universität wien

MASTERARBEIT / MASTER'S THESIS

Titel der Masterarbeit / Title of the Master's Thesis

„The role of trait empathy for objectification in early adolescence"

verfasst von / submitted by

Ella Olivia Louise Bärtels, BSc

angestrebter akademischer Grad / in partial fulfilment of the requirements for the degree of

Master of Science (MSc)

Wien, 2023 / Vienna 2023

Contents

Acknowledgements

I would like to start by thanking Katharina Stiehl for inviting me to collaborate on her project, guiding me in the right directions, giving me feedback, and answering all my questions.

Further I want to thank my supervisor Prof. Giorgia Silani for supporting my ideas and requests for this thesis from beginning to end, giving me all the useful input to make the hurdles a little more predictable, and going out of her way to help me achieve my goals.

To all of you that supported me in the past years, shared coffees, and saved seats in libraries, proofread what I'd written, and loosened the knots in my brain. To my parents for everything, to Krö for the push I needed, and to Lomi without whom I couldn't have done it. Thank you.

Introduction

The present study aims to investigate the potential influence of empathy on the relationship between self-objectification and sexual objectification of others in early adolescence, focusing on gender differences in these interactions. Sexual objectification is widely spread and a highly active part of everyday life, generally starting in early adolescence, with many experiencing sexual harassment during this age for the first time (Daniels et al., 2020; Espelage et al., 2016). In their 2007 report for the American Psychology Association (APA) on the sexual objectification of girls, Zurbriggen et al. (2007) brought awareness to how widely and deeply this sexualization of girls is rooted in western societies and how harmful the consequences, such as eating disorders, mental health, unsafe sexual behavior and limitation of cognitive abilities are (Daniels et al., 2020).

Many of these negative implications are mediated by experiencing sexual objectification and consequently the children's process of self-objectification. This tendency to look at the self through the eyes of objectifying observers is often the result of exposure on different levels (societal, medial, interpersonal) to the presence of the objectifying gaze or representation of individuals being objectified and experiencing objectification (Fredrickson & Roberts, 1997). As an effect, the consistent tendency to objectify the self has been associated with body shame and dissatisfaction, as well as the previously mentioned harmful consequences of sexual objectification (Daniels et al., 2020).

Another consequence of sexual objectification, yet more indirectly administered to the individual, is the dehumanization of the sexualized targets, i.e., perceiving them as less moral, competent, or generally human (Vaes et al., 2011). This dehumanization, in turn, has been shown to lead to the targets of objectification being treated with less empathy and concern, despite these targets being perceived as sometimes more sensitive, sometimes less sensitive, and consequently not helping them as readily as compared to non-sexualized others (Cogoni et al., 2018, 2021; Gray et al., 2011; Loughnan et al., 2010, 2013). However, this effect also seems to go the other way, with Bradshaw (2020) showing lower levels of trait empathy in participants who sexually objectified others compared to a control group. Lower empathy might, therefore, cause higher objectification in addition to being an outcome, making it a possible protective trait against the tendency to objectify others.

While The present study seeks to contribute to the existing literature by exploring the complex relationship between empathy, self-objectification, and sexual objectification in early adolescence. The goal is to deepen insights into the role of empathy in both forms of objectification with the possibility of exploring its potential as a protective factor. As a structure, empathy, sexual objectification, and self-objectification will be discussed regarding their definitions, implications, its role during early adolescence and the gender differences. Finally, because both trait and state level concepts were taken in the survey, the implications and the differences will be explained.

State of the Art

Empathy

On a very general level, empathy may be defined as the understanding of a person from their frame of reference, meaning understanding their beliefs and ideas as a context for their judgments and thoughts, instead of one's own or experiencing that person's thoughts, perceptions and feelings vicariously (American Psychology Association, 2023). Within the last decades, however, a broad range of conceptualizations of empathy has appeared in the literature, with Cuff et al. (2016) counting 43 different notions of empathy. This variety of definitions is partly due to the high amount of closely related psychological concepts such as perspective-taking (Stavroulia & Lanitis, 2023), theory of mind (Tholen et al., 2020), emotion contagion (Nilsonne et al., 2021), emotion recognition (Israelashvili et al., 2020), sympathy or concern (Gerace, 2020) and mimipathy - imitating another's emotions, without experiencing them oneself (Rymarczyk et al., 2016). It is, therefore, difficult to define which concept is included or excluded in the experience of empathy (Cuff et al., 2016).

Components of empathy. While a clear consensus on a specific definition of empathy is lacking in the literature, a few popular models of empathy have received broad support from various researchers. Among them is the empathy umbrella model by Weisz & Cikara (2021), who conceptualize three critical components as a requirement for the multi-layered phenomenon of empathy. The first component is emotional or *affective empathy*, sometimes also referred to as emotion contagion or experience sharing. This type of empathy refers to people vicariously feeling the emotional state of others, although not necessarily in the same

intensity or quality the others are feeling it. The second component is *cognitive empathy*, also known as the theory of mind, perspective-taking, or mentalizing. It describes the ability to consider and understand the thoughts and experiences of others. Finally, a motivational component of empathy is compassion, *empathic concern,* or prosocial concern. This empathy type refers to the desire to promote the well-being of others, alleviate their suffering, or the general intention to comfort.

The concept of empathic concern is where many of the disagreements lie. Multiple researchers recognize only two components of empathy, affective and cognitive, with empathic concern being associated with, but not being an integral part of empathy (G. Barnett & Mann, 2013; Batson et al., 2009; D. Cohen & Strayer, 1996; Eisenberg et al., 2006; Geer et al., 2000; Singer & Lamm, 2009). Lishner et al. (2011) further differentiate between two forms of empathic concern, i.e., tenderness and sympathy. When empathic concern is activated in cases of current need, the authors define it as sympathy. When, on the other hand, empathic concern is activated regarding a member of a vulnerable group (e.g., a child) with no immediate need or distress, it is regarded as tenderness. In their overview of the conceptualizations, Cuff et al. (2016) state that the difference between empathy and sympathy is one of the most frequent discussions in the research field of empathy. While several researchers merge sympathy and empathy into one concept, or at least without clearly distinguishing between them, (G. Barnett & Mann, 2013; McAuliffe et al., 2020; Pavey et al., 2012; Powell & Roberts, 2016; Stocks et al., 2011; Surguladze & Bergen-Cico, 2020; Weisz & Cikara, 2021; Załuski, 2018; Rochat, 2023), others are in favor of clearly differentiate between these concepts (Cuff et al., 2016; Lishner et al., 2011; Niezink et al., 2012).

Gender differences in empathy. Throughout the present study, the terms male and female will be used only to describe the sex of a stimuli or a person, while men and women or boys and girls when describing their gender.

Gender differences in empathy have been of great interest within the scientific community. Most research suggests that women and girls tend to exhibit higher levels of empathy than men and boys (O'Brien et al., 2013; Rueckert & Naybar, 2008; Greenberg et al., 2023; Benenson et al., 2021). In a meta-analysis, Christov-Moore et al. (2014) find that, in general, women tend to score higher on different empathy measures, including both cognitive and affective empathy. A possible explanation for these gender differences in empathy may be attributed to the socialization processes. It is widely recognized that girls are socialized to be more empathic and nurturing, while boys are often brought up to be more independent and

less emotionally expressive (Mestre et al., 2009; Rochat, 2023) This difference in socialization may lead to girls reporting empathy more openly, as most trait empathy is measured through self-evaluation questionnaires. Moreover, societal expectations and gender roles may play a role in developing empathy, making girls more likely to engage in caretaking roles and emotional labor. Lastly, Christov-Moore et al. (2014) even provide evidence for neurobiological sex differences in empathy by finding indications of sex differences in non-human animals and very young children.

As further evidence for gender differences, Hoffman (1977) finds that over 16 studies in empathy reveal overall higher levels of empathy in girls. However, Eisenberg & Lennon (1983), only six years later, point out in their meta-study that these differences in empathy only exist in children's self-report measurements and are not evident or much less pronounced in an experimental empathy measurement. Their findings on experimental empathy are later confirmed by Baez et al. (2017) in their extensive study of over 10,000 adult participants and Michalska et al. (2013) in children and adolescence aged 4 to 17. The findings hence show that measured gender differences in empathy are highly sensitive to be manipulated by its measurement. This is most likely due to cultivated gender roles that dictate the amount of empathy the assumed gender should have to fit their stereotype (Michalska et al. 2013). Nevertheless, these differences in self-reported empathy could also be relevant to everyday life. It seems reasonable to assume that when reporting the self as more or less empathetic, this would transpire to reduced or heightened openness about empathic reactions in social situations, thereby influencing personal relationships.

Empathy in early adolescence. Early adolescence is a critical developmental phase. Ongoing significant changes on a cognitive, psychological, and physical level occur during this phase. It is frequently described as a time of increased vulnerability for the outbreak of later adjustment problems in social and emotional areas (Allemand et al., 2015; Blakemore & Mills, 2014). During this period, humans develop the basis for cognitive, emotional, and social skills, which impact immediate and future health and well-being (Cunsolo, 2017; Negriff & Susman, 2011; Patton et al., 2016). Many physical and psychological changes and challenges during this time have important implications for developing empathy. For example, Eisenberg et al. (2006) find that enhanced emotion regulation skills, coupled with abstract thinking development in early adolescence, promote empathy and pro-social behavior in this age group. The development of moral judgment during adolescence has also often been linked to the development of empathy (Killen & Smetana, 2013).

A study by Dorris et al. (2022) investigates the development of empathy over all age groups, marking the age 10 to 12 as a significant period of growth for cognitive empathy followed by a reduction in the ability of empathy in later adolescence, turning early adolescence into the most empathic time before reaching maturity. This conclusion is also reported by (Carlo et al., 2007), who find a drop in pro-social tendencies from early to middle adolescence.

On the development of empathy, Barnett (1987) proposes that a good forming of empathy profits most from a family environment that (i) satisfies the child's emotional needs and at the same time discourages excessive self-concern, (ii) encourages and supports the child to express and experience a wide range of emotions, and (iii) creates opportunities where the child can interact with and observe others who will encourage emotional sensibility and responsiveness. Hassan et al. (2012) relate this framework to the concept of parental warmth and argue for a positive connection to empathy development and its lacking to a negative empathy development.

Researchers have also identified other factors that can hinder the development of empathy during early adolescence. For example, a study by Hinchey & Gavelek (1982) finds that exposure to violence and aggression is negatively associated with empathy in early adolescence, with children from violent homes showing lower levels of empathy. Overall, studies show that empathy is an essential skill for social development in early adolescence. Its development during this period is affected by parental warmth and support, exposure to violence, and gender role stereotypes (Shipman et al., 2007).

Sexual Objectification of Others

The objectification theory – developed by Fredrickson & Roberts (1997) – describes sexual objectification as treating someone as an object rather than a person with thoughts, feelings, and autonomy. This behavior involves reducing a person to their physical appearance and treating them as a means to an end for sexual pleasure. The target is then primarily defined and valued through this physical appearance and use rather than their mind or mental state (Fredrickson & Roberts, 1997; Karsay et al., 2018; Kellie et al., 2019). However, not all sexually objectifying experiences are, per se, sexual in nature. Moradi (2010, 2011) and Zurbriggen (2013) define the spectrum of experiences to include the societal pressure to create, present, uphold, and continuously improve an appearance deemed as attractive by this society (e.g., being muscular as a man, being thin as a woman). In contrast to sexual objectification, sexualization refers to "sexy" behavior and is associated with wearing

tight clothes or make-up. Therefore, sexualization can theoretically take place without any further assumptions or judgments upon the character of the sexualized (Pacilli et al., 2017), which is not the case for sexual objectification.

Sexually objectified persons are perceived by other people differently than non-sexually objectified ones. For example, they are perceived as less human, meaning they are assumed to possess less uniquely human qualities and attributes (Fredrickson & Roberts, 1997). This perception is referred to as the process of dehumanization, of which sexual objectification is an example. Dehumanization is a more general concept that refers to sexually objectifying a person but also encompasses other contexts, for instance, cases of racism or antisemitism.

According to the dual-process model of Haslam et al. (2006), humanness is decomposed in two forms: human nature and human uniqueness. Human nature includes dimensions that differentiate humans from objects, like emotional responsiveness or interpersonal warmth. When a person is denied these qualities, they are being mechanically dehumanized (i.e., perceived as cold, passive, lacking emotional responsiveness, and fungible). Human uniqueness, on the other hand, differentiates humans from animals. The relevant dimensions here are civility, refinement, and rationality. Animalistic Objectification describes situations when these attributes are not ascribed to a person (Pacilli et al., 2019).

Sexualized targets are perceived as less human in both dimensional spectrums; they appear to be dehumanized mechanically and animalistically (Heflick & Goldenberg, 2009). Following the definition of sexualization, it means someone is being presented in a way that emphasizes their sexual and physical traits (Pacilli et al., 2019). As humans are deemed worthy to receive ethical treatment primarily due to their human status, dehumanizing others leads to severe consequences in personal relationships (Pacilli et al., 2019). Further, objectified young college students exhibited higher levels of aggression, observable through their aggressive behaviors, than non-objectified participants, with this aggression being mediated by their perceived level of control (Poon et al., 2020). This aggression could further impact interpersonal relationships (e.g., romantic connections or friendships) between the objectifying person and the objectified target.

Gender-based differences in the sexual objectification of others. While all genders can experience sexual objectification, the term is primarily linked to the objectification of women. It is a significant concept in various feminist and psychological theories. Core to many feminist approaches is the assumption that the sexual objectification of women fosters

gender inequality (Calogero et al., 2011; Papadaki, 2010). Gender, therefore, plays a vital role in both the target of sexual objectification and the person actively or passively utilizing it. According to Fredrickson and Roberts (1997), women are far more often the targets of sexual objectification. This objectification ranges from sexual violence to sexualized evaluation through the *objectifying male gaze*. As far as the gender difference in actively or passively objectifying others goes, both men and women sexually objectify women more than men. At the same time, men also objectify women more often than women do (Willis et al., 2022).

When investigating the possible influences of gender differences in the sexual objectification of others, a possible reason for the bias of objectifying women more than men. is a focus on women's appearance in western societies. Fredrickson & Roberts (1997) attribute the objectification of women to norms and values that center on a woman's physical appearance rather than other qualities. This is visible in most forms of media that frequently portray women in a sexualized manner. While the objectification of male bodies is growing, most media still use more female bodies to advertise products (Hatton & Trautner, 2011; Ricciardelli et al., 2010). This trend can lead to women being judged based on appearance instead of character, intelligence, or accomplishments.

As a result, both men and women judge other women as less human and, thus, disregard their thoughts, feelings, and desires, which can subsequently lead to harmful attitudes and behaviors towards women, including sexual harassment, social exclusion, and violence (Bernard et al., 2020; Ward, 2016; Wright & Tokunaga, 2016). This dehumanization also influences the perceived sufferings of those harmful attitudes. Sexualized rape victims and women suffering from violence from intimate partners are perceived as more responsible for the experienced violence than non-sexualized women (Pacilli et al., 2017).

While men and women dehumanize sexually objectified women, there appear to be at least partially different reasons for this. Vaes et al. (2011) find throughout different experiments that men seem to objectify women at least in part based on their sexual attraction, shifting their focus from the woman's personality to her body, activating the focus on their sexual goals, thus triggering the dehumanization process. As men focus more on attractiveness than competence when asked to choose a partner for a mathematical task after a completed sex goal activation task, the authors conclude that attractiveness leads to women being more likely to be regarded as objects by men.

On the other hand, women are more inclined to dehumanize the sexually objectified female target the more they distance themselves from this perceived "category of women". It

also shows that a possible reason for the dehumanization of women by women lies in the fact that the sexually objectified person is assumed to be sexually unrestricted and the objectifying women having a negative attitude toward promiscuity (Kellie et al., 2019). Additionally, sexual objectification followed by dehumanization towards attractive men and women by men and women could also be explained as a tool against ego-depletion when comparing oneself with more desirable people of the same sex and attributing their success more to due to luck than to intentions (Agthe et al., 2011; Parks-Stamm et al., 2008).

Bareket and Shnabel (2020) provide evidence that men sexually objectify women to (re)assert their dominance over them. Their study shows that men with high social dominance orientation (i.e., wanting to enforce existing social hierarchy) increased their sexual objectification when working for a boss that was a woman or when working with women partners on equal levels to subordinate women. This behavior was not observed among women working with or for men.

Sexual objectification of others in early adolescence. A factor that contributes to the objectification of women is the early sexualization of girls. Zurbriggen et al. (2007) argue in their report on the APA task force on the sexualization of girls that the sexualization of girls and young women in media and advertising supports the normalization of the objectification of women. The authors stress this may lead to girls and young women internalizing harmful messages.

