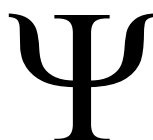




**DET PSYKOLOGISKE FAKULTET**



***Men's Hostility Toward Women: Relationship with Attractiveness,  
Rejection, Loneliness, Romantic and Sexual Partners, Right-Wing  
Authoritarianism, and Gaming***

**HOVEDOPPGAVE**  
*Profesjonsstudiet i psykologi*

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## **Preface**

We would like to express our appreciation for our brilliant supervisors Eilin Kristine Erevik and Ståle Pallesen for their belief in this project and the importance of the subject matter. Their support and feedback have been crucial in developing our study and writing this paper. We are also grateful for the Norwegian Competence Center for Gambling and Gaming Research at the University of Bergen for funding this study. This process has illustrated to us the importance of continuously progressing the fight against hostility toward women. Lastly, we would like to thank the participants for giving us valuable information by responding to our online survey.

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## Sammendrag

**Formål:** Kvinnefiendtlighet er en type fordommer som kan ha skadelige konsekvenser for kvinner og likestilling, men forskning på prediktorer av menns kvinnefiendtlighet er fortsatt begrenset. Denne tverrsnittstudien undersøkte om ensomhet, avvisning, attraktivitet, antall romantiske og seksuelle partnere, høyreorientert autoritarianisme og gaming predikerte kvinnefiendtlighet i et utvalg menn. **Metode:** Totalt 516 menn (18–35 år, enslige, heteroseksuelle, innbyggere i Storbritannia) ble rekruttert via Prolific og bedt om å svare på hostile sexism subscale, misogyny scale, Self-Perceived Sexual Attractiveness scale, Right-Wing Authoritarianism Scale, Gaming Addiction Scale for Adolescents, Adult Rejection-Sensitivity Scale, UCLA Loneliness Scale USL-8, og selvutviklede spørsmål om antall seksuelle og romantiske forhold, og tid brukt på gaming. Etter å ha fjernet ugyldige og mangelfulle responser utførte vi enkle og multiple regresjonsanalyser ( $N = 473$ ). **Resultater:** Som forventet fant vi et sterkt positivt forhold mellom høyreorientert autoritarianisme og kvinnefiendtlighet, samt et sterkt konvekst kurvelineært forhold mellom attraktivitet og kvinnefiendtlighet. I motsetning til hypotesen vår, viste antall seksuelle partnere et moderat konkavt forhold til kvinnefiendtlighet. Vi fant ikke tilstrekkelig støtte for en signifikant positiv sammenheng mellom gaming og kvinnefiendtlighet, og ingen støtte for at ensomhet, avvisning eller antall romantiske partnere predikerte kvinnefiendtlighet. **Konklusjon:** Vår studie støtter høyreorientert autoritarianisme og selvopplevd attraktivitet som relevante faktorer for å forstå menns kvinnefiendtlighet. Longitudinelle studier er nødvendig for å forstå årsakssammenhengen og medierende faktorer involvert i kvinnefiendtlighet.

## Abstract

**Objective:** Hostility toward women is a type of prejudice that can have adverse effects on women and society, but research on predictors of men's hostility toward women is still limited. The present cross-sectional study investigated whether loneliness, rejection, attractiveness, number of romantic and sexual partners, right-wing authoritarianism, and gaming predicted hostility toward women among a sample of men. **Method:** A total of 516 men (18–35 years, single, heterosexual, UK-residents) were recruited via Prolific and asked to answer the hostile sexism subscale, misogyny scale, Self-Perceived Sexual Attractiveness scale, Right-Wing Authoritarianism Scale, Gaming Addiction Scale for Adolescents, Adult Rejection-Sensitivity Scale, UCLA Loneliness Scale USL-8, and self-developed questions regarding number of sexual and romantic partners, and time spent gaming. After removing invalid and missing cases, we performed simple and multiple regression analyses ( $N = 473$ ). **Results:** As hypothesized, we found a strong positive relationship between right-wing authoritarianism and hostility toward women, as well as a strong convex curvilinear relationship between attractiveness and hostility toward women. Contrary to our hypothesis, number of sexual partners showed a moderate concave relationship with hostility toward woman. We did not find sufficient support for a significant positive relationship between gaming and hostility toward women, and no support that loneliness, rejection, or romantic partners predicted hostility toward women. **Conclusion:** Our study supports right-wing authoritarianism and self-perceived attractiveness as relevant factors in understanding men's hostility toward women. Longitudinal studies are needed to understand the causality and mediating factors involved in hostility toward women.

