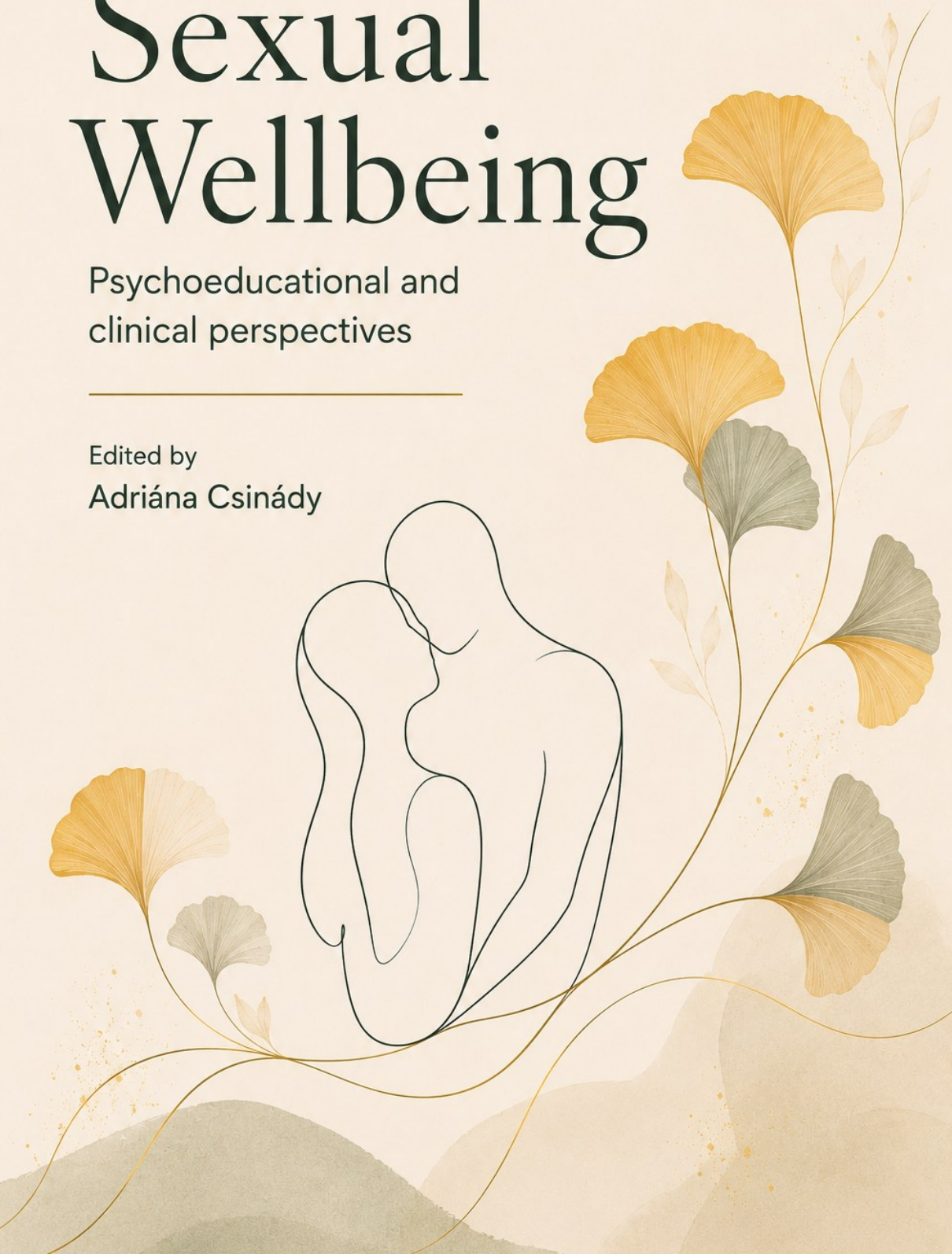


Sexual Wellbeing

Psychoeducational and
clinical perspectives

Edited by
Adriána Csinády



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Preface

Sexual health is a complex phenomenon, not merely the absence of dysfunction, and it is inseparable from overall wellbeing. Humans depend on their significant others for emotional security, physical closeness, and their reflected opinions for lifelong development. The use of continuous social comparison helps to build the self and it can be strengthened or shattered by relationships and sexual experiences.

Although modern sexuality is often framed as free and a pure personal choice, it is in fact shaped by a network of influences, including: self-concept, body image, relationship models, sexual scripts, performance pressures, and the wider cultural context. These forces can make it difficult to form and maintain satisfying, long-term relationships. This is particularly true when early experiences undermine self-esteem and trust. Yet current sexual education rarely goes beyond the biological bases of sexuality and therefore does little to protect individuals from unhealthy relationships, sexual coercion, or difficulties in negotiating contraception.

Thoughtful, evidence-based programs are needed that move beyond biology in sexual education and address sexual assertiveness—communication, consent, boundaries, and personal needs in sexuality. Sexual counseling and education should support people in navigating the complexities of modern sexual life while identifying those vulnerable groups that are more at risk. The following chapters each cover a problem area that shapes our sexual wellbeing.

The opening chapter, **Beyond Biology: The Emerging Role of Sexual Assertiveness in Future Sexual Education** (Adriana Csinády, Boglárka Szarvas) reviews international studies on sexuality education, pointing out how biology-focused, risk-oriented curricula often fail to produce long-term changes in the behaviour and do not help to reduce adolescent pregnancy and sexually transmitted infections. It introduces sexual assertiveness as a key concept that is a measurable and educable skill that links factual knowledge to real-life decisions about consent, contraception, and sexual negotiation. The authors argue toward a shift to age-appropriate and gender-responsive sexual education that incorporates sexual assertiveness and communication.

In **The Interconnections Among Body Image, Sexual Self-Esteem, Assertiveness, Beliefs, and Social Media Usage Patterns** (Kamilla Dózsa, Boglárka Szarvas, Adriana Csinády) the focus shifts to the social media environment that is saturated with idealised and filtered images. This chapter explores how

self-concept, social comparison, and globalised beauty ideals shape body image. They emphasize these constructs in relation to sexual self-esteem, beliefs and assertiveness.

Depression Symptoms and Suicide Risk in Sexual Minority Men (Zsuzsanna Almássy, Donát Debreceni) addresses an alarming mental health concern. The authors incorporate international epidemiological findings with models of minority stress and masculine norms. They review specific risks and protective factors, including stigma, help-seeking barriers, gender-role expectations and social support. The authors introduce the Male Depression Risk Scale and argue that new assessment and intervention strategies are necessary which are sensitive to sexual orientation and target gendered patterns of distress.

The chapter **How Physical Attraction Influences Fan Behaviour in Relation to Parasocial Attraction** (Anna Jolán Moravszki, Ágnes Bernáth) moves into the emerging field of fanship behaviour and parasocial attachment. Based on their survey data from fans of real celebrities, they conclude that physical attraction proves to be the most salient motivator of fanship. Fanship is a complex, emotionally charged, often ambivalent phenomenon that can support identity and resilience but can also blur boundaries and foster unhealthy obsessions.

In **Enhancing Sexual Satisfaction: The Interplay of Mindfulness and Assertiveness in Romantic Relationships** (Boglárka Szarvas, Emese Tóth, Adriana Csinády) examines through an empirical study how trait mindfulness, sexual mindfulness, and sexual assertiveness relate to relationship intimacy and sexual satisfaction. The results indicate that sexual mindfulness is a strong predictor of both sexual and relational outcomes and is also linked to more assertive communication in sexual settings and higher levels of sexual satisfaction.

In the chapter **When Selfobject Needs Remain Unmet: Pathways to Relational Conflict and Sexual Dysfunction** (Szabolcs Kató, Anita Szemán-Nagy) the authors explain how Kohut's self-psychology influences sexual development. They describe sexual functioning as closely tied to the development of a cohesive self and show how disruptions in self-object responsiveness can contribute to relational difficulties and sexual dysfunctions. The authors emphasize the importance of empathic, developmentally informed interventions in improving intimacy and sexual wellbeing.

Clinical perspectives are discussed in the **Etiology and Treatment of Sexual Disorders** (Miguel Ángel Rando Hurtado). Tracing the development of modern sex therapy from Masters and Johnson's early behavioural models to current biopsychosocial approaches the author discusses how shifts in sexual culture, the impact of pornography, digital intimacy, and unstable relationships have reshaped clinical issues and treatment needs.

An Approach to Problematic Pornography Use: Challenges and Clinical Considerations (Cristina González-Monroy) focuses on problematic

pornography use. In her paper drawing on longitudinal and clinical research outcomes she explains how high-frequency pornography use can interact with sexual scripts, relationship dynamics and mental health. We learn about the importance of distinguishing between non-problematic consumption and patterns associated with distress, compulsivity or risk. It emphasizes key problems with assessment and outlines considerations for treatment, including psychoeducation, cognitive-behavioural strategies, and sensitivity to shame and cultural context.

Finally, in the chapter **Mechanisms Matter: How Generational Differences in Erectile Drugs Shape Clinical and Psychosexual Outcomes** (Gábor Szemán-Nagy) we receive knowledge about the functioning of older and newer generations of erectile drugs. Explaining how the differences in mechanism of certain drugs influence clinical outcomes and subjective sexual experience.

The author highlights psychosexual implications as well, including changes in sexual self-confidence, relationship dynamics and expectations. Furthermore he argues that clinicians should integrate these dimensions when prescribing erectile medications.

Beyond Biology: the Emerging Role of Sexual Assertiveness in Future Sexual Education

Abstract

Traditional models of sexual education have often prioritized biological risk avoidance rather than fostering psychological, social, and emotional competencies. Meta-analyses reveal that most programs yield limited or even negative long-term outcomes, pointing toward gaps in the relevance and delivery of sexual education. This paper emphasizes sexual assertiveness in sexual education, as this concept highlights the ability to express boundaries, desires, and needs, which in the long run promote sexual health and satisfaction. The paper advocates for a move “Beyond Biology”, a shift toward comprehensive, gender-responsive, and communication-focused sexual education.

Keywords: Sexual Education; Sexual Assertiveness; Sexual Health; Gender Responsiveness; Sexual Communication; Sexual Wellbeing

Introduction

Comprehensive sexual education (CSE) is defined as an evidence-informed curriculum that provides accurate information on human development, relationships, gender identity, contraception, sexually transmitted infections (STIs), consent, and decision-making skills (UNESCO, 2023). Multiple models of CSE exist along a spectrum of content and delivery, each with distinct strengths and weaknesses.

School-based comprehensive sexual education (CSE) programs are widely promoted by major public health organizations as evidence-based interventions for reducing teen pregnancy, sexually transmitted infections (STIs), and sexual risk behaviors. However, a rigorous global overview of studies on sexual education challenges these claims.

Ericksen and Weed (2019) reviewed 120 studies—103 CSE, 17 abstinence education (AE)—using rigorous research criteria to measure their effectiveness: (1) sustained effects (for at least 12 months), (2) relevant protective outcomes (e.g. abstinence, consistent condom use, or reduced pregnancy rates and STI incidence) and (3) no accompanying negative effects or documented harm. Surprisingly only six showed evidence of effectiveness at 12 months after the intervention, out of the 103 school-based CSE studies reviewed (U.S. and

international). None of these CSE programs could effectively increase consistent condom use. The overall CSE failure rate was 87%, additionally 16 studies documented 22 instances of harm—e.g. increased sexual activity, more sexual partners, STIs, unintended pregnancy or forced sex. CSE programs conducted in other regions of the world produced even worse outcomes. For example in sub-Saharan Africa, the level of harm after CSE was particularly high at 23% (Ericksen & Weed, 2019).

Some CSE programs prioritize abstinence education (AE), emphasizing refraining from sexual activity until marriage and often excluding discussions of contraception and sexual diversity. AE is largely ineffective in most instances, e.g. preventing unintended pregnancies, STIs or lowering the age of sexual debut. Unfortunately, instead of aiding the students with useful knowledge about sexuality these models often increase misinformation in the long run, reduce self-efficacy and stigmatize sexual activity (Santelli et al., 2017; UNESCO, 2023).

Given the data the obvious question arises: why does traditional sexual education so often fail to translate into safer sexual behavior? This paper suggests a „Beyond Biology” move in sexual education. There is an urging need to change programs focused narrowly on biological information, risk messaging, and disease prevention that has created a narrow foundation for sexual education in the recent decades (e.g. Haberland, 2015; UNESCO, 2023). We argue that missing the psychological, relational, and social-structural factors that shape young people’s actual sexual decisions is a pivotal mistake in sexual education. Unfortunately, knowledge about contraceptive methods, STI transmission, or reproduction does not automatically confer to communication skills, nor does it influence sexual assertiveness or negotiation with a partner.

Knowledge alone is not enough for young people to make healthy choices. What really makes a difference is having the confidence and communication skills to talk openly about consent and protection. Sexual assertiveness, the ability to articulate desires, boundaries and safety preferences in sexual situations, provides this skill set. Nevertheless it can be measured, coached and strengthened through sexual education and counselling (Morokoff, 1997; Loshek & Terrell, 2014; Widman et al., 2014). Sexual assertiveness means being able to clearly express your needs and boundaries, initiate or refuse sexual activity, and discuss safe sex practices without embarrassment. Those possessing these skills tend to be more satisfied with their relationships and sexual lives, feel better about themselves, and are less likely to take risks or be pressured into sexual activity (Morokoff, 1997; Loshek & Terrell, 2014; Alvarado et al., 2020). Empirical studies indicate that sexual assertiveness skills besides improving sexual satisfaction and self-esteem also promote the use of contraception and reduce the likelihood of unwanted sex, STIs (Widman et al., 2014). Training in sexual assertiveness can promote more egalitarian, gender-responsive learning

environments (UNESCO, 2023). Therefore, this paper argues that placing sexual assertiveness at the centre of sex education would bring real, lasting benefits: fostering healthier, more respectful relationships and mitigate risks even for minorities, preparing the young people for the challenges of adulthood and prioritizing future sexual health.

Many CSE frameworks already include elements such as communication skills, critical thinking and values clarification alongside the biomedical content. However, implementation of these into real life rarely shows success and sexual education results as a narrow, biology focused, risk-oriented model. The aim of this paper is therefore not to dismiss CSE as a whole, but intends to strengthen the role of sexual assertiveness and interpersonal skills in it.

Adolescent Sexual Risk

Evidence from global adolescent health surveys underscores this mismatch. Sedgh et al. (2014) analyzed official statistics and international demographic databases spanning from the mid-1990s through 2010. His goal was to produce a comprehensive assessment of adolescent pregnancy, birth, and abortion rates across two age groups (10–14 and 15–19) in developed and developing countries. Adolescent pregnancy rates showed wide geographic variation: in 2011, rates ranged from 8 per 1,000 girls aged 15–19 in Switzerland to 57 per 1,000 in the United States. Outside Europe, particularly high rates were identified especially in Mexico and the sub-Saharan Africa (Sedgh et al., 2014).

Abortion rates also showed high variations, with teen pregnancies ranging from 17% in Slovakia to 69% in Sweden and 26% in the U.S.. Notably, Hungary, the United States, and Romania had among the highest rates of pregnancy in very young adolescents aged 10–14 years, with the majority of these pregnancies ending in abortion. However, teen birth rates have declined significantly in most developed countries, particularly in the U.S., England/Wales, and Estonia since the mid-1990s (Sedgh et al., 2014). Yet unintended pregnancy and abortion rates in adolescent populations still pose serious public health concerns, especially in settings with limited access to comprehensive sexuality education or supportive contraceptive services.

A more recent U.S. study estimated how often “early sexual debut” (first intercourse before age 13) occurred. Their results indicate that a non-trivial minority of middle-school students in ten states report sexual intercourse before age 13. This early sexual debut rarely came alone, but often clustered with substance use, exposure to violence and poor mental health status (Muheriwa-Matimba et al., 2024). These alarming patterns strengthen the picture that sexual risk often emerges earlier than traditional high-school SE programmes begin, and it is deeply intertwined with a broader range of social vulnerabilities.

STI epidemiology reveals a similarly problematic situation. In the United States, adolescents and young adults represent roughly half of the 20 million new STI cases each year. Chlamydia and gonorrhoea infections have been rising since 2014. Unfortunately many of these cases stay hidden as they are asymptomatic for extended periods and stay undiagnosed (Shannon & Klausner, 2018). In Europe similar problems can be observed. For example an Italian dataset showed that adolescents (aged 13–18) and young adults (aged 19–25) account for a substantial share of positive tests for Chlamydia. Sadly, this is largely due to the lack of preventive behaviours in younger age groups, coupled with inconsistent condom use and delayed medical visits (Cannovo et al., 2024). These findings support the view that learning about STIs is necessary but not sufficient on its own. Students need appropriate pathogen knowledge combined with concrete skills: condom negotiation with a partner, and in case of problems self-confidence in finding the appropriate health services to seek confidential testing and treatment.

Here we need to address another pivotal problem: analysis of HBSC 2018 results indicate that sexual minority youth face disproportionate risk. Data from eight European countries, including Hungary, show that adolescents who report same- or both-gender attraction, or do not disclose their attraction, have two- to four-fold higher odds of very early sex (before age 14) compared to opposite-gender-attracted peers. This problem is coupled with dramatically higher odds of not using a condom or not knowing whether one was used during the last intercourse (Költő et al., 2024).

These data also reinforce the need to go “Beyond Biology” in sexual education by addressing minority stress, stigma and non-romantic sexual encounters, to make sure that young people receive appropriate information on health risks and protection, along with concrete guidance on how to negotiate in sexual settings. A similar problem is evident among heterosexual youth, the high rates of unintended pregnancies and abortions in adolescence often coexist with the current sexual education. This suggests that information provision alone is not sufficient. If we truly intend to transform sexual health outcomes, then we need to accompany the accurate biological knowledge with interpersonal skills so that young people can make informed decisions and be prepared for unexpected situations as well.

Teacher Preparation and Educational Environment

International and Hungarian evidence suggests that even the most carefully designed sex-education curriculum will have limited impact if teachers are poorly prepared, uncomfortable, or constrained by school climate. Large-scale evaluations of CSE show that programme effectiveness can be highly variable

and often short-lived, and it matters who delivers the content and under what conditions at least as much as what is taught (Ericksen & Weed, 2019; Gyarmathy et al., 2002).

The Hungarian AIDS/STI prevention programme evaluated by Gyarmathy et al. (2002) provides a revealing example. In 54 Budapest secondary schools, 12 different intervention types (lectures, Q&A, role-plays, videos, slide shows and combinations) were delivered by both health-education professionals and regular teachers, most with minimal training in sexual health. Students' knowledge about HIV and condom use improved markedly—correct knowledge about condom use increased from 73% at baseline to 89% at five-week follow-up—yet the strongest predictors of improvement were not the specific method used, but the amount of classroom time and, especially, the characteristics of the educator. Young, engaging external professionals and peer-like educators achieved better outcomes on sensitive topics than older, familiar schoolteachers (Gyarmathy et al., 2002).

These findings reinforce results from other studies (e.g. Spain) that explored how adolescents, teachers and parents perceive school-based sexual education. They admit that insufficient training of educators, institutional reluctance in many cases and limited time are key barriers to providing an effective sexuality education. While participants viewed sexual education as necessary and potentially useful, they also pointed out that sexuality is still treated as a taboo topic both at school and at home (Barriuso-Ortega et al., 2024).

Disappointing, but we see the same pattern in a Hungarian interview study with parents (Lassú et al., 2022). According to these interviews parents expressed a preference to delay sexual education of their children until adolescence and to put the focus mainly on risk avoidance. The result of this approach to SE misses the opportunity to openly talk about consent or abuse prevention with the adolescent population. For this reason, we suggest that teacher preparation must include not only factual content but also needs to provide skills for the teachers to manage their own discomfort, and learn how to facilitate a dialogue with the youth on gender, power and diversity, and, in other highly sensitive issues (e.g. STIs, health screening). In case of providing up-to-date information on health related issues collaborating with external professionals is suggested as they may be better positioned to address these topics.

Age Appropriateness and Timing of Sexual Education

The timing of sexual education is just as critical as its content and delivery. Evidence from multiple studies and countries suggest that sexuality education is most effective when it starts before sexual debut, and is delivered over several years on a regular basis, gradually expanding from basic body knowledge

to topics of sexuality such as gender, power, consent and communication (Haberland, 2015; UNESCO, 2023). However, both international and Hungarian data indicate that many adolescents have their sexual debut much earlier than the standard high-school SE curricula begin (Sedgh et al., 2014; Varga-Tóth, 2018; Muheriwa-Matemba et al., 2024).

In Hungary, Varga-Tóth (2018) found that a substantial proportion of girls had engaged in intercourse by age 15, with some starting at 14 or younger, while in the United States Muheriwa-Matemba et al. (2024) documented non-negligible levels of sexual debut before age 13 across ten states. This early sexual debut increases vulnerabilities—such as substance use, exposure to violence, poorer mental health—suggesting that sexual risk is accompanied by myriad other problems and risk behaviours (Muheriwa-Matemba et al., 2024).

Pornography, Media and Early Sexual Scripts

One of the many concerns related to the media is the children's exposure to sexually explicit images, including pornography. According to a survey done by EU Kids Online 2020 children's exposure to sexual images varies widely across Europe. In Croatia, the Czech Republic, Spain, Malta and Serbia, more than 40% of the children asked (ages ranging between 9-16) have seen sexual content, while in Estonia, France and Lithuania the number is below 25%. Boys report higher exposure than girls in every country, with gender gaps ranging from 2% to 14%. Exposure also rises with age: the difference between the youngest and oldest groups spans 21–70 percentage (Smahel et al., 2020). Studies in Australia and the U.S. suggest that adolescents are exposed to pornography by the age of 13 years on average (Lim et al., 2017; Herbenick et al., 2020). Research indicates that, in the absence of satisfactory comprehensive sexuality education, pornography often becomes a source (often the only source) of sexual information for adolescents. Surveys show that for many teenagers, pornography is one of the main or earliest sources of sex education (29,3% reported pornography to be their main source of education regarding sex), alongside the internet (22,5%) (Navarro-Prado et al., 2023). Sadly adolescent pornography use is associated with earlier sexual debut and various risky sexual behaviours, including unprotected (condomless) sex and sexual encounters with multiple partners (Mestre-Bach et al., 2025; Håkkim et al., 2022). However, new intervention studies indicate that integrating media- or porn-literacy components into sex education can improve young people's critical thinking about sexual media, can increase sexual health knowledge, and support healthier attitudes toward sexuality (Scull et al., 2022; Rothman et al., 2020). We claim that comprehensive sexuality education should explicitly address pornography rather than ignore it.

These findings support the need for a shift toward an earlier start in sexuality education. Sexuality education should begin in late childhood and evolve through schooling, where early stages could focus on body autonomy, personal boundaries, emotions and respect, while later modules should introduce contraception, STI prevention, sexual rights and digital risks. We think that a “Beyond Biology” approach should address parents’ concerns and cultural taboos as well, ensuring that the most vulnerable groups—e.g. who experience early sexual debut—are not left behind by curricula that arrive too late.

Gender Differences in the Effectiveness of Sexual Education

Taking gender differences into account in SE is crucial as gender strongly shapes how young people experience and benefit from it. Several CSE programmes that explicitly address gender and power dynamics are far more successful than gender neutral CE programmes in improving key outcomes—such as reporting increased contraceptive use and fewer unwanted pregnancies, reduced STI rates (Haberland, 2015; UNESCO, 2023). Girls tend to show larger gains in contraceptive use, boost their confidence and ability to negotiate safer sex and they will be equipped with an ability to recognize coercion in advance. Programs that openly address gender power dynamics and promote positive masculinity are five times more effective in reducing risks. Especially for girls to identify risk situations and for boys they help to enhance communication skills and empathy (Haberland, 2015; UNESCO, 2023).

Hungarian studies on sexual attitudes and health literacy add nuance to this picture. Health literacy is an emerging concept that is closely related to sexual attitudes and responsible behaviour. Health literacy is the ability to access, understand, evaluate, and use information to make appropriate decisions about health care, disease prevention, and health promotion (Sorensen et al., 2012). Hegedűs and Orosz (2021) observed that adolescents with adequate health literacy displayed more pragmatic and responsible attitudes toward birth control, but that nearly half of students had problematic or insufficient health literacy, limiting their capacity to act on their intentions (Hegedűs & Orosz, 2021). Csonka et al. (2017) validated the Brief Sexual Attitudes Scale in Hungarian samples and found that men scored higher on permissiveness and instrumentality, whereas women scored higher on the birth-control dimension, reflecting greater concern with responsibility for contraception. These patterns suggest that girls may carry a disproportionate burden of “being responsible”, while boys may feel pressure to conform to peer norms that discourage open communication about protection.

Sexual Assertivity as a New Path to SE

Definition and behavioural correlates

Sexual assertiveness—defined as the ability to express one’s desires, boundaries and safety needs in sexual situations—offers a concrete, teachable skill set that can bridge these gendered expectations. Research shows that higher sexual assertiveness is associated with better condom negotiation, more consistent contraceptive use, lower likelihood of unwanted sex and greater sexual satisfaction (Morokoff, 1997; Loshek & Terrell, 2014). From a “Beyond Biology” standpoint, integrating sexual assertiveness training into sexual education means explicitly practising how to say “no” and “yes”, how to ask for condoms or other methods of contraception, how to disclose sexual orientation or attraction differences, and how to respond to pressure from partners or peers (Loshek & Terrell, 2014). Such training can be particularly empowering for girls and sexual minority youth—who often face higher risks of coercion and non-use of protection (Költő et al., 2024)—while also helping boys develop positive, non-violent masculinities (Költő et al., 2024). In Hungary, where unintended pregnancy remains common and a sizeable minority of women still use no or low-effectiveness contraception methods despite good theoretical knowledge (Makay, 2015; Makay & Kapitány, 2021; Premusz et al., 2024). A curricula where sexual assertiveness is a key concept could help close the gap between knowing and doing. Our “Beyond Biology” curriculum would treat the young people as active agents who might need support to articulate their needs, to negotiate protection in their everyday relationships. As a result sexual assertiveness could be a central core upon which young people can turn the previously learned information into actual, protective behaviour.

Hungarian and international research indicates that knowledge of information alone is not enough for young people to make healthy decisions. It is necessary to have the confidence and communication skills to stand up for yourself and talk openly about consent and protection is the skill that will make the difference in the outcome of sexual education. This is where sexual assertiveness comes in—a set of skills that can be measured, taught, and strengthened through both sexual education and counselling (Morokoff, 1997; Loshek & Terrell, 2014; Ménard & Offman, 2009).

Sexual assertiveness means being able to clearly say what you want or don’t want—whether it’s starting or refusing sexual activity or discussing safe sex practices and boundaries without embarrassment. Those who possess sexual assertiveness skills are happier with their relationships and sexual lives, feel better about themselves, and are less likely to take risks or be pressured into sexual activity (Morokoff, 1997; Loshek & Terrell, 2014; Santos-Iglesias & Sierra, 2010). Studies show these skills improve not only sexual satisfaction and

self-esteem but also promote the use of contraception and avoiding unwanted pregnancies or STIs (Oattes & Offman, 2007; Widman et al., 2014).

Measurement and communication outcomes

Sexual assertiveness is a skill that can be clearly defined, measured, and studied with solid psychometric tools. One of the most widely used instruments for this purpose is the Sexual Assertiveness Questionnaire (SAQ) by Loshek and Terrell (2014), which identifies three main components of women's sexual assertiveness. These components are initiating wanted sexual activity, refusing unwanted sex and communicating openly about sexual history and risk. In addition, the Assertiveness in Sexual Relations Questionnaire (ASRQ) has been validated as a reliable measure for both men and women. This tool captures sexual assertiveness across four factors and demonstrates strong internal consistency (Gil-Llario et al., 2022). Along with validated versions of the Hurlbert Index of Sexual Assertiveness and other established measures, these instruments make it clear that sexual assertiveness can be quantified, monitored and evaluated (Santos-Iglesias & Sierra, 2010; Vallejo-Medina & Sierra, 2015). This has important implications for sexual education, as it allows programmes to move from abstract goals to measurable outcomes. Once a measuring tool is provided for sexual assertiveness, educators and counselors can assess students' baseline skills, track their development, and determine whether their programs truly have an impact.

