbMeGt_oA1HREPCTLBxBdxbp_YH_kYpmV9BT1S03aZz_s0rCTdgQqH9Qxf72_tHz2DdX2v3uaSXED60hEo7WsHyyw8gGd0oY7e4hEKY0

- Keyes, C. L. (2005). Chronic physical conditions and aging: Is mental health a potential protective factor?. *Ageing International, 30*, 88-104. DOI: <https://doi.org/10.1007/BF02681008>
- Keyes, C. L. M., Wissing, M., Potgieter, J. P., Temane, M., Kruger, A., & van Rooy, S. (2008). Evaluation of the Mental Health Continuum-Short Form (MHC-SF) in Setswana-speaking South Africans. *Clinical Psychology and Psychotherapy, 15*(3), 181–192. <https://doi.org/10.1002/cpp.572>
- Koenig, H. G. (2008). Concerns about measuring “spirituality” in research. *The Journal of nervous and mental disease, 196*(5), 349-355. Doi:10.1097/NMD.0b013e31816ff796
- Kronjee, G., & Lampert, M. (2006). Leefstijlen en zingeving. *Geloven in het publieke domein. Verkenningen van een dubbele transformatie*, 171-208.
- Lever, J., Frederick, D. A., & Peplau, L. A. (2006). Does size matter? Men’s and women’s views of penis size across the lifespan. *Psychology of Men & Masculinity, 7*, 129–143. <http://dx.doi.org/10.1037/1524-9220.7.3.129>
- Liyanage, G., Karunainathan, T., Jeyarajah, L., Thevatheepan, P., Thavendra, M., & Seneviwickrama, M. (2021). Body image dissatisfaction and its determinants in urban Sri Lankan adolescents. *Ceylon Medical Journal, 66*(4). Doi: 10.4038/cmj.v66i4.9509
- Manning, L. K. (2013). Navigating hardships in old age: Exploring the relationship between spirituality and resilience in later life. *Qualitative Health Research, 23*(4), 568–575. doi:10.1177/1049732312471730
- Maton, K. I. (1989). The stress-buffering role of spiritual support: Cross-sectional and prospective investigations. *Journal for the Scientific Study of Religion, 28*(3), 310–323. <https://doi.org/10.2307/1386742>
- Matud, M. P., López-Curbelo, M., & Fortes, D. (2019). Gender and psychological well-being. *International journal of environmental research and public health, 16*(19), e3531. <https://doi.org/10.3390/ijerph16193531>

- McCabe, M. P., & Ricciardelli, L. A. (2004). Body image dissatisfaction among males across the lifespan: A review of past literature. *Journal of psychosomatic research, 56*(6), 675-685. [https://doi.org/10.1016/S0022-3999\(03\)00129-6](https://doi.org/10.1016/S0022-3999(03)00129-6)
- McEntee, M. L., Dy-Liacco, G. S., & Haskins, D. G. (2013). Human flourishing: A natural home for spirituality. *Journal of Spirituality in Mental Health, 15*(3), 141-159. <https://doi-org.ezproxy2.utwente.nl/10.1080/19349637.2013.799410>
- Mental Health Foundation. (2019). *Body Image: How we think and feel about our bodies*. <https://www.mentalhealth.org.uk/publications/body-image-report/exec-summary>
- Monod, S., Brennan, M., Rochat, E., Martin, E., Rochat, S., & Büla, C. J. (2011). Instruments measuring spirituality in clinical research: a systematic review. *Journal of General Internal Medicine, 26*, 1345-1357. doi: 10.1007/s11606-011-1769-7
- Pargament, K. I., Kennell, J., Hathaway, W., Grevengoed, N., Newman, J., & Jones, W. (1988). Religion and the problem-solving process: Three styles of coping. *Journal for the Scientific Study of Religion, 27*(1), 90-104. <https://doi.org/10.2307/1387404>
- Perloff, R. M. (2014). Social media effects on young women's body image concerns: Theoretical perspectives and an agenda for research. *Sex roles, 71*(11-12), 363-377. <https://link.springer.com/article/10.1007/s11199-014-0384-6>
- Peter, J., & Valkenburg, P. M. (2014). Does exposure to sexually explicit Internet material increase body dissatisfaction? A longitudinal study. *Computers in Human Behavior, 36*, 297-307. <https://doi.org/10.1016/j.chb.2014.03.071>
- Pliner, P., Chaiken, S., & Flett, G. L. (1990). Gender differences in concern with body weight and physical appearance over the life span. *Personality and Social Psychology Bulletin, 16*(2), 263-273. <https://doi.org/10.1177/0146167290162007>
- Quittkat, H. L., Hartmann, A. S., Düsing, R., Buhlmann, U., & Vocks, S. (2019). Body dissatisfaction, importance of appearance, and body appreciation in men and women over the lifespan. *Frontiers in psychiatry, 10*, 864. <https://doi.org/10.3389/fpsy.2019.00864>