*Keywords:* hostility toward women, rejection, attractiveness, loneliness, gaming, right-wing authoritarianism

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## **Men's Hostility Toward Women: Relationship with Attractiveness, Rejection, Loneliness, Romantic and Sexual Partners, Right-Wing Authoritarianism, and Gaming**

Prejudice, traditionally defined as negative feelings or attitudes toward groups or members of a social group (Eagly & Mladinic, 1994), is a much-studied phenomenon in social psychology (Fiske, 2019). Initially explained as a uniform antipathy, prejudice is now understood as also encompassing favorable attitudes and feelings (e.g., Fiske et al., 2002; Glick & Fiske, 1996, 2001a; Glick et al., 2000). Allport (1954) described prejudices as prejudgments that, despite the emergence of new information, are not changed. These prejudices are often based on stereotypes, which are generalizations by members of one group (us) toward members of another social group (them; Fedor, 2014). According to system-justification theory, stereotypes legitimize existing systems of inequality in a society, lending credibility to unequal social roles and hierarchies (Jost & Banaji, 1994). Discrimination is often a behavioral consequence of prejudice, and can take the form of verbal or physical attacks and avoidance of out-group members (Fiske, 2018). Summarized, prejudice, stereotypes, and discrimination can be understood as biases in the form of emotions, cognition, and behavior respectively, aimed at social groups other than one's own (Fiske, 2019).

The field of psychology concerning prejudice has undergone many changes over the years (Dovidio et al., 2010; Duckitt, 2010; Stangor, 2009). Research has advanced from understanding prejudice, stereotypes and discrimination as associated with psychopathology, to recognizing it as rooted in normal human processes (Dovidio et al., 2010; Duckitt, 2010). The cognitive approach has focused on how categorization and social identity allow people to make simplifications and generalization of beliefs about themselves in relation to others (Stangor, 2009). Stereotypes and prejudice enable cognitive and emotional shortcuts in understanding the social world, something people naturally tend to do (Stangor, 2009).



Research into event-related potentials has found that our brains make incredibly swift judgments on faces and gender, suggesting processes behind prejudice and stereotypes are implicit and automatic (Ito & Urland, 2003; Kubota & Ito, 2007, 2009; Mouchetant-Rostaing & Giard, 2003). More modern approaches have argued that prejudice is multidimensional and goes beyond cognitive assessments; as among others, motivational processes are highly involved (Duckitt, 2010). Regardless, there seems to be a consensus that prejudices and stereotypes represent basic, fundamental, and universal mechanisms, although the content and types of prejudices generally vary across cultures (Dovidio et al., 2010; Duckitt, 2010; Fiske, 2017). Due to the adverse effects on individuals and society, research has been done investigating interventions and ways of counteracting the consequences of prejudice (Kubota & Ito, 2009; Levy & Hughes, 2009; Stangor, 2009).

A central topic in the field of prejudice that has gained more attention recently is that of gender and sexism. Gender (i.e., women and men) refers to a set of attitudes and behaviors assumed of members of a biological sex in a society, while the term sex is used to describe the biological status of a person (i.e., male and female) determined by physical attributes like genitals and chromosomes (American Psychological Association [APA], 2012). Sexism is defined as prejudice aimed at sex or gender, where most often women are seen as different and inferior to men (Allport, 1954; Council of Europe, 2020; Fiske, 2017). As recent as mid-nineteenth century, research focused on proving women to be deficient to men in most areas (Swim & Hyers, 2009). Along with changes in women's societal roles, research has developed from viewing gender differences as a given, to acknowledging sexism as a phenomenon worthy of studying (Swim & Hyers, 2009). In contrast to racial, ethnic, and religious prejudice which generally are culture-specific, sexism is regarded as a universal type of prejudice found across cultures and societies (Fiske, 2017). Although men can also

experience sexism, women and girls are still disproportionately affected (Council of Europe, 2020).