Evidence from communication-focused studies supports this measurement-based approach. A large meta-analysis of 34 studies with more than 15,000 adolescents found a clear link between sexual communication and condom use, the effects were even stronger when the communication specifically focused on condom use (Widman et al., 2014). In other words, assertively talking about protection (negotiating condom use, asking about risk or insisting on contraception) is statistically linked to safer sexual behaviour. Additional research shows that sexual assertiveness and communication skills related to sexuality can increase condom use. For example, a study of female emerging adults in South Korea examined sexual assertiveness alongside attitudes, norms, self-efficacy and perceived barriers. They found that although attitudes were the strongest predictor of condom use, assertiveness and gender norms still played meaningful roles in the model (Lee, 2022). Similarly, a recent study among young men found that consistent condom use was associated with higher self-efficacy and more assertive communication skills around negotiation of condom use (Morell-Mengual et al., 2023). All these findings point to sexual assertiveness as a protective factor against unintended pregnancy and sexually transmitted infections, particularly in the form of condom negotiation and refusing unprotected sex.

Self concept, body image, wellbeing

Building on these links between social contexts and sexual assertiveness, research on pornography use and sexual assertiveness shows mixed patterns. Some studies indicate that more frequent pornography use, particularly among adolescents and young adults, is often associated with more passive and more aggressive sexual communication or we can say less assertive sexual communication, especially in heterosexual contexts (Wright et al., 2015). Pornography can reinforce gender related expectations (such as male dominance, female compliance), which may undermine what young people think about their ability and right to negotiate contraception, express boundaries or refuse unwanted sexual activity (Wright & Bae, 2015). At the same time, other research suggests that when pornography is consumed critically or within sex-positive frameworks, it does not necessarily reduce assertiveness and may even facilitate discussions about desire in some couples (Sun et al., 2016). Overall, the evidence indicates that pornography can and tends to shape sexual scripts in ways that can alter assertive communication for many young people.

Sexual assertiveness also indicates some connection with research in gender and power dynamics. Research with adolescent and young adult women shows that many women do not feel entitled to talk about or negotiate condom use, refuse unwanted sex or initiate sexual activity, especially when they have a history of victimisation or perceive themselves as having low power in their relationships (Rickert et al., 2002). Qualitative and quantitative studies with adolescent girls further reveal how internalised gender norms and sexual double standards can significantly limit sexual assertiveness, even when girls possess accurate knowledge about contraception and STIs (Auslander et al., 2007). Training in sexual assertiveness also helps fight harmful gender roles and supports marginalized students. Lessons that focus on talking, negotiating, and saying “no” or “yes” respectfully help break stereotypes and encourage equality (Loshek & Terrell, 2014; UNESCO, 2023).

Sexual assertiveness is also deeply connected to sexual self-concept, how positively and competently young people perceive themselves as sexual beings. Early research already showed that adolescents with a stronger, more positive sexual self-concept are more likely to use effective contraception during intercourse, while those with a weaker self-concept tend to engage in poorer contraceptive practices (Winter, 1988). More recent findings also show this pattern. A 2023 study showed significant links between sexual self-concept and contraception use, indicating that young people with a more confident and coherent sexual self-view are more consistent users of contraception (Doremami et al., 2023). In this sense, sexual assertiveness can be seen as a behavioural expression of a positive sexual self-concept which is linked to how young people feel about their bodies.

Body image is a strong predictor of sexual assertiveness. Individuals with negative body image or body-related shame are less likely to initiate sexual activity, communicate their needs or refuse unwanted sexual activity due to their concerns about evaluation, attractiveness or approval by their partner (Satinsky et al., 2012). Positive body-esteem and body appreciation are linked to greater sexual agency, better communication of preferences, higher comfort with negotiation about contraception and greater willingness to set boundaries (Sabiston et al., 2010).

Studies on adolescent pregnancy reinforce the same conclusion from a different perspective. Research with pregnant adolescents revealed that those with unplanned pregnancies tend to show lower sexual assertiveness, while higher assertiveness is associated with better self-esteem and more realistic beliefs about love (Moyano et al., 2021). Another study examining risk factors for adolescent pregnancy identified self-esteem and sexual assertiveness as key psychological protective factors (Ditsela & Van Dyk, 2011). Together, these findings suggest that low sexual assertiveness is not just an interpersonal communication style, but a modifiable psychological risk factor that should be explicitly targeted in prevention efforts. Thus, low sexual assertiveness emerges as a modifiable psychological risk factor that cuts across multiple outcomes, from unintended pregnancy to vulnerability to coercion.

Beyond reducing risk, sexual assertiveness also plays a meaningful role in the broader sexual wellbeing of the individual. A literature review (Alvarado et al., 2020) suggests that sexual assertiveness is linked to better sexual functioning, more satisfying sexual relationships, higher body self-esteem and stronger emotion-regulation skills. Recent research with emerging adults aligns with these findings: the higher the levels of sexual assertiveness the better relationship quality and the greater sexual satisfaction (van Lankveld et al., 2022; Loshek & Terrell, 2014). This reinforces the idea that assertiveness-based approaches might be relevant not only for preventing negative outcomes, but also for promoting positive sexual health. These findings underline that sexual assertiveness is not only about avoiding harm, but also about supporting flourishing intimate lives.

Implications for Sexual Education

This review suggests that biology- and risk-focused sexuality education alone is not sufficient to improve adolescents' sexual health, especially when programmes start too late, are delivered by unprepared teachers and ignore social vulnerability and gender inequality. This knowledge-behaviour gap can only be reduced if curricula build upon psychological, relational and communication skills besides the factual information.

Putting sexual assertiveness at the center of sexual education could bring real, lasting benefits. It could lead to healthier and more respectful relationships, reduce risk, and help all youth—including minorities—feel prepared for the challenges of adulthood. (Morokoff, 1997; Loshek & Terrell, 2014; WHO, 2006a; UNESCO, 2023).

Future comprehensive sexuality education should integrate sexual assertiveness training in an age-appropriate, gender-responsive and trauma-informed way. This way programs could help transform young people from passive recipients of information into active agents who are better equipped to negotiate for safer, more satisfying and more equitable sexual relationships.

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The Interconnections Among Body Image, Sexual Self-Esteem, Assertiveness, Beliefs, and Social Media Usage Patterns

Abstract

The present study provides a comprehensive review of the literature examining the interrelated patterns and interactions among social media use, self-concept, self-esteem, body image, and sexual self-esteem. Social media platforms, which increasingly replace traditional forms of media, offer an exceptionally conducive environment for the continuous engagement in social comparison processes.

Self-concept refers to the cognitive–affective representation individuals hold of themselves, whereas self-esteem constitutes one of its most central evaluative components. Social comparison, as a fundamental cognitive mechanism, exerts a substantial influence on self-evaluation and overall self-worth. Social media users have constant access to content shared by others, making these platforms a fertile ground for upward and downward comparisons.

Body image as the core of the self-concept, encompasses the mental representations and emotional responses associated with one's own physical appearance. As a fundamental element of self-evaluation, it is closely tied to self-esteem. As a result, distorted or negative body image may precipitate diminished self-worth. Body-related concerns are particularly salient among young adults, and social media further amplifies globalized beauty ideals, often enhanced through filters and digital editing.

Sexual self-esteem refers to the affective reactions emerging from individuals' subjective evaluations of their sexual thoughts, feelings, and behaviors. This construct is closely related to overall self-esteem and forms an important dimension of psychological and sexual wellbeing.

This review highlights that social media use—and especially exposure to idealized content—plays a critical role in shaping individuals' self-evaluation, body image, and sexual health through the mechanisms of social comparison.

Keywords: self-concept; social comparison; self-esteem; body image; sexual self-esteem

Introduction

Traditional forms of media, such as television and magazines, have been steadily declining in popularity, increasingly replaced by highly interactive, Internet-based platforms (Bell & Dittmar, 2011; Tiggemann & Miller, 2010, in Fardouly et al., 2015). The rise of social media has led to a dramatic escalation in media consumption, with reports indicating that individuals spend, on average, more than ten hours per day engaging with these platforms (Nielsen, 2016, in Franchina & Lo Coco, 2018). The influence of this pervasive digital environment on psychological wellbeing—particularly in relation to body image, self-esteem, and sexuality—represents a critical focus of contemporary research.

The major challenge in the age of social media concerns the dynamic interplay between the digital environment and processes of social comparison, and their combined impact on self-esteem, body image, and sexuality.

By examining these constructs—specifically the unique role of social comparison and the effects of image manipulation tools embedded within social media platforms on sexual self-esteem and body image—the present study intends to provide new insights, given that previous findings on the precise relationship between social media use, self-esteem, and sexuality have often been inconsistent.

Self-Concept

Approaches that conceptualize self-concept as dynamic, active, multi-dimensional, powerful, and capable of change argue that the self-concept interprets and organizes actions and experiences related to the self. By providing incentives, norms, plans, rules, and behavioral patterns it has a motivational impact and it adapts to the challenges posed by the social environment (Markus & Wurf, 1986).

Self-concept is a multifaceted phenomenon that can be understood as a set or collection of self-representations, such as images, schemas, beliefs, prototypes, theories, goals, or tasks (Epstein, 1980; Schlenker, 1980; Carver & Scheier, 1981; Rogers, 1981; Greenwald, 1982; Markus & Sentis, 1982; Markus, 1983; Greenwald & Pratkanis, 1984; Kihlstrom & Cantor, 1984, in Markus & Wurf, 1986). Self-representations include both cognitive and affective components.

Self-representations can vary widely: some are more important, central, or peripheral. Others may be positive or negative while some might refer to current experiences, whereas others pertain to past or future ones. Certain self-representations reflect the actual self, whereas others represent who the individual would like to be, could be, or should be, or has fears to become. These

representations provide evaluative and interpretive contexts for the current self and serve as motivators of behavior by depicting desired or undesired future selves (Markus & Wurf, 1986). Rosenberg (1979, in Markus & Wurf, 1986) distinguished between ideal self-concepts that are attainable and those that constitute glorified images of the self. Self-concepts can be categorized into at least three groups: those reflecting the actual self, the ideal self, and the ought self. Discrepancies between any two of these can lead to discomfort (Higgins, 1983, 1985, in Markus & Wurf, 1986).

Although self-concept often appears stable to the individual, personal views and experiences shape it over time (Mortimer et al., 1982, in Fasbender & Wehrle, 2018). Moreover, it is closely linked to social functioning: interactions between the individual and the environment, as well as interactions among individuals, serve as sources of self-concept. How others perceive and evaluate the individual influences their self-concept (Cooley, 1902; Mead, 1934, in Lachowicz-Tabaczek & Sniecińska, 2011), reinforcing positive self-esteem or contributing to negative self-evaluations (Callero, 1985; Stryker & Burke, 2000, in Fasbender & Wehrle, 2018). Reciprocal relations have been observed between life experiences and self-concept (Mortimer et al., 1982, in Fasbender & Wehrle, 2018). Furthermore, demographic characteristics such as age, gender, ethnicity, personality, self-motives, and group memberships also influence self-concept (Baumeister, 1998; Oyserman et al., 2012; Rosenberg, 1979, in Fasbender & Wehrle, 2018). Self-concept contains a developmental component, becoming increasingly concrete and stable with age (Coleman, 1996, in Fasbender & Wehrle, 2018).

The concept of self-esteem is closely related to self-concept and is typically regarded as one of its most important components (Burke & Cast, 2002). Body image also refers to the self-concept, encompassing the mental image and feelings an individual perceives about their own body. Individuals with a distorted body image may suffer from a diminished sense of self or reduced self-esteem based on their perceived physical appearance (Alipoor et al., 2009).

Social Comparison – A Shaper of Self-Concept

Defining Social Comparison

It is important for individuals to receive evaluations of their opinions and abilities. These factors play a key role in shaping behavior, and when such evaluations are inaccurate or lacking, they can have negative consequences for the individual. The assessment of one's opinions and abilities is often subjective and depends on one's relation to others—that is social comparison (Festinger, 1954). Neuroscientific evidence suggests that even when objective

information is available, individuals tend to rely more heavily on the outcomes of social comparison during self-evaluation (Bault et al., 2011; Kedia et al., 2014, in Corcoran et al., 2022). In the absence of comparison with others, self-evaluations become unstable; therefore, individuals may seek behaviors from others that provide them with feedback about their abilities and opinions (Festinger, 1954).

Comparison with others plays a defining role in determining how an individual perceives who they ought to be. When a person differs from their group in some respect, social pressure emerges to change that difference, as deviation from the norm is typically accompanied by discomfort. The greater the importance of the group to the individual, the stronger the pressure toward uniformity within the group (Festinger, 1954).

Two main types of social comparison can be distinguished: upward and downward social comparison. Upward social comparison refers to the processes by which individuals compare themselves to others perceived as superior on a given dimension. In contrast, downward social comparison refers to the processes through which individuals compare themselves to others perceived as inferior on a given dimension (Guyer & Vaughan-Johnston, 2018).

While social comparison typically focuses on individuals' abilities and performance, social media platforms provide space for appearance-based comparisons, emphasizing physical attributes (Schaefer & Thompson, 2014, in Moreno-Padilla et al., 2025). Exposure to idealized bodies and the resulting body dissatisfaction are also characteristic of traditional media, such as magazines, television, and music videos (Myers & Crowther, 2009, in Fardouly et al., 2015). However, the popularity of these media forms has been declining, and they have been increasingly supplanted by more interactive, Internet-based platforms (Bell & Dittmar, 2011; Tiggemann & Miller, 2010, in Fardouly et al., 2015). Social media sites provide a highly suitable environment for the continuous practice of social comparison (Vogel et al., 2014, in Moninka & Permatasari, 2020), as individuals can access these platforms anytime and anywhere via smart devices (Franchina & Lo Coco, 2018). On average, people spend more than ten hours per day on such platforms (Nielsen, 2016, in Franchina & Lo Coco, 2018), using content shared by others as a means of social comparison (Vogel et al., 2014, in Moninka & Permatasari, 2020). Exposure to photos shared on Instagram encourages individuals to post pictures of themselves, thereby engaging in social comparison and seeking external evaluation of their self-image (Ahmad et al., 2023).

Subjects of Social Comparison

The process of social comparison is characterized by selectivity. When several potential targets are available, individuals tend to compare themselves to those

who are more similar to them. If a person compares themselves to others whom they perceive as having a similar status, their subjective evaluation will remain stable. Individuals who realize that other members of their group share their opinions tend to become highly confident and are more unlikely to change their views. Conversely, people with markedly different abilities—whether superior or inferior—are considered members of other groups, and thus individuals refrain from comparing themselves to them, as such comparisons would not yield an accurate self-assessment. Regarding opinions, however, this assumption has not been empirically confirmed (Festinger, 1954). Nevertheless, social comparison is such a fundamental process that individuals sometimes compare themselves even to others who do not provide relevant self-related information (Gilbert et al., 1995, in Corcoran et al., 2022), and in such cases, they do not expect accurate feedback (Wills, 1981, in Corcoran et al., 2022).

On social media sites, both upward and downward social comparisons may occur—upward comparisons with peers, role models, or influencers (Festinger, 1954, in Moreno-Padilla et al., 2025), and downward comparisons with peers perceived as inferior (Suls & Wills, 1991, in Moreno-Padilla et al., 2025).

On Instagram, many images are posted by peers (Kenny et al., 2027, in Camerini & Pedalino, 2022). When analysing such content, it is important to distinguish between close and distant peers. Research suggests that exposure to slim and attractive images of distant acquaintances has a more detrimental effect than exposure to similarly slim and attractive images shared by close friends. The main reason for this is that young women encounter numerous idealized images of distant acquaintances on social media (Fardouly & Vartanian, 2015, in Camerini & Pedalino, 2022).

In addition to peers, influencers also provide opportunities for social comparison on social media. Due to the characteristics of these platforms, influencers can communicate with their followers in a hyperpersonal manner (Walther & Whitty, 2021, in Moreno-Padilla et al., 2025), appearing authentic (Martensen et al., 2018, in Moreno-Padilla et al., 2025) and sincere (Audrezet et al., 2020, in Moreno-Padilla et al., 2025), and serving as inspiring role models (Moreno-Padilla et al., 2025). As a result, followers often perceive them as similar to themselves (Metzger et al., 2010, in Moreno-Padilla et al., 2025). This perception enables upward social comparison without the threatening or discouraging qualities typically associated with comparisons to unattainable role models or “superstars” (Lockwood & Kunda, 1997, in Moreno-Padilla et al., 2025). Complementing this, when comparing idealized influencer images with varying levels of popularity, the degree of popularity was found to be irrelevant—only the idealized nature of the image mattered (Lowe-Calverley & Grieve, 2021, in Camerini & Pedalino, 2022). Furthermore, the positive comments accompanying popular images also contribute to the impact of these comparisons (Hu, 2018, in Camerini & Pedalino, 2022; as cited in Moreno-Padilla et al., 2025).

In these social comparison processes, in contrast to traditional media where the focus was primarily on body shape, the emphasis shifts to features such as hair, face, and skin. This is because many people upload portrait photographs to social media platforms, whereas full-body images are less common (Haferkamp et al., 2012, in Fardouly et al., 2015). Moreover, Facebook also provides a space for women to compare themselves with other users not only in terms of physical appearance, but also in domains such as social status or life experiences (Fardouly et al., 2015).

The Purpose of Social Comparison

If an individual's evaluation of their opinions or abilities develops independently of comparison with others and remains unstable, they are likely to engage in comparison when the opportunity arises, which will significantly impact their self-assessment (Festinger, 1954). Through social comparison, individuals may experience pride when they surpass others, admiration for those who excel in certain areas, or alternatively, envy and distress regarding their own circumstances (Crusius & Lange, 2017; Smith, 2000; Steckler & Tracy, 2014, in Corcoran et al., 2022).

To preserve or enhance self-esteem, individuals often engage in comparisons with others who are in less favorable situations during adverse circumstances (Wood & Taylor, 1991, in Burke & Cast, 2002), or they associate exclusively with those who affirm their positive self-concept (Epstein & Morling, 1995, in Burke & Cast, 2002). This practice of downward comparison functions as an effective self-protective mechanism (Wills, 1981, in Corcoran et al., 2022) and may enhance subjective wellbeing (Guyer & Vaughan-Johnston, 2018).

By contrast, upward social comparison is often driven by efforts toward self-improvement. Identifying those who perform better than oneself (Guyer & Vaughan-Johnston, 2018) can provide both motivation and valuable information necessary for personal growth (Bandura, 1986, 1997, in Corcoran et al., 2022). This effect is particularly evident when the standard of comparison is perceived as attainable (Lockwood & Kunda, 1997, in Corcoran et al., 2022). Moreover, upward comparison can also fulfill a self-enhancing (or self-affirming) function when the individual identifies with the target of comparison (Collins, 1996; Taylor & Lobel, 1989; Wood, 1989, in Guyer & Vaughan-Johnston, 2018).

Therefore, it can be inferred that the target of social comparison is partially contingent upon the individual's motivation for engaging in such comparison (Corcoran et al., 2022).

Self-Esteem

There is no comprehensive theory of self-esteem (Burke & Cast, 2002); its primary function is to maintain the sense of self and identity. In this regard, it operates as a shield: it protects the self from external threats and preserves its integrity during stressful periods (Coopersmith, 1967; Newman & Newman, 1987, in Mruk, 2006).

Wells and Marwell (1976, in Mruk, 2006) organized the definitions of self-esteem based on two psychological processes: evaluation and affection. The former emphasizes the cognitive functions associated with self-esteem, whereas the latter highlights the role of feelings. Other approaches distinguish two dimensions of self-esteem—competence and worth (Gecas, 1982; Gecas & Schwalbe, 1983, in Burke & Cast, 2002). Competence-based self-esteem derives from perceived efficacy and depends on the extent to which individuals see themselves as capable and effective. Worth-based self-esteem, by contrast, reflects the degree to which individuals consider themselves valuable or worthy (Burke & Cast, 2002).

Rosenberg (1965, in Mruk, 2006) defined self-esteem as a particular type of attitude based on the perception of one's sense of worth. Thus, self-esteem represents the positive or negative attitude of the self towards itself. Some definitions regard self-esteem as relatively stable over time, whereas others view it as responsive to situational and contextual influences, suggesting that it fluctuates. This aspect of self-esteem has been described as “stable versus unstable” self-esteem (Greenier, Kernis, & Waschull, 1995) or “global versus situational” self-esteem (Harter, 1999, in Mruk, 2006).

Similar to other aspects of the self, self-esteem may change in response to social situations. When an individual's identity is acknowledged or validated, their sense of competence and worth increases, thereby enhancing self-esteem. Consequently, to maintain self-esteem, individuals tend to seek out social contexts and groups that affirm their identities and avoid those that do not (Burke & Cast, 2002). Individuals with high self-esteem are more likely to perceive favorable evaluations as consistent with their positive self-view, and they can more easily buffer negative feedback by discrediting its source or by compensating with other positive aspects of the self (Blaine & Crocker, 1993; Spencer et al., 1993; Steele, 1988, in Burke & Cast, 2002).

In cases where self-esteem is not derived from self-justification and does not serve to mitigate negative evaluations, it emerges as a goal to be attained. It guides behavior and motivates individuals to maintain or enhance their level of self-esteem (Kaplan, 1975; Rosenberg, 1979; Tesser, 1988, in Burke & Cast, 2002). One possible way of achieving this is through a deliberate behavior with the goal to increase temporarily low self-esteem, or by attempting to create

a positive impression in terms of worthiness and competence (Rosenberg, 1990, in Burke & Cast, 2002).

The development of self-esteem is closely linked to self-image, particularly for those individuals for whom self-evaluation represents a central domain (James, 1952, 1980, in Lachowicz-Tabaczek & Śniecińska, 2011; Franchina & Lo Coco, 2018). The cognitive process of social comparison regarding one's body exerts a significant influence on both self-evaluation and self-esteem (Wood, 1989, in Franchina & Lo Coco, 2018), as body image constitutes a fundamental component of self-evaluation (Franchina & Lo Coco, 2018). Another relevant aspect of self-evaluation is sexual self-evaluation (Firoozi et al., 2016, in Chenari et al., 2024), which pertains to sexual self-esteem (Esmalian Khamseh et al., 2020, in Chenari et al., 2024).

Body Image

Body image can cover various aspects of an individual's physical self (such as size, shape, weight, and general appearance) and can also refer to the level of satisfaction or dissatisfaction with these attributes (Cash & Deagle, 1997, in Franchina & Lo Coco, 2018). It is a multidimensional construct composed of perceptual, cognitive, affective, and behavioral components that relate to how individuals perceive and experience their own appearance (Cash, 2004; Cash & Pruzinsky, 2002, in Hrabosky et al., 2009).

Body image consists of four main components: perceptual, emotional, cognitive, and behavioral. The perceptual component refers to how individuals see themselves. Though their perceived body image does not necessarily reflect their actual appearance, rather it represents a perception than an objective reality. The emotional component conveys the feelings individuals have toward their bodies, particularly the degree of satisfaction or dissatisfaction. The cognitive aspect on the other hand involves the thoughts and beliefs individuals hold about their physical selves. Finally, the behavioral component includes the actions individuals might take in response to their body image. For instance, when individuals are dissatisfied with their appearance, they may engage in maladaptive behaviors, (e.g. from excessive exercise to eating disorders, in an attempt to alter their physical appearance (Cash & Pruzinsky, 2002).

Culture and society exert a significant influence on both body image and mental health (Stewardson et al., 2020; Anderson-Fye, 2017, in Abdoli et al., 2024). The relationship between culture and body image shows a great variability across groups as well. In Japan, for example, high levels of body dissatisfaction have been observed among young people, particularly among girls (Brockhoff et al., 2016; Maezono et al., 2018, in Abdoli et al., 2024). Among Chinese and

Korean students, interest in cosmetic procedures shows considerable variability (Ghotbi & Khalili, 2017, in Abdoli et al., 2024). In contrast, in the United States—highlighting cultural differences—dissatisfaction is associated with the emphasis on thinness (Schaefer et al., 2018, in Abdoli et al., 2024).

Across numerous cultures—including Japan, Finland, Argentina, and various African and Arab nations—young women have been found to exhibit higher levels of body image concern. Beyond cultural influences, gender also plays a significant role in shaping these concerns (Forbes et al., 2012; Kim et al., 2015; Maezono et al., 2018; Musaiger, 2015; Parker et al., 1995; Rongmuang et al., 2010, in Abdoli et al., 2024). Gender differences in body image are substantial and women generally display greater vulnerability to body dissatisfaction. This pattern appears consistently across cultures. However, recent studies indicate an increase in body dissatisfaction among men too (Mellor et al., 2014, in Abdoli et al., 2024).

Globally, body image concerns are most prevalent among young adults—a demographic in which personal identity is still developing—and are further intensified by the influence of social media. Social media shapes how individuals perceive their bodies and promotes globalized beauty standards. These uniformised ideals exert influence on young people worldwide (Rounsefell et al., 2020; Jill Thompson et al., 2020, in Abdoli et al., 2024). Supporting this, research conducted in a rural South African context—where Western cultural influence is relatively limited—found a lower drive for thinness among the local population (Caradas et al., 2001; Sanderson et al., 2013; Szabo & Allwood, 2006, in Abdoli et al., 2024).

Positive and Negative Body Evaluation

Body evaluation refers to the overall affective experience an individual has toward their own body (Mendelson et al., 2000, in Franchina & Lo Coco, 2018). It is significantly correlated with, and may influence, the broader construct of self-esteem (Franchina & Lo Coco, 2018).

Positive body image is a multidimensional construct that encompasses much more than satisfaction with one's body or evaluation of physical appearance. It includes body appreciation, acceptance, and love, as well as a focus on functionality—that is, acknowledging what the body is capable of and represents, including its unique characteristics. Moreover, it involves feeling comfortable and at ease in one's body, even in the absence of complete satisfaction with all of its aspects (Tylka & Wood-Barcalow, 2015).

Body neutrality encompasses several elements of positive body image, including body appreciation, acceptance, functionality, and body image flexibility (Wood-Barcalow et al., 2024, in Lawrence & Seekis, 2025). This

approach promotes a balanced perspective toward the body, recognizing its strengths and limitations, and focusing on a non-judgmental viewpoint without fixation on perceived negatives (Lawrence & Seekis, 2025). Further core elements of body neutrality include being non-judgmental (Aubrey et al., 2024, in Lawrence & Seekis, 2025) and utilizing self-compassion (Lawrence & Seekis, 2025). Individuals with higher levels of self-compassion tend to hold healthier and more positive body image perceptions, as they are less prone to harsh self-criticism, negative self-judgment, and the internalization of appearance ideals (Turk & Waller, 2020, as cited in Lawrence & Seekis, 2025).

Several approaches and methods exist to maintain and enhance positive body image. One such approach is adopting a broader conceptualization of beauty—the belief that many forms of appearance can be beautiful, regardless of whether those features are fixed (e.g., weight, height) or modifiable (e.g., personal style). Individuals who embrace a broad definition of beauty may draw on internal qualities more, such as confidence and personality, when evaluating their own and others' beauty. They are also more likely to recognize beauty in their own traits, even when these do not conform to sociocultural ideals. Thus, a broad conceptualization of beauty extends beyond perceiving beauty in others and can be internalized in self-perception as well (Tylka & Wood-Barcalow, 2015).

Additionally, through the body-protective filtering of information, individuals can selectively accept messages that align with a positive body image while might reject those that may carry threats toward it. However, this filtering process is not entirely reliable, as even individuals with positive body image may remain vulnerable to body-related threats, especially during periods of heightened sensitivity (e.g., fatigue, stress) (Tylka & Wood-Barcalow, 2015).

In contrast, body dissatisfaction may develop when women frequently compare themselves with others (Keery et al., 2004; van den Berg et al., 2002; Vartanian & Dey, 2013, in Fardouly et al., 2015). Negative self-evaluation and feelings of inferiority or unattractiveness may also emerge in relation to one's physical characteristics, a phenomenon that can be conceptualized as body-image shame (Duarte, Pinto-Gouveia, Ferreira, & Batista, 2015; Gilbert, 2002, in Dias et al., 2018). Body-image shame is typically observed among individuals who distance themselves from both self-directed and other-directed compassion. This stance is strongly influenced by a self-critical attitude (Dias et al., 2018). Body-related shame and a self-critical attitude may contribute to negative self-evaluation and to maladaptive defensive behaviors such as body-image avoidance or body concealment (Duarte et al., 2015; Duarte & Pinto-Gouveia, 2017, in Dias et al., 2018).

Pathological Negative Body Evaluation

Pathological body image is underpinned by disturbances across multiple dimensions of body perception (Cash & Deagle, 1997; Fairburn & Harrison, 2003; Phillips, 1991, in Hrabosky et al., 2009). Body image disturbance is a core feature of eating disorders such as anorexia nervosa and bulimia nervosa, as well as body dysmorphic disorder (Hrabosky, 2009). The manifestation of body dysmorphic disorder is heterogeneous (Veale, 2004), with affected individuals experiencing anxiety, excessive concern, or harmful behaviors in response to perceived or minor flaws in their appearance (APA, 1994, in Hrabosky et al., 2009).