According to Tolman (2002), contemporary social tendencies encourage adolescent girls to present themselves in a sexually appealing manner. However, they most often lack knowledge and understanding about sexuality, sexual desire, and responsible decision-making within intimate relationships that acknowledge their desires. This cultural pressure for girls to appear sexually mature can lead to their objectification as sexual objects. In this regard, younger girls who embody adult sexual characteristics could be perceived as sexually available and appropriate objects of desire. Additionally, the societal emphasis on youthfulness as a component of sexiness may blur the boundaries between sexual maturity and immaturity, perpetuating the objectification of women (Cook & Kaiser, 2004; Zurbriggen et al., 2007). Zurbriggen et al. (2007) also note in their report that this sexualization occurs on a continuum between sexual evaluation and standing trafficking and abuse.

Because of the socially normative sexualization of children, people also sexually objectify these sexualized children. In their 2012 study, Graff et al. (2012) find that young girls portrayed in a sexualized way are devalued and perceived as less competent than non-

sexualized children by United States college students. The objectifying characteristics attributed to the children then lead to the discussed prejudices and stereotypes manifesting in young children and adolescents about themselves and their peers. As these assumptions influence children and adolescents early on, the stereotypes also exist in their peer groups at a young age. For example, Stone et al. (2015) find that children aged between six to eleven rated sexualized girls in images as more popular but less intelligent, less athletic, and less nice than non-sexualized girls.

Moreover, children aged between seven to eleven also dehumanized their sexualized peers, as shown by Pacilli et al. (2019) who presented both boys and girls of that age group pictures of sexualized and non-sexualized children their age. The answers to the questionnaires the participants gave afterward show that girls and boys attribute lower human uniqueness and human nature to sexualized peers. In girls, the scores on human nature mediated the connection between sexualization and reduced helping intention towards sexualized boys and sexualized girls.

To hold, the early sexualization of girls through media and societal pressure to appear sexually mature can lead to their objectification as sexual objects, perpetuating harmful stereotypes and prejudices with children also devaluating and dehumanizing their sexualized peers.

Self-Objectification

While sexual objectification by others has many direct negative consequences on the target, it also results in the target's tendency to adjust the way they see themselves. The internalization of the repeatedly experienced sexual objectification, which results in individuals treating and perceiving themselves as objects to be viewed and evaluated based on appearance, is referred to as self-objectification (Claudat, 2013; Fredrickson & Roberts, 1997; Rollero & De Piccoli, 2017). Heightened self-objectification has been shown to promote a variety of psychological consequences such as general shame, drive for thinness, and appearance anxiety, as well as to hinder task performance and to increase negative mood (Gervais et al., 2011; Moradi & Huang, 2008; Rollero & De Piccoli, 2017). Accordingly, self-objectification is also linked to depression, disordered eating, body shame, sexual dysfunctions, and positive attitudes toward cosmetic surgery (Calogero et al., 2010; Miner-Rubino et al., 2002; Peat & Muehlenkamp, 2011; Rollero & De Piccoli, 2017; Tiggemann & Williams, 2012).

Regarding the connection of self-objectification to the objectification of others, Strelan and Hargreaves (2005) and Harsey and Zurbriggen (2021) show that both men and women that sexually objectify themselves also objectify others more powerfully. However, this effect was more pronounced among women. This effect is confirmed in a study by Lindner et al. (2012), who investigate the circle of objectification described by Strelan and Hargreaves (2005), finding that higher sexual objectification is linked to higher self-objectification among college students of all genders aged 18 to 30. Further studies by Tylka and Sabik (2010), and Puvia and Vaes (2013), support this connection. However, their studies had women participants exclusively. In their study, Kozak et al. (2009) find differences between this connection based on sexual orientation, stating that self-objectification among heterosexual men does not predict the objectification of others. However, in homosexual men, there is a strong relationship between self-objectification and the degree to which they objectify other men.

These findings particularly show how societal objectification integrates toward both the self and others. This result is part of a problem described by Zurbriggen (2013), who argues that self-objectification impairs the ability of oppressed groups like sexually objectified women or men to collaborate on their behalf. She bases this effect on internalized oppression, defined by the integration of negative beliefs about the self and the own group, and on the acceptance of the dominant group's negative stereotypes described by Williams & Williams-Morris (2000). Zurbriggen (2013) states that this can often lead to negative actions against in-group members.

Gender-based differences in self-objectification. Generally, men report lower trait-level self-objectification than women (Frederick et al., 2007; Slater & Tiggemann, 2010; Strelan & Hargreaves, 2005), which stems at least partly from the difference in sexual objectification administered toward men in society compared to women. On the other hand, research has indicated that while men generally exhibit less self-objectification than women, there is a growing trend among young adult men to become increasingly concerned about their physical appearance, as observed in studies conducted by Moradi & Huang (2008). Daniel et al (2014) linked this growing tendency of body image concerns to align with a more present societal and media-based objectification of men's bodies (in Western societies). In line with studies about the consequences of self-objectification in women, there are correlations to negative mood, disordered eating, and lower self-esteem in men (Calogero et al., 2010; Register et al., 2015; Rollero, 2013). What is more, excessive exercise, steroid use, and the general drive for muscularity are assumed to be partially the result of self-

objectification processes (Parent & Moradi, 2011). However, it remains important to note that women are more likely to self-objectify and suffer more often from harmful psychological effects such as depression, body dissatisfaction, low self-esteem, anxiety, shame, and attentional difficulties (Kahalon et al., 2018).

Self-objectification in early adolescence. According to (Fredrickson & Roberts, 1997; Slater & Tiggemann, 2010), there is a higher prevalence of sexualization towards girls and women in media and daily social interactions. This increased exposure to sexualization may lead to a greater likelihood of self-objectification among girls than boys. The gender bias in self-objectification, however, appears not as established in early adolescence as it is among adults. While there are studies by Grabe et al. (2007) and Slater & Tiggemann (2010) that find significantly higher reported self-objectification in girls aged 11 to 13 (Grabe et al., 2007) and 12 to 16 (Slater and Tiggemann, 2011) than in boys other studies find no difference (Jongenelis et al., 2014; Slater & Tiggemann, 2011). For instance, the survey by Jongenelis et al. (2014) conducted in Australia with children around nine discovered that boys and girls were susceptible to self-objectification, with no discernible gender disparities in their levels of body surveillance and body shame. However, a meta-analysis study by (Daniels et al., 2020) compares 66 studies on self-objectification in girls under 18 years of age and reveals that most studies find self-objectification stronger among girls and self-objectification significantly growing with age.

When investigating self-objectification in children and adolescents, it is crucial to consider its predictors and causes as well as its outcomes. According to Daniels et al. (2020), the three major predictors of self-objectification during adolescence are peers, media, and pubertal timing. The four major outcomes are sexual behavior, mental health, disordered eating, and cognitive function.

Regarding children's exposure to objectification and its internalization, prior research has demonstrated that children acquire societal and media standards of beauty before reaching adolescence (Kholmogorova et al., 2017) and as early as per-school age. Furthermore, in a yearlong study on the development of self-objectification in adolescence among 12-to-18-year old's, Vandenbosch and Eggermont (2014) identify three phases of self-objectification. During the first phase, a person internalizes appearance ideals, which leads to body surveillance. In the second phase, these ideals influence the evaluation of one's appearance over competence. In the third phase, internalization leads to higher body consciousness.

As a further example, Rousseau & Eggermont (2018) show in their research a positive correlation between exposure to sexually objectifying media (women being depicted as sexual objects, men as sexual initiators) and self-objectification among pre-adolescents aged 10-13 in Belgium. The study reveals that exposure to sexually objectifying media predicts self-objectification, particularly among girls. Regarding the effects of exposure to sexualized stimuli as consumer items, Vandenbosch et al. (2017) show that playing a video game with a sexualized avatar fosters increased self-objectification among adolescents.

Studies on the influence of mothers on self-objectification find that the self-objectification of girls aged 5 to 7 correlates positively with their mothers' self-objectification (Perez et al., 2018). Nevertheless, these studies consider relatively young children and do not document the effect on adolescence. It is, therefore, not surprising that most research focuses on the influence of peers (other than media influences) on self-objectification. These studies show that almost half of the adolescents aged 10 to 18 had experienced sexual harassment, including unwanted sexual jokes, comments, or gestures (Daniels et al., 2020; Espelage et al., 2016; Hill & Kearl, 2011). In longitudinal studies, adolescents with these experiences are shown to be more likely to develop disordered eating and self-objectification (Petersen & Hyde, 2013). Other peer-related causes for self-objectification in adolescence include both positive compliments and negative comments on the appearance of peers, being teased by peers while playing sports, having smaller- and larger-than-average social networks, monitoring attractive peers online, reading comments on extremely thin peers evaluated as "somewhat underweight" and general exposure to older peers (Brajdić Vuković et al., 2018; Slater & Tiggemann, 2011, 2015; Strauss et al., 2015; Tiggemann & Slater, 2017; Vandenbosch & Eggermont, 2016; Veldhuis et al., 2014).

Another category concerning the predictors of self-objectification stated by Daniels et al. (2020) is pubertal development and its timing. The onset of menstruation seems to be a significant time for changes in body image, with body shame and disordered eating increasing during the two years following the first period (Abraham et al., 2009). What further seems relevant is the timing of maturation, as it is linked to body perceptions, eating practices, and psychological well-being, with on-time or late maturing girls experiencing fewer negative effects than early maturing girls (Mendle et al., 2007; Mendle & Ferrero, 2012), though the impact of pubertal timing on body perceptions may vary across ethnic or racial groups (Argabright et al., 2022; Siegel et al., 1999). However, the relationship between pubertal timing and self-objectification has only been verified by Grabe et al. (2007a), who investigates the relationship between pubertal maturation, body mass index (BMI), peer

sexual harassment, self-surveillance, and body shame among 10–12-year-old children. The study finds that pubertal development predicts increased sexual harassment by peers, higher BMI, and greater self-surveillance, but only for girls. Additionally, the study finds that sexual harassment by peers (indirectly) and higher BMI (directly) are related to higher levels of body shame. However, two other studies find no indication, so further research is advised (Daniels et al., 2020).

Next, the impact of self-objectification on eating habits, mental health, cognitive performance, and sexual behavior will be briefly discussed. Daniels et al. (2020) summarize that self-objectification in adolescence reduces sexual agency, promotes early sexual intercourse and sexting, and is connected to the objectification of others. It also connects to body dissatisfaction, body shame, and depressive symptoms through body shame and rumination (Grabe et al., 2007a) and through objectified body consciousness, a concept closely related to self-objectification (with partially the same measurement of body surveillance) with somatic complaints, suicidal thoughts, and self-injury. The outcome of disordered eating of self-objectification is strongly indicated but not sufficiently documented (Daniels et al., 2020).

Concerning the cognitive outcomes of self-objectification, a study by Pacilli et al. (2016) details the influences of children aged 8 to 10 being exposed to sexualized images of children on their cognitive abilities. The math test results suffered for both girls and boys after being subjected to images of sexualized children of their own gender. This finding suggests a disruptive nature of same-gender sexualized images on the cognitive performance of both boys and girls. The study also shows that the experiment, which induced self-objectification of both boys and girls and had this damaging effect on the displayed math performance, also led to an impaired working memory which mediated the effect of the images on the math performance. Other studies show that playing with sexualized dolls can limit the career aspirations of girls aged 4 to 7 (Sherman & Zurbriggen, 2014). Slater et al. (2017) show that 8 to 9-year-olds, after playing appearance-focused internet games, show similar restrictions to their choices.

Empathy on Self- and Sexual Objectification

The understanding of the consequences of the mistreatment that sexually objectified targets experience is primarily embedded in the ability of people to feel empathy. The dehumanization of targets is the failure to recognize their cognitive and emotional complexities and consequently influences the empathy that they are met with (Simon &

Gutsell, 2021). In a study, Cikara et al. (2011) find that participants with sexist attitudes depicted more minor activation of the mentalizing network when looking at images of sexualized women but not when seeing non-sexualized women. This finding suggests a diminished ability to understand the thoughts and emotions of sexualized women. This reduced activation of the mentalizing network, in turn, relates to lower empathic behavior toward sexualized women (Bernard et al., 2020).

Vaes et al. (2011) investigate the causes for the sexual objectification of others based on gender differences. They explain the behavior of women dehumanizing women with the desire of distancing themselves from sexualized women, viewing them as out-group members and as less human than in-group members. This distinction between in-group and out-group due to sexualization is also seen in the empathy for members of an in-group or out-group based on their similarity to the sexualized target (Hudson et al., 2019; Stürmer et al., 2006). Related to this discrepancy in similarity regarding empathy and sexual objectification, Cogoni et al., (2021) show that participant attributed less similarity between emotional experiences of the self and of others, when these others were sexualized rather than non-sexualized. This was shown through self-reports, reports on viewed others and the assumed reactions to pleasant or unpleasant stimuli.

To analyze the relationship between sexualization and empathy at behavioral and neural levels, Cogoni et al. (2018) use a social-exclusion task. Participants watch sexualized and non-sexualized women being excluded from a game while their neural responses were recorded. Additionally, they self-reported their subjective empathy. The study finds that participants showed less empathy for sexualized women than non-sexualized ones. At the neural level, brain regions involved in both empathy and mentalization are shown to be less active when participants are presented with the social exclusion of sexualized women than non-sexualized women. This finding indicates that sexualization influences empathy toward women, affecting both neural processing and self-reported empathetic reactions (Bernard et al., 2020). In line with these results, Loughnan et al. (2010) also find that both men and women show less empathy for the physical pain of sexualized compared to non-sexualized targets. Interestingly, sexually objectified women evoke less empathy in others (Cogoni et al., 2018; Loughnan et al., 2010), even though they are sometimes judged to be able to experience emotions and physical sensations more strongly than personalized women (Gray et al., 2011). Bradshaw (2020) and Costello et al. (2020) find further that the trait of empathy is negatively associated with the sexual objectification of others. Castello and colleagues document this association among all genders, while Bradshaw only tested heterosexual men.

Regarding the relationship between empathy and self-objectification, only a few results exist. A study by Dvir & Nagar (2022) shows that women, who are sexually objectified through an experiment, show higher empathy for other women who are sexually objectified. A similar effect is observed by Fox et al. (2021), who find that women with induced self-objectification show less aggression towards female peers than control groups, indicating heightened empathy. In another study, Bevens et al. (2018) present that women with higher trait self-objectification showed more sympathy toward rape victims. Because sympathy as a concept is very closely related to or, depending on the chosen definition, identical to compassionate empathy, like in the model presented earlier, a positive connection to total trait empathy seems reasonable to assume. Stojiljković et al. (2014) further find a connection between self-concept (like body image, which would be closely related to self-objectification) and empathy. Taken together, these studies indicate a positive relationship between self-objectification and empathy.

Trait and State Concepts

For these concepts, empathy, self-objectification, and sexual objectification of others, it is important to differentiate between the notions of trait and state (Nezlek et al., 2007; Vandenbosch et al., 2015). While traits refer to more stable characteristics that are considered more as causes than outcomes of behavior or emotions. Traits may still change, but these changes tend to happen over a longer period of time. States, on the other hand, are assumed to change constantly, influenced by, for example, stress, mood, and social context. States are hence considered more as the reaction to circumstances or as outcomes. The time of a state can vary from minutes to a day (Nezlek et al., 2007). For example, Li et al. (2017) show state empathy is higher among participants who are in a positive mood compared to those who are in a negative one. Kimmig et al. (2021) find that state empathy was higher in participants who are interacting with a close friend compared to those who are interacting with a stranger. Trait empathy, conversely, is influenced more by the environment in which it is developed and in addition to genetics (Nezlek et al., 2007).

Similar variation applies to self-objectification. State self-objectification is defined as a temporary experience where people view their body from an observer's perspective that is triggered by circumstances (Gay & Castano, 2010). This can, for example, be induced by placing participants in an objectifying condition (e.g., wearing swimwear) and comparing their responses to a control condition (e.g., fully clothed) or performing a baseline comparison. In contrast, trait empathy is the consistent tendency to self-objectify and is not

induced but self-reported. It is causally connected to having experienced sexual objectification over some time (Carrotte & Anderson, 2018; Gay & Castano, 2010).

This distinction between state and trait level cannot be made as easily regarding sexual objectification. As this concept is generally measured in relation to a specific stimulus that aims to either trigger objectification or not, it is difficult to define trait sexual objectification.