### **Hostility Toward Women**

Sexism was initially explained as prejudice reflecting hostile attitudes and feelings toward women (Allport, 1954). A distinction was later made between different types of sexism: hostile and benevolent sexism, illustrating its ambivalent nature (Glick & Fiske, 1996). In the scientific literature, the term hostile sexism is used to refer to men's hostility and antipathy toward women (Glick & Fiske, 2001a), closely aligned with the traditional understanding of sexism. Examples of hostile sexism include attitudes implying that women are incompetent, exaggerate sexism, and engage in sexual relationships to control, manipulate, and exploit men (Glick & Fiske, 1996). According to Glick and Fiske (1997), hostile sexism is used to justify male superiority, men's sexual exploitation of women, and traditional gender norms. The term benevolent sexism describes a more paternalistic, yet positive view of women (Glick & Fiske, 2001a). Benevolent sexist attitudes place women on a pedestal and support traditional views of women as caring and warm, but still lacking competence and in need of protection; represents as such a more subtle and socially accepted form of sexism (Glick & Fiske, 1996, 2001a; Glick et al., 2000; Mastari et al., 2019). Though undoubtedly worth further scientific scrutiny, benevolent sexism is not the focus of the current study. Rather, the focus is on hostile sexism which overlaps and is used interchangeably with the term misogyny (e.g., Allport, 1954; Cote, 2017; Rottweiler & Gill, 2021). Misogyny refers to hatred or prejudiced attitudes directed at women and a belief that women are inferior to men (Fleming et al., 2018; Oxford English Dictionary, 2022; Tollan & Magnus, 2018; Cambridge University Press, n.d.). Based on the understanding that the core of misogyny and hostile sexism is hostility directed at women, we will use the term hostility toward women for both phenomena in this thesis.

Hostility toward women comprises a set of attitudes that can manifest themselves in several ways and on different levels (Bearman & Amrhein, 2013; Council of Europe, 2020). The current study focuses on men's interpersonal hostility, meaning hostile attitudes toward women that individual men hold and express (Bearman & Amrhein, 2013). Men's hostility toward women can be conveyed in speech, writing, behavior, and gestures (Council of Europe, 2020), with some expressions being subtle while others are more overt (Bearman & Amrhein, 2013). Examples of the latter range from degrading or sexualizing comments about a woman's appearance and inappropriate touching, to threatening, aggressive and fatal behavior (Council of Europe, 2020; Srivastava et al., 2017). However, hostility toward women is not exclusively found among men; women can also be hostile toward themselves or other women, reflecting internalized hostility toward women (Bearman & Amrhein, 2013). Women can also experience hostility on a more systemic level reflected in society's laws, policies, practices, and traditions (Bearman & Amrhein, 2013; Council of Europe, 2020). Although equally important, women's hostility to their own gender and institutionalized hostility toward women are beyond the scope of the current study.

Gender-based hostility seems to be a phenomenon experienced by many women, often on an everyday basis (Bearman & Amrhein, 2013; Council of Europe, 2020; Glick & Fiske, 1996; Swim et al., 2001). Despite efforts to strengthen women's rights, women and girls are still disproportionately affected by discrimination, verbal and sexual abuse, and public harassment (Council of Europe, 2020; United Nations Development Programme, 2020). Men are more likely to be the perpetrators of such acts (Dale et al., 2023; Sugiura, 2021), and have consistently reported significantly higher levels of hostile attitudes toward women than women (Glick et al., 2000; Mastari et al., 2019; Ramiro-Sánchez et al., 2018). Therefore, understanding men's hostility toward women is important and further illustrated by the negative consequences of such hostility.