The etiology of body dysmorphic disorder is associated with heightened self-evaluation of the body, cognitive distortions in information processing, predisposition to a dysphoric body image, and exposure to media (Ip & Jarry, 2008, in Hrabosky et al., 2009). The condition is frequently chronic and is accompanied by impairments in psychosocial functioning and reductions in quality of life (Grant et al., 2002; Phillips et al., 2005, 2006, in Hrabosky et al., 2009). Research indicates that among specific physical features, the greatest dissatisfaction is typically observed regarding the face and hair (Phillips et al., 1993, in Hrabosky et al., 2009), while concerns about body weight or shape are less prominent in individuals with body dysmorphic disorder (Rosen & Ramirez, 1998, in Hrabosky et al., 2009). Compared to other psychopathologies, affected individuals focus more extensively on self-evaluation, which is generally more negative due to their physical appearance, and they exhibit higher levels of avoidance behaviors and appearance-management activities (Hrabosky et al., 2009).

According to the research findings presented in The Facebook Files, Instagram worsens body image issues in one out of three teenage girls. This effect is primarily attributed to unhealthy social comparisons taking place on the platform (Horwitz et al., 2021, in Camerini & Pedalino, 2022). Furthermore, findings from a longitudinal study conducted with female university students indicated that maladaptive Facebook use—including seeking negative social evaluation and engaging in general social comparisons—together with body dissatisfaction played a mediating role in the relationship between maladaptive Facebook use and heightened overeating (Smith et al., 2013, as cited in Fardouly et al., 2015).

Several specific subtypes of body dysmorphic disorder are associated with online applications. Snapchat dysmorphia has emerged in response to social media platforms such as Snapchat and Instagram. Both platforms offer filters that allow users to modify their facial features, including skin tone, lips, wrinkles, and other aspects of their appearance. Plastic surgeons have reported patients requesting interventions to make their faces resemble filtered images, giving rise to the concept of Snapchat dysmorphia (Mejias & Ramphul, 2018).

Zoom dysmorphia was identified during the COVID-19 pandemic, when a significant portion of workplace meetings took place via video calls, often requiring individuals to observe themselves for prolonged periods on screen. Careful scrutiny of their appearance led many individuals to develop a negative body image due to the perception of minor imperfections (Pino, 2021).

Sexual Assertiveness

Sexual assertiveness is an important construct within human sexuality (Santos-Iglesias & Sierra, 2010, in Alvarado et al., 2020). According to Moyano et al. (2021, in Chenari et al., 2024), sexual assertiveness refers to an individual's effort to exercise their rights or to fulfill internal expectations within a defined time frame through communication with a sexual partner. Similarly, Azmoude et al. (2016, in Chenari et al., 2024) define sexual assertiveness as the ability to express one's own sexual needs, feelings, and thoughts without guilt or anxiety, and able to negotiate sexual relations with a partner, or assert one's own sexual rights without violating those of the other person.

A variety of gender-based norms can be observed in relation to sexuality and sexual assertiveness. Men and women tend to express their sexual thoughts in different ways (Santos-Iglesias et al., 2013, in Alvarado et al., 2020). Research indicates that men and women, in particular, face strong societal expectations to conform to traditional gender roles. Women are also expected to develop skills to avoid or reject sexual advances (Bourdeau, Thomas, & Long, 2008; Manago, Ward, & Aldana, 2015; Santos-Iglesias et al., 2013, in Alvarado et al., 2020).

Cultural context also plays a significant role in shaping sexual assertiveness. Studies have shown that individuals in individualistic societies tend to demonstrate higher levels of sexual assertiveness compared to those in collectivist societies, where rigid gender stereotypes are more strongly reinforced, as seen for example in many Latin American cultures (Alvarado et al., 2020).

Sexual assertiveness has been shown to influence overall mental health, satisfaction with interpersonal relationships, self-expression, confidence, and self-esteem (Boket et al., 2016, in Chenari et al., 2024). Moreover, greater body satisfaction has been associated with higher sexual assertiveness (Chae & Lee, 2021). Conversely, a negative body image during sexual activity and dissatisfaction with specific body parts have been linked to lower sexual assertiveness, self-efficacy, and self-confidence, particularly among college women (Meston et al., 2009). The relationship between body evaluation and sexual assertiveness also manifests through social media use. Facebook use can increase body awareness and influence sexual assertiveness, either positively, by enhancing an individual's self-esteem, or negatively, by reinforcing body-related shame (Manago et al., 2015, in Alvarado et al., 2020).

Sexual Self-Esteem

Sexual self-esteem has been defined as a general tendency of individuals to provide themselves with nonspecific, internal reinforcement for their capacity to engage in sexual relationships with another person (Papini & Snell, 1989). It encompasses the totality of affective reactions that arise from the subjective evaluation of one's own sexual thoughts, feelings, and behaviors (Chenari et al., 2024). Sexual self-esteem does not necessarily reflect a realistic self-assessment; rather, it often mirrors an individual's past experiences related to sexuality (Papini & Snell, 1989). The concept includes the value individuals ascribe to their sexual identity and sexual acceptability (Esmalian Khamseh et al., 2020, in Chenari et al., 2024).

Five dimensions of sexual self-esteem have been identified. Skills and experience refer to the extent to which individuals are able to enjoy their partner's advances and the opportunities they have for sexual interactions. Attractiveness concerns individuals' feelings about their own body and sexual appeal. Control reflects the degree to which individuals feel in command of their sexual thoughts, emotions, and behaviors. Moral judgment pertains to the extent to which individuals consider their sexual activities morally acceptable. Finally, adaptiveness encompasses the degree of satisfaction individuals experience in their sexual relationships and the extent to which these relationships meet their goals and needs (Brown et al., 2022).

A relationship has been identified between sexual self-esteem and global self-esteem. Moreover, individuals with higher levels of sexual self-esteem are significantly more likely to exhibit greater sexual assertiveness and sexual satisfaction (Oattes & Offman, 2007, as cited in Ménard & Offman, 2009; Leidger et al., 2022; Esmalian Khamseh et al., 2020; and Beisert et al., 2020, as cited in Chenari et al., 2024). Conversely, low sexual self-esteem may negatively affect one's self-evaluation, life satisfaction, ability to experience pleasure, interpersonal reciprocity, and capacity to establish intimate relationships (Bridge et al., 2022, in Chenari et al., 2024).

Several factors have been identified as potentially detrimental to sexual self-esteem, including physical disability (Mona et al., 2000; Potgieter & Khan, 2005, in Ménard & Offman, 2009), illness (Muehrer et al., 2006; Volker & Harmon, 1998, in Ménard & Offman, 2009), infertility (Andrews et al., 1991, in Ménard & Offman, 2009), childhood sexual abuse (Van Bruggen, Runtz, & Kadlec, 2006 in Ménard & Offman, 2009), and adult sexual coercion or victimization (Shapiro & Schwarz, 1997 in Ménard & Offman, 2009).

Sexual Beliefs and Dysfunctions

Individuals' perceptions of sexuality are influenced by culture, religion, and the value systems of their communities (Aker et al., 2019). Knowledge regarding heterosexual intercourse is partly based on historical information passed down as fact, as well as on incorrect beliefs, misconceptions, and myths related to intercourse, female orgasm, male premature ejaculation, or female frigidity (Elberdin, 1999, in Guardiola et al., 2023). These beliefs continue to appear in the media, conveying unrealistic representations of sexuality (Guardiola et al., 2023). In addition, the culturally rooted concept of “machismo”, originating from Spanish-speaking contexts, glorifies traditional masculinity, emphasizes male dominance and female subordination, and upholds conventional gender roles (Hirai et al., 2018, in Guardiola et al., 2023). A significant portion of these learned and internalized beliefs is dysfunctional (Aker et al., 2019). False beliefs, myths, and misconceptions, as well as attitudes associated with “machismo”, create expectations in sexual relationships that are impossible or difficult to meet, leading to feelings of failure, inadequacy, guilt, and the belief that one may have a sexual dysfunction (Guardiola et al., 2023).

Sexual dysfunction represents one of the most common classes of disorders, affecting up to 46% of the general population (Simons & Carey, 2001, in Barth et al., 2013). It is associated with reduced sexual and marital satisfaction, as well as diminished quality of life (Althof et al., 2005; Laumann, Paik, & Rosen, 1999; Read, King, & Watson, 1997, in Barth et al., 2013). Psychological factors play a crucial role in the development and maintenance of sexual dysfunction (Althof et al., 2005, in Barth et al., 2013).

Among women experiencing sexual dysfunction, higher prevalence of sexual beliefs has been reported, along with convictions related to age and body image. These women tend to consider physical appearance a central factor for sexual satisfaction (Nobre & Pinto-Gouveia, 2006). Furthermore, an association has been found between sexually avoidant behavior and negative body image. Women with higher body-image self-consciousness are more likely to avoid sexual activity due to fear and anxiety (Wiederman, 2000, in Cioe & La Rocque, 2011). Negative body-related attitudes are also associated with higher sexual aversion among women (Davis et al., 2005, in Cioe & La Rocque, 2011). This may be explained by the impact of negative body image on sexual enjoyment, leading to avoidance of sexual activity, and lower self-esteem (Wiederman, 1996, in Cioe & La Rocque, 2011).

Among the risk factors for the development of sexual distress related to sexual function (SDRSF)—which is pivotal in diagnosing sexual dysfunction—are personality traits such as anxiety and perfectionism, as well as body disconnection, including negative body image, and low self-esteem (Manão et al., 2024).

The Effects of Social Media and Filter Use

In particular, image- and text-based platforms such as Instagram enable individuals to construct self-representations that highlight ideal characteristics while concealing imperfections (Walther & Whitty, 2021, in Moreno-Padilla et al., 2025). Similarly, Facebook allows users to edit their personal profiles in a magazine-like manner and to carefully curate how they present themselves, creating an idealized version of the self (Manago et al., 2008; Zhao et al., 2008, in Fardouly et al., 2015).

Individuals frequently share only their successes and the positive aspects of their lives on social media, thus platforms present a distorted, positively biased view of social reality (Reinecke & Trepte, 2014, in Corcoran et al., 2022). Influencers especially capitalize on these affordances by carefully selecting, editing, and displaying highly polished images that align with societal ideals of beauty, fitness, and lifestyle (Walther & Whitty, 2021, in Moreno-Padilla et al., 2025). Users who spend more time on Facebook are more likely to believe that others are happier and lead better lives than they do—especially in the case of users they do not know personally and interact with only on the platform (Chou & Edge, 2012, in Fardouly et al., 2015).

This is supported by an interview study conducted with 24 adolescent girls, which found that in an effort to gain approval from their followers, they tried to meet assumed expectations and preferences, presenting a highly selective version of themselves (Chua & Chang, 2016, in Camerini & Pedalino, 2022). Among adolescent girls and young women, self-representation tends to focus heavily on physical appearance and beauty ideals, and the main motivation behind such self-presentation is the desire to gain attention for their posts, especially from peers (Yau & Reich, 2019, in Camerini & Pedalino, 2022).

As in traditional media, exposure to idealized images and profiles on Facebook can negatively affect women's self-esteem and general wellbeing. Women may examine others' Facebook profiles to compare themselves with them (Haferkamp et al., 2012, in Fardouly et al., 2015). They may also accept the ideals presented on these platforms and adopt them as personal goals, attempting to compete with them unsuccessfully (Rousseau et al., 2017, in Franchina & Lo Coco, 2018). Additionally, for individuals dissatisfied with their appearance, visiting social media sites may serve to reinforce pre-existing negative self-beliefs. Exposure to seemingly perfect appearances and comparing themselves to these images may maintain their negative body image (Franchina & Lo Coco, 2018). Furthermore, individuals who frequently share content about themselves and tend to edit it are more prone to unhappiness and to having a negative self-concept and body image (Vogel, 2014, in Moninka & Permatasari, 2020; McLean et al., 2015, in Franchina & Lo Coco, 2018).

In addition to exposure to idealized and filtered images, the interactive features of social media platforms also influence individuals' body evaluations. Both positive and negative comments or messages about one's body can have harmful effects (Herbozo & Thompson, 2006; Barker & Galambos, 2003; Ricciardelli et al., 2000, in Franchina & Lo Coco, 2018). Regardless of their content, such comments remind individuals that others are evaluating their appearance (Herbozo & Thompson, 2006, in Franchina & Lo Coco, 2018). In a study demonstrating the significance of multiple social comparisons, the number of people an individual was connected to on a social media platform predicted body-related concerns, independent of the amount of time spent on the platform (Tiggemann & Slater, 2017, in Franchina & Lo Coco, 2018).

However, social media use may also have positive effects. Individuals often create a positive, aspirational self-image on social media and willingly share pleasant life events to make a good impression on others, which can serve as inspiration or encouragement (Moningga & Permatasari, 2020). Moreover, social media provides a wide-reaching platform for the body neutrality movement. TikTok—the most popular social media application among women aged 18–24 (Statista, 2023, in Lawrence & Seekis, 2025)—enables users to engage with content promoting body positivity through the body neutrality movement, thereby fostering healthier self-perception (Lawrence & Seekis, 2025). Content creators on the platform present body neutrality with natural and unedited content, sharing personal experiences of how body neutrality improved their body image and offering practical advice on how others can apply this perspective (Aubrey et al., 2024; Hallward et al., 2023, in Lawrence & Seekis, 2025). Emerging findings indicate that exposure to body neutrality-related content may promote body functionality, body satisfaction, and positive mood among young women (Seekis & Lawrence, 2023a, 2023b, in Lawrence & Seekis, 2025).

Conclusion

This review of the literature explored the effects of social media use and image-editing filters—primarily through the process of social comparison—on self-concept, self-esteem, body image and sexual self-esteem.

Self-esteem represents an evaluative component of the self-concept and reflects an individual's perception of personal worth and competence. Body image is a fundamental element of self-esteem, encompassing the cognitive and affective representation a person holds about their physical appearance. According to research distorted or negative body image can reduce self-esteem. The process of social comparison directly influences both body image and self-esteem. This is especially valid in our current social media filled environment, which facilitates social comparisons to idealized images presented on social

media. Particularly upward comparisons, may lead to negative self-evaluations and body dissatisfaction. Sexual self-esteem constitutes another essential aspect of self-esteem and it refers to the affective responses associated with an individual's sexual thoughts, feelings, and behaviors. This construct is closely related to the global self-esteem. When one's sexual self-esteem is low, general self-evaluations may be negatively affected as well.

The reviewed literature underscores the central role of social comparison in the development and shaping of self-concept, self-esteem, and body image. Moreover, significant associations indicate that the idealization pressures promoted by social media may also extend to the domain of sexual self-esteem.

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Depression Symptoms and Suicide Risk: The Role of Psychosocial Factors in Males and Sexual Minority Groups

Abstract

The study explores the relationship between depressive symptoms, suicide risk, masculine norms, and help-seeking attitudes among men and sexual minority groups. Although men have higher suicide rates, their depressive symptoms often differ from traditional diagnostic patterns, leading to underrecognition and undertreatment. Sexual minority individuals, particularly sexual minority men, face elevated vulnerability due to minority stress, stigma, and conflicts related to gender norms. A total of 184 adults participated in the online survey, completing validated measures of masculine norm conformity, depression, hopelessness, suicidal cognitions, sexual identity, and help-seeking attitudes. Using a funnel-model analytical approach, the study examined differences by sexual orientation and identified subgroups at highest risk. Results showed that sexual minority participants reported significantly higher hopelessness and suicidal cognitions than heterosexual participants. Among all subgroups, sexual minority men with both traditional and male-typical depressive symptoms exhibited the highest suicide vulnerability and the lowest help-seeking attitudes. Negative sexual identity significantly predicted suicidal cognitions. The findings highlight that sexual minority men constitute the most vulnerable group, emphasizing the need for targeted mental health interventions, improved recognition of male-typical depressive symptoms, and stigma-reducing strategies to increase help-seeking.

Keywords: male depression symptoms; suicide risk; sexual minority; help-seeking

Introduction

According to the World Health Organization (2025) data, over 280 million people globally suffer from depression, which significantly contributes to suicide, claiming over 720,000 lives annually. Hungary has the third highest suicide mortality rate in the European Union, roughly double the EU average (KSH, 2019; KSH, 2020).

Men's depression often manifests through externalizing symptoms, such as anger, somatic symptoms or substance abuse, divergent from classical symptomatology typically observed in women (Cavanagh et al., 2017; Möller-Leimkühler et al, 2004). This discrepancy leads to "male depression" going unrecognized and untreated. Their reluctance to seek help stems from societal norms of masculinity, which pressures them to suppress emotional expression.

The representation of depression and suicide risk factors exhibit variation across social groups, heavily influenced by gender and sexual identity. Men are generally less inclined to report depressive symptoms or seek psychological help, while women, although diagnosed more often, actively pursue help (Doblyte & Jiménez-Mejías, 2017). Additionally, individuals from sexual minority groups experience higher incidents of depression and suicidal thoughts, faced with extra challenges regarding discrimination and stigma when seeking help (McDermott et al, 2018; Meyer et al, 2015).

This research investigates these complex interrelations to inform and improve mental health interventions. By exploring the connections between adherence to masculine norms, suicide risk, and help-seeking behaviors, the study aims to clarify how these dynamics shape depressive symptomatology across gender and sexual identities. The study employs internationally validated questionnaires to assess male depressive symptoms, aiming to facilitate early detection and prevention, with a particular focus on at-risk male populations and sexual minorities.

The Role of Psychosocial Factors

Depression displays notable gender differences, with studies indicating that unipolar depression prevalence is about twice as high in women compared to men. While women express depression through traditional symptoms, men are often diagnosed later or not at all due to atypical symptoms that do not conform to conventional diagnostic criteria. Recent revisions, like the ICD-11's inclusion of irritability, indicate progress, but stigma and men's reluctance to seek help hinder proper recognition and treatment of male depression (Østergaard, 2023).

Men and women learn societal norms and ideologies that shape their attitudes and behaviors regarding gender roles. Key factors in male role socialization include male role conflict and masculinity ideology, which can negatively affect men's wellbeing by internalizing the view that they must be tough and competitive. Various sociocultural and socioeconomic factors also influence gender role expectations (Mahalik et al., 2003). Research indicates a growing focus on how masculine norms relate to depression, highlighted by two frameworks: the dysfunctional stress paradigm, which suggests violations of these norms have negative psychological impacts, and the adherence-to-gender-norms

theory, which assesses how conformity to these norms affects mental health and responses to depression (Iwamoto et al., 2018).

The theoretical models addressing these issues suggest that adherence to traditional masculine norms can result in psychological stress and affect help-seeking behaviors, contributing to a cycle of untreated depression. For instance, the Gotland Study in Sweden highlighted that, despite improved recognition of depression in primary care, men continued to experience unchanged suicide rates compared to women, illustrating a disconnect in accessing mental health care (Seidler et al., 2016; Rutz et al., 1995).

Traditional masculinity significantly impacts the development of depressive symptoms and suicide risk. Baumeister's escape theory and Pollack's "male gender role strain" emphasize that rigid gender roles hinder men's emotional expression, increasing vulnerability (Coleman, 2015; Griffin et al., 2022). Hegemonic masculinity ideals, like emotional restraint, competitiveness, and physical strength, pressurize young boys, negatively affecting emotional regulation. The "ideation-to-action" framework suggests that men's socialization increases the "acquired capability" for suicide, linking adherence to traditional masculinity directly to suicidal thoughts and behaviors (Houle et al., 2008; King et al., 2020).

Sexual Minorities

Research demonstrates that mental health outcomes for sexual minority men are markedly worse than those of heterosexual men, with meta-analyses indicating they are two to three times more likely to experience major depressive episodes (King et al., 2008; Plöderl & Tremblay, 2015). Additionally, suicidal behavior is disproportionately high, as highlighted by Sexual minority men are four times more likely to attempt suicide than their heterosexual counterparts, with suicide attempt prevalence ranging from 12% to 19% for sexual minorities against 3% to 4% for heterosexuals (Haas et al., 2011). This elevated risk is particularly pronounced among sexual minority adolescent boys, who are five times more likely to attempt suicide compared to heterosexual peers (Stone et al., 2014), a trend that continues into adulthood (Blosnich et al., 2016).

The interplay between adherence to masculine norms and mental health is complex, with many LGBTQ individuals facing internal conflicts between their sexual identities and traditional male roles. This tension, known as masculinity stress (Sanchez et al., 2010), is linked to heightened depressive and anxiety symptoms. Gay and bisexual men who strongly adhere to masculine norms report greater psychological distress due to the stress related to failing to meet these expectations, identified as a significant risk factor for depression within this demographic (Pachankis et al., 2020).

Many gay men embody traits and behaviors associated with effeminacy and gender nonconformity, particularly during childhood. However, most tend to “defeminize” in adolescence due to societal pressures and stigmatization, with only a small subset remaining gender-nonconforming into adulthood, often at the cost of their psychological wellbeing. Despite a historical appreciation for gender nonconformity in gay culture, anti-effeminacy prejudice is prevalent among gay men. This prejudice is linked to two factors: hegemonic masculinity ideology, which values masculinity over femininity, and masculinity consciousness, relating to self-perception and awareness of masculinity (Taywaditep, 2001).

The intersection of masculine norms and sexual minority status creates a “double bind” for men. While striving to meet traditional masculine roles to avoid stigma, they often experience higher psychological distress due to homophobic undertones in these norms. Overconformity to masculinity is linked to increased depression and anxiety, as identified by research (Fischgrund et al., 2012; Parent et al., 2018). In contrast, sexual minority men who reject traditional masculine ideals generally report better psychological wellbeing, attributed to emotional openness and seeking support (Gonzalez et al., 2021). Despite their higher likelihood of accessing mental health services, many remain untreated due to adherence to norms that discourage help-seeking (Cochran et al., 2003; Vogel et al., 2014). Understanding the influence of sexual orientation on mental health and suicidal behaviors is critical for developing effective interventions, as sexual minority individuals often have unique psychological needs (Rodrigues & Pereira, 2021).

Method

The present study aimed to explore the development of depressive symptoms and suicide risk, focusing on gender differences and sexual identity, particularly on how masculine norms and help-seeking attitudes were associated. The aim of the study was not to identify clinically diagnosed depressive episodes, but rather to gain a deeper understanding of the development of depressive symptoms. We highlighted the increased vulnerability of sexual minority groups, who faced heightened risks stemming from social rejection, stigma, and conflicts related to gender norms.

A major goal of the study was to map how adherence to masculine norms contributed to the manifestation of male-typical depressive symptoms. Additionally, we investigated the relationship between help-seeking attitudes and depression, especially among sexual minority groups.

Data collection for the study was conducted online via social media platforms, with voluntary participation and guaranteed anonymity for respondents. The

questionnaire ensured informed consent. Participants provided demographic and mental health-related information before answering a question about their sexual orientation, which determined the subsequent questionnaire pathway.

In the study, participants who did not identify as heterosexual, the Lesbian, Gay, and Bisexual Identity Scale (LGBIS) was administered regardless of gender. Following this, male participants completed the Conformity to Masculine Norms Inventory (CMNI-30). After this, the participants completed the following scales: first, the Male Depression Risk Scale (MDRS-22-H) was completed, followed by the Beck Depression Inventory (BDI). Suicidal risk was evaluated with the Beck Hopelessness Scale (BHS) and the Brief Suicide Cognitions Scale (BSCS). Participants concluded with the Mental Help-Seeking Attitudes Scale (MHSAS) and the General Help-Seeking Questionnaire (GHSQ) to evaluate their attitudes towards seeking help.

Table 1 *Instruments used in the research (Source: created by the authors)*

Conformity to Masculine Norms Inventory (CMNI-30; Levant et al., 2020)
Lesbian, Gay, and Bisexual Identity Scale (LGBIS; De Oliveira et al., 2012)
Male Depression Risk Scale (MDRS-22; Rice et al., 2013)
Beck Depression Inventory (BDI; Beck et al., 1988)
Beck Hopelessness Scale (BHS; Beck, 1988)
Brief Suicide Cognitions Scale (B-SCS, Rudd & Bryan, 2021)
Mental Help-Seeking Attitudes Scale (MHSAS; Hammer et al., 2018)
General Help-Seeking Questionnaire (GHSQ; Tulio & Velaquez, 2014)

In the study, adults aged 18 years and older from the Hungarian population participated in data collection conducted between mid-November 2024 and early April 2025. A total of 184 participants completed the questionnaire, with a mean age of 28.5 years (SD = 10.9; median = 24; range: 18–77).

The gender distribution included 73 men (mean age = 31.44 years; SD = 11.37) and 111 women (mean age = 26.58 years; SD = 10.2). In terms of sexual orientation, there were 43 heterosexual men (mean age = 33.7 years; SD = 13.13), 30 sexual minority men (mean age = 28.17 years; SD = 7.27), 84 heterosexual women (mean age = 27.36 years; SD = 11.2), and 27 sexual minority women (mean age = 24.15 years; SD = 5.61).

Table 2 *Age Characteristics by Gender and Sexual Orientation (Source: created by the authors)*

Gender and Sexual Orientation	N	Mean Age	SD
Heterosexual men	43	33.72	13.13
Sexual minority men	30	28.17	7.27
Heterosexual women	84	27.36	11.2
Sexual minority women	27	24.15	5.61

Study

In the first phase of the analysis, we conducted descriptive statistical examinations of the data, followed by an assessment of the reliability and normality indicators of the questionnaires. This step was particularly important, as not all scales had an available Hungarian adaptation.

Throughout the analysis, we applied a funnel-model approach that we had developed for this study. Our aim was to move from a broad, general level toward increasingly specific analyses, thereby gradually narrowing the focus until the most vulnerable group could be identified. This approach enabled us to determine which subgroup within the sample exhibited the highest risk in terms of depressive symptoms and suicide vulnerability.

During the evaluation of internal consistency, Cronbach's alpha coefficients were calculated to assess the reliability of questionnaires and scales used in the study. Reliability values between 0.60 and 0.70, and those exceeding 0.70, were deemed acceptable indicators of measurement reliability. The scales demonstrated adequate internal consistency, making them suitable for further analysis. Additionally, the normality of the data was assessed using the Shapiro–Wilk test, which informed the choice between parametric and non-parametric statistical procedures for subsequent analyses. In this study, only partial results from the our research are presented.

Differences by Sexual Orientation

We conducted the analysis based on sexual orientation by comparing heterosexual participants ($N = 127$) with those who identified as belonging to a sexual minority ($N = 57$). Scores on the Male Depression Risk Scale, the Beck Depression Inventory, the Beck Hopelessness Scale, the Brief Suicide Cognitions Scale, the Mental Help-Seeking Attitudes Scale, and the General Help-Seeking Questionnaire were examined across the two sexual orientation groups. Since our data did not follow a normal distribution, we used the non-parametric Mann–Whitney test for the comparisons.

Scores on adherence to masculine norms (CMNI) were higher among sexual minority participants ($M = 47.56$) than heterosexual participants ($M = 32.80$), but this difference was not statistically significant ($U = 3082.00$, $p = 0.0688$), indicating a non-significant trend. In contrast, a significant difference in hopelessness was observed (BHS) ($U = 2259.00$, $p < 0.001$), with sexual minority participants reporting a higher mean score ($M = 8.26$) compared to heterosexual participants ($M = 4.91$), suggesting an elevated risk of suicidal vulnerability among the former.

Additionally, suicidal cognitions (B-SCS) showed significant differences ($U = 2849.50$, $p = 0.0194$), where sexual minority participants had higher scores

($M = 11.18$) compared to their heterosexual counterparts ($M = 9.49$). Conversely, no significant difference emerged in help-seeking attitudes (MHSAS) ($U = 3493.50, p = 0.7487$), implying that attitudes toward seeking psychological help were consistent across sexual orientations.