As seen above, there is typically a difference in the collection of data on either state or trait level. Traits are usually measured through universally valid self-report questionnaires, while data collection on states is done through experimental and often computer-based tests (Zhao et al., 2021). The distinction between state and trait level is especially important regarding the statistical interaction between the two, as trait and state empathy may reflect different underlying psychological processes. Therefore, state and trait level relationships must be considered mathematically independent (Nezlek, 2001).

Intention and Relevance of the Study

The aim of the present study is to advance the understanding of the multi-layered phenomenon of sexual objectification in early adolescence. As described above, early adolescence is a critical phase in life concerning development in many areas and is still very much understudied compared to childhood and adolescence. This study aims to deepen the understanding of how the internalization of sexual objectification toward the self in the form of self-objectification might influence the active sexual objectification of others in the age group of early adolescence. This paper furthermore investigates which part empathy plays regarding these concepts of objectification. It also aims to uncover if empathy acts as a mediator in the relationship between the two concepts.

As previous theories and research findings suggest, experiencing sexual objectification through popular media and during social interactions in the developmental phase of early adolescence strongly supports the act of overtaking an observer's perspective on the self, therefore benefitting the development of self-objectification (Vandenbosch & Eggermont, 2014). The aim of this study, however, is to inquire about the influence the other way around with the possibility of trait self-objectification predicting the sexual objectification of others. This approach is based on research that, to this author's knowledge, has only been previously documented for adults (Harsey & Zurbriggen, 2021; Lindner et al., 2012; Puvia & Vaes, 2013; Strelan & Hargreaves, 2005; Tylka & Sabik, 2010) with only Rousseau and Eggermont (2018) going broadly in this direction by measuring both concepts in early adolescence, stating that induced through sexualized media scripts, girls aged 10 to 13 show heightened

objectification of other women, causing self-objectification of both boys and girls. This however only shows that perceived objectification leads to objectifying others and the self without a direct relationship. Therefore, it is the aim of this paper to bring new insight into the relationship between trait self-objectification and state objectification of others in early adolescence, which are both objectifying and being objectified by their peers and administering self-objectification early on. As previously described, this interaction is especially meaningful regarding the continued objectification from peers, who share the experience of being objectified and self-objectifying, yet still objectifying others. Because there are different findings on the influence of gender self-objectification in early adolescence, it is also targeted to contribute to the clarification of these uncertainties.

Another interaction that will be looked at specifically is the connection between self-objectification and empathy. In reference to the above discussed limited research done on this topic, it is important to note that there are no existing studies with participants under 18 investigating this connection documented for adults (Bevens et al., 2018; Dvir & Nagar, 2022; Fox et al., 2021; Stojiljković et al., 2014). Hence, there is a need to understand this connection, particularly because the development of empathy and the development of self-objectification play such an important role in the maturation process from childhood to adolescence.

In addition, the influence of empathy on sexual objectification is the subject of this study, again focusing on the opposite direction of popular research. While most of the academic work explores state empathy regarding sexualized objects and how the sexualization of humans affects the empathy they face from their peers, the objective of this paper is to find the connection from the other direction: to understand if there is an influence or possible protective element of trait empathy concerning the sexual objectification of others. This relationship has not yet been explored in early adolescence. Therefore, this study aims to fill this gap in research.

Finally, this paper aims to evaluate the role that empathy plays in the influence of self-objectification on the sexual objectification of others. As the connection between self-objectification and empathy is proposed to be positive and the causality of empathy on sexual objectification negative, it can be speculated that empathy may inhibit the proposed positive relationship between self-objectification and objectification of others. This mediation effect could then be understood as a possible disruption to the "circle of objectification" described

by Strelan and Hargreaves (2005). Also, as empathy critically develops during early adolescence, it is important to fully understand the possible implications of this trait.

Research Questions and Hypotheses

Based on the presented state of the art, the research question for this thesis is as follows: *Does empathy influence the relationship between self-objectification and sexual objectification in early adolescence?*

Derivation of Hypotheses

Most of the hypotheses are based on previous studies on adults, as the research on early adolescence is still limited. Where possible, references on early adolescence were used. In other cases, the point of reference were studies on mostly young adults.

Based on the findings by Strelan and Hargreaves (2005) and Harsey and Zurbriggen, (2021), documenting that men and women who sexually objectify others also show higher self-objectification, a positive interaction between self-objectification and reported sexual objectification of others is hypothesized.

H1: *Participants with high reported trait self-objectification exhibit higher state objectification of others.*

Due to most research verifying girls self-objectify more than boys (Grabe et al., 2007b; Slater & Tiggemann, 2010), which is most likely linked to them being more often subjected to sexual objectification of others and the media, it is hypothethized that the girl participants will show higher state self-objectification than the boy participants.

H1.1: *Girl participants report higher self-objectification than boy participants.*

Based on findings that the objectification of others is stronger among men (Bareket & Shnabel, 2020; Willis et al., 2022), it is hypothesized that the observed sexual objectification will be higher among boy than girl participants.

H1.2: *Boy participants exhibit higher state objectification of others than girl participants.*

Based on a variety of studies providing evidence to the fact, that women are being sexualized more by both men and women (Blake et al., 2016; Loughnan et al., 2010; Tyler et al., 2017), it is hypothesized that the stimuli of the sexualized girl will evoke higher sexual objectification than the sexualized boy stimuli from both boy and girl participants.

H1.3:   *The sexualized girl stimuli will evoke higher state sexual objectification than the sexualized boy stimuli from all participants.*

Further based on Strelan & Hargreaves, (2005), who find that the relationship between increased objectification and higher self-objectification was stronger in women than in men, a positive interaction between self-objectification and observed sexual objectification of others is hypothesized.

H1.4:   *The association between trait self-objectification and state sexual objectification is stronger in girl participants compared boy participants.*

Suggested by previous findings regarding self-objectification and sympathy (Bevens et al., 2018), with sympathy being equivalent to compassionate empathy in the assumed model, and general findings of a connection between self-concept (like body image) and empathy (Stojiljković et al., 2014), it is hypothesized that participants with higher trait self-objectification will exhibit higher trait total empathy (H2) as well as the affective empathy (H2.1), cognitive empathy (H2.2) and compassionate empathy (H2.3) individually.

H2:   *Participants with high reported self-objectification report higher trait total empathy.*

H2.1:   *Participants with high reported trait self-objectification will report higher affective empathy.*

H2.2:   *Participants with high reported trait self-objectification will report higher cognitive empathy.*

H2.3:   *Participants with high reported trait self-objectification will report higher compassionate empathy.*

Regarding Bradshaw (2020), who finds that objectification of others was connected to lower levels of general empathy, it is hypothesized that trait empathy induces lower self-objectification.

H3:   *Participants with high reported trait empathy exhibit lower state sexual objectification of others.*

Since most research finds that women and girls tend to exhibit higher levels of trait empathy than men and boys (Baez et al., 2017; Löffler & Greitemeyer, 2023; O'Brien et al., 2013), it is hypothesized that boy participants show lower empathy then girl participants.

H3.1:   *Reported empathy will be lower in boy participants than in girl participants.*

Based on the presumed positive relationship between Empathy and self-objectification (Bevens et al., 2018), the connection between self- and the sexual objectification of others (Harsey & Zurbriggen, 2021) , and the negative causality of empathy and the sexual objectification of others (Cogoni et al., 2018; Simon & Gutsell, 2021) a mediating effect of empathy on the relationship between self-objectification and the sexual objectification of others is hypothesized. Figure 1summarizes the proposed mediation model.

H4:   *The effect of trait self-objectification on state sexual objectification of others is mediated by empathy.*
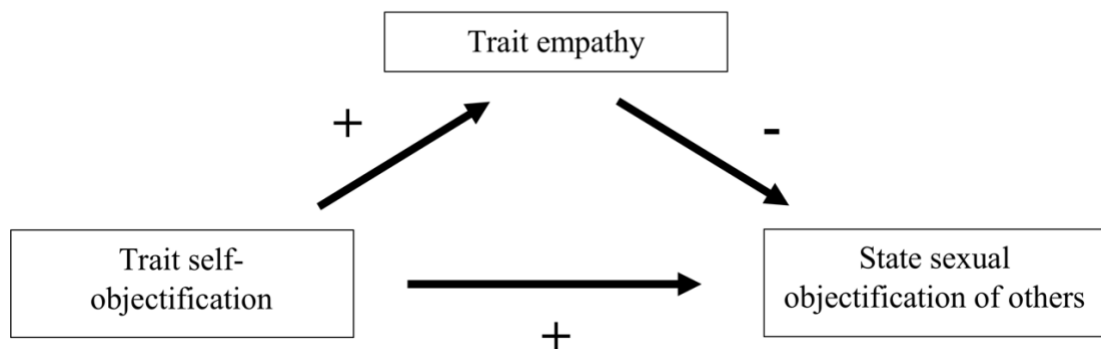

Figure 1: Proposed mediation model of H4.

Methods

This study was conducted as part of a larger study including further questionnaires on perceived media pressure, body image, helping intentions and other measures. The study was previously reviewed and approved by the Ethics Committee of the University of Vienna. All participants were asked before the questionnaire to agree to taking part in the experiment, with instructions and explanations adjusted to the age of the participants.

Study Design

The study was conducted online via the platform SoSci-Survey with an anticipated duration of 30 to 40 minutes. As it was conducted during the Covid19 pandemic, the questionnaire was conducted in an unsupervised manner by the participants at home in their

own free time. Participants were assigned codes via SoSci-Survey and the data was only seen and analyzed by the researchers. The names of the participants were not collected, and their anonymity was thereby assured. The questionnaire was conducted in German and divided into two parts. Table 1 gives an overview of the studies procedure.

Table 1: Overview of the procedure of the study.

Information and consent	1. Consent of the participants
	2. Survey on weight and height, Sociodemographic data including age, gender, nationality, type of school family size and parental occupation,
Matching of gender sensitive questionnaires to reported gender and randomization of gender and order of presented stimuli	
Experiment and questionnaires	3. Children's body Image Scale (CBIS; Truby & Paxton, 2002)
	4. Presentation of stimuli one (boy or girl / sexualized or non-sexualized) and sexualized girl questionnaire (Stone et al., 2015)
	5. Experimental induction and testing of helping intentions
	6. Perceived media pressure and the want to achieve these body ideals – Sociocultural Attitudes Towards Appearance Scale-3 (Thompson et al., 2004)
	7. Objectified Body Consciousness Scale - Body surveillance subscale & Body shame subscale (McKinley, 1998; McKinley & Hyde, 1996)
	8. Presentation of stimuli two (same gender as stimuli one / counterbalanced sexualization) and sexualized girl questionnaire (Stone et al., 2015)
	9. Empathy Questionnaire for Children and Adolescents (EmQue-CA; Overgaauw et al., 2017)

	10. Possibility of participation on the gift card-lottery

Note. As the data collection was part of a joined research project, only data from 4,5, 7, 8 and 9 are analyzed in the present paper.

Sample

Participants from Austria and Germany were recruited through their school administrations or through personal connections to their parents. The schools were contacted through e-mails over the year 2021, giving the information of purpose and content of the study to the school principals, who then forwarded the information to the teachers in charge of the classes in the required age group. Five participants won a 70 EUR gift certificate as a thank you for their time, which was used as an incentive for participation.

The assumed effect size for this study was small, based on the calculations from Rousseau and Eggermont (2018), who identify an effect size of 0.11 for the interaction of trait self-objectification and state objectification of others in adolescence. To detect a small effect size in linear regressions with one predictor following the proposals of Cohen (1988), the power calculation suggests a sample size of 482 participants.

After contacting hundreds of schools in Austria and Germany, collecting responses over a full calendar year, and cleaning the responses, the final sample consists of 103 participants. 207 participants started the first part of the questionnaire during the contact dates from January to June 2021. While 178 participants confirmed that they want to participate, only 140 also reached the end of the second questionnaire. Since there was no manipulation check and the students were assumed to be alone in taking the survey, participants who had taken so little time to answer the questions that it is unlikely that they read all questions before answering them were excluded. As the necessary time to answer the questionnaire thoroughly was estimated at about 30-40 minutes, only responses with a total participation time of at least 10 minutes were considered. This filter reduces the number of valid respondents to 111. Manual checks the of the remaining responses for double entries of participants or deliberate nonsense to open questions further cleaned the data. Two respondents exhibited the same age, size, weight, age of siblings and parental occupations, so the second set of responses were hence omitted. Finally, 5 responses were removed because they did not provide sufficient information in empathy-related questions. After all these filters were applied, there where any more responses with random letters or in direct defiance of the posed question found.

The average participant is 11.7 years old (SD = 0.735) with a range between 9 and 13.5 years. The average time to complete the survey was 21.7 minutes (SD = 5.66) with a range between 10.4 and 32.6 minutes. The sample is split into 46 girl participants and 57 boy participants, so there is a ratio of 45% of girl participation in my sample. The average age among girl participants is 11.8 years (SD = 0.730) and for boy participants 11.7 years (SD = 0.737).

Stimuli

Four comic-style drawn pictures were used as stimuli. They were two boys and two girls with brown hair and different colored swim ware. The stimuli differ in their degree of physical maturation, making the more physically matured stimuli the sexualized ones. The physical maturation is illustrated in the boy stimuli with wider shoulders and more muscles compared to the less developed boy. The girls' physical maturation is visualized in wider hips and thighs and prominent breasts compared to the less matured girl. The girls are wearing swimsuits and the boys are wearing swimming trunks. The color was assigned so that each a sexualized and non-sexualized stimuli would wear each color. They were also given a name and a German description: "This is Thomas/Anna/Lisa/Felix. He / She is your age and is having swimming class now". The sexualized boy is named Thomas, the sexualized girl is named Anna, the non-sexualized girl is called Lisa and the non-sexualized boy is called Felix. They can be seen in Figure 2.
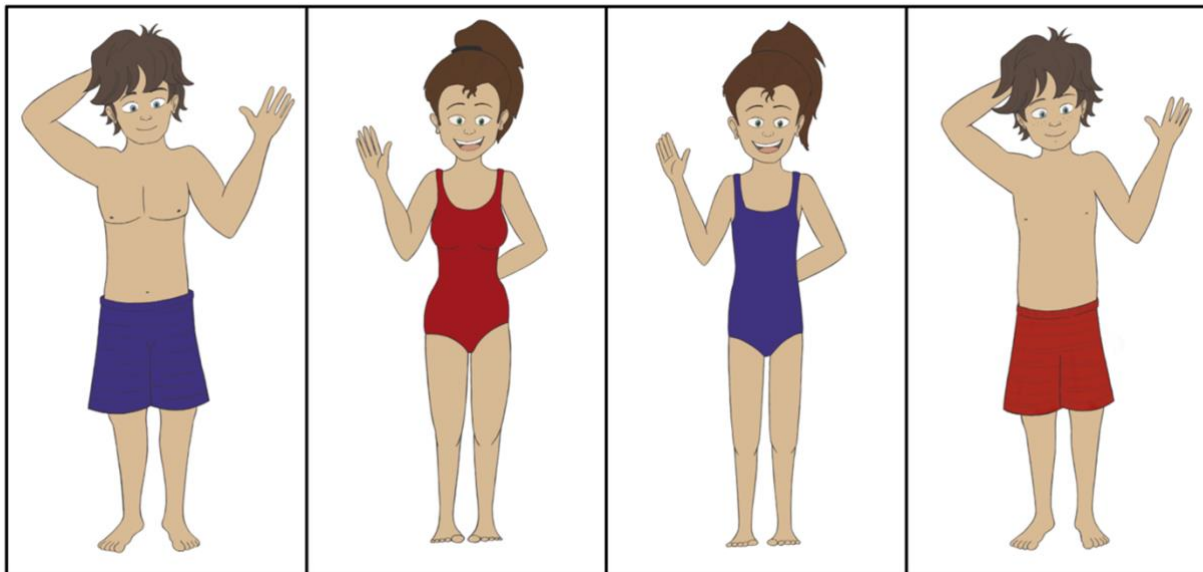

Figure 2: From left to right: sexualized boy (Thomas), sexualized girl (Anna), non-sexualized girl (Lisa), non-sexualized boy (Felix).