- Rubin, L. R., Fitts, M. L., & Becker, A. E. (2003). "Whatever feels good in my soul": Body ethics and aesthetics among African American and Latina women. *Culture, medicine and psychiatry*, 27, 49-75. <https://link.springer.com/article/10.1023/A:1023679821086>
- Slade, P. D., Dewey, M. E., Newton, T., Brodie, D., & Kiemle, G. (1990). *Body Satisfaction Scale (BSS)* [Database record]. APA PsycTests. <https://doi.org/10.1037/t60486-000>
- Stice, E., Gau, J. M., Rohde, P., & Shaw, H. (2017). Risk factors that predict future onset of each DSM-5 eating disorder: Predictive specificity in high-risk adolescent females. *Journal of Abnormal Psychology*, 126(1), 38–51. <https://doi.org/10.1037/abn0000219>
- Thompson, J. K., & Stice, E. (2001). Thin-ideal internalization: Mounting evidence for a new risk factor for body-image disturbance and eating pathology. *Current Directions in Psychological Science* 10, 181–183. doi: 10.1111/1467-8721.00144
- Tuck, I., Pullen, L., & Wallace, D. (2001). A comparative study of the spiritual perspectives and interventions of mental health and parish nurses. *Issues in Mental Health Nursing*, 22, 1–13. <https://doi.org/10.1080/01612840121450>
- Tylka, T. L., & Sabik, N. J. (2010). Integrating social comparison theory and self-esteem within objectification theory to predict women's disordered eating. *Sex roles*, 63, 18-31. <https://link.springer.com/article/10.1007/s11199-010-9785-3>
- Urke, H. B., Holsen, I., & Larsen, T. (2021). Positive youth development and mental well-being in late adolescence: The role of body appreciation. findings from a prospective study in Norway. *Frontiers in Psychology*, 12, 696198. <https://doi.org/10.3389/fpsyg.2021.696198>
- U.S. Department of Health and Human Services. (2001). *Mental Health: Culture, Race, and Ethnicity—A Supplement to Mental Health: A Report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General.

- Vankar, P. (2023 Oct 5). *Total costs for mental health care in the Netherlands from 2017 to 2021*. Statista. <https://www.statista.com/statistics/1403312/total-mental-healthcare-costs-in-the-netherland/>
- Venegas Ayala, K. S., & González Ramírez, M. T. (2018). Intervention approach to improve body image perception, from the positive psychology perspective. *Pensamiento Psicológico* 16(1), 119-131. <https://doi:10.11144/Javerianacali.PPSI16-1.iaib>
- Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin*, 98(2), 219–235. <https://doi.org/10.1037/0033-2909.98.2.219>.
- White, M., Berry, R., & Rodgers, R. F. (2020). Body image and body change behaviors associated with orthorexia symptoms in males. *Body Image*, 34(46–50). doi: 10.1016/j.bodyim.2020.05.003
- Woods, S. A., & Hampson, S. E. (2005). Measuring the Big Five with single items using a bipolar response scale. *European Journal of Personality*, 19, 373–390. <http://dx.doi.org/10.1002/Per.542>.
- World Health Organization. (2004). Promoting mental health: Concepts, emerging evidence, practice (Summary Report). Geneva: WHO.110 *Journal of Clinical Psychology*
- Zakhour, M., Haddad, C., Sacre, H., Tarabay, C., Zeidan, R. K., Akel, M., & Hallit, S. (2021). Differences in the Associations between Body Dissatisfaction and Eating Outcomes by Gender? A Lebanese Population Study. *Revue d'Épidémiologie et de Santé Publique*. doi: 10.1016/j.respe.2021.02.003