Figure 1 Differences in Beck Hopelessness Scale (BHS) total scores by sexual orientation (Source: created by the authors)

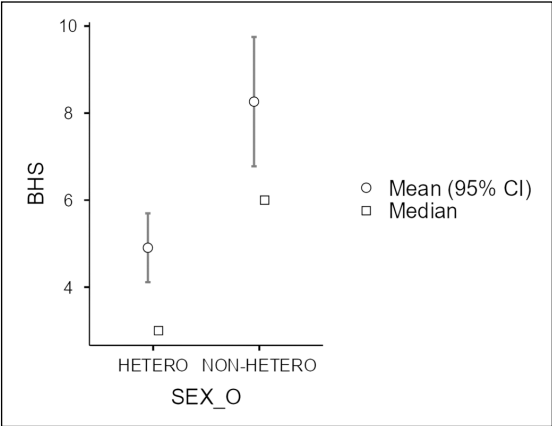
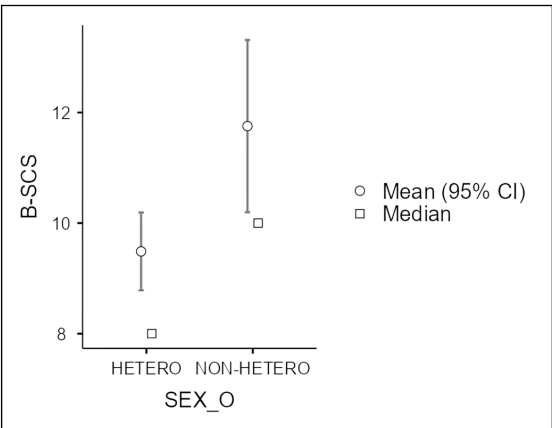


Figure 2 Differences in Brief Suicide Cognitions Scale (B-SCS) total scores by sexual orientation (Source: created by the authors)



Help-seeking intentions revealed that heterosexual participants were significantly more willing to seek help for emotional problems ($M = 37.1$) than sexual minority participants ($M = 33.7$), with a significant difference noted ($U = 2921, p = 0.037$). A similar trend was observed for relationship or family issues, where heterosexual participants scored higher ($M = 34.8$) compared to sexual minority participants ($M = 31.7$) with a significant difference ($U = 2942, p = 0.043$).

In contrast, no significant difference in help-seeking for work-related problems was found, though heterosexual participants exhibited slightly higher willingness ($M = 34.4$) than sexual minority participants ($M = 32.4$), with this difference not reaching statistical significance ($U = 3158$, $p = 0.167$). Overall, the findings highlight that sexual minority individuals tend to show lower help-seeking tendencies, particularly concerning emotional and interpersonal challenges.

Identification of the Most Vulnerable Group

In a detailed analysis, subgroups were created based on gender, sexual orientation, and categories of depression to assess suicide risk and help-seeking willingness. Statistical analysis was conducted using Kruskal–Wallis tests due to the non-parametric nature of the data.

The analysis of hopelessness scores (BHS) indicated significant differences among the groups ($H = 61.91$; $p < 0.001$). Notably, the male / sexual minority / traditional and male-type depressive symptoms group recorded the highest mean score ($M = 13.00$), suggesting they are at an exceptionally high risk for suicide. In contrast, the lowest scores were seen in the male / heterosexual / no-depression group ($M = 3.05$).

A similar trend was noted for suicidal cognitions (B-SCS), where significant differences were again present ($H = 41.21$; $p < 0.001$). The group reflecting male / sexual minority / traditional and male-type depressive symptoms again exhibited the highest mean score ($M = 27.08$), while lower scores were found in the no-depression categories.

Help-seeking attitudes varied significantly across groups as well ($H = 17.35$, $p = 0.004$). Women / heterosexual / traditional-depression symptoms participants demonstrated the most positive help-seeking attitudes ($M = 48.14$), whereas the lowest attitudes were recorded in the male / sexual minority / traditional and male-type depressive symptoms group ($M = 30.17$).

These findings substantiate the notion that non-heterosexual men displaying both traditional and male-type depressive symptoms constitute the most vulnerable subgroup within the studied population.

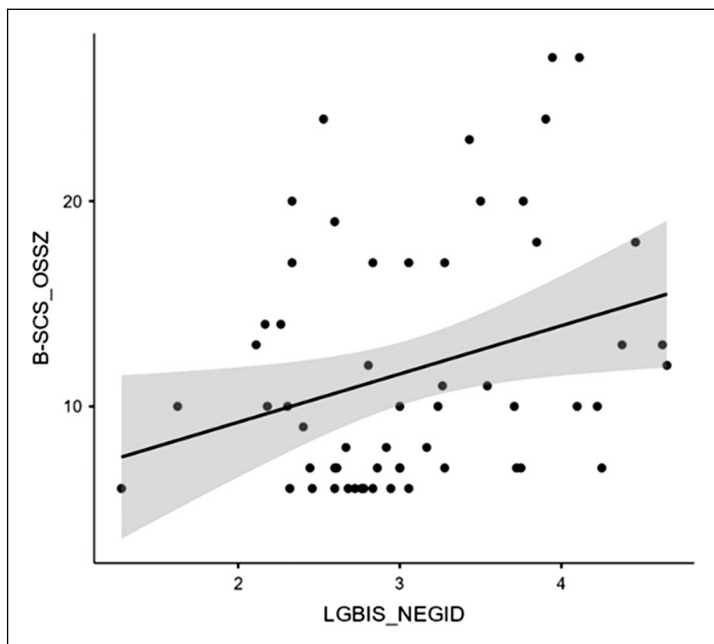
Examining the Underlying Relationships

In the linear regression analysis, we investigated how strongly negative sexual identity predicts suicidal cognitions among sexual minority participants ($N = 57$).

The findings showed that the Negative Identity subscale of the LGBIS was a significant positive predictor of suicidal thoughts ($\beta = 2.35$; $p = 0.025$). Nevertheless, the model accounted for only a small proportion of the variance

($R^2 = 0.088$). This indicates that, while negative sexual identity significantly contributes to higher levels of suicidal cognitions, it alone is insufficient for accurately predicting suicide risk.

Figure 3 *The relationship between negative sexual identity and suicide risk (Source: created by the authors)*



Conclusions

The study highlights a significant correlation between depressive symptoms, suicide risk, and help-seeking behaviors, particularly among men and sexual minority groups. It reveals that men's depressive symptoms often differ from traditional profiles, with externalizing behaviors such as irritability being prevalent. This “masked” depression complicates both recognition and treatment, often indicating higher suicide risk.

Among sexual minority men, there is a higher prevalence of depressive symptoms and suicidal thoughts, supporting the minority stress theory which attributes this to social stigma and discrimination. Negative experiences regarding sexual identity significantly foster hopelessness and inhibit help-seeking, driven by self-stigma and internalized shame.

The funnel-structured analytical model of the study revealed that sexual minority men are the most vulnerable group, exhibiting high hopelessness and

diminished help-seeking attitudes. The results call for targeted prevention strategies that go beyond classical diagnostic criteria, advocating for mental health professional training and campaigns to normalize help-seeking, especially among minority populations.

The study's limitations include a non-representative sample and a cross-sectional design, suggesting the need for larger, more inclusive studies. The conclusions emphasize the importance of understanding social and identity-related factors in treating mental disorders among men.

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How Physical Attraction Influences Fan Behaviour in Relation to Parasocial Attraction

Abstract

Our research aimed to examining the phenomena that could potentially motivate fan behaviour all in relation to parasocial attachment. This one-sided perceived intimacy developed through media exposure mirrors the patterns of interpersonal relationships. Its emergence is influenced by interpersonal attraction (physical, social and task related), empathy and perceived homophily. Besides that, it is proven to be part of fan behaviour. Building on this connection, we wanted to explore how these constructs that appear in the context of parasocial attachment (interpersonal attraction, empathy, perceived homophily) influence the evolvement and intensity of fan behaviour. Though we examined all the mentioned, this writing will focus on the results related to attraction, mainly physical attraction. The research was executed both in Hungarian and in English by a package of previously validated questionnaires and self-formulated questions distributed on social media platforms. It focused on individuals older than eighteen years old who are a fan of an existing, not fictional person. We had 214 participants whose average age was 23 years. Based on the results it can be concluded that the phenomena influencing parasocial attachment correlated with the intensity of fanship. Despite the proven connections, neither was able to predict it and thus give a fulfilling explanation. Fanship is therefore a complex and multi-layered construct, a change of attitude that cannot be solely explained by interpersonal constructs. Interpersonal attraction, especially physical attraction though, had an interesting and significant role in it.

Keywords: *fanship; fan behaviour; parasocial attachment; parasocial interaction; interpersonal attraction; physical attraction; social interaction; task attraction*

LITERATURE REVIEW

Fan behaviour

Fan behaviour, or fanship can be defined as elevated interest, attachment and intense emotional reaction towards a person or an intellectual property (Hinck, 2019). It describes the psychological connection fans feel with the object of their interest (Reysen & Branscombe, 2010). The majority of society is a fan

of something (Booth, 2018). The individuals who show fan behaviour towards someone or something are called fans. Fans can be defined by focused attention towards a distinct subject (Leshner et al., 2018). The emergence of psychological processes related to fanship could be different for each individual. Not all fans show the same behaviour but rather patterns that are personalized to them by intensity and appearance (Booth, 2016). Fans are usually categorised by the course of their interest (Pan, 2022). It is presumed that different types of fans show similar psychological pathways (Reysen et al., 2017). Fan behaviour has many advantages to the psyche. Their beloved object or person can motivate fans to reflect on themselves which can lead to personal growth (Click et al., 2013). If they have the opportunity to share their fan identity with others, not only their social skills will evolve, but it can also positively influence their psychological wellbeing and contribute to their resiliency in life (Reysen et al., 2021; O'Donovan, 2016; He & Sun, 2022). The feelings and psychological phenomena related to fanship make a fragile balance. The line between the person and the object of their fan behaviour may get blurred. This can lead to addiction or even an unhealthy obsession (Pan, 2022; Maltby et al., 2006). This further proves that fanship is a complex phenomenon (Hinck, 2019; Reysen & Branscombe, 2010) that can be integrated into the cognitive and emotional functioning and control behaviour.

Parasocial attachment

Fanship includes a one-sided attachment with its object, for example the beloved celebrity (Brooks, 2018). This phenomenon is called parasocial attachment and research shows that it correlates with the degree of fan behaviour (Earnhardt & Haridakis, 2009). It can be defined as a one-sided relationship forming between viewers and media personalities in the case of continuous media exposure to that given person that leads to a sense of intimacy (Horton & Wohl, 1956). Generalized emotional and cognitive involvement with a real or fictional character which is also present outside the context of media exposure (Klimmt et al., 2006).

Parasocial attachment is based on *parasocial interactions*. These can be conceptualized as a perceived reciprocity with the media character in the sense of adjustment and attention (Hartmann & Goldhoorn, 2011). Parasocial interaction is a situational contact between the media personae and the consumer, which means that it is limited to the timeframe of media consumption (Schramm, 2008). Therefore, the amount of time spent with exposure of the given media is quite significant given that the extent of contact can advance the development of the connection (Fehr, 1996). Horton and Wohl theorised that these interactions strongly resemble the ones forming in real life, with the

difference that these exclude mutuality and two-sided communication (Horton & Wohl, 1956). If these interactions appear repeatedly, a *parasocial relationship* develops. The feeling of safety and comfort this gives leads to parasocial attachment (Stever, 2013). People tend to react to media personalities the same way they do to people existing in their living space (Tukachinsky et al., 2020). Therefore, parasocial phenomena can be interpreted as a type of interpersonal relationship between the media personae and the viewer (Turner, 1993; Cohen, 1997; Tukachinsky & Stever, 2019). This is further confirmed by the fact that various interpersonal constructs, such as intimacy, empathy or interpersonal attraction, are proven to influence the evolution of parasocial attachment (Auter & Palmgreen, 2000; Rubin & Perse, 1987; Cohen, 1997).

Attraction

Parasocial attraction mostly follows the patterns of interpersonal attraction (Cialdini, 1993). Identically it can be grouped into three categories, which are physical attraction, social attraction and task related attraction (McCroskey & McCain, 1974). Physical attraction means how attractive people find the outside appearance of others (McCroskey & McCain, 1974). In the early stages of the evolution of parasocial attachment physical attraction plays an important role (Tukachinsky & Stever, 2019). Since the media personality is mostly unknown to the consumers, they base their attraction on the qualities that are salient, which mostly are related to their appearance. Physical attraction will then provide the motivation further interaction which elevates the amount of exposure (Tukachinsky & Stever, 2019). Mere exposure correlates positively with attraction (Rubin & McHugh, 1987) and the process reinforces itself. Besides physical attraction can create the base for romantic parasocial attachment too (Liebers & Schramm, 2022).

Social and task attraction only appear later since those are based on information that the viewer can only gain through continuous exposure (Tukachinsky & Stever, 2019). Social attraction shows how attractive individuals find someone in social settings, how charismatic they are. Through task related attraction people find others talented and competent (McCroskey & McCain, 1974). All three types of interpersonal attraction influence the formation of parasocial attachment (Frederick et al., 2012; Kurtin et al., 2019).

Romantic Implications

Based on the Uses and Gratifications Theory it can be said that media users use the given form of media to fulfil certain needs (Katz et al., 1974). That means

that the consumer is active and goal-oriented who is aware of what they want and chooses the media outlet accordingly (Katz et al., 1974). If the viewer is exposed to the form of media frequently and for a longer period of time, they will probably feel some type of attraction towards its characters (Rubin & McHugh, 1987).

Attraction influences the development of parasocial relationships (Frederick et al., 2012; Kurtin et al., 2019). Besides that, the various types of attraction also appear to be a part of another phenomenon in the context of parasocial attachment which is called secondary attachment (Stever, 1994). Secondary attachment is based on the psychoanalyst Object Relations Theories. Essentially the celebrity becomes the object of the relationship, thus the target of romantic representation or identification (Adams-Price & Greene, 1990). It is only secondary because the primary object is the internalized image of the celebrity which is not necessarily accurate to reality. This however is not a problem since given the parasocial nature of the relationship it is highly unlikely that this mental image will ever be confronted by reality (Adams-Price & Greene, 1990).

Parasocial attachment to a media personality can be based on different emotional or interpersonal needs the consumer seeks to fulfil (Stever, 1994). While parasocial relationships cannot fully substitute real social interactions they could generate the feeling of connection resembling that (Tsao, 1996). The Social Surrogacy Hypothesis states that parasocial attachment can compensate for social deficits (Derrick et al., 2009). Though this theory was disproved in the context of friendly parasocial attachment (Tukachinsky et al., 2020), it is yet to be investigated on the romantic one which has gained interest nowadays (Adam & Sizemore, 2013; Liebers & Schramm, 2017).

Friendship-like parasocial phenomena are based on platonic feelings, while the romantic version manifests in emotional and physical love for the media character (Tukachinsky, 2010). In this case loneliness has a stronger effect too, especially if one feels lonely in the romantic sense (Liebers & Schramm, 2022).

Regardless of the emotional charge of the parasocial phenomena the Panksepp–Jakobson Hypothesis can serve as an alternative explanation (Panksepp, 1998). It explains that human evolution did not have time to adapt to the emergence of media which means that the reactions to media content are based on ancient emotional patterns of real-life interactions, thus are very similar (Panksepp, 1998). This could be a potential reason why the line sometimes becomes very blurred between social and parasocial and also for fanship to cause such an intense emotional effect on some people.

Fans can get to the point where they feel like they deserve privileges for their love, for example the time or attention of the celebrity (Mendelson, 2013; Smith, 2014). This feeling of entitlement can lead to the false belief that they are somehow more deserving than other fans (Mendelson, 2013), or they can try to get the attention of the celebrity somehow (Purcell et al., 2004). While

these stem from fan behaviour becoming distorted, the strain in the relationship could come from the other side too. If the subject of fanship causes their fans disappointment, that can lead to cessation in fan behaviour. This process can be very similar to processing grief with the stages of denial, bargaining and recovery (He & Sun, 2022). These information further stresses how complex and emotionally charged fanship is.

RESEARCH

Purpose

The goal of our research was to investigate how the phenomena already explored in the context of parasocial attachment, empathy, perceived homophily and types of attraction, directly affect fan behaviour and its intensity. Also, we wanted to survey the causal relationship between fanship and parasocial interaction. The academic base of these is that parasocial attachment is part of fan behaviour and correlates with its intensity (Earnheardt & Haridakis, 2009; Brooks, 2018). In this article however, the main focus is the relationship between attraction, the parasocial phenomena and fanship. Therefore, only the related information and results will be further explored.

We hypothesized that the behaviour explored in the context of the types of attraction, so physical, social and task related, implies and is able to predict the degree of fanship (Tukachinsky & Stever, 2019; Rubin & McHugh, 1987; Kurtin et al., 2019). Though research related to fan behaviour is becoming more widespread, many aspects of the phenomenon is still unexplored. Therefore, we found it necessary to also compose research questions in order to have a more holistic view of it.

Firstly, we wanted to know if the participants could predict the real reason of their own fan behaviour. We wanted to see if their own answer to the question about why they love their chosen celebrity (*Please describe why you love the person you choose with your own words!*) will align with the results of the questionnaires in regard to motivation of fanship.

Thus far the interpersonal phenomena mentioned above, was mostly surveyed in relation to parasocial attachment (Turner, 1993; Hartmann & Goldhoorn, 2011; Tukachinsky & Stever, 2019). Currently the relationship between fanship and parasocial phenomena (Earnheardt & Haridakis, 2009) is what ties fanship to the interpersonal constructs, like attraction. Therefore, it would be interesting to see how these can affect fan behaviour through parasocial interaction. We used a mediation model to investigate this.

Participants

The first criterion for participation in the research was adult age. Only people who turned eighteen years old could be part of it. The respondents also had to have a real, not fictional person they considered themselves a fan of. This fan attitude was also essential for participation.

The questionnaire could be filled out both in English and in Hungarian. The reason for that is that fans are mostly active on international platforms where they communicate in English with each other. We found it important to target these sites to ensure the diversity of the sample thus the extensiveness of the research. Altogether we had 214 participants in the research after excluding the respondents who were not adequate for some reason (in most cases because of their young age). There were 119 Hungarian and 95 English individuals. We summarized the data coming from the two languages. This was justified by the lack of significant difference between the two and also ensured more reliability at the examination of hypotheses.

Among the respondents there were 169 women (79%), 32 men (15%) and 13 individuals (6%) who did not want to disclose their gender. Almost half of the summarized participants studied in higher education (49.5%) at the time of the survey and 24% had graduated from high school. Most of them were single (62%), 31% were in a relationship and 7% was married while there was no widow amongst the participants. The average age was 23 years old, the youngest respondent was 18 and the oldest 71 years old.

During the survey all the participants had to choose a person whom they were a fan of. Considering the occupation of these given people, most of them were singers or musicians (66%) and the second biggest group was actors (17%). The participants have known their chosen person for an average of seven years and spent an average of eight hours weekly consuming content related to them.

Method and Measurements

The questionnaire package used for the survey was distributed through social media. It consisted of questions related to demographic data and five previously validated questionnaires each related to one of the phenomena we wanted to examine. First was the Short 3 Factor **Version of Empathy Quotient** (Muncer & Ling, 2006), from which we only used the scale about cognitive empathy. The participants had to fill this one out in regard to themselves but after this, they had to choose the person they are a fan of and answer the rest of the questionnaires relating to them. First came the self-formulated questions about their occupation, how long they have known them (in years) and how much time they spend consuming content about them weekly. These time intervals

are quite relevant amongst fans since they use these to gauge how committed the others are (Reysen, 2006). Participants also had to answer why they love this person with their own words (*Please describe why you love the person you choose with your own words!*).

The self-formulated questions were followed by the **Celebrity Worship Scale** (McCutcheon et al., 2002), which measured the intensity of fanship. Then came the questionnaire related to attraction, the **Measurement of Interpersonal Attraction** (McCroskey et al., 2006) with three scales, each measuring one type of attraction (physical, social, task related). For surveying perceived homophily we used the scale of **Measurement of Homophily** (McCroskey et al., 2006) relating to attitude homophily. The last questionnaire was the **Parasocial Interaction Scale** (Rubin et al., 1985) to measure the intensity of parasocial interactions and through that, parasocial attachment. This was originally made to examine interactions with television hosts which meant we had to transform it a little. We reframed the questions into more general statements, so they fit the goal of the research more.

RESULTS

Descriptives

The Hungarian version of the questionnaires we used were translated with supervision and then translated back to see its accuracy. The first step was to examine the reliability of these. The results of the relevant questionnaires for the current article can be seen below (*see at Table 1*). The questionnaire for parasocial interaction (Parasocial Interaction Scale) is an exception because we had to alter it in both languages. Therefore, here we examined reliability on the whole database.

Table 1 Results of the reliability test for the Hungarian version of the questionnaires (Source: created by the authors)

Questionnaire	Cronbach-alpha value	Omega value
Celebrity Worship Scale (McCutcheon et al., 2002)	0.915	0.917
Measure of Interpersonal Attraction (McCroskey et al., 2006)	0.936	0.947
scale for task attraction	0.863	0.878
scale for social attraction	0.856	0.875
scale for physical attraction	0.949	0.958
Parasocial Interaction Scale (Rubin et al., 1985)	0.853	0.858

The next table summarizes the results of the descriptive statistics for the whole database (*see at Table 2*).

Table 2 *The statistical data of the surveyed constructs (Source: created by the authors)*

Phenomenon	Mean	Standard deviation	Median	Minimum	Maximum	Normality test
fanship (CWS)	23.4	7.97	24.0	1	41	0.126
attraction (MoIA)	217	28.2	222	126	264	<.001
task attraction (MoIA)	79.6	11.4	81.0	44	98	<.001
social attraction (MoIA)	63.4	11.6	63.0	32	84	0.002
physical attraction (MoIA)	73.9	12.2	78.0	23	84	<.001
parasocial interaction (PSIS)	47.0	8.65	48.0	13	63	<.001

Note: After every phenomenon in parentheses there is the name of the questionnaire used for measuring it

As it can be seen from the results of the normality test (Shapiro Wilk p) only fanship passed the criteria of normal distribution ($p>0.05$). This makes the use of non-parametric procedures justified when examining the hypotheses. The table shows the scales of the Measurement of Interpersonal Attraction separately too since in our hypothesis we wanted to examine the independent effect of all three types of interpersonal attraction (physical, social, task).

Hypotheses

To examine the influence of parasocial interaction and interpersonal attraction to the intensity of fan behaviour, we used correlation. Since not all variables passed the criteria of normal distribution we used the non-parametric version of it, Spearman's rank correlation. For further exploration of the relationship between variables, we also used Linear Regression. The obtained results are summarized in the following table (*see at 3rd table*).

Table 3 The table summarizing the results of the hypotheses (Source: created by the authors)

	Correlation	Linear Regression
	fanship (CWS)	
parasocial interaction (PSIS)	p<.001 rho=0.715	p<.001 R ² =0.499
task attraction (MoIA)	p<.001 rho=0.387	p<.001 R ² =0.159
social attraction (MoIA)	p<.001 rho=0.384	p<.001 R ² =0.172
physical attraction (MoIA)	p<.001 rho=0.385	p<.001 R ² =0.165
the predictive ability of all types of attraction together (MoIA)		p<.001 R ² =0.259

All the variables correlated positively with the intensity of fanship and based on the results of the Linear Regression it can be seen that they can also predict that. However, neither of them could do it reliably enough.

In order to examine the data more diversely we also needed the mediation model. For this we used GLM mediation model. The model predicts three kinds of effect, direct, indirect (mediated) and complete effect. Our mediation model presumes that parasocial interaction mediates between the interpersonal phenomena explored in its context and the degree of fanship. Because of the size of the data and also for the sake of greater accuracy we set the Bootstrap sample to five thousand.

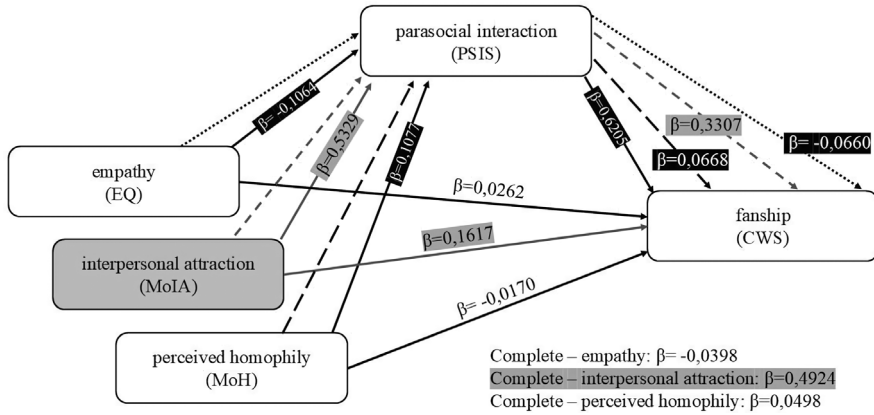
The direct effect was not significant for neither of the interpersonal variables. It was $p=0.577$ and $z=0.558$ ($SE=0.1593$) for empathy and $p=0.762$ and $z=-0.302$ ($SE=0.0302$) for perceived homophily. For interpersonal attraction it was $p=0.058$ and $z=1.897$ ($SE=0.0241$), though not significant but shows a tendency.

The indirect (mediated) effect is the one that shows the influence the interpersonal variables have on the degree of fanship through the mediation of parasocial interaction. It was only significant in the case of *interpersonal attraction* with $p>.001$ and $z=4.017$ ($SE=0.0233$). It was trend-like for empathy with $p=0.059$ and $z=-1.888$ ($SE=0.1187$) and $p=0.179$ and $z=1.345$ ($SE=0.0267$) for perceived homophily.

The complete effect of the model was also only significant in the case of *interpersonal attraction* with the values of $p>.001$ and $z=7.598$ ($SE=0.0183$). It was $p=0.535$ and $z=-0.621$ ($SE=0.2177$) for empathy and $p=0.468$ and $z=0.727$ ($SE=0.0369$) for perceived homophily.

The values of the standardized regression coefficients (β) for the variables can be seen in the following figure (see at 1st figure) for better clarity.

Figure 1 Presentation of the values of standardized regression coefficients (Source: created by the authors)



Note: Direct effect is represented by continuous lines and indirect effect is indicated by dashed line. The difference between the dashing of the lines (dotted, small dashes, big dashes) shows which variable they are aligned to.

Content Analysis

While filling out the questionnaire, participants had to answer a question with their own words about why they love the person they choose (*Please describe why you love the person you choose with your own words!*). We analysed the content of these answers and created six categories based on the theoretical base of the research. However, it was important that this base does not overrule the adequate categorisation. The categories were the following: *physical/romantic attraction*, *social attraction*, *task related attraction*, *identification* and *emotional involvement*. There was also the *other* category which included all the answers that did not fit into anywhere else. There also were answers that could fit into multiple categories based off their content. In such cases we decided based on the most prominent detail or without that, the one they mentioned first.

The answers focusing mainly on outside qualities went to ‘physical/romantic attraction’ category. The category of ‘social attraction’ had the answers highlighting the qualities that are most prominent in social settings, like being friendly or charismatic. If the answers focused on the talent or expertise of the person, they went in the ‘task related attraction’ category. The category of ‘identification’ included answers where the agreement of the worldview or values of the celebrity were articulated. The last category was ‘emotional involvement’

where emotional closeness was the most significant including wording the motivational or inspirational role of the person they were about.

Table 4 Results of the content analysis (Source: created by the authors)

Category	Percentage	Number of Answers	Example
task related attraction	31%	66	“Very talented and creative. Lyrical genius.”
emotional involvement	22%	46	“I feel like they help me understand emotions that are hard to explain, and I really connect with their songwriting. They also seem to be a very kind and thoughtful person in real life, so I really look up to them.”
identification	20%	43	“He’s so much like me. Very calm and collected even in moments he’s supposed to be screaming and all over the place. He stays composed”
social attraction	15%	33	“I think they’re fun and funny, they’re good with other people, they’re respectful and considerate, and they’re a great voice actor.”
physical/romantic attraction	8%	18	“They are good looking with a playful and emotionally intelligent personality”
other	4%	8	“I love them but I’m not a fanatic”

The analysis of the answers was also done by two other individuals who were independent from the research. The results of the different coders showed high contingency. The Cohen’s κ for the English was 0.9077 and for the Hungarian 0.9892.

As it can be seen based on the table, physical attraction was not as common amongst the answers. However, as it was mentioned above, in some cases we decided based on the most prominent quality or without that, the one they mentioned first. Sometimes that quality was not physical attraction but around 20% of the answers included it in some form.

Our research question was whether the results obtained from self-report answers confirm the questionnaire results regarding motivation behind fan-ship. In order to examine that, we had to compare the categories of the content analysis to corresponding the results of the questionnaires. We wanted to see if the phenomena from the categorisation matched with the one they got the highest scores for from the questionnaires.