Measures

Self-objectification. Self-objectification was measured through the body surveillance subscale of the Objectified Body Consciousness Scale (OBCS) (McKinley & Hyde, 1996). The used subscale was taken from the adapted version of the questionnaire by Forrester-Knauss et al. (2008) "Adolescents body image questionnaire for adolescent boys and girls". The body surveillance subscale has been established to measure self-objectification in previous research (Greenleaf, 2005; Mercurio & Landry, 2008; Muehlenkamp et al., 2005). It consists of eight items that measure to which extent a person thinks about how their body looks rather than how it feels. Two examples of used items are "during the day, I think about how I look many times" and "I think more about how my body feels than how my body looks" (scores reversed). The seven-point response scale used in the original version of the OBCS was changed to a four-point response scale by Forrester-Knauss et al. (2008) as they established that a four-point scale is easier to answer for adolescent participants. The "Adolescents body image questionnaire for adolescent boys and girls" questionnaire included three more items not included in this survey. The OBCS included the same items as this survey but used different response scale items from 1 (strongly disagree) to 4 (strongly agree) instead of 1 (strongly disagree) to 7 (strongly agree) without the option of not answering. The Cronbach alpha (α) of the responses for body surveillance subscale was 0.82 for the total sample.

Empathy. Empathy was measured using the Empathy Questionnaire for Children and Adolescents (EmQue-CA) designed by Overgaauw et al., (2017) as an adaptation for children and adolescents on the original Empathy Questionnaire (EmQue) by Rieffe et al., (2010) for toddlers. This questionnaire consists of 18 self-report items and examines the level of empathy as reported by a person between the ages 9 and 16 in three categories: affective empathy (seven items), cognitive empathy (five items), and compassionate empathy (six items). Example items are "If my mother is happy, I also feel happy" (affective empathy), "When a friend is angry, I tend to know why" (cognitive empathy) and "If a friend is sad, I like to comfort him" (empathic concern). There are three possible answers, that participants may choose from (not true (0), sometimes true (1), often true (2)). The sum of all 18 item scores provides the total empathy score. Overgaauw et al., (2017) calculate good internal consistencies for the scales: affective empathy 0.70, cognitive empathy 0.70, and intention to comfort 0.74. The internal consistency calculated for the EmQue-CA responses in this sample resulted in a Cronbach alpha (α) of 0.80.

Sexual objectification. Sexual objectification was operationalized through an experimental introduction of sexualized and non-sexualized boy and girl stimuli and the interpretation of the differentiation through the participants. Each participant was presented with the image of two persons of the same gender. Either they saw the sexualized and the non-sexualized girl (Anna and Lisa) or they saw the sexualized and non-sexualized boy (Thomas and Felix). These sexualizations are designed through physical body maturation as described above. This experimental induction of sexual objectification bases on the objectification of pubertal development. As mentioned above, the pubertal status correlates to experienced sexual objectification (Daniels et al., 2020).

The order in which the participants see the stimuli is randomized. After seeing the picture and reading the description, the participants are asked to answer four questions concerning the stimuli they saw. These questions are taken from the sexualized girl stereotype (Stone et al., 2015). The item questions are "How popular do you think Thomas/Anna/Lisa/Felix is?", "How nice do you think Thomas/Anna/Lisa/Felix is?", "How clever do you think Thomas/Anna/Lisa/Felix is?" and "How athletic do you think Thomas/Anna/Lisa/Felix is?". An example of this part of the questionnaire with Anna as a Stimuli can be seen in Figure 3.
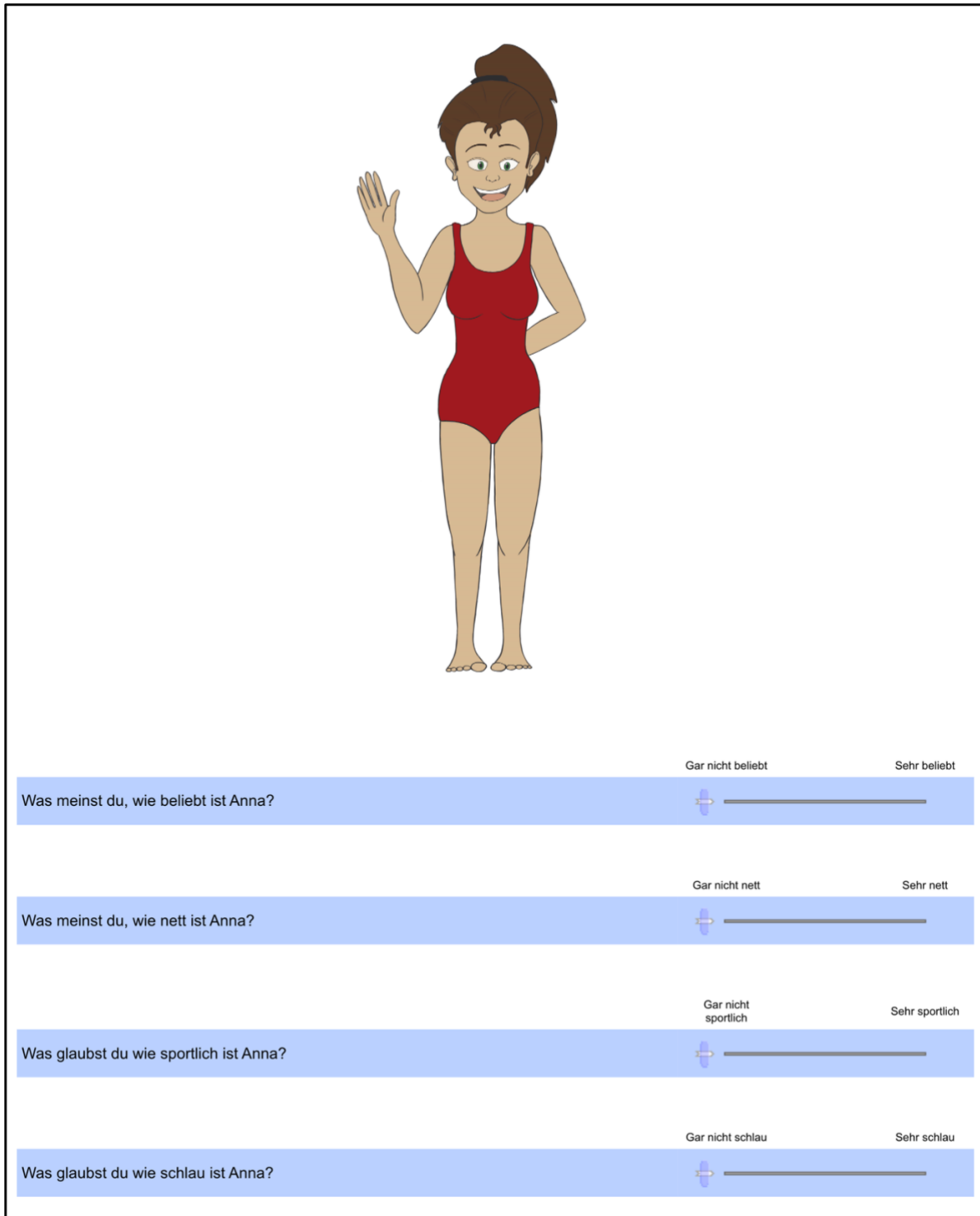
Figure 3: Sexualized girl questionnaire with the example of Anna.

The sexualized girl stereotype expects sexualized girls to be less clever, less nice, less athletic but mor popular. The difference in scoring (on a scale from one to 100) between the non-sexualized stimuli (independent variable) and the sexualized stimuli (dependent variable) was interpreted as objectification in the corresponding variable. These stereotypes of sexualization are expected to extend to boys as well. The sum of all differences (with the

popular item inverted) constitutes the variable of sexual objectification for this study. The internal consistency for the sexual objectification responses exhibits a Cronbachs alpha (α) of 0.81.

Statistical Analysis

Different strategies using the statistical programming language R Version 4.2.2 (R Core Team, 2022) were applied in order to analyze the data. For all data manipulation tasks, the *tidyverse* family of packages (Wickham et al., 2019) has been used. To compute Cronbach's alpha, the *psych* package of Revelle (2022) was employed. For the calculation of partial η^2, the *lsr* package of Navarro (2015) is used. The *pwr* package of Champely et al. (2017) is used for all power calculations.

Throughout all statistical tests, a significance level of $p \leq 0.05$ was considered to infer whether a test result is considered significant or not. To investigate the hypotheses, averages with 95% confidence intervals were used to illustrate differences among groups, ANOVAs and univariate regressions to establish whether two variables exhibit a statistically significant relationship and multivariate regressions as for the mediation analysis. Where applicable, F-statistics, p-values, and partial η^2 are reported to provide detailed results on statistical tests.

Results

Self-Objectification and Sexual Objectification of Others

For all relationships, the start is with computing correlations that are summarized in Table 5 in the Appendix. To address H1, self-objectification as measured by body surveillance and the sexual objectification of others was analyzed. Self-objectification exhibits a positive correlation but statistically insignificant correlation with measured sexual objectification of others ($r = 0.04, p = 0.664$). The ANOVA of the sexual objectification measure on body surveillance also shows an insignificant positive coefficient on body surveillance of $F(1, 101) = 0.19, p = 0.66, \eta^2 = 0.00$). Hence, there is no statistical evidence in support of H1: participants with high reported trait self-objectification do not unconditionally exhibit significantly higher sexual objectification in the present sample.

To address H1.1 and investigate whether girl participants report a higher self-objectification than boy participants, the data was first visually inspect. Figure 4 indeed shows that the average body surveillance is higher among girl participants than the average among boy participants. However, an ANOVA of body surveillance on the gender of participants does not provide any statistical support for the positive relationship described in H1.1 ($F(1, 101) = 0.59, p = 0.48, \eta^2 = 0.01$).
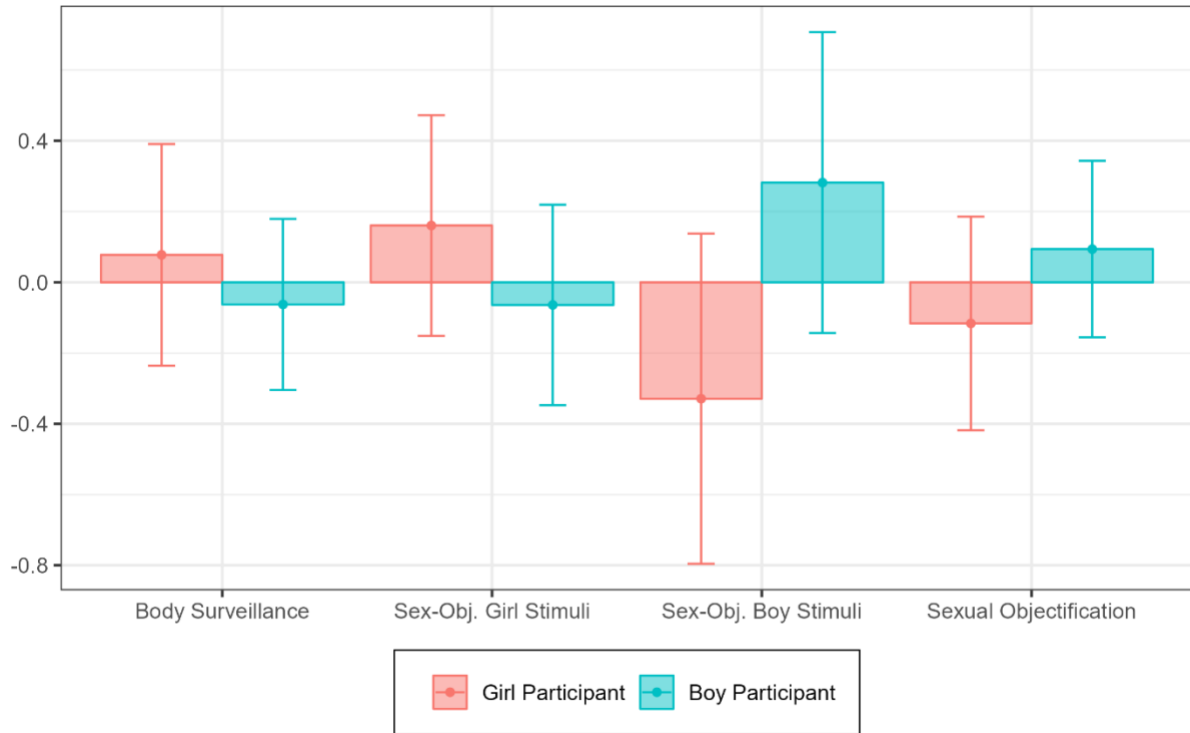

Figure 4: Average body surveillance and sexual objectification per participant gender. The error bars indicate corresponding 95% confidence intervals. All measures are standardized for comparability reasons.

Figure 4 also indicates that the average sexual objectification of others is lower among girl participants compared to boy participants as stated in H1.2. However, the ANOVA between sexual objectification and participant gender does not yield any statistically significant support for the hypothesis ($F(1, 101) = 1.12, p = 0.29, \eta^2 = 0.01$).

More interestingly, the sexual objectification among girl participants for the girl stimuli is, on average higher than among boy participants, while the sexual objectification of the boy stimuli is higher among boy than girl participants. In addition, the girl participants seem to sexually objectify the boy stimuli significantly less than they objectify the girl stimuli. To dig deeper into these gender differences with respect to the stimuli, Figure 5

provides average sexual objectification split by participant gender, stimuli gender and whether the first stimuli was sexualized or non-sexualized. The figure provides three key insights: (i) sexual objectification tends to be higher when the first stimuli are non-sexualized as opposed to when the first stimuli are sexualized; (ii) boy participants exhibit on average the highest sexual objectification for the non-sexualized boy stimuli compared to all other groups; and (iii) the sexualized girl stimuli does not clearly lead to higher sexual objectification than the sexualized boy stimuli, indicating a lack of support for H1.3. Indeed, the ANOVA of sexual objectification on the stimuli type does not yield any significant statistical relationship $(F(1, 101) = 0.06, p = 0.81, \eta^2 = 0.00)$, hence providing no unconditional support for H1.3.
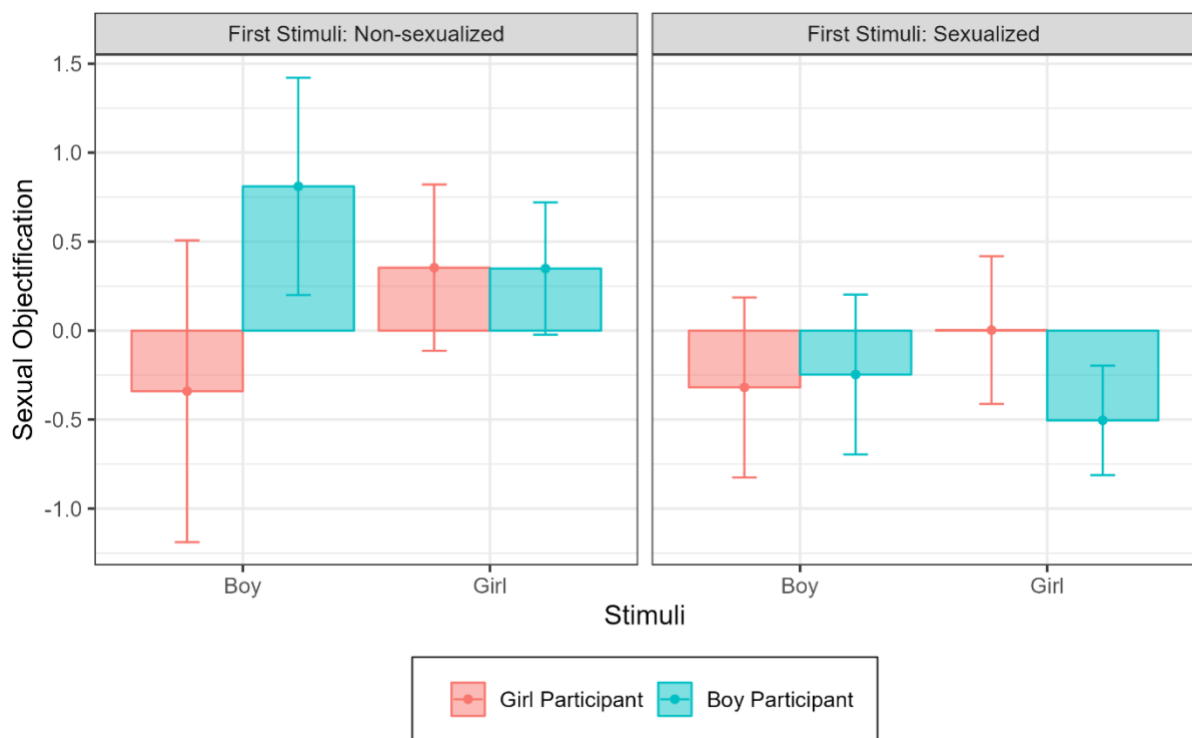

Figure 5: Average sexual objectification per participant gender, stimuli and stimuli order. The error bars indicate 95% confidence intervals.