## **Consequences of Hostility Toward Women**

Much of the research on hostility toward women has focused on its consequences, showing how it can negatively impact both individuals and society. Particular attention has been directed to how it affects women, where studies have shown that the hostility many women are subjected to is associated with adverse outcomes in most areas of their life (Council of Europe, 2020). In the following sections, we highlight central and recurring findings from these studies.

There is overwhelming evidence suggesting that hostile attitudes toward women contribute to harmful behavior by men. Men's hostile attitudes toward women have been positively linked to fantasies about rape, acceptance of rape myth, and justification of violence (Agadullina et al., 2022; Begany & Milburn, 2002; Locke & Mahalik, 2005; Lonsway & Fitzgerald, 1995; Scaptura & Boyle, 2020); aggression toward women (Forbes et al., 2004); and verbal, physical and sexual violence (Abrams et al., 2003; Agadullina et al., 2022; Begany & Milburn, 2002; Jewkes et al., 2011; Locke & Mahalik, 2005; Parrott & Zeichner, 2003). Violence toward women is an international problem: global data suggests more than five women are killed every hour by men due to their gender, usually by a partner or family member (United Nations Office on Drugs & Crime and United Nations Entity for Gender Equality and the Empowerment of Women [UNDOC & UN Women], 2022). In many cases, these women are subjected to abuse and violence prior to the homicide (UNDOC & UN Women, 2022). In a sample of women from countries in the European Union, 1 in 3 reported having experienced physical and/or sexual violence, 1 in 20 had been raped, and 1 out of 2 women had experienced sexual harassment (European Union Agency for Fundamental Rights, 2014). Similarly, a recent Norwegian report showed that women are more at risk of being raped than men, and more vulnerable to violence in intimate relationships, where abuse is often repeated and hidden (Dale et al., 2023). There are probably significant dark figures due

to challenges with identifying all incidents (UNDOC & UN Women, 2022), making the actual numbers even more horrifying. Men are also subjected to violent acts and harassment (Dale et al., 2023), but unlike for women, the hatred and hostile behaviors are generally unrelated to their gender (Sugiura, 2021; UNDOC & UN Women, 2022).

Hostility toward women moves beyond familial and intimate relationships; women also experience it in their working lives. Hostility toward women is primarily directed at women who break out of traditional gender norms, making career women and feminists targets (Glick & Fiske, 1997). In a study that explored how men group women into stereotypes, Glick and Fiske (1997) found that men who endorsed hostility toward women attributed more negative interpersonal traits to career women, describing them as greedy, aggressive, and cold. Other research has found that successful women were less liked than equally successful men, a bias that can negatively affect working women's ability to advance their careers (Heilman et al., 2004). Despite women proving themselves to be competent, if they are in a male-dominated arena and violate gender-stereotypical norms, their competency is prone to make them derogated, and it negatively affects their workplace evaluations and recommendations (Heilman et al., 2004; Heilman & Okimoto, 2007). Many countries have laws forbidding women from pursuing education and working life, and discrimination prevents women from being offered certain jobs (Bearman & Amrhein, 2013). In addition, women typically earn significantly less than their male counterparts, despite having the same education and experience (Bearman & Amrhein, 2013). Experiences of sexism at work can also negatively affect women's job satisfaction, their sense of belonging, and in turn, their mental health (Rubin et al., 2019).