For that we converted the categories of the content analysis into numbers from one to five. Then we created a column for each measured category where the participants got zero or one points based on if their answer was in that category or not (the name of the column was for example ‘identification or not’).

We used Independent Samples T-Test and Mann-Whitney U Test to examine the question. The dependent variable was the score on the questionnaire scale corresponding to the category (for example in the case of physical/romantic attraction it was the physical attraction scale of the Measurement of Interpersonal attraction) since we wanted to compare those with each other. The results of the test can be seen in the table below.

Table 5 Results of the T-Test and Mann-Whitney U Tests comparing the categories of the content analysis and the scores of the questionnaires (Source: created by the authors)

Surveyed construct	Name of Category	p-value
<i>physical attraction</i>	<i>physical/romantic attraction</i>	0.009
perceived homophily	identification	0.011
empathy	emotional involvement	0.060
social attraction	social attraction	0.170
task attraction	task attraction	0.475

The relationship between the categories and the result of the questionnaires was only significant in the case of *physical attraction* and perceived homophily. It means that the participants whose self-reported answer included physical attraction or homophily could predict the motivation behind their own fan behaviour, meaning the questionnaire where they got the highest score.

DISCUSSION

Conclusion

In our research we wanted to explore the factors that could potentially motivate fan behaviour using the theoretical base of parasocial phenomena. It was justified since they assume relationship between the two (Earnhardt & Haridakis, 2009) and view parasocial phenomena as an important variable in the development of fanship (Brooks, 2018). The dynamics of those resembles real social interactions (Turner, 1993; Cohen, 1997; Tukachinsky & Stever, 2019) and because of that they can be explained by interpersonal constructs like attraction and its various types, perceived homophily or empathy (Cialdini, 1993; Turner, 1993; Tsao, 1996). Therefore, based on the relationship between

fanship and parasocial phenomena that these constructs can directly influence fan behaviour and serve as a potential motivating factor.

Physical attraction turned out to be a very significant factor in the exploration of the potential reasons behind fan behaviour. It correlated with the intensity of fanship though its ability to directly predict it was not that strong. However, its influence could truly come through the examination of the research questions. Physical attraction was almost the only factor where the result of the questionnaires aligned with own perception of the participants on why they love their favourite celebrity. It also was able to have a significant influence through the mediation of parasocial interaction. It highlights an important social psychological thesis about human nature, when perceiving others physical appearance is salient and it plays an important role in developing sympathy towards others (Smith et al., 2021). Beauty, especially a symmetric face evokes positive assumptions assuming that “if something is beautiful it is also good” (Dion et al., 1972). This phenomenon is not dependent on culture but rather universal amongst people (Dion, 2002). As it seems like based on the results of the research it also is not limited on real life interactions, it can also appear in the context of mediated relationships through media. It is also not a coincidence that attractive celebrities are more effective in marketing through product endorsement and by perceived more creditable (Kamins, 1990; Till & Busler, 1998).

Limitations

In the procedure of the research there were factors that could have influenced the process of data collection and also the results. The most important one of these is the method. In the case of online questionnaires, the self-report answers and the environment is a methodological restriction as well as the inability to influence the quality of the filling out. The lengthiness of the questionnaire could also have a negative effect on that since it took around twenty or twenty-five minutes. Besides that, since the research of fanship is a relatively new field of research there are not as many questionnaires to choose from. This could have led to some questions feeling very similar to each other.

The method of distribution was also a potential limitation especially in the case of the English questionnaire package. We distributed it personally by sending it in various fan groups. Most of these groups, especially the ones with enough people to guarantee potential participants, revolve around musicians which can explain why this job was overpowering in the data. Also, the size of the whole data could further modulate the results.

Since this whole research was not only about physical attraction it would be also very useful to further focus on that for example with the involvement of sexuality.

Considering these aspects, the repetition of the survey could be interesting and worthwhile to further examine the effect the various phenomena have on each other and understand fan behaviour better.

Future Directions

Fan behaviour therefore is a very complex phenomenon and its relation to physical attraction and through that sexuality can be especially interesting. As established before fanship can be defined through the one-sided interactions of the parasocial phenomena (Earnheardt & Haridakis, 2009; Brooks, 2018). This means the fans never really have to confront the celebrity as a real person (Adams-Price & Greene, 1990) and thus makes it easy for them to project anything they want onto them. These relationships provide a safe place for self-discovery (Click et al., 2013) that can include the discovery of sexuality too.

Fans also have various types of methods and media to fulfil their emotional needs and fantasies. Fanfictions are one of the main outlets for this. These are stories fans write about their favourite (Taylor, 2015; Rokicka, 2023) and most often they include romantic storyline and also very sexual themes. Their target audience is mostly female, teenagers and young adults in most cases (Lacasa et al., 2017). It would be really interesting to examine how the consuming of this type of content in such an important developmental phase shapes their expectations of romantic relationships and sexual intercourse as well as how they appear in the real-life relationships they form later.

Fanship is therefore a very intense cognitive, emotional and behavioural phenomenon where the line between what is real and what is not can easily be blurred. This is proven further by the cases where fans feel entitled to the time and attention of celebrities or even threaten their wellbeing with their obsessive behaviour (Maltby et al., 2006; Pan, 2022). This field of research provides plenty of interesting opportunities as well as a possibility to understand human condition more through this.

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Enhancing Sexual Satisfaction: The Interplay of Mindfulness and Assertiveness in Romantic Relationships

Abstract

This study examined associations among trait mindfulness, sexual mindfulness, sexual assertiveness, relationship satisfaction and sexual satisfaction in a Hungarian sample of 99 adults. Participants completed the Mindful Attention Awareness Scale (MAAS), the Sexual Mindfulness Measure (SMM), the Sexual Assertiveness Questionnaire (SAQ), the Relationship Assessment Scale (RAS), the Personal Assessment of Intimacy in Relationships scale (PAIR), and the New Sexual Satisfaction Scale (NSSS), and reported on their mindfulness practice habits. Sexual mindfulness was consistently found as a strong predictor. It was associated with higher sexual assertiveness, greater relationship satisfaction and increased sexual satisfaction. Trait mindfulness showed only a weak positive link with sexual mindfulness and neither trait mindfulness nor practice habits predicted the wellbeing outcomes. The results mirror international findings and highlight sexual mindfulness as a key contributor to intimate and sexual wellbeing in a Hungarian cultural context, emphasizing its promise for future research and clinical applications.

Keywords: Sexual Assertiveness; Mindfulness; Sexual Mindfulness; Sexual Well-being; Relationship Satisfaction

Introduction

Sexual and romantic relationships play a central role in the wellbeing of the individual and their quality depends on a complex interplay of cognitive, emotional and behavioural factors. In recent years, mindfulness has received increasing attention as a construct that shapes various factors in our lives, such as cognitive, affective and overall health aspects.

Mindfulness not only influences general wellbeing, but it has a positive influence on romantic relationships and sexual wellbeing. Sexual mindfulness refers to the ability to bring non-judgmental, present-moment awareness to sexual experiences (Brotto & Heiman, 2007). Individuals who are more mindful during sexual activity tend to be more attuned to the sensations of the body,

emotional cues and their partner's responses, which can enhance intimacy and reduce anxiety or self-criticism. This mindful awareness allows for greater emotional connection, authenticity, and acceptance, so such factors that are crucial for both sexual and relationship satisfaction.

Sexual assertiveness, on the other hand, encompasses the ability to communicate one's sexual needs, boundaries and preferences openly and confidently (Morokoff et al., 1997). Sexually assertive individuals are more likely to initiate desired sexual activities, refuse unwanted intercourse and negotiate mutually satisfying sexual interactions with their partners, including the form of contraception methods they want to use. By fostering equality and respect in sexual activities, sexual assertiveness contributes not only to personal empowerment but also to trust and satisfaction in the relationship.

Sexual satisfaction is the subjective interpretation of one's sexual experiences and the perceived quality of sexual interactions. It can serve as a key indicator of sexual wellbeing (Sánchez-Fuentes et al., 2014). It reflects the extent to which sexual needs and desires are fulfilled and is shaped by both individual-level factors (such as mindfulness and assertiveness) and relational dynamics (such as emotional intimacy and communication).

Finally, relationship satisfaction represents the global evaluation of one's romantic relationship, including emotional closeness, commitment, trust and conflict resolution skills (Hendrick, 1988). Sexual and relationship satisfaction are strongly interlinked. Fulfilling sexual experiences can enhance emotional connection and stability, while satisfying relationships provide the safety and trust necessary for open sexual exploration.

Taken together, sexual mindfulness and sexual assertiveness can be understood as variables that foster greater sexual satisfaction, which in turn supports higher relationship satisfaction. Understanding these interconnections provides valuable insights for both research and clinical interventions aimed at promoting healthy, fulfilling intimate relationships.

Mindfulness and Its Psychological Foundations

Definition and Core Processes

Recently, mindfulness has received considerable attention in psychology, being linked to a wide range of cognitive, emotional, and health-related outcomes. Rooted in Eastern traditions, mindfulness is often associated in popular understanding with the formal practice of meditation. It can be understood as a fundamental state of awareness that involves consciously noticing present-moment experiences. A frequently cited definition describes mindfulness as "the maintenance of attention in a particular way: intentionally, in the present

moment, and without judgment” (Kabat-Zinn, 1994; Shapiro et al., 2006). This definition by Kabat-Zinn encompasses three core axioms: intention, attention, and attitude. These are not separate processes or stages but interrelated, simultaneous aspects of a unified, cyclical process. In this way, mindfulness represents an ongoing, moment-to-moment practice (Shapiro et al., 2006). When Western psychology adopted mindfulness, the original intent rooted in Buddhism (enlightenment and compassion for all beings) was partially lost (Shapiro & Schwartz, 2000). Intention remains a dynamic component, evolving with practice from self-regulation to self-exploration and self-liberation (Shapiro & Schwartz, 2000; Shapiro et al., 2006). The second axiom, attention is the observation of present-moment internal and external experiences, central to psychological healing (Shapiro et al., 2006; Brown & Ryan, 2003). Attitude, the third axiom, shapes how attention is applied, emphasizing nonjudgment, acceptance and openness, allowing experiences to come and go without clinging (Kabat-Zinn, 2003; Shapiro et al., 2006). It is assumed that intentional, open, and nonjudgmental attention in mindfulness leads to a perspective shift called *reperception*, a metamechanism that organizes key change processes. These include: self-regulation, clarification of values, cognitive, emotional and behavioral flexibility, and exposure to intense emotions with reduced reactivity. Each mechanism interacts to support transformation and positive outcomes (Shapiro et al., 2006).

When we look up the term mindfulness, we can see that researchers have engaged in extensive discussion about how to conceptualize it best. A commonly used definition describes it as openly paying attention, with awareness, to one’s experiences in the present moment. This process of awareness of the present moment differs from our usual mental habits, in which we frequently let our minds wander (Killingsworth & Gilbert, 2010), operate on autopilot mode (Bargh & Chartrand, 1999) or attempt to push away unwanted experiences (Kang et al., 2012). These mindless states that we have every day have been shown to have negative consequences. For example, people’s minds are unfocused for about 47% of the time and mind wandering is linked to subsequent unhappiness (Killingsworth & Gilbert, 2010). By contrast, being more mindful in daily life is associated with greater psychological wellbeing (Brown & Ryan, 2003).

Mindfulness has been defined in a variety of ways across scientific research. However, there are two core elements that tend to appear across most definitions. The first is that mindfulness involves directing one’s attention and awareness to what is happening in the present moment. The aspects of present-moment experience that a person can focus on are diverse, it ranges from bodily sensations and emotions to mental images, inner speech and perceptual experiences such as sounds. This monitoring feature of mindfulness has been described as a form of watchfulness or a clear awareness of each experience

as it happens in the present (Bodhi, 2011; Brown et al., 2007; Quaglia et al., 2015). The second common element is having emphasis on approaching the experiences with openness and acceptance. This means observing the upcoming experiences with a curious, detached and nonreactive attitude. Crucially, this accepting behaviour does not imply passively surrendering to the current situation. Instead, it reflects a willingness to allow experiences to be present, even when they are uncomfortable or challenging (Bishop et al., 2004).

Factors Relevant to Sexuality

Mindfulness not only has a positive effect on general wellbeing but is also linked with better romantic and sexual relationships. Practicing mindfulness enhances body awareness and interoception (the sense of the internal state of your body, including signals like hunger, thirst, pain and heart rate), helping individuals become more attuned to bodily sensations, which is particularly relevant for arousal and sexual experiences (Farb, Segal, & Anderson, 2013; Mehling et al., 2012; Kerr et al., 2013). It also improves emotion regulation and helps to reduce performance anxiety, allowing people to experience sexual situations with less stress, greater relaxation and more presence, which can increase sexual satisfaction (Kabat-Zinn, 1990; Hölzel et al., 2011; Jain et al., 2007). Furthermore, mindfulness cultivates cognitive flexibility and acceptance, encouraging openness to one's sexual desires and experiences without judgment, reducing negative self-evaluation, and promoting intimacy and sexual wellbeing (Shapiro, Carlson, Astin, & Freedman, 2006; Gu, Strauss, Bond, & Cavanagh, 2015; Baer, 2003). Together, these factors help individuals engage more fully in sexual experiences, enhancing both physiological responsiveness and psychological satisfaction.

Sexual Mindfulness

Definition and Conceptual Distinctions

Sexual experiences play an important role in relational wellbeing, so higher levels of mindfulness may indirectly enhance relationship satisfaction through its positive effects on sexual connection. Mindfulness can support healthy sexual relationships by increasing intimacy and reducing cognitive distraction (Leavitt et al., 2019).

Sexual mindfulness refers to the application of mindfulness principles, present-moment awareness and nonjudgmental acceptance, specifically in sexual contexts (Brotto & Heiman, 2007). Unlike general mindfulness, which applies broadly to daily life, sexual mindfulness emphasizes awareness of bodily

sensations, emotions, thoughts and interpersonal cues during sexual activity. Main components include present awareness, nonjudgmental acceptance and attunement to partner cues, allowing individuals to engage fully with their own experience while remaining responsive to their partner (Brotto et al., 2016; Leavitt et al., 2019).

Despite prior research on mindfulness in romantic and sexual relationships, relatively few studies have focused on sexual mindfulness, a subcomponent of mindfulness that may be more directly related to relationship outcomes. Practicing sexual mindfulness, particularly during sexual activity, which often occurs in a high-anxiety context, may require greater attention and nonjudgmental awareness than mindfulness in less stressful settings. For example, maintaining attention during yoga practice differs significantly from sustaining attention during sexual activity (Leavitt et al., 2019).

Theoretical framework

Sexual mindfulness can be integrated with established models of sexual functioning and relationship satisfaction. The Dual Control Model (Bancroft et al., 2009) highlights how sexual excitation and inhibition may be influenced by mindful awareness. The Dual Control Model of Sexual Response suggests that sexual arousal is a result of a balance between two independent systems: sexual excitation (the “gas pedal”) and sexual inhibition (the “brake pedal”). The sexual excitation system (SES) is responsible for the processes that lead to arousal. It can be thought of as the “gas pedal” and its sensitivity determines how easily a person becomes aroused by sexual stimuli. The sexual inhibition system (SIS) is responsible for inhibiting sexual arousal and activity. It functions like the “brake pedal” and can be triggered by a variety of factors, including anxiety, fear or negative past experiences. Individuals vary in their sensitivity to both the excitation and inhibition systems, which explains the wide range of sexual responses and behaviours seen across different people and situations.

Sexual mindfulness may help finding this balance by increasing attention to sexual cues, reducing cognitive distraction and fostering nonjudgmental awareness of both excitation and inhibition processes. By improving present-moment awareness and acceptance, individuals can experience arousal more fully (supporting the SES) while reducing the impact of anxiety and self-critical thoughts (modulating the SIS). This heightened level of awareness and regulation may lead to greater sexual satisfaction, intimacy and relational wellbeing (Brotto, Chivers, Millman, & Albert, 2016; Leavitt, Lefkowitz, & Waterman, 2019)

Conceptualizing Sexual Wellbeing

Definitions and frameworks

Sexual wellbeing is a positive, multidimensional aspect of health that includes physical, emotional, psychological and relational dimensions of sexuality. The World Health Organization (WHO, 2006) defines sexual health as “a state of physical, emotional, mental and social wellbeing in relation to sexuality,” stating that sexual health is not limited to the absence of sexual problems or disease. Consistent with this holistic view, Laumann et al. (2006) describe subjective sexual wellbeing as the cognitive and emotional evaluation of the individual’s own sexuality, which involves personal factors, such as sexual satisfaction, the experience of pleasure and the perceived importance of sexual activity in one’s life. Sexual wellbeing includes not just good physical functioning but also feeling good about one’s sexuality. For example, having confidence, enjoying sexual experiences and feeling comfortable rather than anxious or in pain during sexual actions (Harden, 2014). In relationships, sexual wellbeing is reflected in safe, respectful and fulfilling intimacy, supported by emotional closeness, mutual respect and open communication between partners (WHO, 2006; Laumann et al., 2006).

Sexual wellbeing is increasingly seen as a key part of overall quality of life and mental health, leading to growing advocacy for treating sexual wellbeing as a main component of public health and wellbeing frameworks rather than focusing only on risks and pathology (Mitchell et al. 2021).

Key Components of Sexual Wellbeing

Sexual Assertiveness

Assertiveness has been a recognized concept in psychology since the late 1940s, initially it was associated with Salter (1949), but it was Wolpe (1958) who first used the term in a way that we use it in the current meaning. According to Wolpe (1958), assertiveness encompasses both friendly and confrontational behaviours, as they are expressions that help individuals communicate their emotions effectively in interpersonal situations. Rich and Schroeder (1976) further defined assertive behaviour as the ability to express one’s feelings and desires even when doing so may not lead to approval or may even result in disapproval of others. This way assertiveness plays a crucial role in communication and interpersonal functioning and is significant in sexual contexts as well. When it comes to sexuality, sexual assertiveness refers to openly communicating about sexual matters, such as initiating wanted sexual activity or declining

unwanted ones, discussing desires and satisfaction, talking about sexual history and making decisions regarding contraception, especially the use of condom (Loshek & Terrell, 2014). Sexual assertiveness was first studied among women, who have traditionally been cast in more sexually passive roles, and has been linked to various mental and physical health benefits. These include greater sexual satisfaction, increased desire toward one's partner, more frequent orgasms, reduced risk of unwanted sexual experiences and more consistent use of protection, even in contexts involving alcohol use (Impett & Peplau, 2003; Loshek & Terrell, 2014; Morokoff et al. 1997).

Sexual satisfaction

Sexual satisfaction is typically defined as an individual's subjective evaluation of the pleasure, fulfilment and overall quality of their sexual life (Lawrance & Byers, 1995; Mangas & Sierra, 2025). It is a multidimensional concept involving both physical aspects of sexual experience (like orgasm or arousal) and emotional aspects (like intimacy or feeling valued by the sexual partner) (Bondarchuk-McLaughlin & Anderson, 2024). Higher sexual satisfaction has been linked to positive outcomes for both individuals and couples, including better psychological wellbeing, greater relationship satisfaction and even higher relationship stability (Sánchez-Fuentes et al., 2014; Vowels et al., 2022). Sexual satisfaction is strongly influenced by how emotionally close partners feel, how openly they communicate about their sexual needs, and whether their sexual experiences are free from distress or dysfunction (Mallory, 2022; Pascoal et al., 2013; Rausch & Rettenberger, 2021). For example, couples who have open sexual communication and emotional closeness tend to report higher sexual satisfaction, meanwhile unresolved sexual problems or not matching expectations can undermine it (Mallory, 2022; Pascoal et al., 2013). Given its strong connection to happiness and relationship quality, sexual satisfaction is often regarded as a main component of overall sexual health and quality of life (Mangas & Sierra, 2025; Sánchez-Fuentes et al., 2014).

Relationship satisfaction

Relationship satisfaction refers to an individual's overall evaluation of the quality and functioning of their romantic relationship. It has been consistently linked to key indicators of wellbeing, including emotional stability, life satisfaction and psychological health (Fincham & Beach, 2010). One of the strongest predictors of relationship satisfaction is sexual satisfaction, which contributes to emotional closeness, intimacy, and long-term stability (Sánchez-Fuentes et al., 2014). Recent research also highlights the role of mindfulness, particularly sexual mindfulness, in enhancing both sexual and relational satisfaction, by

reducing cognitive distraction, improving emotional attunement and fostering open, nonjudgmental awareness during intimate situations (Leavitt et al., 2019; Brotto et al., 2016).

Methods

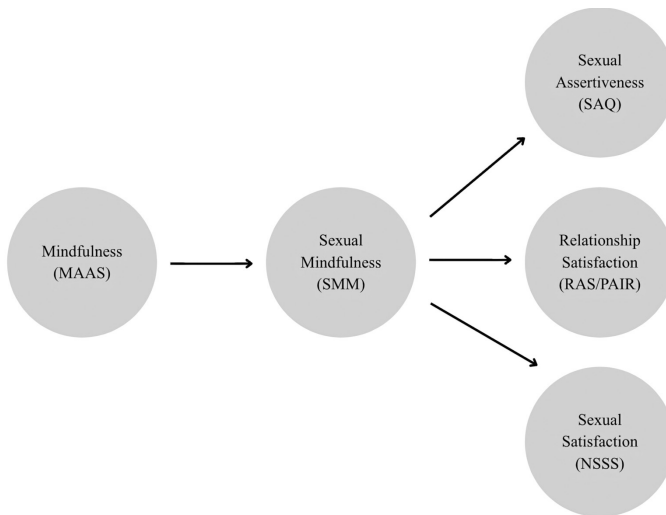
The aim of the study

The aim of the present study was to explore the links between mindfulness, sexual mindfulness and sexual assertiveness, and how they link to relationship and sexual satisfaction in a Hungarian sample. Previous research has shown that mindfulness in general supports emotional regulation, intimacy and wellbeing in relationships (Brown & Ryan, 2003; Shapiro et al., 2006). More recent work has identified sexual mindfulness. It can be defined as present-moment, nonjudgmental awareness during sexual activity, as a unique predictor of sexual and relational satisfaction (Brotto et al., 2016; Leavitt et al., 2019). Similar to sexual mindfulness, sexual assertiveness has also been connected with higher levels of sexual satisfaction, more frequent orgasms and healthier sexual boundaries, especially among women (Loshek & Terrell, 2015; Impett & Peplau, 2003). By examining these variables in a Hungarian adult sample, the present study contributes to a more diverse understanding of the psychological predictors of sexual and relationship wellbeing.

Based on previous findings, we formulated six hypotheses to explore the relationships between mindfulness, sexual mindfulness, sexual assertiveness, and relational and sexual satisfaction (Figure 1).

- H1: Practicing mindfulness can be positively associated with self-reported scores on the Hungarian version of the Mindful Attention Awareness Scale (MAAS-H).
- H2: Scores on the MAAS-H can be positively associated with scores on the Hungarian version of the Sexual Mindfulness Measure (SMM-H).
- H3: Higher Sexual Mindfulness Measure scores can be positively associated with higher scores on the Hungarian version of the Sexual Assertiveness Questionnaire (SAQ-H).
- H4: Sexual Mindfulness Measure scores can be positively associated with scores on the Hungarian version of the Relationship Assessment Scale (RAS-H).
- H5: Sexual Mindfulness Measure scores can be positively associated with scores on the Hungarian version of the Personal Assessment of Intimacy in Relationships scale (PAIR-H).
- H6: Sexual Mindfulness Measure scores can be positively associated with scores on the Hungarian version of the New Sexual Satisfaction Scale (NSSS-H).

Figure 1 *Hypothesized Correlations (Source: created by the authors)*



Measures

Participants completed a set of self-report questionnaires measuring general mindfulness, sexual mindfulness, sexual assertiveness, relationship satisfaction, intimacy and sexual satisfaction. All instruments were in Hungarian, using either officially translated and validated versions or translations adapted following standard back-translation procedures.

The questionnaire consisted of three sections. In the first section we collected demographic information (gender, age, relationship status, sexual orientation, sexual lifestyle, highest level of education and place of residence). In the second section participants had to answer questions based on their experiences and attitudes related to mindfulness and sexual mindfulness. And the last section focused on sexual assertiveness, as well as relationship and sexual satisfaction.

Self-reported mindfulness practice

Mindfulness practice habits were assessed using questions based on the study of Baer et al. (2008). Participants had to answer questions according to the frequency and duration of their usual mindfulness practice.

Mindful Attention Awareness Scale (MAAS)

Trait mindfulness was assessed using the Mindful Attention Awareness Scale (Brown & Ryan, 2003). The scale measures the frequency of open and receptive attention to present-moment experiences and awareness of these. Higher scores indicate a tendency to be more mindful in daily life.

Sexual Mindfulness Measure (SMM)

Sexual mindfulness was measured with the Sexual Mindfulness Measure (Leavitt et al., 2019). This scale captures the degree of present-focused, nonjudgmental awareness during sexual activity. It includes subscales for awareness and nonjudgment.

Sexual Assertiveness Questionnaire (SAQ)

Sexual assertiveness was measured using the Sexual Assertiveness Questionnaire (Morokoff et al., 1997; Loshek & Terrell, 2015). This questionnaire assesses the ability to initiate wanted sexual activity, refuse unwanted sex and negotiate contraceptive use.

Relationship Assessment Scale – Hungarian version (RAS-H)

Relationship satisfaction was measured using the Relationship Assessment Scale's Hungarian version (Hendrick, 1988; Martos et al., 2014). It's a 7-item scale assessing global satisfaction with one's romantic relationship.

Personal Assessment of Intimacy in Relationships – Hungarian version (PAIR-H)

Relational intimacy was measured using the PAIR-H, which evaluates the depth of emotional closeness and connectedness in romantic partnerships (Kover et al., 2017).

New Sexual Satisfaction Scale (NSSS)

Sexual satisfaction was assessed using the NSSS (Štulhofer et al., 2010), a multidimensional scale measuring both physical and emotional aspects of sexual fulfilment.

Participants

First, the sample was described based on demographic variables. Data were analyzed using Google Forms' built-in summary tools and the Jamovi statistical software. Out of the 99 participants, 63 identified as women, indicating that the sample was female-dominated.

The majority of respondents identified as non-religious. Approximately 85% of the participants held at least a bachelor's degree, meaning individuals without higher education were underrepresented in this sample. 57% of participants reported living in the capital city. Regarding parental status, 57% of participants did not have children. In this category we also included those who selected "expecting first child," as their recent lifestyle aligned more closely with those

who are childfree. The age distribution was not normal, participants ranged from 20 to 58 years old, with both the mean and median age being 34.

Descriptive Statistics

Descriptive statistics were calculated for all of the questionnaires. Normality of the data distribution was assessed using the Shapiro–Wilk test. Results indicated that scores for mindfulness practice and the MAAS followed a normal distribution (Shapiro–Wilk $p > 0,05$), while the remaining variables did not follow a normal distribution. So for consistency all analyses were conducted using statistical methods appropriate for non-normally distributed data.

We conducted reliability analysis for each of the scales used in the study. Scales with Cronbach's alpha values between 0,60 and 0,80 were interpreted as if they had acceptable internal consistency. The total score on the Mindfulness Practice Scale showed a negative correlation with the other measures, suggesting reverse-scored content. So we reverse-coded the scale before doing further analysis. After adjusting this, the revised Cronbach's alpha for the scale was 0,649, which falls within the acceptable range. As a result, all items of the scale were retained for further analyses, given that the internal consistency was satisfactory for this study.

Results

We found no significant correlation between the variables in the first and fourth hypotheses, so we rejected those. This means that participants who reported practicing mindfulness more frequently did not score significantly higher on the MAAS (trait mindfulness) scale. Furthermore, it means that sexual mindfulness cannot be positively associated with relationship satisfaction with the use of the MMS and RAS scales.

In the second hypothesis we stated that participants with higher scores on the MAAS scale would have also scored higher on the SMM scale. The variables show a significant, but weak positive correlation ($p = 0,004$; $r = 0,289$), indicating that individuals who are more mindfully aware also tend to report higher sexual mindfulness.

The third hypothesis proposed a positive correlation between sexual mindfulness and sexual assertiveness, which was supported by the results ($p < 0,001$; $r = 0,370$). Individuals who reported higher scores regarding sexual mindfulness also tended to report higher levels of sexual assertiveness.

In the fifth hypothesis we proposed a positive correlation between sexual mindfulness and relational intimacy, measured by the PAIR scale. The proposal

was supported by the results ($p=0,027$; $r=0,238$), showing a significant but weak positive correlation. These findings suggest that individuals who report higher sexual mindfulness also tend to experience higher levels of intimacy and satisfaction in their romantic relationships.