To disentangle the complex gender differences with respect to participant and stimuli gender, a multivariate regression approach summarized in Table 2 is used. The results are as follows: (i) girl participants show a statistically significant lower sexual objectification than boy participants if stimuli gender and stimuli sequence are controlled for; (ii) all participants reported on average a statistically significant higher sexual objectification when the first stimuli was sexualized than when the first stimuli was non-sexualized; (iii) girl participants reported higher sexual objectification for the girl stimuli compared to other participant and

stimuli combinations; and (iv) girl participants reacted stronger when the first stimuli was sexualized compared to other participants and stimuli combinations.

The multivariate regression model hence provides support for H1.2 as girl participants exhibit lower other sexualization compared to boy participants, controlling for the stimuli gender and sequence. In addition, the model also provides partial support for H1.3 since the girl stimuli leads to higher sexual objectification than the boy stimuli, but only among girl participants.

Table 2: Multivariate regression to assess the relationship between sexual objectification and participant gender.

Effect	Estimate	SE	95% CI		p
			LL	UL	
Intercept	0.76	0.22	0.32	1.19	.001
Girl Participant	−1.01	0.32	−1.65	−0.37	.002
Girl Stimuli	−0.36	0.25	−0.85	0.13	.147
First Stimuli: Sexualized	−0.95	0.25	−1.43	−0.46	.000
Girl Participant x Girl Stimuli	0.85	0.37	0.12	1.59	.023
Girl Participant x First Stimuli: Sexualized	0.81	0.37	0.07	1.53	.031

To address H1.4, which states a stronger association between self-objectification and sexual objectification of girl participants compared to boy participants, a multivariate regression was run. A statistically negative coefficient on the interaction term between the indicator variable for girl participants and body surveillance would indicate support for the hypothesis. The corresponding results can be seen in Table 3. The table shows that the current sample cannot provide any statistically meaningful support for H1.4 as all coefficients are insignificant (p-values range between 0.63 and 0.89) as well as the overall regression model is also insignificant ($F(1, 101) = 0.46, p = 0.71$).

Table 3: Multivariate regression to assess the association between self-objectification and sexual objectification by participant gender.

Effect	Estimate	*SE*	95% CI		*p*
			LL	*UL*	
Intercept	−0.84	6.508	−13.75	12.07	.898
Girl Participant	−1.51	9.264	−19.89	16.88	.871
Body Surveillance	1.11	2.316	−3.48	5.71	.632
Girl Participant x Body Surveillance	−0.57	3.209	−6.94	5.80	.859

Self-Objectification and Empathy

To investigate the relationship between self-objectification and empathy, correlations between body surveillance and total empathy and its individual components were computed. Additional Table

Table 5 includes the correlations between body surveillance and the empathy measures. The correlation between body surveillance and total empathy is positive but statistically insignificant ($r = 0.09, p = 0.361$). In addition, the ANOVA cannot support a statistically significant association between total empathy and body surveillance either ($F(1, 101) = 0.84, p = 0.36, \eta^2 = 0.01$). Similarly, all individual components of empathy exhibit a positive correlation, but individual ANOVAs do not provide any support for a relationship between body surveillance and affective ($F(1, 101) = 0.23, p = 0.63, \eta^2 = 0.00$), cognitive ($F(1, 101) = 1.69, p = 0.20, \eta^2 = 0.02$), or empathic concern ($F(1, 101) = 0.10, p = 0.27, \eta^2 = 0.00$). Therefore, the present sample does not provide any statistical support for H2, H2.1, H2.2, or H2.3.

Empathy and Sexual Objectification

Next, H3 is investigated, which predicts that high reported empathy leads to lower sexual objectification. The relationship between empathy and sexual objectification has been

assessed via ANOVA as well but does not exhibit any statistically significant result $(F(1, 101) = 0.19, p = 0.66, \eta^2 = 0.00)$.

The investigation of gender differences with respect to empathy yields the expected results of H3.1. Figure 6 shows that the average total empathy is lower among boy participants compared to girl participants, in particular for cognitive empathy and empathic concern.
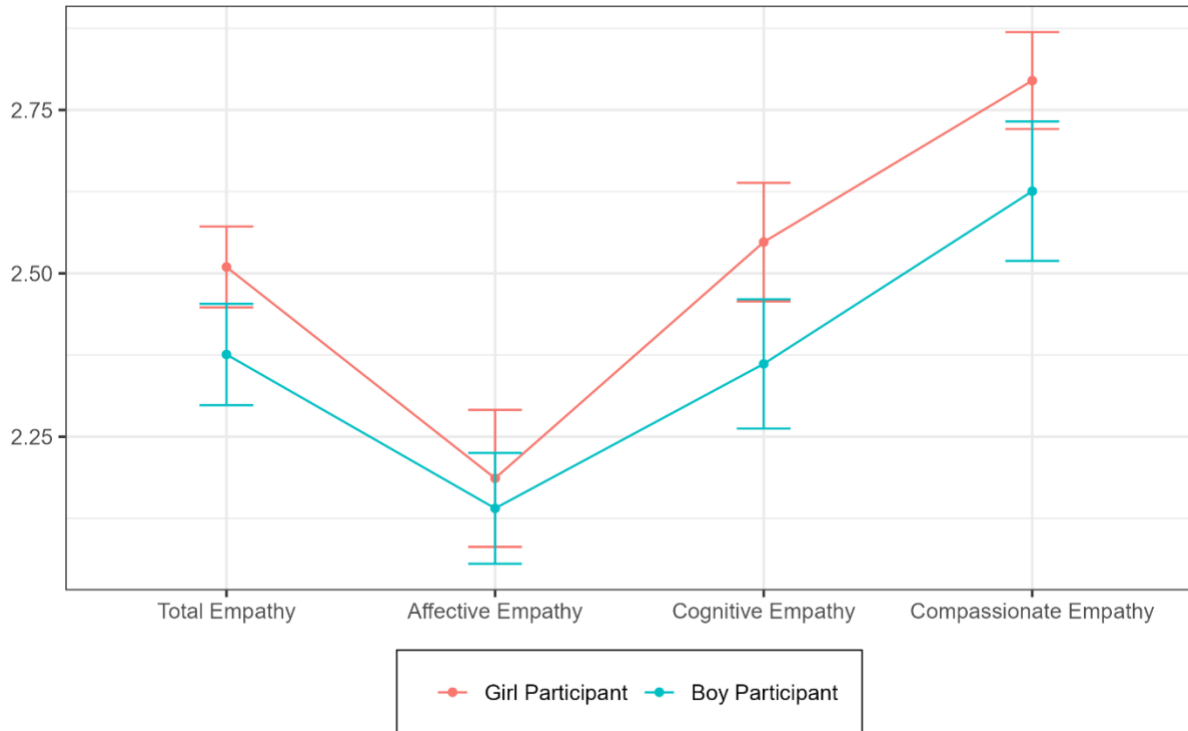

Figure 6: Average measured empathy by participant gender and empathy types. The error bars indicate 95% confidence intervals.

The ANOVA confirms a statistically significant impact of gender on total empathy $(F(1, 101) = 6.53, p = 0.01, \eta^2 = 0.06)$. The coefficient of the corresponding univariate regression is -0.13 and significant at the 5%-level. The breakdown of empathy in the individual components suggests that the gender difference is particularly prevalent in cognitive $(F(1, 101) = 7.12, p = 0.01, \eta^2 = 0.07)$ and empathic concern $(F(1, 101) = 5.93, p = 0.02, \eta^2 = 0.06)$, but not statistically significant for affective empathy $(F(1, 101) = 0.46, p = 0.50, \eta^2 = 0.01)$.

Mediation Analysis

The final hypothesis H4 states that empathy mediates the effect of trait objectification on state sexual objectification. However, as shown above, there is neither a statistically significant relationship between body surveillance and sexual objectification nor empathy and sexual objectification. It is hence not surprising that the multivariate regression of the sexual objectification measure on body surveillance and total empathy does not yield any statistically significant results, as summarized in Table 4. The mediation analysis hence does not provide any support for H4.

Table 4: Multivariate regression to assess the mediation effect of total empathy between self-objectification and sexual objectification.

Effect	Estimate	*SE*	95% CI		*p*
			LL	*UL*	
Intercept	−0.36	0.91	−2.15	1.44	.695
Body Surveillance	0.04	0.10	−0.16	0.24	.603
Total Empathy	0.15	0.37	−0.59	0.88	.694

Discussion

This study aimed to deepen the understanding of sexual objectification in early adolescence, a currently understudied topic. The focus of this paper was to measure the effect of self-objectification on the sexual objectification of others and the role of empathy in mediating this relationship. The study aimed to investigate whether trait self-objectification predicted sexual objectification of others in early adolescence, which has only been previously studied in adults. Additionally, it was aimed to further contribute to the clarification of uncertainties regarding gender self-objectification in early adolescence. The relationship between self-objectification and empathy and the influence of empathy on the sexual objectification of others was also explored as a possible protective factor against the

circle of objectification. The study aimed to fill gaps in research and contribute to the understanding of the complex phenomenon of self- and sexual objectification in early adolescence.

However, all four major hypotheses had to be rejected because there was no calculated significance to the proposed relationships. There are hypotheses-specific, as well as more general possible explanations for this non-result. The general limitations will be discussed first before turning to the hypothesis-specific ones.

General Limitations

The general limitations of this study are mostly due to the setting, in which the study was conducted. As the participants are children and therefore a highly protected group, the survey was originally intended to take place in school classrooms in Austria, supervised by a team of researchers and teachers. However, due to the Covid-19 Pandemic, which broke out after the initial planning of the study and before the data collection, there were extended periods of time with closed schools or limited attendance at schools. Moreover, as a part of the precautions that had to be taken, it was no longer feasible to conduct the survey with a physical presence. Therefore, the study design had to be readjusted and adapted for online participation, so that the children would be able to participate in the survey from home. The extent of the study was also adjusted, reducing from the initially planned three sessions of 40-minute data collection to one session of an estimated time of 40 minutes to complete the survey. This reduction was mostly done because of the pandemic and the large strain it put on the educational system. As a result, it was no longer possible for the schools to directly support this study in a controlled environment or to assign participation due to the already high pressure that both educators, as well as students, found themselves in. Therefore, the student's participating in this survey were mostly unsupervised and did not have the possibility to ask questions during the survey, making possible misunderstandings or deliberate random answers (due to lack of motivation or as a joke) more likely.

Furthermore, these circumstances lead to a problem in the recruitment of participants. As a protected group, children could not be addressed directly, but they had to be contacted through teachers, who then would have to contact the children's parents for them to consent for their child to participate in the study. This time and energy-consuming recruitment process in turn led to teachers mostly not being able to support this study with their already pandemic-induced overload. Hence, this study was regrettably underpowered, which could mean that the

measured effects would have been significant if a larger number of children had participated.

Discussion of hypotheses

Regarding hypothesis H1, it was expected that participants with high reported trait self-objectification would exhibit higher state objectification of others. This study, however, did not find any significant results regarding this relationship. As previously discussed, this connection has not yet been shown in early adolescence. There are multiple possible causes for the absence of a significant effect beyond the general limitations previously discussed. First, it is important to point out, that the connection between traits and states is always somewhat complicated and multilayered (Horstmann & Ziegler, 2020; Nezlek et al., 2007) making the establishment of an effect from one to the other generally less likely. Second, there are some limitations towards the sexualization of the targets with the resulting objectification. In general, the utilized sexualization was selected to be only shown by the level of maturation. This approach could be considered as the most basic or weakest form of sexualization, as the attribution to the character in physical development would be less direct compared to make-up or clothing choices (Lee, 1994). This experimental induction of sexual objectification bases on the objectification of pubertal development. As mentioned above, the pubertal status correlates to experienced sexual objectification (Daniels et al., 2020). Therefore, the induction of objectification stimuli was deliberately chosen to be not obvious or strong in order to test if this objectification based solely on fixed physical elements would be effective. These low-level objectification stimuli could, however, be in part responsible for the fact that there were over all participants no significant differences in the estimation of the qualities of the sexualized girl stereotype between sexualized and non-sexualized stimuli.

Furthermore, the direction of the comparison of the two presented stimuli seems to play an important role. In the comparison of the groups considering the order in which the stimuli were presented, the is a strong significant difference, showing that both boy and girl participants objectified both boys and girls more when they were first presented with the non-sexualized image. This result could indicate that the objectification of the referenced pubertal development may only happen in comparison to less developed peers. This assumption would, however, require the conjecture that, while comparative assumptions would take place in objectifying a target, they would not do so in judging a non-sexualized target differently. Another possible explanation for the absence of a statistically significant effect of self-objectification on the objectification of others is that the effect does not exist in early

adolescence. Based on previous findings (Daniels et al., 2020), age plays an important factor in the development of self-objectification and constantly rises during adolescence. It could hence also be possible that the relationship between self-objectification and the objectification of others may not be as developed at the time of early adolescence.

Another aspect that could manipulate an overall influence of self-objectification on sexual objectification is the difference in both participant gender and stimuli gender analyzed in hypotheses H1.1 to H1.4, as for example high self-objectification is expected to be more present in girl participants but objectification of others to be less present in this group. Based on Grabe et al. (2007b) and Slater and Tiggemann (2010), H1.1 speculated that girl participants report higher self-objectification than boy participants. H1.2 proposed in reference to Strelan and Hargreaves (2005) and Willis et al. (2022) that boy participants exhibit higher state objectification of others than girl participants. Based on multiple studies (Blake et al., 2016; Loughnan et al., 2010; Tyler et al., 2017), H1.3 hypothesized that the sexualized girl stimuli receive higher state sexual objectification than the sexualized boy stimuli from all participants. H1.4 regarding the research of Strelan and Hargreaves (2005) expected that the relationship between self-objectification and state sexual objectification would be stronger in girl participants compared boy participants.

Considering H1.1, though girl participants did report slightly higher means of body surveillance, this gender difference was not statistically significant. H1.4 also did not reveal any significant gender differences in the statistical analyses. However, there was evidence found for H1.2 in the multiple regression analysis, as sexual objectification was significantly more done by boy participants compared to girl participants. This result was mostly due to boy participants objectifying the sexualized boy stimuli significantly stronger than the girl participants. Girl participants, on the other hand, objectified the sexualized girl stimuli more than the boy participants. The significant overall difference was that the boy participants objectified the sexualized girl stimuli more than the girl participants objectified the sexualized boy and objectified the sexualized boy stimuli more than the girl participants the sexualized girl stimuli. This finding is contrary to previous research claiming that both men and women objectify women more.

This difference in findings may be due to the age of the participants. As previously discussed, sex goal is a powerful fuel for the objectification of women by men. Therefore, it would be reasonable to assume that most boys aged 9 to 13 have not had sex yet and are not directly led by sex goals. Therefore, the documented higher objectification of boys from boys

and of girls from girls (same gender bias) is only the result of the projection of learned and experienced objectification of others through media and society and is not influenced by sex goals. This could explain the lower-than-expected objectification of girls by boys. These findings are, therefore, in line with Rousseau & Eggermont (2018), who find no gender differences in the sexual objectification of others in early adolescents.

Hypotheses H2, H2.1, H2.2 and H2.3 examined the relationship between self-objectification and empathy, most prominently indicated by Bevens et al., (2018), with a positive relationship between self-objectification and sympathy. However, the authors find this effect between trait self-objectification and state empathy, while the current paper employs trait empathy. Other studies that suggest a relationship between self-objectification and empathy only document results on a state-level (Dvir & Nagar, 2022; Fox et al., 2021): experiencing sexual objectification causes more empathetic responses towards sexualized others. This behavior could be driven by two factors: (i) similarity with the sexualized target, as the perceived similarity is typically associated with higher empathy; (ii) self-objectification induced by experiencing sexual objectification, thus causing higher empathy with sexualized others. In this paper, there was no significant relationship between self-objectification and any empathy type. The absence of results supporting the interaction of trait self-objectification and trait empathy could, therefore, either support the notion that there is no relationship or be a consequence of the previously discussed limitations.

Hypothesis H3 assumed that based on Bradshaw (2020), who identifies a connection between the objectification of others and lower levels of empathy, participants with high reported trait empathy exhibit lower state sexual objectification of others. However, there was no evidence supporting this in the current paper, even though hypothesis H3.1, which stated in reference to (Baez et al., 2017; Löffler & Greitemeyer, 2023; O'Brien et al., 2013) that self-reported empathy would be lower in boy participants than in girl participants, was supported by a significant difference with respect to gender. Hence, the results show that empathy was lower in boy participants, and boy participants did exhibit higher sexual objectification of others. However, a direct connection could not be made, and so the last Hypothesis H4, which theorized that the effect of trait self-objectification on state sexual objectification of others is mediated by empathy, did not yield any significant results.