The hostility that women experience seems to impact their health and well-being. Hamilton and DeHart (2020) found that women exposed to sexist hostility reported higher alcohol intake than a control group, suggesting drinking as a way of coping with the negative

experiences of hostility. Similarly, women who have experienced hostility due to their gender, such as discrimination and sexual harassment, have shown to have higher rates of mental illness, like depression, psychological distress, and lower life satisfaction (Gale et al., 2019; Hackett et al., 2019; Harnois & Bastos, 2018), more problems with sleep, and musculoskeletal injuries (Gale et al., 2019). When seeking help for health issues, women report more often being met with dismissive attitudes, having their pain psychologized by healthcare workers (Samulowitz et al., 2018; Zhang et al., 2021), suffering longer wait times (Din et al., 2015) and having been less likely to receive the treatment they need (Lee et al., 2019; Samulowitz et al., 2018). Besides the negative consequences for women's own health, poor medical help naturally affects women's ability to function in society.

Hostility toward women also poses a threat to women and society by maintaining gender inequalities and obstructing democracy. Generally, hostility toward women seems to be more prevalent in countries with larger gender equality gaps (Glick et al., 2000). Research suggests that hostility toward women is important in justifying and maintaining gender inequalities (Glick et al., 2000; Glick & Fiske, 2001b; Mastari et al., 2019). By expressing hostility toward women who do not follow or protest traditional gender roles and therefore are perceived as a threat, men are able to maintain their dominant position over women (Hammond & Overall, 2017; Mastari et al., 2019), thus creating a reinforcing cycle. This is supported by the Council of Europe (2020), which notes sexism as the harmful root of gender inequality. This also makes female journalists and politicians particularly vulnerable, possibly leading to self-censorship (Council of Europe, 2020). Mogensen and Rand (2020) point out that women may refrain from participating in public debates due to the hostile statements aimed at their gender, sexuality, and appearance, and threats of rape and murder that many of them experience on social media. Fear of being harassed can limit women's freedom of speech and consequently democracy (Council of Europe, 2020; Mogensen & Rand, 2020).

Lachance-Grzela et al. (2021, p. 2122) summarized the effects of hostility toward women, saying it “devalues women’s competence, legitimates violence toward women, and discourages women from aiming for independent success.”

It is generally not as well understood and researched how hostility toward women can be harmful to men (Fleming et al., 2018; Hammond & Overall, 2013). Some research seems to support that men’s hostility toward women is also associated with adverse outcomes for men, although this is mainly based on cross-sectional and correlational data. A study on men in Tijuana found a significant positive relationship between hostility toward women and heroin use and depressive symptoms (Fleming et al., 2018). Other studies have found that men who supported sexist gender norms were more likely to have negative mental health and social functioning (Mahalik et al., 2006; Wong, Owen, & Shea, 2012; Wong, Ho, et al., 2017). Men’s hostility toward women has also been related to lower relationship adjustment and life satisfaction (Hammond & Overall, 2013, 2017; Hammond & Sibley, 2011; Lachance-Grzela et al., 2021; Napier et al., 2010). Although several scholars have suggested that the adverse mental health and life measures are consequences of men’s hostility toward women (Hammond & Overall, 2013, 2017; Hammond & Sibley, 2011), caution against making definite inferences about causality is called for; consequently, the findings must be interpreted with this in mind. Nevertheless, these findings do, at least theoretically, suggest that hostility toward women can have negative effects, not just for women and society, but also for the men who endorse it.

### **Predictors of Hostility Toward Women**

Despite the serious repercussions of hostility toward women, there is limited knowledge about why some men are more hostile toward women than others. Based on articles identified after informal searches in the databases PsycInfo, Web of Science and PubMed in the period April to September 2022, individual and environmental factors, such as

a competitive worldview and tough-minded personality traits, avoidant and anxious attachment style, high scores on the global measure of the dark triad, and parents' educational level and moral beliefs, have shown to be associated with men's hostility toward women (Hart et al., 2012; Mastari et al., 2019; Navas et al., 2020; Sibley et al., 2007). Nevertheless, the existing research on predictors of hostility toward women is limited; hence, the antecedents of this phenomenon are still not fully understood.