Regarding the last hypothesis, a significant, moderately strong positive correlation was found between sexual mindfulness and sexual satisfaction ($p<0,001$; $r=0,475$). This suggests that individuals who are more mindful during sexual experiences tend to report higher levels of sexual satisfaction.

Based on the results, we conducted linear regression analyses for the variables that showed significant correlations. Specifically, the analyses aimed to examine the predictive power of dispositional mindfulness on sexual mindfulness, as well as the predictive role of sexual mindfulness on sexual assertiveness, relational intimacy (as measured by the PAIR), and sexual satisfaction.

Regarding the first hypothesis the t-tests for both the slope and intercept parameters of the regression equation showed that both values significantly differed from zero, indicating a significant association between the two variables. The slope coefficient was positive, suggesting that higher MAAS scores predict higher SMM scores. Specifically, a one-point increase in MAAS was associated with a 0,0138-point increase in SMM. The strength of the association was weak, with a correlation coefficient of $r=0,240$. A model fit test was also conducted. The results showed that the explained variance exceeded the unexplained variance. Based on the regression F-test, the MAAS variable was found to be a significant predictor of SMM scores ($p<0.05$). The results of the linear regression analyses are summarized in the tables below (Table 1, Table 2 and Figure 2).

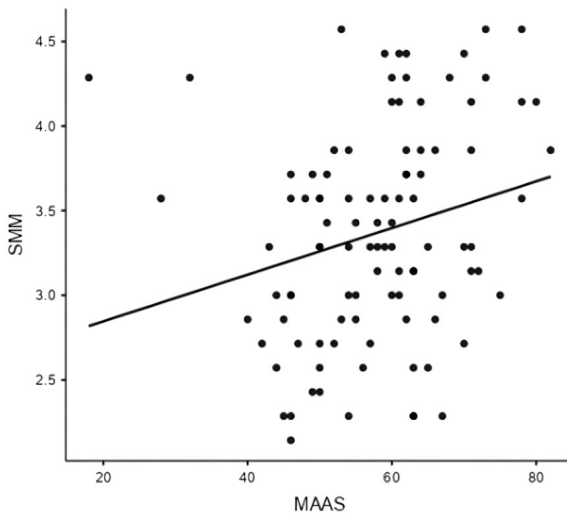
Table 1 Factors of the MAAS–SMM regression line equation (Source: created by the authors)

Predictor Variable	Estimate	SE	t	p	Correlation Coefficient
Intercept	2.5701	0.33354	7.71	<0.001	
MAAS	0.0138	0.00567	2.43	0.017	0.240

Table 2 F-test result for the MAAS–SMM regression model (Source: created by the authors)

F-test	R	R ²	F	df1	df2	p
	0.240	0.057	5.91	1	97	0.017

Figure 2 The MAAS–SMM regression line (Source: created by the authors)



Regarding the third hypothesis, a positive association was expected between scores on the Sexual Mindfulness Measure (SMM) and the Sexual Assertiveness Questionnaire (SAQ). The results of the linear regression analysis are presented in the two tables below. The t-tests for the slope and intercept parameters of the regression equation indicated that both values significantly differed from zero, suggesting a statistically significant relationship between the variables. The slope parameter was positive, indicating that the association was positive as well. A one-point increase in SMM score predicted a 9,56-point increase in SAQ score. The strength of the relationship, was moderate, as indicated by the correlation coefficient ($r=0,350$). A model fit test showed that the explained variance exceeded the unexplained variance. Based on the regression F-test, the SMM variable was found to significantly predict SAQ scores ($p<0,05$). (Table 3, Table 4 and Figure 3)

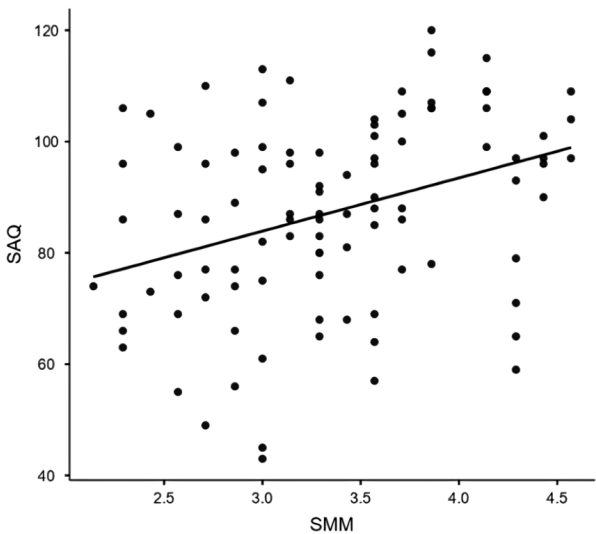
Table 3 Coefficients of the SMM–SAQ Regression Equation (Source: created by the authors)

Predictor Parameter	Estimate	SE	t	p	Correlation Coefficient
Intercept	55.23	8.91	6.2	<0.001	
SMM	9.56	2.6	3.68	<0.001	0.350

Table 4 F-test Results for the SMM–SAQ Regression Line (Source: created by the authors)

F-test	R	R ²	F	df1	df2	p
	0.35	0.122	13.5	1	97	<0.001

Figure 3 The SAQ–SMM regression line (Source: created by the authors)



Concerning the fifth hypothesis, the t-tests conducted for the slope and intercept parameters of the regression line showed that both values significantly differed from zero, indicating a relationship between the variables. The slope was positive, meaning that a one-unit increase in the SMM score predicted a 5,27-unit increase in the PAIR score. The strength of the relationship was indicated by the correlation coefficient, which showed a weak-to-moderate correlation (0,215).

A model fit test was also performed, which revealed that the explained variance exceeded the unexplained variance. Based on the results of the regression F-test, we concluded that the SMM predictor variable significantly explains variance in the PAIR outcome variable ($p<0,05$). (Table 5, Table 6 and Figure 4)

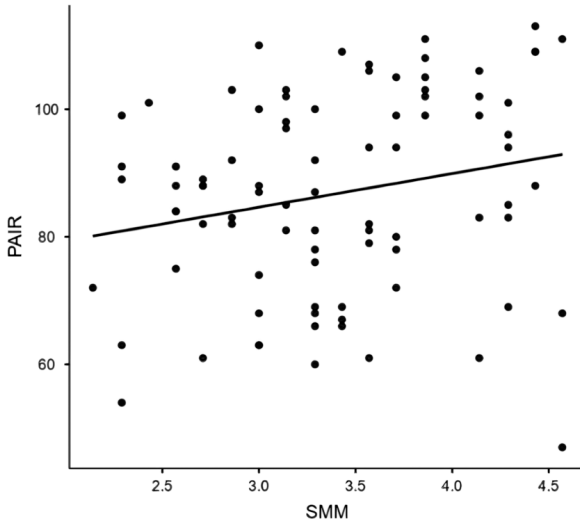
Table 5 Coefficients of the SMM–PAIR Regression Equation (Source: created by the authors)

Predictor Parameter	Estimate	SE	t	p	Correlation Coefficient
Intercept	68.84	9.01	7.64	<0.001	
SMM	5.27	2.61	2.02	0.047	0.215

Table 6 F-test Results for the SMM–PAIR Regression Line (Source: created by the authors)

F-test	R	R ²	F	df1	df2	p
	0.215	0.0462	4.07	1	84	0.047

Figure 4 The PAIR–SMM regression line (Source: created by the authors)



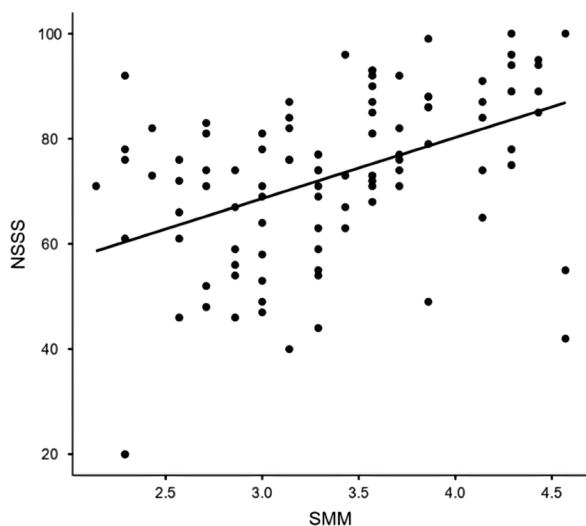
Regarding the last hypothesis, the results of the t-tests conducted on the slope and intercept parameters of the regression equation showed that both values significantly differed from zero, indicating a relationship between the variables. The slope parameter was positive, indicating a positive relationship. An increase of one unit in the SMM score predicted an increase of 11,6 units in the NSSS score. The strength of this relationship was indicated by the correlation coefficient, which reflected a moderate correlation (0,445). A model fit test was also conducted, revealing that the explained variance exceeded the unexplained variance. Based on the results of the regression F-test, it was concluded that the SMM predictor variable significantly explains the variance in the NSSS outcome variable ($p < 0,05$). (Table 7, Table 8 and Figure 5)

Table 7 Coefficients of the SMM–NSSS Regression Equation (Source: created by the authors)

Predictor Parameter	Estimate	SE	t	p	Correlation Coefficient
Intercept	33.8	8.16	4.14	<0.001	
SMM	11.6	2.39	4.86	<0.001	0.445

Table 8 F-test results for the SMM–NSSS Regression Line (Source: created by the authors)

F-test	R	R ²	F	df1	df2	p
	0.445	0.198	23.7	1	96	<0.001

Figure 5 *The NSSS–SMM regression line (Source: created by the authors)*

Conclusion

Our study aimed to explore the associations between general mindfulness, sexual mindfulness, sexual assertiveness, and both relational and sexual satisfaction on a Hungarian sample. While some hypotheses were not supported, the results provided important insights into the role of mindful awareness in intimate contexts.

As expected, dispositional mindfulness was significantly related to sexual mindfulness, though the strength of the association was weak. Sexual mindfulness, showed positive associations with sexual assertiveness (SAQ), relationship satisfaction (PAIR), and especially sexual satisfaction (NSSS), with moderate correlations observed. These findings support the idea that the ability to remain present, nonjudgmental and attuned during sexual experiences may play a beneficial role in fostering assertive communication, emotional connection and greater sexual fulfilment. Regression analyses further revealed that sexual mindfulness is a significant predictor of both sexual assertiveness and sexual satisfaction.

Despite limitations such as the small, predominantly female and highly educated sample, the study highlights the importance of cultivating mindfulness within intimate relationships. Future research could benefit from examining these dynamics in more diverse populations and considering the mediating roles of factors like body awareness, emotional regulation, and gendered sexual norms.

Overall, the findings contribute to suggesting that mindfulness, especially in its sexual form, is not only beneficial for individual mental health but may also serve as a way to feel deeper relational intimacy and satisfaction.

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When Selfobject Needs Remain Unmet: Pathways to Relational Conflict and Sexual Dysfunction

Abstract

This paper examines Kohut's self psychology as a relational-developmental framework for understanding the formation of the cohesive self and its implications for psychopathology, interpersonal functioning, and sexuality. Building on classical psychoanalytic theory while integrating contemporary attachment, mentalization, and affect regulation perspectives, the study highlights the central role of selfobject needs—mirroring, idealization, and twinship—in shaping psychological organization across the lifespan. When these needs are adequately met, they foster authenticity, emotional stability, and the capacity for intimacy; when disrupted, they contribute to fragmentation vulnerability, defensive interpersonal patterns, and relational strain. The review further demonstrates how selfobject processes influence couple functioning and sexual health, with unmet needs linked to diminished self-esteem, communication difficulties, and increased susceptibility to sexual dysfunction, particularly in medically or emotionally stressful contexts. Taken together, the findings underscore the enduring relevance of selfobject responsiveness in supporting psychological well-being and point toward the clinical value of empathic, developmentally informed interventions in both individual and couple psychotherapy.

Keywords: self-psychology; selfobject needs; mirroring; idealization; twinship; attachment; affect regulation; relational functioning; sexuality; sexual dysfunction

Introduction

Psychoanalytic theory underwent a significant paradigm shift in the late twentieth century with the emergence of self-psychology, founded by Heinz Kohut that redirected emphasis from instinctual drives and intrapsychic conflict toward the formation, maintenance, and psychopathology of the cohesive self (Kohut, 1971; 1977). Rooted in, yet ultimately moving beyond, classical Freudian theory and object relations theories, self-psychology conceptualized the Self not as a derivative of Ego functions but as the core of psychological experience and cohesion (Stolorow, Atwood, & Brandchaft, 1987; Wolf, 1988).

Where Freud (1914/1957) described early development as dominated by “primary narcissism,” Kohut challenged the assumption that narcissism was inherently pathological, arguing instead for a spectrum encompassing both healthy and developmentally essential narcissistic structures (Kohut, 1977; Banai, Mikulincer, & Shaver, 2005). The Self develops through empathically mediated interactions that foster three foundational capacities: healthy ambition (Grandiosity), internalized ideals (Idealization), and belongingness (Twinship) (Kohut, 1971; Siegel, 1996).

Empathy and Development of the Cohesive Self

Kohut viewed empathy as a primary developmental mechanism and a clinical instrument -“vicarious introspection”—through which internal experience is understood (Kohut, 1977). Appropriate empathic attunement enables the child to internalize regulatory functions, whereas chronic empathic failure leads to fragmentation, self-disorders, and vulnerability to narcissistic psychopathology (Baker & Baker, 1987; Karterud & Monsen, 1997).

Moderate, developmentally appropriate disappointment—optimal frustration—facilitates internalization of regulatory capacities (Kohut, 1971; Fonagy & Target, 2007). Empathy thus functions not merely as interpersonal sensitivity, but as a developmental scaffold for affect regulation and self-cohesion, anticipating contemporary attachment and neurobiological theories (Schore, 2012).

Selfobject Needs and Psychopathology

Kohut conceptualized selfobject needs as fundamental relational experiences required for the formation of the cohesive self. These needs—Mirroring, Idealization, and Twinship—correspond to three developmental axes: Grandiosity, Idealization, Connectedness (Kohut, 1971; 1977). When empathically met, they support self-esteem, ambition, internalized ideals, and a sense of belonging.

Mirroring Needs

Mirroring refers to the child’s need to feel seen, admired, affirmed, and emotionally held in the caregiver’s positive gaze. Through empathic reflection, a child internalizes capacities for self-soothing, motivation, and healthy self-esteem (Kohut, 1977). Inadequate mirroring leads to chronic self-doubt, hypersensitivity to shame, and reliance on external validation—features often

associated with narcissistic vulnerability and emotional dysregulation (Messer & Warren, 2001).

Idealization Needs

Idealization involves the child's need to experience the caregiver as powerful, calm, and wise, enabling the development of internalized ideals, self-regulatory capacity, and goals (Kohut, 1977). Disruptions lead to unstable ideals, disillusionment, and oscillation between idealization and devaluation, observed clinically in borderline and narcissistic personality structures (Kernberg, 1975; Diamond & Meehan, 2013).

Twinship Needs

The Twinship or Alterego function reflects the need to feel likeness and belonging: Fulfillment produces a sense of shared humanity, secure identity, and social belonging. Failures here often produce chronic feelings of alienation, emptiness, or compulsive peer-merging—frequent in both narcissistic problems and attachment problems (Siegel, 1996; Stern, 2024).

Developmental Injuries and Psychopathology

Kohut reframed psychopathology as resulting from structural deficits, not intrapsychic conflict. Chronic empathic failures produce distinctive developmental injuries.

Kohut's conceptualization of psychopathology, as presented by Baker and Baker (1987), identifies several characteristic disturbances of the self that arise from specific developmental failures in early caregiver–child interactions.

The Uderstimulated Self, which emerges when caregivers fail to provide adequate validating and stimulating responses. Individuals who develop under these conditions often experience a pervasive sense of inner emptiness, accompanied by compulsive attempts at self stimulation and a propensity toward various addictive behaviors.

The Fragmented Self, results from caregivers whose empathic responses are inconsistent, unpredictable, or chaotic. This developmental environment undermines the child's capacity to maintain a cohesive sense of self, leading in adulthood to dissociative tendencies, significant difficulties in affect regulation, and a range of psychosomatic symptoms.

The Overstimulated Self, which arises when caregivers provide excessive admiration, stimulation, or excitement. Although such responses may appear positive on the surface, they can overwhelm the developing self, ultimately

giving rise to fears of success and heightened anxiety surrounding ambition and performance.

The Overburdened self develops in the absence of a soothing, idealized caregiver capable of offering emotional support. Individuals shaped by this deficit often present with emotional isolation that is masked as self sufficiency or personal “strength.” They may struggle to seek help from others, experience chronic internal tension, and exhibit increased vulnerability to psychosomatic difficulties.

Such individuals often seek compensatory selfobject experiences, appearing clinically as:

- **Mirror-hungry personalities** — crave admiration to counter shame
- **Ideal-hungry personalities** — seek omnipotent figures to feel safe
- **Twinship-hungry personalities** — search for sameness to avoid fragmentation (Siegel, 1996)

These structures map closely onto contemporary concepts of attachment-problems, mentalization problems, and affect-regulation deficits (Fonagy & Allison, 2014; Schore, 2012).

In psychotherapy, selfobject transferences emerge—Mirroring, Idealizing, and Twinship—and are worked through empathically, not interpreted as resistance (Kohut, 1977; Stolorow et al., 1987). This process allows “missing experiences” to be internalized, promoting structural repair. Contemporary relational and mentalization-based frameworks increasingly validate these mechanisms (Fonagy & Target, 2007; Orange, Stolorow, & Atwood, 1997).

Selfobject Needs in Healthy and Troubled Relationship Functioning

Selfobject needs provide a foundational framework for understanding both adaptive and maladaptive relational functioning. Mirroring, idealization, and twinship constitute essential psychological functions through which individuals maintain self-cohesion, regulate affect, and develop a sense of belonging (Banai et al., 2005). Because these needs remain influential across the lifespan, the extent to which they are adequately met within intimate relationships becomes a central determinant of relational stability and emotional wellbeing.

In healthy relational contexts, partners are able to function as reliable selfobjects who provide attunement, validation, and affective soothing. Such responsiveness strengthens the partner’s sense of self and reduces the reliance on primitive forms of external regulation (Lopez et al., 2013). As developmental capacities mature, selfobject needs evolve from early dependency-based

expressions toward more differentiated forms that support autonomy, authenticity, and mutuality. In this process, individuals who feel mirrored and understood become more capable of expressing needs openly, tolerating vulnerability, and engaging in reciprocal care. Dispositional authenticity—coherence between inner experience and outward expression—has been linked to increased self-regulation and deeper interpersonal connectedness, reflecting the internalization of earlier selfobject experiences (Goldman & Kernis, 2006). These dynamics foster secure attachment, relational satisfaction, and emotional resilience (Marmarosh & Mann, 2014).

However, relational difficulties frequently arise when selfobject needs are insufficiently met, inconsistently met, or responded to in developmentally inappropriate ways. Unmet selfobject needs may contribute to insecure attachment patterns, complicating emotional interactions and promoting maladaptive strategies aimed at stabilizing fragile self-esteem. When partners seek continual reassurance to meet mirroring needs, dependency and heightened anxiety may emerge; conversely, chronic failures in providing selfobject responsiveness can lead to avoidance, emotional withdrawal, or compulsive self-reliance (Banai et al., 2005; Lopez et al., 2013). These responses often reflect attempts to defend against further empathic failures, yet they paradoxically undermine intimacy and heighten distress (Marmarosh & Mann, 2014).

Empirical work further demonstrates that chronic disruptions in selfobject availability can produce emotional instability, particularly under stress (Banai et al., 2005). Individuals may retreat into isolation or rely on compulsive behaviors to regulate overwhelming affect, reinforcing maladaptive relational dynamics and limiting access to corrective interpersonal experiences. Limited emotional self-disclosure has similarly been linked to relational dissatisfaction and disconnection, as restricted communication impedes partners' ability to meet each other's needs (Khodayari & Ahadi, 2022). By contrast, studies examining contexts such as pregnancy highlight how empathic responsiveness and the recognition of socioemotional needs can serve as stabilizing forces within relationships (Shomaker et al., 2020).

These relational patterns often have roots in earlier developmental environments. Chronic failures in early caregiving relationships may produce enduring self-deficits that are later reenacted in intimate partnerships, contributing to cycles of blame, withdrawal, idealization–devaluation, or reactive aggression (Fosshage, 1995; Lachmann, 1986; Park et al., 2024). These reenactments often represent efforts, usually outside awareness, to regain regulatory experiences that were not adequately internalized earlier in development. Over time, these defensive patterns may erode relational stability, diminish intimacy, and reinforce feelings of emotional disconnection.

The interplay between selfobject needs and attachment styles thus provides a powerful lens through which to conceptualize both healthy and troubled

relationships. Healthy relationships offer opportunities for flexible, reciprocal engagement in which partners can both provide and receive selfobject functions. In contrast, chronic unmet needs or rigid compensatory strategies perpetuate instability and increase vulnerability to relational stress. Recognizing and addressing selfobject needs within therapeutic contexts has been shown to deepen the therapeutic alliance, facilitate corrective emotional experiences, and support the development of more adaptive relational patterns (VanDerHeide, 2009; Leone, 2021).

These findings indicate that selfobject needs are not merely developmental phenomena but function as ongoing relational processes that influence intimacy, affect regulation, and resilience across adult relationships. Recognizing how selfobject needs operate in adult relationships helps clarify the mechanisms that support relational functioning and offers practical guidance for clinical work.

Selfobject Needs in Healthy Sexuality and Sexual Dysfunction

The relevance of selfobject needs extends directly into the domain of sexual functioning, where relational attunement, validation, and a sense of connectedness represent crucial foundations for both healthy sexuality and the prevention of sexual dysfunctions. From a Kohutian perspective, sexuality cannot be understood purely as a biological or behavioral phenomenon; rather, it emerges from a cohesive self capable of experiencing desire, intimacy, vulnerability, and reciprocal pleasure. When selfobject needs—mirroring, idealizing, and twinship—are adequately met, they support a stable sense of self that can engage in sexual relating with confidence, authenticity, and emotional presence. Conversely, when selfobject needs remain unmet, they can create emotional and relational conditions that increase vulnerability to sexual difficulties.

Unmet selfobject needs may affect sexual functioning through several mechanisms. First, the absence of adequate attunement and emotional responsiveness increases psychological distress, which is strongly linked to decreased arousal, lowered libido, and performance-related anxieties across clinical populations (Fatiregun et al., 2019). Second, when validation is limited or inconsistent, individuals may internalize negative self-evaluations or experience their bodies as unreliable, damaged, or unworthy—factors particularly salient in survivors of prostate or gynecologic cancers who face treatment-related sexual changes (Chambers et al., 2019). Such disruptions compromise the internalization of healthy idealizable figures and impede the capacity to sustain a stable and confident sexual self.

Relational dynamics further mediate the link between selfobject functioning and sexual wellbeing. Couples-based studies highlight that sexual dysfunction

rarely exists in isolation; rather, it emerges within patterns of communication, mutual responsiveness, and shared meaning-making. When partners struggle to express sexual needs or fears—whether due to shame, avoidant coping, or concerns about burdening the other—selfobject needs remain unrecognized or unmet, perpetuating emotional distance and sexual dissatisfaction. Interventions that support clearer dialogue, acknowledgment of each partner's experience, and greater empathic responsiveness have been shown to improve both sexual and relational outcomes, underscoring the centrality of selfobject processes in couple sexual functioning (Chambers et al., 2019).

Twinship needs—experiences of sameness, belonging, and shared identity—also play an essential role in healthy sexuality. A sense of “we-ness,” or dyadic cohesion, has been shown to buffer distress associated with illness-related changes in sexuality and to facilitate adaptive coping strategies. Couples who maintain a sense of partnership despite functional changes—whether through humor, experimentation, or renegotiation of sexual expectations—tend to report greater satisfaction and resilience. These findings echo Kohut's notion that a stable self emerges not only from being seen and admired, but also from feeling accompanied.

Research across different clinical and cultural settings indicates that when selfobject needs are met, individuals tend to experience more stable and satisfying sexual functioning. When mirroring is present, individuals tend to experience stronger sexual self-esteem, reduced performance anxiety, and greater comfort communicating desires. When idealization is available in adaptive forms, individuals demonstrate more hopeful and proactive engagement with sexual rehabilitation, for example after cancer treatment (Bond et al., 2019). When twinship needs are fulfilled, partners can renegotiate sexual intimacy in ways that preserve closeness despite physical or emotional challenges, reinforcing relational resilience and mutual regulation.

These perspectives show that sexual functioning is closely linked to relational and self-regulatory systems, rather than being a purely individual or biological phenomenon. Unmet selfobject needs heighten vulnerability to sexual dysfunction by undermining self-esteem, impairing affect regulation, and constraining the capacity for intimate communication. Conversely, relationships characterized by empathic responsiveness, clear information, and a sense of mutual belonging tend to support more adaptive and satisfying sexual functioning. Clarifying these processes provides a more precise theoretical basis for understanding sexual functioning and supports the development of more targeted clinical interventions.

Conclusion

This paper examined selfobject needs within Kohut's self-psychology as a unifying framework for understanding the development and maintenance of a cohesive self, the quality of adult relationships, and patterns of sexual functioning. Across the reviewed literature, mirroring, idealization, and twinship emerged as enduring relational motivators, not limited to childhood but continuously shaping how individuals regulate affect, form attachments, and experience intimacy. When these needs are met with consistent empathic responsiveness, they support authenticity, emotional stability, and a secure relational bond. When unmet, however, they contribute to fragmentation vulnerability, defensive interpersonal patterns, and relational strain.

These dynamics extend clearly into couple functioning and sexuality. Partners who can provide reliable selfobject experiences—empathic attunement, validation, and a sense of shared identity—tend to report more satisfying relationships and healthier sexual functioning. Conversely, disruptions in selfobject responsiveness are associated with communication difficulties, diminished self-esteem, and increased susceptibility to sexual dysfunction.

Overall, the findings underscore that selfobject needs operate as core relational processes throughout adulthood, influencing psychological wellbeing in both everyday functioning and moments of heightened vulnerability. Integrating self-psychological concepts with attachment, affect regulation, and contemporary clinical research offers a more comprehensive understanding of relational and sexual difficulties and highlights the importance of empathic, developmentally informed interventions in both individual and couple therapy.

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Etiology and Treatment of Sexual Disorders

Abstract

Masters and Johnson, together with other authors such as Kaplan and Kinsey, are considered pioneers of sexual therapy in the 1960s. They proposed a simple model that conceptualized the treatment of sexual dysfunctions as a gradual exposure to situations generating anxiety in the individual. Although this model remains relevant today, the sexual reality of contemporary society has evolved, necessitating the inclusion of new variables in treatment approaches to achieve optimal efficacy. It is worth noting that sexual interactions tend to be more sporadic and unstable, leading individuals to self-evaluate more frequently in terms of physical appearance and sexual performance. Such performance is often compared to models presented in pornography, which has become a sexual reference point for most young people. It is also important to consider that sexual therapy was originally conceived to be carried out with stable couples; however, nowadays, a large number of individuals attend therapy alone and without having a stable partner. This situation leads us to propose some recommendations that could be taken into account to better address clinical cases.

Keywords: *Sexual therapy, Sexology, Sexual disorders*

Introduction

Sexual function is a complex biopsychosocial process coordinated by the neurological, vascular, and endocrine systems (Avasthi et al., 2017). Beyond its biological dimension, psychosocial factors such as social and religious beliefs, health status, personal experience, ethnic background, and sociodemographic conditions play a decisive role in adequate sexual functioning. Moreover, sexual activity always occurs within a relational context, in which each individual brings unique attitudes, needs, expectations, and emotional responses. Disruptions in any of these areas may lead to sexual dysfunction, highlighting the importance of integrative approaches in both research and clinical practice (Raposo et al., 2024).

Prevalence data underscore the clinical significance of this issue. Approximately 43% of women and 31% of men experience some form of sexual dysfunction at some point in their lives. Among men, premature ejaculation

is the most common; among women, studies vary—some identify hypoactive sexual desire disorder as the most frequent, followed by orgasmic and arousal disorders, while others emphasize difficulties achieving orgasm and vaginal dryness. These conditions may be lifelong or acquired, generalized or situational, and can affect not only sexual performance but also self-esteem and relationship satisfaction (Rosen, 2000).

Despite their high prevalence, sexual dysfunctions often go undetected and underdiagnosed. Many clinicians report limited training in sexuality, resulting in superficial evaluations and inadequate interventions. This gap between prevalence and clinical detection demonstrates the need for continuous education in sexual health.