For future research, it is sensible to investigate the proposed relationship between self-objectification, objectification of others, and empathy on a state level for all three concepts in order to see these possible interactions on the same level. Furthermore, these interactions

could also be examined with both a stronger sexualization of the stimuli and a higher number of participants. Thirdly, it seems as if the relationship of presented stimuli and, thus the comparability in the context of sexual objectification of others should be further explored. Lastly, the factors which contribute to the objectification of others during early adolescence and how the objectification relates to the socialization of genders should be further explored.

Conclusion

In general, it is important to state that almost all assumed relationships between concepts were documented, though not at a statistically significant level. The non-results might relate to the underpowered nature of the study, which was in turn the result of difficult data collection during the COVID-19 pandemic. However, the effective interactions found in this paper are as follows: (i) lower reported empathy among boy participants compared to girl participants; (ii) higher objectification of others when the participants had previously been exposed to a non-sexualized target; (iii) and lastly the stronger same gender objectification in both boy and girl participants with boys overall sexually objectifying others more strongly than girls. Further research in a controlled environment with a larger number of participants to reevaluate the suggested relationship would seem advisable to further explore if the strong objectification of boys by boy participants can be confirmed and whether empathy mediates the effect of self-objectification on the sexual objectification of others.

References

Abraham, S., Boyd, C., Lal, M., Luscombe, G., & Taylor, A. (2009). Time since menarche, weight gain and body image awareness among adolescent girls: Onset of eating disorders? *Journal of Psychosomatic Obstetrics & Gynecology*, *30*(2), 89–94. https://doi.org/10.1080/01674820902950553

Agthe, M., Spörrle, M., & Maner, J. K. (2011). Does Being Attractive Always Help? Positive and Negative Effects of Attractiveness on Social Decision Making. *Personality and Social Psychology Bulletin*, *37*(8), 1042–1054. https://doi.org/10.1177/0146167211410355

Allemand, M., Steiger, A. E., & Fend, H. A. (2015). Empathy development in adolescence predicts social competencies in adulthood. *Journal of Personality*, *83*(2), 229–241. https://doi.org/10.1111/jopy.12098

American Psychology Association (2023). Empathy. In *APA Dictionary of Psychology*. Last accessed on May 15th 2023, from https://dictionary.apa.org/empathy

Argabright, S. T., Moore, T. M., Visoki, E., DiDomenico, G. E., Taylor, J. H., & Barzilay, R. (2022). Association between racial/ethnic discrimination and pubertal development in early adolescence. *Psychoneuroendocrinology*, *140*, 105727. https://doi.org/10.1016/j.psyneuen.2022.105727

Baez, S., Flichtentrei, D., Prats, M., Mastandueno, R., García, A. M., Cetkovich, M., & Ibáñez, A. (2017). Men, women…who cares? A population-based study on sex differences and gender roles in empathy and moral cognition. *PLOS ONE*, *12*(6), e0179336. https://doi.org/10.1371/journal.pone.0179336

Bareket, O., & Shnabel, N. (2020). Domination and Objectification: Men's Motivation for Dominance Over Women Affects Their Tendency to Sexually Objectify Women. *Psychology of Women Quarterly*, *44*(1), 28–49. https://doi.org/10.1177/0361684319871913

Barnett, G., & Mann, R. E. (2013). Empathy deficits and sexual offending: A model of obstacles to empathy. *Aggression and Violent Behavior*, *18*(2), 228–239. https://doi.org/10.1016/j.avb.2012.11.010

Barnett, M. A. (1987). Empathy and related responses in children. In *Empathy and its development* (pp. 146–162). Cambridge University Press.

Batson, C. D., Ahmad, N., & Lishner, D. A. (2009). *Empathy and Altruism.* https://doi.org/10.1093/oxfordhb/9780195187243.013.0039

Benenson, J. F., Gauthier, E., & Markovits, H. (2021). Girls exhibit greater empathy than boys following a minor accident. *Scientific Reports*, *11*(1), Article 1. https://doi.org/10.1038/s41598-021-87214-x

Bernard, P., Cogoni, C., & Carnaghi, A. (2020). The Sexualization–Objectification Link: Sexualization Affects the Way People See and Feel Toward Others. *Current Directions in Psychological Science*, *29*(2), 134–139. https://doi.org/10.1177/0963721419898187

Bevens, C. L., Link to external site, this link will open in a new window, Brown, A. L., & Loughnan, S. (2018). The role of self-objectification and women's blame, sympathy, and support for a rape victim. *PloS One*, *13*(6), e0199808. http://dx.doi.org/10.1371/journal.pone.0199808

Blake, K. R., Bastian, B., & Denson, T. F. (2016). Perceptions of low agency and high sexual openness mediate the relationship between sexualization and sexual aggression. *Aggressive Behavior*, *42*(5), 483–497. https://doi.org/10.1002/ab.21644

Blakemore, S.-J., & Mills, K. L. (2014). Is Adolescence a Sensitive Period for Sociocultural Processing? *Annual Review of Psychology*, *65*(1), 187–207. https://doi.org/10.1146/annurev-psych-010213-115202

Bradshaw, T. (2020). *Trait-level Predictors of Objectification in Heterosexual Men* [Thesis]. https://digital.library.adelaide.edu.au/dspace/handle/2440/131102

Brajdić Vuković, M., Lucić, M., & Štulhofer, A. (2018). Internet Use Associated Body-Surveillance Among Female Adolescents: Assessing the Role of Peer Networks. *Sexuality & Culture*, *22*(2), 521–540. https://doi.org/10.1007/s12119-017-9480-4

Calogero, R. M., Pina, A., Park, L. E., & Rahemtulla, Z. (2010). Objectification Theory Predicts College Women's Attitudes Toward Cosmetic Surgery. *Sex Roles*, *63*(1–2), 32–41. https://doi.org/10.1007/s11199-010-9759-5

Calogero, R. M., Tantleff-Dunn, S., & Thompson, J. K. (Eds.). (2011). Objectification theory: An introduction. In *Self-objectification in women: Causes, consequences, and counteractions* (pp. 3–21). American Psychological Association. https://doi.org/10.1037/12304-001

Carlo, G., Crockett, L. J., Randall, B. A., & Roesch, S. C. (2007). A latent growth curve analysis of prosocial behavior among rural adolescents. *Journal of Research on Adolescence*, *17*, 301–324. https://doi.org/10.1111/j.1532-7795.2007.00524.x

Carrotte, E., & Anderson, J. R. (2018). A systematic review of the relationship between trait self-objectification and personality traits. *Personality and Individual Differences*, *132*, 20–31. https://doi.org/10.1016/j.paid.2018.05.015

Champely, S., Ekstrom, C., Dalgaard, P., Gill, J., Weibelzahl, S., Anandkumar, A., Ford, C., Volcic, R., & De Rosario, H. (2017). *pwr: Basic functions for power analysis*.

Chismar, D. (1988). Empathy and sympathy: The important difference. *The Journal of Value Inquiry*, *22*(4), 257–266. https://doi.org/10.1007/BF00136928

Christov-Moore, L., Simpson, E. A., Coudé, G., Grigaityte, K., Iacoboni, M., & Ferrari, P. F. (2014). Empathy: Gender effects in brain and behavior. *Neuroscience & Biobehavioral Reviews*, *46*, 604–627. https://doi.org/10.1016/j.neubiorev.2014.09.001

Cikara, M., Eberhardt, J. L., & Fiske, S. T. (2011). From Agents to Objects: Sexist Attitudes and Neural Responses to Sexualized Targets. *Journal of Cognitive Neuroscience*, *23*(3), 540–551. https://doi.org/10.1162/jocn.2010.21497

Claudat, K. (2013). *The Role of Body Surveillance, Body Shame, and Body Self-Consciousness during Sexual Activities in Women's Sexual Experience*. https://doi.org/10.34917/4797992

Cogoni, C., Carnaghi, A., & Silani, G. (2018). Reduced empathic responses for sexually objectified women: An fMRI investigation. *Cortex*, *99*, 258–272. https://doi.org/10.1016/j.cortex.2017.11.020

Cogoni, C., Carnaghi, A., & Silani, G. (2021). Reduced shared emotional representations toward women revealing more skin. *Cognition and Emotion*, *35*(2), 225–240. https://doi.org/10.1080/02699931.2020.1826409

Cohen, D., & Strayer, J. (1996). Empathy in conduct-disordered and comparison youth. *Developmental Psychology*, *32*, 988–998. https://doi.org/10.1037/0012-1649.32.6.988

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed). L. Erlbaum Associates.

Cook, D. T., & Kaiser, S. B. (2004). Betwixt and be Tween: Age Ambiguity and the Sexualization of the Female Consuming Subject. *Journal of Consumer Culture*, *4*(2),

203–227. https://doi.org/10.1177/1469540504043682

Costello, T. H., Watts, A. L., Murphy, B. A., & Lilienfeld, S. O. (2020). Extending the nomological network of sexual objectification to psychopathic and allied personality traits. *Personality Disorders: Theory, Research, and Treatment*, *11*(4), 237–248. https://doi.org/10.1037/per0000377

Cuff, B. M. P., Brown, S. J., Taylor, L., & Howat, D. J. (2016). Empathy: A Review of the Concept. *Emotion Review*, *8*(2), 144–153. https://doi.org/10.1177/1754073914558466

Cunsolo, S. (2017). Subjective wellbeing during adolescence: A literature review on key factors relating to adolescent's subjective wellbeing and education outcomes. *Studi sulla Formazione/Open Journal of Education*, *20*(1), Article 1. https://doi.org/10.13128/Studi_Formaz-20941

Daniel, S., Bridges, S. K., & Martens, M. P. (2014). The development and validation of the Male Assessment of Self-Objectification (MASO). *Psychology of Men & Masculinity*, *15*(1), 78–89. https://doi.org/10.1037/a0031518

Daniels, E. A., Zurbriggen, E. L., & Monique Ward, L. (2020). Becoming an object: A review of self-objectification in girls. *Body Image*, *33*, 278–299. https://doi.org/10.1016/j.bodyim.2020.02.016

Dorris, L., Young, D., Barlow, J., Byrne, K., & Hoyle, R. (2022). Cognitive empathy across the lifespan. *Developmental Medicine & Child Neurology*, *64*(12), 1524–1531. https://doi.org/10.1111/dmcn.15263

Dvir, M., & Nagar, M. (2022). Would victims blame victims? Effects of ostracism, sexual objectification, and empathy on victim blaming. *Frontiers in Psychology*, *13*, 912698. https://doi.org/10.3389/fpsyg.2022.912698

Eisenberg, N. (2002). Distinctions among various modes of empathy-related reactions: A matter of importance in humans. *Behavioral and Brain Sciences*, *25*(1), 33–34. https://doi.org/10.1017/S0140525X02350015

Eisenberg, N., Fabes, R. A., & Spinrad, T. L. (2006). Prosocial Development. In *Handbook of child psychology: Social, emotional, and personality development, Vol. 3, 6th ed* (pp. 646–718). John Wiley & Sons, Inc.

Eisenberg, N., & Lennon, R. (1983). Sex differences in empathy and related capacities. *Psychological Bulletin*, *94*, 100–131. https://doi.org/10.1037/0033-2909.94.1.100

Espelage, D. L., Hong, J. S., Rinehart, S., & Doshi, N. (2016). Understanding types, locations, & perpetrators of peer-to-peer sexual harassment in U.S. middle schools: A focus on sex, racial, and grade differences. *Children and Youth Services Review*, *71*, 174–183. https://doi.org/10.1016/j.childyouth.2016.11.010

Forrester-Knauss, C., Paxton, S., & Alsaker, F. (2008). Body Dissatisfaction in Adolescent Boys and Girls: Objectified Body Consciousness, Internalization of the Media Body Ideal and Perceived Pressure from Media. *Sex Roles*, *59*, 633–643. https://doi.org/10.1007/s11199-008-9474-7

Fox, J., Vendemia, M. A., Smith, M. A., & Brehm, N. R. (2021). Effects of taking selfies on women's self-objectification, mood, self-esteem, and social aggression toward female peers. *Body Image*, *36*, 193–200. https://doi.org/10.1016/j.bodyim.2020.11.011

Frederick, D., Buchanan, G., Sadeghi-Azar, L., Peplau, L., Haselton, M., Berezovskaya, A., & Lipinski, R. (2007). Desiring the muscular ideal: Men's body satisfaction in the United States, Ukraine, and Ghana. *Psychology of Men & Masculinity*, *8*, 103–117. https://doi.org/10.1037/1524-9220.8.2.103

Fredrickson, B. L., & Roberts, T.-A. (1997). Objectification Theory. *Psychology of Women Quarterly*, *21*(2), 173–206. https://doi.org/10.1111/j.1471-6402.1997.tb00108.x

Gay, R. K., & Castano, E. (2010). My body or my mind: The impact of state and trait objectification on women's cognitive resources. *European Journal of Social Psychology*, *40*(5), 695–703. https://doi.org/10.1002/ejsp.731

Geer, J. H., Estupinan, L. A., & Manguno-Mire, G. M. (2000). Empathy, social skills, and other relevant cognitive processes in rapists and child molesters. *Aggression and Violent Behavior*, *5*(1), 99–126. https://doi.org/10.1016/S1359-1789(98)00011-1

Gerace, A. (2020). Roses by other names? Empathy, sympathy, and compassion in mental health nursing. *International Journal of Mental Health Nursing*, *29*(4), 736–744. https://doi.org/10.1111/inm.12714

Gervais, S. J., Vescio, T. K., & Allen, J. (2011). When What You See Is What You Get: The Consequences of the Objectifying Gaze for Women and Men. *Psychology of Women Quarterly*, *35*(1), 5–17. https://doi.org/10.1177/0361684310386121

Grabe, S., Hyde, J. S., & Lindberg, S. M. (2007a). Body Objectification and Depression in Adolescents: The Role of Gender, Shame, and Rumination. *Psychology of Women Quarterly*, *31*(2), 164–175. https://doi.org/10.1111/j.1471-6402.2007.00350.x

Grabe, S., Hyde, J. S., & Lindberg, S. M. (2007b). Body Objectification and Depression in Adolescents: The Role of Gender, Shame, and Rumination. *Psychology of Women Quarterly*, *31*(2), 164–175. https://doi.org/10.1111/j.1471-6402.2007.00350.x

Graff, K., Murnen, S. K., & Smolak, L. (2012). Too sexualized to be taken seriously? Perceptions of a girl in childlike vs. Sexualizing clothing. *Sex Roles: A Journal of Research*, *66*, 764–775. https://doi.org/10.1007/s11199-012-0145-3

Gray, K., Knobe, J., Sheskin, M., Bloom, P., & Barrett, L. F. (2011). More than a body: Mind perception and the nature of objectification. *Journal of Personality and Social Psychology*, *101*(6), 1207–1220. https://doi.org/10.1037/a0025883

Greenberg, D. M., Warrier, V., Abu-Akel, A., Allison, C., Gajos, K. Z., Reinecke, K., Rentfrow, P. J., Radecki, M. A., & Baron-Cohen, S. (2023). Sex and age differences in "theory of mind" across 57 countries using the English version of the "Reading the Mind in the Eyes" Test. *Proceedings of the National Academy of Sciences*, *120*(1), e2022385119. https://doi.org/10.1073/pnas.2022385119

Greenleaf, C. (2005). Self-Objectification Among Physically Active Women. *Sex Roles*, *52*(1), 51–62. https://doi.org/10.1007/s11199-005-1193-8

Harsey, S. J., & Zurbriggen, E. L. (2021). Men and women's self-objectification, objectification of women, and sexist beliefs. *Self and Identity*, *20*(7), 861–868. https://doi.org/10.1080/15298868.2020.1784263

Haslam, N., Bain, P., Douge, L., Lee, M., & Bastian, B. (2006). More Human Than You: Attributing Humanness to Self and Others. *Journal of Personality and Social Psychology*, *89*, 937–950. https://doi.org/10.1037/0022-3514.89.6.937

Hassan, B., Arzeen, S., & Riaz, N. (2012). Perception of Parental Acceptance and Rejection in Emotionally Empathic and Non-Empathic Adolescents. *Pakistan Journal of Social and Clinical Psychology*, *10*.

Hatton, E., & Trautner, M. N. (2011). Equal opportunity objectification? The sexualization of men and women on the cover of Rolling Stone. *Sexuality & Culture: An Interdisciplinary Quarterly*, *15*, 256–278. https://doi.org/10.1007/s12119-011-9093-2

Heflick, N. A., & Goldenberg, J. L. (2009). Objectifying Sarah Palin: Evidence that objectification causes women to be perceived as less competent and less fully human. *Journal of Experimental Social Psychology*, *45*(3), 598–601. https://doi.org/10.1016/j.jesp.2009.02.008

Hein, G., & Singer, T. (2008). I feel how you feel but not always: The empathic brain and its modulation. *Current Opinion in Neurobiology*, *18*(2), 153–158. https://doi.org/10.1016/j.conb.2008.07.012

Hill, C., & Kearl, H. (2011). Crossing the Line: Sexual Harassment at School. In *American Association of University Women*. American Association of University Women. https://eric.ed.gov/?id=ED525785

Hinchey, F. S., & Gavelek, J. R. (1982). Empathic responding in children of battered mothers. *Child Abuse & Neglect*, *6*(4), 395–401. https://doi.org/10.1016/0145-2134(82)90083-7

Hoffman, M. L. (1977). Sex differences in empathy and related behaviors. *Psychological Bulletin*, *84*, 712–722. https://doi.org/10.1037/0033-2909.84.4.712

Horstmann, K. T., & Ziegler, M. (2020). Assessing Personality States: What to Consider when Constructing Personality State Measures. *European Journal of Personality*, *34*(6), 1037–1059. https://doi.org/10.1002/per.2266

Hudson, S. T. J., Cikara, M., & Sidanius, J. (2019). Preference for hierarchy is associated with reduced empathy and increased counter-empathy towards others, especially out-group targets. *Journal of Experimental Social Psychology*, *85*, 103871. https://doi.org/10.1016/j.jesp.2019.103871

Israelashvili, J., Sauter, D., & Fischer, A. (2020). Two facets of affective empathy: Concern and distress have opposite relationships to emotion recognition. *Cognition and Emotion*, *34*(6), 1112–1122. https://doi.org/10.1080/02699931.2020.1724893

Jongenelis, M. I., Byrne, S. M., & Pettigrew, S. (2014). Self-objectification, body image disturbance, and eating disorder symptoms in young Australian children. *Body Image*, *11*(3), 290–302. https://doi.org/10.1016/j.bodyim.2014.04.002

Kahalon, R., Shnabel, N., & Becker, J. C. (2018). Experimental Studies on State Self-Objectification: A Review and an Integrative Process Model. *Frontiers in Psychology*, *9*. https://www.frontiersin.org/articles/10.3389/fpsyg.2018.01268

Karsay, K., Knoll, J., & Matthes, J. (2018). Sexualizing Media Use and Self-Objectification: A Meta-Analysis. *Psychology of Women Quarterly*, *42*(1), 9–28. https://doi.org/10.1177/0361684317743019

Kellie, D. J., Blake, K. R., & Brooks, R. C. (2019). What drives female objectification? An investigation of appearance-based interpersonal perceptions and the objectification of

women. *PLoS ONE*, *14*(8), e0221388. https://doi.org/10.1371/journal.pone.0221388

Kholmogorova, A., Tarhanova, P., & Shalygina, O. (2017). Standards of physical beauty and mental health in children and young people in the era of the information revolution. *International Journal of Culture and Mental Health*, *11*, 1–12. https://doi.org/10.1080/17542863.2017.1394007

Killen, M., & Smetana, J. G. (Eds.). (2013). *Handbook of Moral Development* (2nd ed.). Psychology Press. https://doi.org/10.4324/9780203581957

Kimmig, A.-C. S., Wildgruber, D., Wendel, S.-M. U., Sundström-Poromaa, I., & Derntl, B. (2021). Friend vs. Foe: Cognitive and Affective Empathy in Women With Different Hormonal States. *Frontiers in Neuroscience*, *15*, 608768. https://doi.org/10.3389/fnins.2021.608768

Kozak, M., Frankenhauser, H., & Roberts, T.-A. (2009). Objects of desire: Objectification as a function of male sexual orientation. *Psychology of Men & Masculinity*, *10*(3), 225–230. https://doi.org/10.1037/a0016257

Lee, J. (1994). Menarche and the (hetero)sexualization of the female body. *Gender & Society*, *8*, 343–362. https://doi.org/10.1177/089124394008003004

Li, X., Meng, X., Li, H., Yang, J., & Yuan, J. (2017). The impact of mood on empathy for pain: Evidence from an EEG study. *Psychophysiology*, *54*(9), 1311–1322. https://doi.org/10.1111/psyp.12882

Lindner, D., Tantleff-Dunn, S., & Jentsch, F. (2012). Social Comparison and the 'Circle of Objectification.' *Sex Roles*, *67*(3), 222–235. https://doi.org/10.1007/s11199-012-0175-x

Lishner, D., Batson, C., & Huss, E. (2011). Tenderness and Sympathy: Distinct Empathic Emotions Elicited by Different Forms of Need. *Personality & Social Psychology Bulletin*, *37*, 614–625. https://doi.org/10.1177/0146167211403157

Löffler, C. S., & Greitemeyer, T. (2023). Are women the more empathetic gender? The effects of gender role expectations. *Current Psychology*, *42*(1), 220–231. https://doi.org/10.1007/s12144-020-01260-8

Loughnan, S., Haslam, N., Murnane, T., Vaes, J., Reynolds, C., & Suitner, C. (2010). Objectification leads to depersonalization: The denial of mind and moral concern to objectified others. *European Journal of Social Psychology*, *40*(5), 709–717.

https://doi.org/10.1002/ejsp.755

Loughnan, S., Pina, A., Vasquez, E. A., & Puvia, E. (2013). Sexual Objectification Increases
Rape Victim Blame and Decreases Perceived Suffering. *Psychology of Women
Quarterly*, *37*(4), 455–461. https://doi.org/10.1177/0361684313485718

McAuliffe, W. H. B., Carter, E. C., Berhane, J., Snihur, A. C., & McCullough, M. E. (2020).
Is Empathy the Default Response to Suffering? A Meta-Analytic Evaluation of
Perspective Taking's Effect on Empathic Concern. *Personality and Social Psychology
Review*, *24*(2), 141–162. https://doi.org/10.1177/1088868319887599

McKinley, N. M. (1998). Gender differences in undergraduates' body esteem: The mediating
effect of objectified body consciousness and actual/ideal weight discrepancy. *Sex
Roles: A Journal of Research*, *39*(1–2), 113–123.
https://doi.org/10.1023/A:1018834001203

McKinley, N. M., & Hyde, J. S. (1996). The Objectified Body Consciousness Scale:
Development and Validation. *Psychology of Women Quarterly*, *20*(2), 181–215.
https://doi.org/10.1111/j.1471-6402.1996.tb00467.x

Mendle, J., & Ferrero, J. (2012). Detrimental psychological outcomes associated with pubertal
timing in adolescent boys. *Developmental Review*, *32*(1), 49–66.
https://doi.org/10.1016/j.dr.2011.11.001

Mendle, J., Turkheimer, E., & Emery, R. E. (2007). Detrimental psychological outcomes
associated with early pubertal timing in adolescent girls. *Developmental Review*,
27(2), 151–171. https://doi.org/10.1016/j.dr.2006.11.001

Mercurio, A. E., & Landry, L. J. (2008). Self-objectification and Well-being: The Impact of
Self-objectification on Women's Overall Sense of Self-worth and Life Satisfaction.
Sex Roles, *58*(7), 458–466. https://doi.org/10.1007/s11199-007-9357-3

Mestre, M. V., Samper, P., Frías, M. D., & Tur, A. M. (2009). Are women more empathetic
than men? A longitudinal study in adolescence. *The Spanish Journal of Psychology*,
12(1), 76–83. https://doi.org/10.1017/s1138741600001499

Michalska, K. J., Kinzler, K. D., & Decety, J. (2013). Age-related sex differences in explicit
measures of empathy do not predict brain responses across childhood and adolescence.
Developmental Cognitive Neuroscience, *3*, 22–32.
https://doi.org/10.1016/j.dcn.2012.08.001

Miner-Rubino, K., Twenge, J. M., & Fredrickson, B. L. (2002). Trait Self-Objectification in Women: Affective and Personality Correlates. *Journal of Research in Personality*, *36*(2), 147–172. https://doi.org/10.1006/jrpe.2001.2343

Moradi, B. (2010). Addressing gender and cultural diversity in body image: Objectification theory as a framework for integrating theories and grounding research. *Sex Roles: A Journal of Research*, *63*, 138–148. https://doi.org/10.1007/s11199-010-9824-0

Moradi, B. (2011). Objectification Theory: Areas of Promise and Refinement. *The Counseling Psychologist*, *39*(1), 153–163. https://doi.org/10.1177/0011000010384279

Moradi, B., & Huang, Y.-P. (2008). Objectification Theory and Psychology of Women: A Decade of Advances and Future Directions. *Psychology of Women Quarterly*, *32*(4), 377–398. https://doi.org/10.1111/j.1471-6402.2008.00452.x

Muehlenkamp, J. J., Swanson, J. D., & Brausch, A. M. (2005). Self-Objectification, Risk Taking, and Self-Harm in College Women. *Psychology of Women Quarterly*, *29*(1), 24–32. https://doi.org/10.1111/j.1471-6402.2005.00164.x

Navarro, D. (2015). *Learning statistics with R: A tutorial for psychology students and other beginners. (Version 0.6)*. University of New South Wales. https://learningstatisticswithr.com

Negriff, S., & Susman, E. J. (2011). Pubertal timing, depression, and externalizing problems: A framework, review, and examination of gender differences. *Journal of Research on Adolescence*, *21*(3), 717–746. https://doi.org/10.1111/j.1532-7795.2010.00708.x

Nezlek, J. B. (2001). Multilevel Random Coefficient Analyses of Event- and Interval-Contingent Data in Social and Personality Psychology Research. *Personality and Social Psychology Bulletin*, *27*(7), 771–785. https://doi.org/10.1177/0146167201277001

Nezlek, J., Schuetz, A., Lopes, P., & Smith, C. (2007). *Naturally occuring variability in state empathy*. https://doi.org/10.1017/CBO9780511543753.012

Niezink, L. W., Siero, F. W., Dijkstra, P., Buunk, A. P., & Barelds, D. P. H. (2012). Empathic concern: Distinguishing between tenderness and sympathy. *Motivation and Emotion*, *36*(4), 544–549. https://doi.org/10.1007/s11031-011-9276-z

Nilsonne, G., Schwarz, J., Kecklund, G., Petrovic, P., Fischer, H., Åkerstedt, T., Lekander, M., & Tamm, S. (2021). *Empirical evidence for a three-level model of emotional*

contagion, empathy and emotional regulatio. https://doi.org/10.31234/osf.io/ake34

O'Brien, E., Konrath, S. H., Grühn, D., & Hagen, A. L. (2013). Empathic Concern and Perspective Taking: Linear and Quadratic Effects of Age Across the Adult Life Span. *The Journals of Gerontology: Series B*, *68*(2), 168–175. https://doi.org/10.1093/geronb/gbs055

Overgaauw, S., Rieffe, C., Broekhof, E., Crone, E. A., & Güroğlu, B. (2017). Assessing Empathy across Childhood and Adolescence: Validation of the Empathy Questionnaire for Children and Adolescents (EmQue-CA). *Frontiers in Psychology*, *8*. https://doi.org/10.3389/fpsyg.2017.00870

Pacilli, M. G., Pagliaro, S., Loughnan, S., Gramazio, S., Spaccatini, F., & Baldry, A. C. (2017). Sexualization reduces helping intentions towards female victims of intimate partner violence through mediation of moral patiency. *British Journal of Social Psychology*, *56*(2), 293–313. https://doi.org/10.1111/bjso.12169

Pacilli, M. G., Spaccatini, F., Barresi, C., & Tomasetto, C. (2019). Less human and help-worthy: Sexualization affects children's perceptions of and intentions toward bullied peers. *International Journal of Behavioral Development*, *43*(6), 481–491. https://doi.org/10.1177/0165025419873040

Pacilli, M. G., Tomasetto, C., & Cadinu, M. (2016). Exposure to Sexualized Advertisements Disrupts Children's Math Performance by Reducing Working Memory. *Sex Roles*, *74*(9), 389–398. https://doi.org/10.1007/s11199-016-0581-6

Papadaki, L. (2010). What is Objectification? *Journal of Moral Philosophy*, *7*(1), 16–36. https://doi.org/10.1163/174046809x12544019606067

Parent, M. C., & Moradi, B. (2011). His biceps become him: A test of objectification theory's application to drive for muscularity and propensity for steroid use in college men. *Journal of Counseling Psychology*, *58*(2), 246–256. https://doi.org/10.1037/a0021398

Parks-Stamm, E. J., Heilman, M. E., & Hearns, K. A. (2008). Motivated to Penalize: Women's Strategic Rejection of Successful Women. *Personality and Social Psychology Bulletin*, *34*(2), 237–247. https://doi.org/10.1177/0146167207310027

Patton, G. C., Sawyer, S. M., Santelli, J. S., Ross, D. A., Afifi, R., Allen, N. B., Arora, M., Azzopardi, P., Baldwin, W., Bonell, C., Kakuma, R., Kennedy, E., Mahon, J., McGovern, T., Mokdad, A. H., Patel, V., Petroni, S., Reavley, N., Taiwo, K., … Viner, R. M. (2016). Our future: A Lancet commission on adolescent health and

wellbeing. *The Lancet*, *387*(10036), 2423–2478. https://doi.org/10.1016/S0140-6736(16)00579-1

Pavey, L., Greitemeyer, T., & Sparks, P. (2012). "I Help Because I Want to, Not Because You Tell Me to": Empathy Increases Autonomously Motivated Helping. *Personality and Social Psychology Bulletin*, *38*(5), 681–689. https://doi.org/10.1177/0146167211435940

Peat, C. M., & Muehlenkamp, J. J. (2011). Self-Objectification, Disordered Eating, and Depression: A Test of Mediational Pathways. *Psychology of Women Quarterly*, *35*(3), 441–450. https://doi.org/10.1177/0361684311400389

Perez, M., Kroon Van Diest, A. M., Smith, H., & Sladek, M. R. (2018). Body Dissatisfaction and Its Correlates in 5- to 7-Year-Old Girls: A Social Learning Experiment. *Journal of Clinical Child & Adolescent Psychology*, *47*(5), 757–769. https://doi.org/10.1080/15374416.2016.1157758

Petersen, J. L., & Hyde, J. S. (2013). Peer sexual harassment and disordered eating in early adolescence. *Developmental Psychology*, *49*(1), 184–195. https://doi.org/10.1037/a0028247

Poon, K.-T., Chen, Z., Teng, F., & Wong, W.-Y. (2020). The effect of objectification on aggression. *Journal of Experimental Social Psychology*, *87*, 103940. https://doi.org/10.1016/j.jesp.2019.103940

Powell, P., & Roberts, J. (2016). Situational determinants of cognitive, affective, and compassionate empathy in naturalistic digital interactions. *Computers in Human Behaviour*, *68*. https://doi.org/10.1016/j.chb.2016.11.024

Puvia, E., & Vaes, J. (2013). Being a Body: Women's Appearance Related Self-Views and their Dehumanization of Sexually Objectified Female Targets. *Sex Roles*, *68*(7), 484–495. https://doi.org/10.1007/s11199-012-0255-y

Quinn, D. M., Kallen, R. W., Twenge, J. M., & Fredrickson, B. L. (2006). The Disruptive Effect of Self-Objectification on Performance. *Psychology of Women Quarterly*, *30*(1), 59–64. https://doi.org/10.1111/j.1471-6402.2006.00262.x

R Core Team. (2022). *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing. https://www.R-project.org/

R. Williams, D., & Williams-Morris, R. (2000). Racism and Mental Health: The African

American experience. *Ethnicity & Health*, *5*(3–4), 243–268. https://doi.org/10.1080/713667453

Register, J. D., Katrevich, A. V., Aruguete, M. S., & Edman, J. L. (2015). Effects of Self-Objectification on Self-Reported Eating Pathology and Depression. *The American Journal of Psychology*, *128*(1), 107–113. https://doi.org/10.5406/amerjpsyc.128.1.0107

Revelle, W. (2022). *psych: Procedures for Psychological, Psychometric, and Personality Research*. Northwestern University. https://CRAN.R-project.org/package=psych

Ricciardelli, R., Clow, K., & White, P. (2010). Investigating Hegemonic Masculinity: Portrayals of Masculinity in Men's Lifestyle Magazines. *Sex Roles*, *63*, 64–78. https://doi.org/10.1007/s11199-010-9764-8

Rieffe, C., Ketelaar, L., & Wiefferink, C. H. (2010). Assessing empathy in young children: Construction and validation of an Empathy Questionnaire (EmQue). *Personality and Individual Differences*, *49*(5), 362–367. https://doi.org/10.1016/j.paid.2010.03.046