A study by Gonsalves et al. (2020) analyzed international and national professional guidelines on sexual function and dysfunction. The findings indicated that 48% of recommendations were evidence-based, 10% were grounded in “clinical principles” (best practices generally accepted by physicians), and 42% relied on expert opinion. This suggests that much of clinical decision-making in sexual therapy continues to depend on professional judgment and experience, reflecting both the complexity of sexual behavior and the evolving nature of scientific knowledge.

Modern sexual therapy originated in the 1960s and 1970s with the work of Masters and Johnson, who conducted the first scientific studies on human sexual behavior and developed a clinical intervention model for sexual disorders. Their intervention was based primarily on gradual exposure to sexual activity to reduce associated anxiety. Two additional key elements were the enhancement of communication—facilitating the expression of feelings and desires—and the expansion of the couple’s repertoire of pleasure, encouraging focus beyond intercourse and genitality.

While this intervention model remains widely used today due to its simplicity, it must be complemented with other strategies that enhance therapeutic effectiveness, given that sexuality is a constantly evolving human behavior. The patterns of sexual interaction observed in contemporary clinical practice differ markedly from those encountered by Masters and Johnson. Analyzing these changes and integrating them into therapeutic frameworks is essential for improving clinical outcomes.

Historical Development

William Masters began his studies on human sexuality in 1957, assisted by Virginia Johnson, who would later become both his scientific and romantic partner. In 1966, they published *Human Sexual Response*, marking the beginning of sexology as both a scientific discipline and a field of clinical intervention. One

of their major contributions was the division of the sexual response cycle into four phases: excitement, plateau, orgasm, and resolution (Masters & Johnson, 1966), within which they described the physiological changes occurring in men and women.

From this foundation, and with contributions from later authors, a therapeutic procedure emerged based on gradual exposure to sexual activity (understood primarily as penetration), in which subjects were instructed to progressively advance toward the act. This gradual approach allowed for the reconditioning of anxiety—essentially applying the same principles used in behavioral treatments for anxiety disorders.

Throughout this process, couples improved their sexual communication—expressing likes, discomforts, and emotions—and expanded their sexual repertoire by incorporating new forms of pleasure such as caressing and playful interaction. It is important to note that Masters and Johnson's interventions were exclusively couple-based and aimed to reestablish penetrative sexual activity leading to orgasm. These features have been criticized for their heteronormative focus and for prioritizing orgasmic performance through penetration.

Later authors expanded the model by incorporating elements such as emotions, attitudes, and expectations (Hite, 1976; Kaplan, 1974, 1996a, 1996b; LoPiccolo & Stock, 1986). While early sexual therapy was heavily influenced by behaviorism (Lazarus, 1971), subsequent decades saw the integration of elements from cognitive and systemic psychology, broadening both the scope of assessment and intervention.

Conceptual Framework

Before initiating any intervention, it is essential to identify the origins of the sexual dysfunction. What factors have triggered the subject's avoidance or withdrawal behaviors? Why is the sexual response inhibited by anxiety? Does the individual fear rejection, inadequacy, or failure to meet expectations? Have there been prior unsatisfactory experiences?

Assessment must go beyond the dysfunction itself, exploring the individual's sexual history, sexual knowledge, self-esteem, communication styles, and other factors that may influence healthy sexual development.

Although Sensate Focus and related exercises have proven effective (Masters & Johnson, 1995), they often fail to address individual-specific variables, explaining why sexual therapy may sometimes yield suboptimal results. Clients may not fully understand the rationale behind the intervention, leaving underlying fears and anxieties unresolved.

Contemporary sexual therapy differs significantly from the context of Masters and Johnson's era (Cabello, 2003). For instance, many clients today

do not have stable partners, rendering traditional sensate focus techniques impractical. In such cases, treatment must help individuals confront personal fears related to self-esteem and sexual expectations.

Current models of sex education often fail to prepare individuals for healthy sexuality—not only in terms of physical health (STI prevention, contraception, genital knowledge) but also in terms of emotional and relational awareness. Every new sexual encounter, even for an experienced individual, requires adaptation to a new partner's desires, comfort levels, and boundaries.

However, casual sexual encounters have become increasingly common, often emphasizing physical appearance and performance. The emergence of online dating platforms has simplified sexual partnering, reducing the role of social skills and deep interpersonal connection, while increasing performance-related anxiety.

Pornography has become a major educator for younger generations (Navarro-Mantas & Sáez-Lumbreras, 2025), promoting unrealistic models of sexual performance—prolonged excitement, rapid pacing, multiple positions, and mutual orgasm as the expected conclusion. Such portrayals foster distorted expectations, leading individuals to interpret normal sexual variability as failure.

Modern sex education must challenge these myths and emphasize adaptive sexual communication and pleasure that aligns with one's partner and oneself, rather than with pornographic ideals.

Many sexual dysfunctions originate from such misconceptions. For instance, temporary loss of erection may be entirely normal and easily recoverable, but if interpreted as disinterest or inadequacy, it may trigger avoidance and perpetuate dysfunction. Similarly, a partner might interpret this as rejection or unattractiveness, leading to anxiety that further impacts future sexual interactions.

Pornography also promotes a model of constant high arousal until orgasm, whereas real sexual encounters naturally involve fluctuations in excitement. Effective clinical evaluation must identify these interpretive errors—understanding what the client thought, felt, and concluded—to address the maintenance mechanisms of dysfunction.

Too often, clinicians hastily apply technical interventions aimed at restoring sexual performance without addressing the underlying fears and self-esteem issues that require deeper therapeutic work. Sexual history, early learning experiences, and internalized myths—all of which are often reinforced by pornography—must be explored in depth.

While diagnostic systems categorize dysfunctions based on the phases of the sexual response cycle (Masters & Johnson), rapid diagnosis and treatment selection may overlook the specific anxieties triggering the dysfunction. Improved therapeutic outcomes require focusing on these underlying factors, both during and prior to sexual interactions.

Conclusions

Current diagnostic frameworks for sexual dysfunction often rely on the sexual response phases established by Masters and Johnson. Although treatment techniques can be selected swiftly, clinical outcomes remain limited when underlying anxiety factors are neglected.

The contemporary therapeutic landscape requires clinicians to move beyond mere technique, addressing broader dimensions such as body image, gender roles, sexual scripts, and the influence of digital intimacy. Integrating psychoeducation, mindfulness, and cognitive restructuring has proven effective for clients whose difficulties stem from perfectionism, anxiety, or unrealistic comparisons linked to pornography and social media.

Moreover, the success of any sexual therapy largely depends on creating a safe, nonjudgmental environment where clients can express shame, fear, and frustration. Interventions must be tailored to each individual's relational reality—whether in stable couples, polyamorous contexts, or individual exploration—and acknowledge that sexual wellbeing extends beyond the absence of dysfunction, encompassing pleasure, emotional connection, and personal meaning.

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An Approach to Problematic Pornography Use: Challenges and Clinical Considerations

Abstract

Pornography has evolved from a stigmatized cultural artifact to a ubiquitous digital phenomenon shaped by technology, culture, and social norms. This paper explores the multifaceted nature of pornography use, emphasizing the distinction between non-problematic and problematic consumption. Drawing on recent empirical and neuropsychological evidence, it examines how chronic or compulsive patterns may impact emotional regulation, reward processing, and relational functioning. The discussion highlights the conceptual and diagnostic challenges surrounding Problematic Pornography Use (PPU) and its relation to Compulsive Sexual Behavior Disorder within the ICD-11 framework. Vulnerable populations, such as adolescents, neurodivergent individuals, and older adults, are identified as being at higher risk due to developmental or psychosocial factors. Clinically, assessment should prioritize function over morality, focusing on whether pornography serves as a coping mechanism, emotional regulator, or substitute for intimacy. Evidence-based interventions include cognitive-behavioral and acceptance-based therapies, mindfulness, and relational work. Emerging phenomena, including parasocial dynamics on platforms like OnlyFans and AI-generated sexual content, redefine intimacy and pose novel ethical and therapeutic challenges. Understanding pornography as both a cultural and psychological construct allows clinicians and researchers to address its risks and potentials within an increasingly mediated sexual landscape.

Keywords: *pornography, problematic pornography use, compulsive sexual behavior disorder, digital intimacy, neuropsychological impact, clinical assessment, therapy, OnlyFans, artificial intelligence, ethics*

Introduction

Pornography is one of the most widely consumed yet least openly discussed forms of media. Historically, the term *pornographos* in Ancient Greek referred to writings about prostitutes, while its modern sense, sexually explicit material created with the intention of arousing sexual excitement, emerged in the 19th century, influenced by Victorian moral codes and evolving legal frameworks

(Binnie & Reavey, 2019). Beyond being a type of content itself, pornography functions as a social category shaped by cultural norms, legal regulations, and institutional discourse (Chile & Gbasha, 2024).

The digital age has transformed both the accessibility and visibility of pornography. High-speed internet, mobile devices, and affordable or free platforms have made sexual content virtually ubiquitous, allowing users to engage with a broad spectrum of material discreetly (Ashton et al., 2019). This proliferation highlights the importance of understanding pornography not merely as media, but as a psychological, social, and ethical phenomenon (Chile & Gbasha, 2024).

To study and address its impact, it is crucial to establish a precise definition, enabling researchers, clinicians, and policymakers to distinguish pornography from erotic art, literature, or educational content (Eaton, 2018). Such distinctions inform legal frameworks, ethical considerations, and clinical interventions, providing clarity for both research and practice.

Defining Pornography

Defining pornography is a complex and contested endeavor. According to McKee et al. (2019), pornography can be described as sexually explicit material created with the intention of eliciting sexual arousal. However, there is no universal consensus, as the definition varies across cultural, historical, and legal contexts. Some scholars emphasize textual qualities, arguing that pornography is inherently explicit, while others treat it as a socially constructed category, whose meaning is assigned by specific institutions, discourses, and cultural norms (Andrews, 2012).

In this regard, researchers in the social sciences tend to favor operational definitions suitable for empirical research, emphasizing measurable characteristics such as intent and explicitness. Humanities scholars, by contrast, often frame pornography as a conceptual category, variable across time, culture, and institutional interpretation (McKee et al., 2019). This distinction highlights a central tension: defining pornography for empirical purposes requires clarity and precision, whereas conceptual definitions aim to capture cultural and ethical complexity, sometimes resisting closure.

Recent work further extends the definition by introducing ethical considerations, particularly the role of consent. Drawing on existing definitions and the ethical implications of new technologies, Ashton et al. (2019) propose the following definition: “*Material deemed sexual, given the context, that has the primary intention of sexually arousing the consumer and is produced and distributed with the consent of all persons involved.*” This formulation preserves the traditional criteria of sexual content and arousal intent but explicitly incorporates consent.

This addition is particularly relevant in the digital age, where the proliferation of online content has made non-consensual material more visible and socially consequential. By embedding consent within the definition, researchers can avoid inadvertently legitimizing sexual assault, provide ethical guidance for social science investigations, and promote responsible research dissemination (Moretta et al., 2022). Moreover, emphasizing consent supports the dialogue towards ethical pornography, while enhancing issues for the development of legal and health policies aimed at preventing sexual violence (Ashton et al., 2019).

Patterns of Consumption

Pornography consumption is a complex, multifaceted phenomenon shaped not only by individual preferences but also by cultural trends, technological access, and social context (Navarro-Mantas & Sáez-Lumbreras, 2025). Recent data from Pornhub Insights (2024) provide a detailed overview of how these factors influence viewing patterns globally.

On average, visitors spent approximately 9 minutes and 40 seconds per visit, with women staying slightly longer than men. Daily and weekly usage reveal predictable peaks: traffic is lowest during early morning hours, around 3 a.m. to 1 p.m., and begins to rise in the afternoon around 2 p.m., coinciding with lunch breaks or moments of rest. Traffic increases steadily in the evening, reaching a peak at midnight, reflecting both circadian rhythms and lifestyle factors. Notably, Mondays emerge as the most popular day for viewing, while Fridays show lower engagement, likely due to social and recreational activities. Country-specific data reveal that Mexico has the longest average session (11 minutes and 1 second), followed by the Netherlands and the United States.

Consumption preferences differ significantly across generations, reflecting distinct socialization patterns, technological fluency, and sexual scripts. Generation Z (18–24 years) shows high engagement with vertical videos, hentai, and gaming-related content, indicating a desire for experiences beyond explicit sexual material, analogous to how Boomers historically engaged with Playboy for its editorial content. Generation Y (25–34 years) tends toward FMM content and tattooed performers, with emerging interest in parody. Generation X (35–54 years) prefers compilation videos, role-play, and fetish content such as feet. Boomers (55+ years) gravitate toward handjob, BBW, and strap-on categories, often engaging with group sex content, reflecting established sexual scripts and long-term preferences.

Pornography consumption is heavily influenced by cultural phenomena, viral trends, and major world events. The “Demure Desires” trend, inspired by viral TikTok videos, led to increases in searches for “demure,” “mindful

pleasure,” and “ethical porn.” Similarly, the release of *The Secret Lives of Mormon Wives* spurred searches for “wife” and marital-themed pornography, including amateur wife, traditional wife, and “wife threesome,” illustrating the interaction between mainstream media narratives and sexual fantasy. Major global events also shape consumption: during the 2024 Paris Olympic Games, searches for “sex Olympics” and athlete-related content surged, showing how sexuality intertwines with societal focus and collective attention.

The continued popularity of animation and hentai indicates the importance of fantasy, escapism, and imaginative engagement, particularly among younger viewers, while viral sensations like “Hawk Tuah” demonstrate the influence of social media and candid cultural phenomena on sexual exploration. The medium of consumption significantly impacts engagement. In 2024, smartphones accounted for 90.5% of global traffic, reflecting intimate, private, and portable access. Desktop and laptop usage increased slightly, as did tablets, suggesting a diversification of access methods. The dominance of mobile technology enables on-demand consumption, embedding pornography into daily routines.

Globally, the average visitor was 38 years old, with the largest segment comprising 18–24-year-olds and 25–34-year-olds, together accounting for over half of all traffic. Older adults, particularly those over 45, are proportionally more prevalent in countries such as Spain and Argentina, highlighting how age influences both access and interest. Gender differences were minor, with female visitors spending slightly longer per session on average. Geographically, the United States, France, and the Philippines represented the top three countries by traffic, together reflecting the intersection of population size, cultural norms, and internet accessibility. Regional variations show culturally specific interests, such as Nevada’s searches for “Vegas” and Spain’s concentration of older viewers.

With all this, pornography consumption is dynamic and multifactorial, influenced by generational preferences, cultural trends, technological platforms, and global events. Temporal, demographic, and device-related patterns underscore the pervasiveness and accessibility of pornography in modern life. Understanding these patterns provides a critical foundation for research, clinical intervention, and educational initiatives, highlighting the importance of considering context, media influence, and technological mediation when assessing the effects and implications of pornography use.

Neuropsychological Impact

Chronic and frequent pornography consumption has been increasingly associated with neuropsychological changes resembling patterns observed

in behavioral and substance-related addictions (Shu et al., 2025). While the specific neurobiological mechanisms remain under investigation, current evidence highlights alterations in brain connectivity, reward processing, and autonomic functioning.

Individuals with high-frequency pornography use seem to exhibit enhanced functional connectivity in the primary sensory cortex and supplementary motor cortex, as well as stronger activity in the parasympathetic nervous system compared to low-frequency users (Volkow et al., 2011). These patterns suggest heightened sexual arousal responses and a more pronounced engagement of sensorimotor circuits. High-frequency pornography use has also demonstrated increased functional connectivity in the frontopolar, ventrolateral, and dorsolateral prefrontal cortices, regions implicated in executive control, decision-making, and reward evaluation (Shu et al., 2025). This mirrors neural pathways activated in substance use, particularly the midbrain-limbic dopamine system, which connects the ventral tegmental area, nucleus accumbens, amygdala, hippocampus, and prefrontal cortex (Gu et al., 2021; Zattoni et al., 2020). Such parallels underscore the shared neurobiological substrates between compulsive pornography use and other addictive behaviors.

Additionally, pornography-induced arousal is accompanied by measurable autonomic changes. High-frequency viewers show reductions in heart rate and increased standard deviation of normal-to-normal interbeat intervals (SDNN), paralleling physiological responses observed during opioid use, including euphoria, analgesia, and blunted emotional expressivity (Zhang et al., 2024). Cognitive effects are also apparent: a decreased accuracy and longer reaction times on the Stroop Color–Word Test, consistent with impaired executive functioning under conditions of repeated stimulation, have been reported (Shu et al., 2025).

Frequent consumption is linked to negative affective states, including anxiety and depression, and may serve as a coping mechanism to manage stress (Privara & Bob, 2023). High-frequency users score higher on standardized measures of anxiety and depression, corroborating prior findings that excessive pornography use affects both cognitive control and emotional regulation (Shu et al., 2025). Neuroimaging studies further reveal increased connectivity between the dorsolateral prefrontal cortex and orbitofrontal cortex, which may initially enhance brain function but, when overactivated, contribute to short-term cognitive decline and emotional dysregulation (Kühn & Gallinat, 2014).

These findings suggest that chronic pornography consumption can influence reward sensitivity, impulse control, and emotional regulation in ways that resemble established addictive behaviors (Love et al., 2015). Treatment approaches typically begin with psychotherapeutic interventions such as acceptance and commitment therapy and cognitive-behavioral strategies. Pharmacological adjuncts, including serotonin-reuptake inhibitors or anti-androgens, may be

considered in severe cases, though evidence remains preliminary and controversial (Sharma et al., 2022).

Thus, neuropsychological evidence highlights that high-frequency pornography consumption can alter reward processing, functional connectivity, and emotional regulation, supporting the conceptualization of pornography use as a behavior with potential addictive properties (Prantner et al., 2024; Zhang et al., 2025).

Compulsive Sexual Behavior Disorder and Pornography-Use Disorder

Pornography consumption may become clinically significant for some individuals, manifesting as compulsive sexual behavior that impairs daily functioning and psychological wellbeing. The *International Classification of Diseases* (ICD-11) (World Health Organization, 2023) recognizes Compulsive Sexual Behavior Disorder as an impulse-control disorder encompassing behaviors such as excessive pornography use. However, there is ongoing debate regarding the most appropriate conceptual framework.

The American Society of Addiction Medicine (ASAM, 2019) emphasizes that addiction is defined by its neurobiological impact on the brain rather than by the specific substance or behavior. This perspective suggests that compulsive internet pornography use shares reward-system activation, cue-reactivity, and psychosocial consequences with other behavioral addictions, including Internet Gaming Disorder (Love et al., 2015). By contrast, the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5; American Psychiatric Association, 2013) uses restrictive definitions that exclude non-gaming internet behaviors, creating a conceptual inconsistency: excessive engagement with internet pornography exhibits neurobiological and behavioral features similar to Internet Gaming Disorder, yet is often not classified analogously (Love et al., 2015; Vieira et al., 2024).

Neuroimaging and behavioral studies support the emergence of Pornography-Use Disorder as a distinct clinical entity within the ICD-11 framework of “Other specified disorders due to addictive behaviors” (Griffiths et al., 2022). Hallmarks include loss of control over pornography consumption, persistent use despite negative consequences, compulsive engagement driven by craving and cue-reactivity, and functional impairment in personal, occupational, or social domains (Antons et al., 2020). These criteria parallel those observed in substance-use disorders, reinforcing the argument for a specific diagnostic focus on problematic pornography use (PPU).

Recognizing pornography-use problems as clinically relevant has implications for assessment, prevention, and intervention. Psychotherapy, particularly

cognitive-behavioral approaches, is the first-line treatment, often complemented by strategies targeting emotional regulation, sexual desire re-education, and relational dynamics (López-Pinar et al., 2025; Roza et al., 2024). The debate over addiction versus impulse-control classification highlights the need for continued research into the neuropsychological and psychosocial mechanisms underlying compulsive pornography consumption.

Evidence from neuroscience, behavioral studies, and clinical observation supports the consideration of compulsive pornography use as a potentially addictive behavior. Understanding its neurobiological underpinnings and psychosocial manifestations is critical for accurate classification and effective intervention.

Vulnerable Populations

Certain populations exhibit heightened sensitivity to the effects of pornography consumption due to developmental, cognitive, or social factors. Understanding these vulnerabilities is essential for targeted prevention, education, and clinical interventions (Sutrisno & Saputra, 2025).

Adolescents and young adults are particularly susceptible due to ongoing neurodevelopment, especially in the prefrontal cortex, which governs impulse control, decision-making, and emotional regulation (Casey et al., 2008). Exposure to pornography during critical developmental windows can shape sexual scripts, potentially reinforcing associations between desire, dominance, or coercion. Repeated consumption may normalize unrealistic expectations of sexual behavior and body image, influencing relational patterns and self-perception (Mestre-Bach & Potenza, 2025).

Individuals with neurodevelopmental conditions such as Attention-deficit/hyperactivity disorder (ADHD) or autism spectrum disorder may demonstrate heightened focus or compulsivity, making them more likely to engage excessively with pornography (Privara & Bob, 2023). Hyperfocus, a common ADHD trait, can intensify engagement with pornographic content, while social difficulties may contribute to the use of pornography as a coping or compensatory mechanism for intimacy deficits (Niazof et al., 2019). For individuals on the spectrum, literal interpretation of sexual behaviors depicted may lead to confusion or imitation, underlining the importance of guided sexual education and support (Motamed et al., 2025).

Older adults navigating life transitions, such as divorce, retirement, or bereavement (Hawkey & Kocherginsky, 2018), may increasingly turn to pornography to manage loneliness or rekindle sexual exploration. This population often lacks familiarity with the digital landscape, which can amplify the risk of engagement with extreme or unrealistic content, fostering anxiety, performance pressure, or unrealistic comparisons (Sousa, 2020).

Cultural background, religious norms, and societal messaging influence both access to and interpretation of pornography (Grigoropoulos, 2023). For instance, individuals from conservative societies may internalize shame or guilt related to sexual expression, increasing the risk of secretive consumption, internal conflict, or compulsive use (Volk et al., 2016).

Vulnerable populations require tailored interventions that address developmental stage, cognitive differences, and socio-cultural context. Awareness of these factors allows researchers and clinicians to implement prevention strategies, educational programs, and clinical interventions that support healthier sexual development and coping mechanisms.

Clinical Considerations

Not all pornography use is inherently problematic. However, up to 10% of users may develop PPU (Brand et al., 2019). Clinical relevance emerges when consumption results in functional impairment, emotional distress, or compulsive patterns (Ince et al., 2023). Assessment should focus on function rather than moral judgment. Clinicians evaluate whether pornography is used to relieve anxiety or manage negative affect, as a substitute for social or intimate interaction, or purely for sexual stimulation without adverse consequences (López-Pinar et al., 2025). Excessive reliance on pornography to regulate mood or escape real-life stressors may indicate a clinically significant pattern requiring intervention (Brand et al., 2019).

When use is problematic, interventions generally target three domains. The first domain is emotional self-regulation, developing sustainable strategies to manage difficult emotions, including mindfulness, cognitive restructuring, and acceptance-based approaches (Yıldız et al., 2024). The second domain is re-education of desire and the body, which involves techniques such as mindful sexual practices (Pareek et al., 2023), graded exposure, fantasy work, and sensory reconnection to help individuals align arousal with realistic sexual experiences, reducing reliance on mediated content (Roza et al., 2023). The third domain is relational dynamics, addressing secrecy, divergent sexual meanings, or relational conflict to improve transparency and shared understanding within couples, fostering intimacy beyond pornography (Ford et al., 2012).

Therapeutic modalities include cognitive-behavioral therapy, which targets maladaptive thoughts and behaviors, enhancing impulse control and emotion regulation; acceptance and commitment therapy, which focuses on acceptance of internal experiences while committing to value-based behaviors; and couples therapy, which helps partners navigate disagreements, establish boundaries, and renegotiate shared sexual expectations (Roza et al., 2023). Pharmacological

approaches, in severe cases, may involve SSRIs or anti-androgens, though evidence remains mixed and ethical considerations must be weighed (Sniewski et al., 2018).

Education on healthy sexual development, media literacy, and the ethical production and consumption of sexual content can mitigate risk before compulsive patterns emerge (Scull et al., 2022). Clinicians can provide psychoeducation emphasizing consent, diversity of desire, and critical engagement with sexual media. Clinical interventions should be context-sensitive, individualized, and focused on functional impact. Understanding the role of pornography in emotional regulation, sexual development, and relational dynamics is essential for effective assessment and treatment (Testa et al., 2024).

New Phenomena: OnlyFans and Artificial Intelligence

Platforms such as OnlyFans have transformed pornography into an interactive, participatory, and transactional experience. Users increasingly seek not only sexual stimulation but also connection and affirmation, resulting in parasocial relationships: one-sided emotional bonds with creators who do not reciprocate the interaction (Hoffner & Bond, 2022).

These interactions blur the line between intimacy and performance, as consumers may perceive attention, personalized messages, or tailored content as genuine emotional engagement. This shift creates a digital economy of intimacy, where individuals pay not only for sexual content but also for the perception of authenticity, recognition, or the illusion of being special (Cardoso et al., 2022).

Such transactional engagement can influence expectations of real-world relationships. Users may begin to prioritize mediated experiences over physical connections, potentially altering attachment patterns and emotional regulation (Cardoso et al., 2022). The parasocial nature of these relationships may reinforce reward-seeking behaviors, as intermittent reinforcement from creators (likes, messages, or exclusive content), mirrors the mechanisms underlying behavioral addiction. Over time, this can increase reliance on mediated intimacy to fulfill emotional or sexual needs, contributing to problematic use (Hoffner & Bond, 2022).

Artificial intelligence further amplifies these dynamics. AI-generated content, including deepfakes, synthetic pornography, and virtual partners, can simulate memory, emotional intimacy, and sexual responsiveness (Döring et al., 2025). These technologies challenge the distinction between fantasy and reality, enabling experiences that are increasingly personalized and emotionally engaging without reciprocal interaction. Users may form attachments to virtual agents, raising questions about desire formation, consent, and relational expectations (Kim & Banks, 2024).

Clinically, these developments complicate assessment and intervention. Therapists must consider not only frequency and intensity of use, but also the emotional and cognitive significance of parasocial and AI-mediated interactions. Interventions may require adapting traditional approaches, such as graded exposure, fantasy work, and sensory reconnection to address experiences that are immersive, interactive, and technologically mediated. Ethical considerations are also paramount: questions of consent, digital labor exploitation, and the social shaping of desire must be incorporated into psychoeducation and clinical guidance.

In sum, the evolving digital landscape transforms pornography from a passive consumption activity into a complex psychosocial and transactional phenomenon, necessitating careful contextual, ethical, and clinical consideration. Understanding these dynamics is essential to evaluate both risk and potential interventions, ensuring that therapeutic strategies remain relevant in a technologically mediated sexual culture.

Conclusion

Pornography should be understood as more than a sexual product. It functions as a cultural mirror, reflecting social norms, taboos, and the evolution of desire; a mold of sexual scripts and expectations; and, for many individuals, an emotional coping tool used to manage stress, loneliness, or emotional dysregulation. Investigating its use requires moving beyond moral judgment to consider context, function, and the interplay between pleasure, cognition, emotion, and relational dynamics.

The digital landscape has amplified both the accessibility and complexity of pornography. Platforms such as OnlyFans, along with AI-generated content, have transformed consumption into interactive, participatory, and transactional experiences. These developments raise novel questions regarding desire formation, parasocial attachments, consent, and ethical production, which must be addressed in both research and clinical practice.

Awareness of neuropsychological, social, and clinical dimensions allows for more informed research, education, and therapeutic interventions. Clinicians must consider frequency, intensity, and functional impact, as well as the emotional significance of mediated and AI-driven experiences, adapting traditional therapeutic approaches, such as graded exposure, fantasy work, and sensory reconnection, to contemporary realities.

Psychoeducation emphasizing consent, media literacy, and relational awareness can help individuals navigate these experiences safely.

Finally, understanding pornography as a multifaceted phenomenon informs not only clinical practice but also policy, prevention, and education. Integrating

ethical, cultural, and technological considerations ensures that interventions remain relevant, respectful, and effective, empowering researchers, educators, and clinicians to address both risks and opportunities inherent in the evolving sexual landscape.