Rochat, M. J. (2023). Sex and gender differences in the development of empathy. *Journal of Neuroscience Research*, *101*(5), 718–729. https://doi.org/10.1002/jnr.25009

Rohlinger, D. A. (2002). Eroticizing Men: Cultural Influences on Advertising and Male Objectification. *Sex Roles*, *46*(3), 61–74. https://doi.org/10.1023/A:1016575909173

Rollero, C. (2013). Men and women facing objectification: The effects of media models on well-being, self-esteem and ambivalent sexism. *International Journal of Social Psychology*, *28*(3), 373–382. https://doi.org/10.1174/021347413807719166

Rollero, C., & De Piccoli, N. (2017). Self-Objectification and Personal Values. An Exploratory Study. *Frontiers in Psychology*, *8*, 1055. https://doi.org/10.3389/fpsyg.2017.01055

Rousseau, A., & Eggermont, S. (2018). Television and Preadolescents' Objectified Dating Script: Consequences for Self- and Interpersonal Objectification. *Mass Communication and Society*, *21*(1), 71–93. https://doi.org/10.1080/15205436.2017.1341533

Rueckert, L., & Naybar, N. (2008). Gender differences in empathy: The role of the right hemisphere. *Brain and Cognition*, *67*(2), 162–167. https://doi.org/10.1016/j.bandc.2008.01.002

Rymarczyk, K., Żurawski, Ł., Jankowiak-Siuda, K., & Szatkowska, I. (2016). Emotional Empathy and Facial Mimicry for Static and Dynamic Facial Expressions of Fear and Disgust. *Frontiers in Psychology*, *7*. https://www.frontiersin.org/articles/10.3389/fpsyg.2016.01853

Sherman, A. M., & Zurbriggen, E. L. (2014). "Boys Can Be Anything": Effect of Barbie Play on Girls' Career Cognitions. *Sex Roles*, *70*(5), 195–208. https://doi.org/10.1007/s11199-014-0347-y

Shipman, K. L., Schneider, R., Fitzgerald, M. M., Sims, C., Swisher, L., & Edwards, A. (2007). Maternal Emotion Socialization in Maltreating and Non-maltreating Families: Implications for Children's Emotion Regulation. *Social Development*, *16*(2), 268–285. https://doi.org/10.1111/j.1467-9507.2007.00384.x

Siegel, J. M., Yancey, A. K., Aneshensel, C. S., & Schuler, R. (1999). Body image, perceived pubertal timing, and adolescent mental health. *Journal of Adolescent Health*, *25*(2), 155–165. https://doi.org/10.1016/S1054-139X(98)00160-8

Simon, J. C., & Gutsell, J. N. (2021). Recognizing humanity: Dehumanization predicts neural mirroring and empathic accuracy in face-to-face interactions. *Social Cognitive and Affective Neuroscience*, *16*(5), 463–473. https://doi.org/10.1093/scan/nsab014

Singer, T., & Lamm, C. (2009). The Social Neuroscience of Empathy. *Annals of the New York Academy of Sciences*, *1156*(1), 81–96. https://doi.org/10.1111/j.1749-6632.2009.04418.x

Slater, A., Halliwell, E., Jarman, H., & Gaskin, E. (2017). More than Just Child's Play?: An Experimental Investigation of the Impact of an Appearance-Focused Internet Game on Body Image and Career Aspirations of Young Girls. *Journal of Youth and Adolescence*, *46*(9), 2047–2059. https://doi.org/10.1007/s10964-017-0659-7

Slater, A., & Tiggemann, M. (2010). Body Image and Disordered Eating in Adolescent Girls and Boys: A Test of Objectification Theory. *Sex Roles*, *63*(1), 42–49. https://doi.org/10.1007/s11199-010-9794-2

Slater, A., & Tiggemann, M. (2011). Gender differences in adolescent sport participation, teasing, self-objectification and body image concerns. *Journal of Adolescence*, *34*(3), 455–463. https://doi.org/10.1016/j.adolescence.2010.06.007

Slater, A., & Tiggemann, M. (2015). Media Exposure, Extracurricular Activities, and Appearance-Related Comments as Predictors of Female Adolescents' Self-

Objectification. *Psychology of Women Quarterly*, *39*(3), 375–389.
https://doi.org/10.1177/0361684314554606

Stavroulia, K. E., & Lanitis, A. (2023). The role of perspective-taking on empowering the
empathetic behavior of educators in VR-based training sessions: An experimental
evaluation. *Computers & Education*, *197*, 104739.
https://doi.org/10.1016/j.compedu.2023.104739

Stocks, E. L., Lishner, D. A., Waits, B. L., & Downum, E. M. (2011). I'm Embarrassed for
You: The Effect of Valuing and Perspective Taking on Empathic Embarrassment and
Empathic Concern. *Journal of Applied Social Psychology*, *41*(1), 1–26.
https://doi.org/10.1111/j.1559-1816.2010.00699.x

Stojiljković, S., Todorović, J., Đigić, G., & Dosković, Z. (2014). Teachers' Self-concept and
Empathy. *Procedia - Social and Behavioral Sciences*, *116*, 875–879.
https://doi.org/10.1016/j.sbspro.2014.01.313

Stone, E. A., Brown, C. S., & Jewell, J. A. (2015). The Sexualized Girl: A Within-Gender
Stereotype Among Elementary School Children. *Child Development*, *86*(5), 1604–
1622. https://doi.org/10.1111/cdev.12405

Strauss, J., Sullivan, J. M., Sullivan, C. E., Sullivan, S. J., & Wittenberg, C. E. (2015).
Contextualizing the "Student Body": Is Exposure to Older Students Associated With
Body Dissatisfaction in Female Early Adolescents? *Psychology of Women Quarterly*,
39(2), 171–181. https://doi.org/10.1177/0361684314550407

Strelan, P., & Hargreaves, D. (2005). Women Who Objectify Other Women: The Vicious
Circle of Objectification? *Sex Roles*, *52*, 707–712. https://doi.org/10.1007/s11199-
005-3737-3

Stürmer, S., Snyder, M., Kropp, A., & Siem, B. (2006). Empathy-Motivated Helping: The
Moderating Role of Group Membership. *Personality and Social Psychology Bulletin*,
32(7), 943–956. https://doi.org/10.1177/0146167206287363

Surguladze, S., & Bergen-Cico, D. (2020). Editorial: Empathy in a Broader Context:
Development, Mechanisms, Remediation. *Frontiers in Psychiatry*, *11*, 529.
https://doi.org/10.3389/fpsyt.2020.00529

Tholen, M. G., Trautwein, F.-M., Böckler, A., Singer, T., & Kanske, P. (2020). Functional
magnetic resonance imaging (fMRI) item analysis of empathy and theory of mind.
Human Brain Mapping, *41*(10), 2611–2628. https://doi.org/10.1002/hbm.24966

Thompson, J., van den Berg, P., Roehrig, M., Guarda, A., & Heinberg, L. (2004). The Sociocultural Attitudes Towards Appearance Scale-3 (SATAQ-3): Development and Validation. *The International Journal of Eating Disorders*, *35*, 293–304. https://doi.org/10.1002/eat.10257

Tiggemann, M., & Slater, A. (2017). Facebook and body image concern in adolescent girls: A prospective study. *International Journal of Eating Disorders*, *50*(1), 80–83. https://doi.org/10.1002/eat.22640

Tiggemann, M., & Williams, E. (2012). The Role of Self-Objectification in Disordered Eating, Depressed Mood, and Sexual Functioning Among Women: A Comprehensive Test of Objectification Theory. *Psychology of Women Quarterly*, *36*(1), 66–75. https://doi.org/10.1177/0361684311420250

Tolman, D. L. (2002). *Dilemmas of desire: Teenage girls talk about sexuality* (pp. xiii, 259). Harvard University Press.

Truby, H., & Paxton, S. J. (2002). Development of the Children's Body Image Scale. *The British Journal of Clinical Psychology*, *41*(Pt 2), 185–203. https://doi.org/10.1348/014466502163967

Tyler, J. M., Calogero, R. M., & Adams, K. E. (2017). Perpetuation of sexual objectification: The role of resource depletion. *British Journal of Social Psychology*, *56*(2), 334–353. https://doi.org/10.1111/bjso.12157

Tylka, T., & Sabik, N. (2010). Integrating Social Comparison Theory and Self-Esteem within Objectification Theory to Predict Women's Disordered Eating. *Sex Roles*, *63*, 18–31. https://doi.org/10.1007/s11199-010-9785-3

Vaes, J., Paladino, P., & Puvia, E. (2011). Are sexualized women complete human beings? Why men and women dehumanize sexually objectified women. *European Journal of Social Psychology*, *41*(6), 774–785. https://doi.org/10.1002/ejsp.824

Vandenbosch, L., Driesmans, K., Trekels, J., & Eggermont, S. (2017). Sexualized Video Game Avatars and Self-Objectification in Adolescents: The Role of Gender Congruency and Activation Frequency. *Media Psychology*, *20*(2), 221–239. https://doi.org/10.1080/15213269.2016.1142380

Vandenbosch, L., & Eggermont, S. (2014). The three-step process of self-objectification: Potential implications for adolescents' body consciousness during sexual activity. *Body Image*, *11*(1), 77–80. https://doi.org/10.1016/j.bodyim.2013.10.005

Vandenbosch, L., & Eggermont, S. (2016). The Interrelated Roles of Mass Media and Social Media in Adolescents' Development of an Objectified Self-Concept: A Longitudinal Study. *Communication Research*, *43*(8), 1116–1140. https://doi.org/10.1177/0093650215600488

Vandenbosch, L., Muise, A., Eggermont, S., & Impett, E. A. (2015). Sexualizing reality television: Associations with trait and state self-objectification. *Body Image*, *13*, 62–66. https://doi.org/10.1016/j.bodyim.2015.01.003

Veldhuis, J., Konijn, E. A., & Seidell, J. C. (2014). Negotiated media effects. Peer feedback modifies effects of media's thin-body ideal on adolescent girls. *Appetite*, *73*, 172–182. https://doi.org/10.1016/j.appet.2013.10.023

Ward, L. M. (2016). Media and Sexualization: State of Empirical Research, 1995–2015. *The Journal of Sex Research*, *53*(4–5), 560–577. https://doi.org/10.1080/00224499.2016.1142496

Weisz, E., & Cikara, M. (2021). Strategic Regulation of Empathy. *Trends in Cognitive Sciences*, *25*(3), 213–227. https://doi.org/10.1016/j.tics.2020.12.002

Wickham, H., Averick, M., Bryan, J., Chang, W., McGowan, L. D., François, R., Grolemund, G., Hayes, A., Henry, L., Hester, J., Kuhn, M., Pedersen, T. L., Miller, E., Bache, S. M., Müller, K., Ooms, J., Robinson, D., Seidel, D. P., Spinu, V., … Yutani, H. (2019). Welcome to the tidyverse. *Journal of Open Source Software*, *4*(43), 1686. https://doi.org/10.21105/joss.01686

Willis, M., Bridges, A. J., & Sun, C. (2022). Pornography Use, Gender, and Sexual Objectification: A Multinational study. *Sexuality & Culture*, *26*(4), 1298–1313. https://doi.org/10.1007/s12119-022-09943-z

Wright, P. J., & Tokunaga, R. S. (2016). Men's Objectifying Media Consumption, Objectification of Women, and Attitudes Supportive of Violence Against Women. *Archives of Sexual Behavior*, *45*(4), 955–964. https://doi.org/10.1007/s10508-015-0644-8

Załuski, W. (2018). On Three Types of Empathy: The Perfect, the Truncated, and the Contaminated. *Logos i Ethos*, *46*(2), 51–66. https://doi.org/10.15633/lie.2361

Zhao, Q., Neumann, D. L., Yan, C., Djekic, S., & Shum, D. H. K. (2021). Culture, Sex, and Group-Bias in Trait and State Empathy. *Frontiers in Psychology*, *12*. https://www.frontiersin.org/articles/10.3389/fpsyg.2021.561930

Zurbriggen, E. L. (2013). Objectification, Self-Objectification, and Societal Change. *Journal of Social and Political Psychology*, *1*(1), Article 1. https://doi.org/10.5964/jspp.v1i1.94

Zurbriggen, E. L., Collins, R. L., Lamb, S., Roberts, T.-A., Tolman, D. L., Ward, L. M., & Blake, J. (2007). *Sexualization of Girls 2010*. 72.

Appendix

List of Figures

List of Tables

Abstract English

This paper investigates the relationship between self-objectification and the sexual objectification of others among early adolescents and the potentially mediating effect of empathy on this relationship. So far, existing results only support a positive connection between self-objectification and empathy for adults. Moreover, the literature mainly documents a causal effect of sexual objectification on self-objectification. In this paper, the focus is on the reverse causality and whether there is a protective element of empathy concerning the objectification of others via reduced self-objectification. Through an online survey, measures for body surveillance, empathy, and sexual objectification were elicited from 103 participants aged 9 to 13. Sexual objectification was measured as differences in reported perceptions of illustrated images of sexualized and non-sexualized targets. No statistically significant relationships between empathy and self-objectification were detected, potentially due to the lack of power or the unplanned remote nature of the survey as a result of the COVID-19 pandemic. However, three significant results have been uncovered: (i) lower empathy among boy participants compared to girl participants; (ii) higher objectification of sexualized targets when the participants had previously been exposed to a non-sexualized target; and (iii) a stronger same gender objectification in both boy and girl participants with boys overall sexually objectifying others more than girls. Additional research in controlled environments and with a larger number of participants might provide support for the hypotheses laid out in this paper.

Abstract German

Diese Arbeit untersucht die Beziehung zwischen Selbst-Objektifizierung und sexueller Objektifizierung anderer bei Jugendlichen und den potenziell vermittelnden Effekt von Empathie auf diese Beziehung. Bisherige Ergebnisse belegen nur für Erwachsene einen positiven Zusammenhang zwischen Selbst-Objektifizierung und Empathie. Darüber hinaus wird in der Literatur hauptsächlich ein kausaler Effekt von sexuellen Objektifizierung auf Selbstobjektivierung dokumentiert. In diesem Beitrag liegt der Schwerpunkt auf der umgekehrten Kausalität und der Frage, ob es ein schützendes Element der Empathie in Bezug auf die Objektifizierung anderer durch eine geringere Selbst-Objektivierung gibt. In einer Online-Umfrage wurden 103 Teilnehmenden im Alter von 9 bis 13 Jahren zu den Themen Körperüberwachung, Empathie und sexuelle Objektifizierung befragt. Die sexuelle Objektifizierung wurde als Unterschiede in der Wahrnehmung von Abbildungen von sexualisierten und nicht-sexualisierten gezeichneten gleichaltrigen gemessen. Es wurden

keine statistisch signifikanten Zusammenhänge zwischen Empathie und Selbst-Objektifizierung festgestellt, was möglicherweise auf die mangelnde Macht oder das ungeplante Onlineformat der Befragung aufgrund der COVID-19-Pandemie zurückzuführen ist. Es wurden jedoch drei signifikante Ergebnisse gefunden: (i) geringere Empathie bei männlichen Teilnehmenden im Vergleich zu weiblichen Teilnehmenden; (ii) höhere Objektifizierung von sexualisierten Zielpersonen, wenn die Teilnehmenden zuvor einer nicht-sexualisierten Zielperson ausgesetzt waren; und (iii) eine stärkere gleichgeschlechtliche Objektifizierung sowohl bei männlichen als auch bei weiblichen Teilnehmenden, wobei Jungen insgesamt andere sexuell stärker objektivieren als Mädchen. Weitere Untersuchungen in kontrollierten Umgebungen und mit einer größeren Anzahl von Teilnehmenden könnten die in diesem Artikel aufgestellten Hypothesen unterstützen.

Additional Table

Table 5: Correlation of all variables used in the analysis.

Variable	*M*	*SD*	1	2	3	4	5	6	7
1. Sexual Objectification	0.83	14.17							
2. Sex. Obj. Girl Stimuli	1.17	10.91	-						
3. Sex. Obj. Boy Stimuli	0.49	16.86	-	-					
4. Body Surveillance	2.74	0.88	.04	.17	-.03				
5. Total Empathy	2.44	0.27	.04	-.01	.07	.09			
6. Affective Empathy	2.16	0.34	.08	.05	.09	.05	.69**		
7. Cognitive Empathy	2.44	0.36	.09	.06	.10	.13	.77**	.23*	
8. Empathic Concern	2.70	0.36	-.06	-.14	-.02	.03	.83**	.38**	.52**

Note. M and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). * indicates $p < .05$. ** indicates $p < .01$.