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Mechanisms Matter: How Generational Differences in Erectile Drugs Shape Clinical and Psychosexual Outcomes

Abstract

Erectile dysfunction (ED) represents a complex interplay between vascular, neurological, endocrine, and psychological factors. The pharmacological history of ED therapy (from early intracavernosal agents such as papaverine to modern PDE5 inhibitors) illustrates how changes in drug mechanisms fundamentally reshape not only clinical outcomes but also psychosexual dynamics, identity, and intimacy. This review synthesizes mechanistic differences across drug generations and explores how these distinctions translate into divergent psychosexual trajectories, adherence patterns, and rehabilitative potentials. Special emphasis is placed on the nitric oxide–cGMP pathway, the neurovascular integration of erection, and the feedback loops that determine treatment success.

Keywords: erectile dysfunction; phosphodiesterase type 5 inhibitors; nitric oxide–cGMP pathway; psychosexual integration; pharmacological mechanisms

INTRODUCTION

Erectile dysfunction (ED) affects an estimated 150–200 million men worldwide and represents one of the most prevalent male sexual health concerns globally. Although historically framed as a predominantly vascular condition, contemporary evidence highlights ED as a fundamentally psychobiological phenomenon. Successful erection requires the coordinated interaction of neural, endocrine, vascular, emotional, and relational systems. Disruption in any of these levels (psychogenic, neurogenic, vasculogenic, or hormonal) can impair erectile function.

The late 20th century brought a paradigm shift in the understanding and treatment of ED. While early interventions focused on mechanical or purely vascular solutions, the introduction of a PDE-5 inhibitor, sildenafil, in 1998 reshaped both clinical practice and the cultural narrative surrounding male sexuality. Sildenafil was not simply a new drug; it represented a mechanistic reframing of how erection could be pharmacologically supported. By

enhancing physiological nitric oxide (NO)–cGMP signaling rather than forcibly inducing smooth muscle relaxation, sildenafil re-established the natural sequence of desire leading to erection. This seemingly simple mechanistic difference produced profound psychosocial effects, influencing men's confidence, relationships, and sexual identity.

From a broader historical perspective, ED pharmacotherapy reflects a continuous effort to reconcile biological mechanisms with subjective sexual experience. Pre-PDE5 drugs such as papaverine and TRIMIX were effective but often psychologically discordant: they produced erections independent of arousal, frequently causing performance anxiety, loss of spontaneity, and reduced partner satisfaction. In contrast, PDE5 inhibitors aligned more closely with natural intimacy patterns and reduced the psychological burden of treatment (Corbin, Francis, 2002).

This study examines the mechanistic evolution of ED therapies and their psychosexual implications. By comparing pre-PDE5 and PDE5-based treatments, it seeks to demonstrate how pharmacological mechanism fundamentally shapes not only physiological outcomes but also patient experience, therapy adherence, and relational meaning. Ultimately, the goal is to clarify why “mechanisms matter”, not only biologically but psychologically and socially (Corbin, Francis, 2002).

Historical Perspectives on Erectile Pharmacotherapy

The development of erectile pharmacotherapy illustrates a clear trajectory from invasive, physiology-overriding interventions toward more integrated, arousal-dependent mechanisms. This progression reflects both scientific innovation and shifting cultural attitudes toward male sexuality and intimacy (Burnett, 1997).

Early Intracavernosal Vasodilators

The contemporary clinical era began in 1983 when Giles Brindley publicly demonstrated the effect of intracavernosal papaverine injection by disrobing and revealing a pharmacologically induced erection during a scientific meeting, an event that became legendary in the field of sexual medicine. Papaverine, a non-specific phosphodiesterase inhibitor and smooth muscle relaxant, acted directly on cavernosal tissue, bypassing psychogenic and neurogenic pathways.

Although physiologically potent, papaverine's lack of receptor or isoenzyme specificity raised concerns regarding priapism, corporeal fibrosis, and dosing unpredictability. Equally important were the psychological barriers: needle fear, loss of spontaneity, emotional discomfort, and the sense of “artificial” sexuality. Despite these drawbacks, papaverine established a proof of concept that

pharmacological vasodilation could reliably produce an erection independent of arousal (Corbin, Francis, 2002).

The TRIMIX Era

To improve reliability and reduce single-agent adverse effects, combination formulations emerged in the late 1980s and early 1990s. The most influential was TRIMIX, combining: (Hsiao, Bennett, Mulhall, 2010)

- **papaverine** (non-specific PDE inhibition),
- **phentolamine** (α -adrenergic blockade),
- **alprostadil** (PGE1, stimulating cAMP pathways).

TRIMIX rapidly became the gold standard for severe ED, particularly in neurogenic and post-surgical cases. The combination was highly effective but rarely well tolerated from a psychosexual standpoint. The need for precise preparation, fear of injection complications, and the mechanical nature of the induced erection contributed to high dropout rates, estimated between 40% and 70% in various cohorts. The TRIMIX era highlights a tension in ED therapy: pharmacological success does not always translate to psychosexual acceptance (Hsiao, Bennett, Mulhall, 2010).

The Emergence of PDE5 Inhibitors

The discovery of sildenafil's pharmacological profile during failed angina trials marked one of the most remarkable unexpected findings in medicine. By selectively inhibiting phosphodiesterase type 5 (PDE5) in cavernosal tissue, sildenafil enhanced endogenous nitric oxide signaling by supporting, rather than replacing sexual arousal pathways.

Its approval in 1998 represented a therapeutic revolution:

- efficacy up to 80% in selected populations,
- oral administration without invasiveness,
- restored spontaneity and natural sexual timing,
- fewer psychosexual barriers to initiation and adherence.

Importantly, sildenafil shifted ED treatment from a technically demanding medical procedure into an accessible therapy integrated into everyday life. Subsequent agents (tadalafil, vardenafil, and later avanafil) further refined onset, duration, pharmacokinetic profiles, and tolerability (Jannini, Droupy, 2019).

Mechanism of Erection: A Neurovascular–Psychosexual Model

Erection is not a purely vascular phenomenon; it is a tightly regulated neurovascular process that emerges from the interaction of psychological, autonomic, and endothelial mechanisms. Its complexity mirrors the multidimensional nature of sexual experience, making erectile function a uniquely integrative physiological event (Burnett, 1997).

Central Integration of Psychogenic Stimuli

Psychogenic erection begins in the brain. Erotic, emotional, symbolic, and relational cues are processed within the **limbic system**, including the amygdala, hippocampus, anterior cingulate cortex, and medial prefrontal cortex. These regions modulate the motivational and emotional components of sexual arousal. Signals converge in the **hypothalamic paraventricular nucleus (PVN)**, a critical hub where oxytocinergic and nitrenergic neurons modulate descending autonomic pathways. This central integration determines whether cortical arousal translates into physiological erection. Stress, fear, and performance anxiety activate competing circuits—particularly the sympathetic amygdalar–hypothalamic axis—suppressing parasympathetic outflow and inhibiting erection. Thus, the central nervous system acts as both a facilitator and a gatekeeper of sexual function (Giuliano, Rampin, 2000).

Spinal Autonomic Centers

The signal from the PVN descends to the spinal cord, where two major autonomic centers regulate erection: (Dean, Lue, 2005)

- **Sympathetic (T11–L2):** Mediates detumescence via norepinephrine release. It increases cavernosal smooth muscle tone and enhances venous outflow. Sympathetic dominance is characteristic of anxiety states, pain, cold exposure, and cardiovascular stress.
- **Parasympathetic (S2–S4):** Facilitates erection via acetylcholine release and activation of nonadrenergic, noncholinergic (NANC) fibers that release nitric oxide (NO). These nuclei project through the pelvic plexus and cavernous nerves to the corpora cavernosa.

Psychogenic and reflexogenic erections converge at this spinal level. Reflexogenic erections, triggered by direct penile or perineal stimulation, rely less on cortical input and more on intact sacral pathways, which explains their persistence in certain neurologic injuries.

Peripheral Neurovascular Events

At the level of the penis, erection depends on NO-mediated smooth muscle relaxation within the **corpus cavernosum**. The steps are: (Burnett, 1997)

1. **NO release** from neuronal (nNOS) and endothelial (eNOS) sources.
2. **Activation of soluble guanylate cyclase (sGC)** in cavernosal smooth muscle.
3. **Increase in cyclic GMP (cGMP)**.
4. **Reduction in intracellular Ca^{2+}** , leading to smooth muscle relaxation.
5. **Arterial dilation and lacunar expansion**, increasing blood flow.
6. **Veno-occlusive mechanism**, whereby expanding sinusoids compress sub-tunical venules, maintaining rigidity.

This cascade reflects an elegant biochemical amplification system: small amounts of NO produce substantial hemodynamic effects (Burnett, 1997).

Psychosexual Feedback Loops

Erectile function is embedded within a bidirectional mind–body feedback system. Positive erectile experiences reinforce confidence and arousal, reduce performance anxiety, and strengthen limbic facilitation. Conversely, erectile failure—particularly in emotionally meaningful contexts—activates sympathetic circuits, generating a self-perpetuating cycle of anxiety and diminished erectile capacity.

Partners also shape these loops. Supportive, communicative relational environments facilitate parasympathetic dominance, whereas relational conflict or avoidance can reinforce sympathetic inhibition and psychogenic ED.

Understanding these feedback mechanisms is essential, as different ED therapies interact with them in distinct ways depending on their pharmacological mechanism (Barry, Barry, 2013).

Mechanism of Action of Erectile Drugs

Pharmacological treatments for erectile dysfunction can be broadly categorized based on whether they **override**, **supplement**, or **enhance** the natural physiological and psychosexual processes that generate erection. Mechanistic differences are central to understanding clinical effectiveness, psychosexual acceptance, and long-term adherence.

Pre-PDE5 Agents: Direct Smooth Muscle Vasodilators

Before the advent of PDE5 inhibitors, erectile pharmacotherapy relied primarily on **intracavernosal injections** of vasodilators, most notably papaverine, alprostadil (prostaglandin E1), and the combination formulation TRIMIX.

Papaverine

Papaverine is a non-specific phosphodiesterase inhibitor that increases both cAMP and cGMP levels within cavernosal smooth muscle. This causes **direct relaxation independent of sexual arousal**. While effective, its lack of selectivity increases the risk of priapism, penile fibrosis, and unpredictable responses (Corbin, Francis, 2002).

Phentolamine

Phentolamine acts as a non-selective α -adrenergic receptor antagonist, blocking both α_1 and α_2 receptors in penile vascular smooth muscle. This blockade prevents sympathetic-mediated vasoconstriction (Andersson, 2011).

Alprostadil (PGE1)

Alprostadil activates adenylate cyclase, increasing intracellular cAMP. It is more predictable and safer than papaverine but can cause penile pain, bruising, and injection-related anxiety (Andersson, 2011).

TRIMIX (Papaverine + Phentolamine + Alprostadil)

TRIMIX combines:

papaverine's PDE inhibition,

- phentolamine's α -adrenergic blockade,
- alprostadil's cAMP-mediated vasodilation. (Linnet, Ogrinc, 1996)

Its efficacy is high even in severe neurogenic and post-prostatectomy ED. However, the **intrusive delivery, fear of needles,** and the **arousal-independent mechanism** frequently create psychological discomfort. Patients often report that an erection produced “mechanically,” without desire, feels unnatural and discordant with intimacy. These psychosexual barriers lead to high discontinuation rates despite excellent physiological efficacy.

PDE5 Inhibitors: Arousal-Dependent Modulation of the NO–cGMP Pathway

The introduction of sildenafil—and later tadalafil, vardenafil, and avanafil—transformed ED treatment because these agents do not force an erection. Instead, they **enhance the body’s endogenous erectile signaling**, preserving the natural sequence: (Rajfer, Aronson, Bush, Dorey, Ignarro, 1992)

Desire → Arousal → Parasympathetic Activation → NO Release → cGMP Increase → Erection

PDE5 inhibitors prevent the breakdown of cGMP by selectively blocking the PDE5 enzyme found abundantly in cavernosal smooth muscle. When sexual stimulation triggers NO release, cGMP accumulates more effectively, producing more robust and sustained smooth muscle relaxation (Corbin, Francis, 2002).

Why this mechanism matters psychologically

- The erection occurs **only when desire is present**, preserving authenticity.
- Spontaneity improves because the drug works in harmony with arousal rather than replacing it.
- Performance anxiety decreases, as patients feel they have physiological “support” rather than an artificial erection.
- Partner dynamics improve when sexuality feels natural and not medically orchestrated.

PDE5 inhibitors therefore align better with psychosexual functioning than pre-PDE5 therapies (Jannini, Droupy, 2019).

Generational Differences Within PDE5 Inhibitors

PDE5 inhibitors vary in onset, half-life, selectivity, and psychosexual usability (Francis, Morris, Corbin, 2008).

Sildenafil (Rajfer, Aronson, Bush, Dorey, Ignarro, 1992)

- Onset: 30–60 minutes
- Duration: ~4 hour
- Notable effects: facial flushing, visual blue tint (PDE6 inhibition), nasal congestion
- Psychosexual effect: strong “physiological sensation,” which some patients find reassuring and others intrusive.

Tadalafil

- Onset: 20–30 minutes
- Duration: up to 36–48 hours
- Minimal visual side effects
- Psychosexual effect: enables “weekend window” of spontaneity, reducing timing pressure.

Avanafil

- Onset: 10–15 minutes
- High PDE5 selectivity (Corbin, Francis, 2002)
- Psychosexual effect: ideal for situational anxiety and rapid, low-preparation contexts.

The pharmacokinetic profile of each drug shapes not only physiological response but relational patterns, sexual timing, emotional comfort, and adherence (Jannini, Droupy, 2019).

Psychosexual Implications of Mechanistic Differences

The psychosexual meaning of an erectile drug depends not only on its effectiveness but on *how* and *when* it produces an erection. Pharmacological mechanism shapes the lived experience of treatment, influencing confidence, identity, intimacy, and relational dynamics. Understanding these psychosexual dimensions is essential for aligning treatment with the patient’s life context (Burnett, 1997).

Spontaneity Versus Scheduling

One of the most profound differences between pre-PDE5 therapies and PDE5 inhibitors lies in spontaneity. Intracavernosal injections require:

- preparation,
- precise timing,
- dosing anxiety,
- and attention to technique.

This transforms sexual activity into a **scheduled medical procedure**, which many couples find incompatible with emotional intimacy. The requirement for planning can provoke performance pressure, disrupt arousal, and generate avoidance patterns.

In contrast, PDE5 inhibitors—especially tadalafil—restore **spontaneous sexual timing**, allowing sexual encounters to unfold naturally in response to desire. For many men and couples, this feels more congruent with their identity and relational expectations (Jannini, Droupy, 2019).

Psychological Barriers to Needle-Based Therapies

Fear of needles, embarrassment, and concern about penile injury contribute significantly to discontinuation of injection therapies. Even when physiological efficacy is excellent, psychological aversion can override treatment success.

Additionally, arousal-independent erections can create sensations of detachment or incongruence, leading to thoughts such as:

- “This doesn’t feel like *my* erection,”
- “I’m performing, not participating,”
- “Sex feels medical instead of intimate.”

These cognitive responses undermine sexual satisfaction and contribute to avoidance and relational stress (Bearely, Phillips, Pan, 2020).

The Role of Performance Anxiety

Performance anxiety is a major driver of psychogenic ED and a key modifiable factor in treatment outcomes. Mechanistically:

- Sympathetic activation (T11–L2) suppresses NO release and inhibits erection.
- Anxiety intensifies this sympathetic tone, creating a self-perpetuating cycle.

PDE5 inhibitors counteract this cycle by: (Corbin, Francis, 2002)

- lowering the threshold for successful erection,
- boosting confidence,
- reducing the perceived “risk of failure.”

This psychophysiological support often leads to a virtuous feedback loop: successful experiences reduce anxiety, which further improves erectile reliability.

Partner Dynamics and Relational Meaning

Erectile difficulties affect not only the individual but the relationship. Sexual avoidance, shame, secrecy, and miscommunication can strain partners. PDE5 inhibitors promote relational reconnection by:

- enabling shared spontaneity,
- reducing fear of failure,
- allowing co-created sexual timing,
- and supporting a sense of normalcy (Burnett, 1997).

By contrast, injection-based therapies often require partner involvement in a way that feels “clinical” rather than intimate. Although some couples adapt successfully, others experience decreased emotional closeness or a feeling that sex has become medicalized.

Identity, Masculinity, and Self-Efficacy

Erectile function is deeply tied to masculine identity in many cultures. Mechanistic differences in therapy therefore have psychological consequences. Erectile drugs that work *with* natural arousal processes enhance self-efficacy, because the patient retains a sense of agency. Drugs that work *independently* of arousal may create:

- diminished ownership of sexual function,
- feelings of artificiality,
- or concerns about dependence.

For these reasons, PDE5 inhibitors frequently improve self-image and sexual confidence more effectively than older agents—even when both produce adequate rigidity (Jannini, Droupy, 2019).

Current Clinical Roles of Older Agents

Although PDE5 inhibitors dominate contemporary erectile dysfunction therapy due to their efficacy, ease of administration, and psychosexual advantages, **pre-PDE5 agents remain indispensable** in several clearly defined clinical scenarios. Their continuing relevance underscores the importance of matching pharmacological mechanism to patient-specific pathophysiology and psychological context (Corbin, Francis, 2002).

Post-Prostatectomy and Other Neurologic Injuries

Radical prostatectomy, pelvic trauma, and other injuries involving the cavernous nerves can result in severe neurogenic ED. In such cases, neural pathways responsible for nitric oxide release are impaired or absent. Because PDE5 inhibitors depend on **endogenous NO release**, they are often ineffective during the early recovery phase. Intracavernosal therapies—including alprostadil and TRIMIX—play a crucial role in: (Hsiao, Bennett, Mulhall, 2010)

- penile rehabilitation, (Dall'era, Mills, Koul, Meacham, 2006)
- maintenance of cavernosal oxygenation,, (Burnett, 1997)
- prevention of apoptosis and smooth muscle fibrosis,
- preservation of long-term erectile potential.

These agents bypass the neural deficit by acting **directly** on cavernosal smooth muscle, making them essential in the months to years following prostatectomy(Burnett, 1997).

Severe Vasculopathy, Diabetes, and Endothelial Dysfunction

Patients with advanced vascular disease, long-standing diabetes, or severe endothelial dysfunction often have inadequate NO bioavailability. PDE5 inhibitors, which rely on intact NO production, may therefore fail to generate sufficient cGMP. Intracavernosal therapies provide a reliable alternative because their mechanisms:

- do not require endothelial NO, (Burnett, 1997)
- act independently of sexual stimulation,
- remain effective even in advanced vasculogenic ED.

TRIMIX is often the most potent option in this patient group (Hsiao, Bennett, Mulhall, 2010).

Contraindications to PDE5 Inhibitors

PDE5 inhibitors are contraindicated in patients taking nitrates or certain pulmonary vasodilators due to the risk of severe hypotension. In these cases:

- intracavernosal alprostadil, (Linnet, Ogrinc, 1996)
- vacuum erection devices,
- or combination therapy provide safe and effective alternatives (Padma-Nathan, Hellstrom, et al., 1997).

Treatment of Severe Psychogenic ED When Anxiety Disrupts Parasympathetic Activation

Although PDE5 inhibitors are beneficial for performance anxiety, there are cases where extreme sympathetic overactivation prevents adequate parasympathetic signaling even with pharmacological support. Intracavernosal agents can override this inhibition by producing erection independently of arousal, allowing therapeutic success in otherwise refractory cases, often in combination with psychotherapy (Barry, Barry, 2013).

Use in Highly Choreographed Contexts (e.g., Adult Film Industry)

Professional sexual performance settings often require:

- reliability,
- prolonged rigidity,
- and predictable timing.

In such contexts, arousal-independent agents like alprostadil or TRIMIX offer mechanical advantages: (Hsiao, Bennett, Mulhall, 2010)

- rapid onset,
- high rigidity,
- minimal dependence on psychological state.

This illustrates that “naturalness” is not always the primary therapeutic goal—context defines what mechanism is clinically optimal (Bearely, et al., 2020).

Multimodal and Combination Therapy

Older agents are increasingly incorporated into multimodal protocols, including:

- low-dose PDE5 inhibitors + intermittent intracavernosal therapy (Corbin, Francis, 2002)
- injection therapy + vacuum devices for rehabilitation (Dall'era, Mills, Koul, Meacham, 2006)
- pharmacotherapy combined with sexual counseling.

Such strategies leverage mechanistic complementarities to maximize tissue health, function, and psychosexual outcomes (Argiolas, Argiolas, 2023).

Future Directions in Erectile Therapy

The future of erectile dysfunction treatment is moving beyond symptom management toward biologically restorative, psychologically integrated, and mechanistically precise therapies. Emerging developments aim to repair underlying endothelial, neural, or hormonal deficits while facilitating healthier psychosexual functioning. This shift reflects an increasing recognition that erectile capacity is inseparable from emotional, relational, and neurobiological wellbeing.

Centrally Acting Agents Targeting Sexual Desire and Arousal

While most current ED therapies act peripherally on penile smooth muscle, new pharmacological approaches target central arousal pathways. The most promising class is melanocortin receptor agonists, particularly those acting on MC3 and MC4 receptors in the hypothalamus (Argiolas, Argiolas, 2023).

Bremelanotide (PT-141)

- Activates central melanocortin pathways.
- Increases libido, arousal, and sexual motivation.
- Effective even when peripheral mechanisms are compromised.

Unlike PDE5 inhibitors, which require sexual stimulation to be effective, bremelanotide can increase sexual desire itself, offering a novel therapeutic dimension—particularly valuable for patients with comorbid low libido or psychogenic inhibition (Argiolas, Argiolas, 2023).

Regenerative and Tissue-Restorative Approaches

A major frontier in ED therapy is *biological regeneration*. These modalities aim to reverse the underlying pathology rather than compensate for it.

Low-Intensity Shockwave Therapy (LiSWT)

- Stimulates angiogenesis.
- Improves endothelial function.
- Increases penile blood flow.

Randomized trials show moderate yet meaningful improvements in erectile function scores, especially in vasculogenic ED.

Stem Cell Therapy

Mesenchymal stem cells and adipose-derived regenerative cells show promise in:

- repairing endothelial damage,
- supporting neural regeneration,
- reducing fibrosis.

Early-phase trials indicate potential long-term benefits, though large-scale studies are still needed.

Platelet-Rich Plasma (PRP)

PRP therapy delivers concentrated growth factors directly into the corpus cavernosum, promoting: (Argiolas, Argiolas, 2023)

- collagen remodeling,
- neovascularization,
- smooth muscle repair.

Evidence remains preliminary, but mechanistic plausibility is strong.

Gene Therapy and Molecular Restoration

Gene therapy represents the most molecularly precise approach. Strategies under investigation include:

- **Upregulation of eNOS or nNOS expression**, restoring physiologic NO production.
- **VEGF gene delivery** to stimulate angiogenesis.
- **Potassium channel gene transfer** to improve smooth muscle relaxation.

Although these therapies remain experimental, several have shown durable improvement in animal models and early human trials.

Personalized and Multimodal Psychobiological Rehabilitation

The future of ED treatment will increasingly combine pharmacological, regenerative, and psychological interventions.

Integrated rehabilitation may include: (Dall'era, Mills, Koul, Meacham, 2006)

- PDE5 inhibitors enhancing physiological pathways,
- psychotherapy addressing performance anxiety, sexual trauma, or relational conflict,
- endocrine optimization,
- lifestyle interventions targeting metabolic and vascular health,
- neurostimulation and pelvic floor therapy.

This holistic approach acknowledges that sexual function cannot be restored through a single mechanism—it requires alignment of biological, psychological, and relational domains.

Digital Health, Wearables, and Remote Monitoring

Emerging technologies may allow objective, continuous assessment of erectile function through (Argiolas, Argiolas, 2023) nocturnal erection monitoring devices,

- smartphone-based imaging,
- wearable vascular sensors.

These tools can provide real-time feedback, improve adherence, and personalize dosing strategies—especially useful in rehabilitation contexts or clinical research (Dall'era, Mills, Koul, Meacham, 2006).

Discussion

The evolution of erectile pharmacotherapy demonstrates that drug mechanisms shape not only physiological outcomes but also the psychological and relational experience of sexuality. The transition from arousal-independent smooth muscle vasodilators to arousal-dependent PDE5 inhibitors represents more than a pharmacological milestone—it signifies a shift toward therapies that better align with human sexual meaning.

Pre-PDE5 agents such as papaverine, alprostadil, and TRIMIX deliver strong and predictable physiological responses, making them indispensable in severe neurogenic or vasculogenic ED. However, their mechanistic independence from arousal introduces psychosexual discordance. Men frequently describe these erections as “mechanical,” “artificial,” or “disconnected,” which can undermine confidence and relational intimacy. The medicalized nature of injections, combined with the fear of complications, further contributes to poor adherence

despite physiological efficacy. In contrast, PDE5 inhibitors support the natural coupling of desire and erection. By enhancing nitric oxide–cGMP signaling rather than replacing it, these agents preserve the psychological authenticity of sexual response. This mechanistic congruence explains why PDE5 inhibitors not only achieve high clinical success rates but also demonstrate superior psychosexual acceptance. Patients report improved confidence, reduced performance anxiety, and more satisfying relational experiences—outcomes closely tied to emotional and cortical regulation of sexual function.

Mechanistic differences therefore translate into different *psychological pathways of recovery*:

- Pre-PDE5 therapies restore physiological capacity but may challenge the patient's self-efficacy and identity.
- PDE5 inhibitors restore physiological capacity *and* enhance psychological congruence.
- Regenerative therapies aim to restore the biological substrate itself, promising long-term integration of biological and psychosexual health.

A crucial implication is that ED is rarely only a vascular disorder. The neurovascular model, combined with psychosexual feedback loops, underscores that treatment must be contextualized within emotional, relational, and identity-related frameworks. A purely mechanical approach risks addressing the symptom without addressing the experience. Effective therapy requires understanding how molecular mechanisms intersect with lived sexual meaning.

Ultimately, the therapeutic goal is not merely improving penile hemodynamics but restoring the patient's sense of competence, agency, and intimacy. This requires a collaborative approach between urologists, sexual medicine specialists, psychologists, and rehabilitation experts. As pharmacological innovation continues—incorporating central-acting agents, regenerative strategies, and personalized psychobiological rehabilitation—the integration of mechanism and meaning will be essential for optimizing outcomes.

Conclusion

The history of erectile pharmacotherapy illustrates how pharmacological mechanisms can shape not only physiological outcomes but also the psychological and relational dimensions of sexuality. Early intracavernosal therapies demonstrated that erections could be reliably induced through direct smooth muscle vasodilation, yet their mechanistic independence from arousal often produced emotional distance, reduced spontaneity, and significant psychological barriers. These treatments remain essential in specific clinical

contexts—particularly severe neurogenic or vasculogenic ED—but they do not fully support the broader psychosexual needs of most patients.

The advent of PDE5 inhibitors marked a turning point. By enhancing endogenous nitric oxide–cGMP signaling, these drugs restored the natural sequence linking desire, arousal, and erection. This mechanistic alignment with intrinsic sexual processes greatly improved patient satisfaction, adherence, and relational wellbeing. PDE5 inhibitors showed that the most effective ED therapies are those that support both biological and psychological integrity, reinforcing the close interdependence of neurovascular function and psychosexual experience.

As the field moves toward regenerative and centrally acting therapies, the future of ED treatment will increasingly focus on restoring underlying physiological mechanisms while simultaneously addressing emotional and relational factors. Rather than treating ED as a purely mechanical issue, modern approaches recognize it as a multidimensional condition requiring integrated care.

Ultimately, the therapeutic goal is more than restoring penile rigidity—it is restoring confidence, intimacy, identity, and relational connection. Mechanism and meaning cannot be separated; the best outcomes emerge when both domains are addressed in harmony.

Take-Home Message

Mechanisms matter—but meaning matters more.

Erectile dysfunction treatment succeeds most profoundly when it restores not only erectile function but also the psychological and relational foundations of sexual wellbeing. Pharmacological mechanisms shape how men experience their bodies, how couples experience intimacy, and how confidence rebuilds after sexual difficulty.

Pre-PDE5 therapies demonstrate that physiology alone cannot guarantee satisfaction; PDE5 inhibitors illustrate how arousal-dependent mechanisms can realign body and mind. Future regenerative and centrally acting treatments will only reach their full potential if they are integrated with psychosexual understanding.

For clinicians and psychologists alike, the essential message is clear: ED therapy is not merely a biological intervention but a psychobiological reconstruction of confidence, connection, and meaning.

Supporting patients requires acknowledging the interplay of physiology, emotion, identity, and relationship. When these elements converge, treatment becomes not only effective but transformative.

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