### ***Loneliness, Attractiveness, Romantic and Sexual Partners, and Rejection***

A phenomenon that in recent times has been linked to hostility toward women and that can indicate possible predictors, is incels. The term stands for involuntary celibates, and was first coined by a woman who started a forum for people who had difficulty forming romantic relationships (Mogensen & Rand, 2020; Taylor, 2018). In recent years, the term has mainly been used by and about men who stereotypically blame women for their struggle to find sexual and romantic partners and congregate in online forums (Mogensen & Rand, 2020; Reform, 2022). Inside these communities incels share frustration about their lack of power and control over women, specifically their bodies (Zimmerman et al., 2018). They see themselves as victims of feminism and egalitarianism which must be fought, even with violence (Zimmerman et al., 2018), an ideology closely aligned with Glick and Fiske's (1996) definition of hostile sexism. In the last decade, incel forums have gained increasing numbers of followers and the content on incel forums has become more extreme (Prøitz et al., 2022).

Much of the media focus and concerns about this community have arisen in light of recent mass killings and attacks (Branson-Potts & Winton, 2018; Tande, 2021). Since 2014, there have been nearly 50 deaths from a string of violent attacks related to incel communities, including stabbings, shootings, and vehicle-rammings (Hoffman et al., 2020). It should be emphasized that most men in such groups or who have hostile attitudes toward women do not terrorize or kill women (Mogensen & Rand, 2020). A quick look at various online forums for



incels also shows that they do not make up a homogenous group; some communities center around sharing experiences and supporting each other. Some also refer to themselves as living in involuntary celibacy (i.e., state) rather than identifying as an incel (i.e., trait), as a way of distancing themselves from the hostility toward women associated with many incel forums (Langeland et al., 2022). We find that the phenomenon is more complicated and nuanced than what is often described in the media. This does however not diminish the fact that hostility toward women is prevalent and a central tenet in the incel ideology (Broyd et al., 2022; Zimmerman et al., 2018). Thus, there has been increasing amount of interest and research to better understand why incels hold hostile attitudes toward women, and – in extreme cases – why they have performed and endorsed violent attacks.

Recent research aimed at understanding incels does provide some suggestions of possible underlying factors as to why some men hold hostile attitudes toward women. In their report, *The Angry Internet*, Mogensen and Rand (2020) shed light on possible reasons as to why some men become part of hostile online groups. The men typically reported feeling lonely and socially excluded, having bad experiences in face-to-face interactions with women, and little prosocial contact with others outside the online forums. The findings are supported by an investigation into the incel phenomenon by Reform (2022), where the informants reported struggling with loneliness. Several of the men in a qualitative study reported loneliness as the main driver behind joining incel forums in the first place, and claimed that they were enlightened by the community into becoming hostile toward women (L. Williams, 2020). Mogensen and Rand (2020) explain that most users initially sought to online forums for emotional and social support, and suggest transitioning to more hostile beliefs about women to cope with their experience of inadequacy. Prøitz et al. (2022) propose a similar line of thinking, describing loneliness as a central characteristic of incels, but also a motivator for joining the community, potentially leading to a cycle of hating themselves and others.

Many men on these forums describe themselves as losers or unattractive (Mogensen & Rand, 2020), and report struggling with a lack of romantic relationships (Reform, 2022). A recent study found that incels reported being unsuccessful in online dating, as well as having low self-esteem (Sparks et al., 2022a). One of the biggest online incel forums released findings from two polls carried out in 2019 and 2020 on users of their website, involving over a thousand respondents (Anti-Defamation League [ADL], 2020). Unsurprisingly, over 80% reported never having had romantic relationships and sex, supporting virginity as a core element of incelism (ADL, 2020). The number one factor preventing incels from finding a partner was, according to themselves, their low attractiveness, with over 80% of the respondents naming physical appearance as the culprit (ADL, 2020). Self-confidence and lifestyle were endorsed by over half of the respondents as important causes (ADL, 2020).

Furthermore, rejection seems to be a recurring theme among incels (Mogensen & Rand, 2020). A recent study found that incels tend to perceive and strongly react to rejection (Sparks et al., 2022a). The most infamous incel, Elliot Rodgers, went on a killing spree in Isla Vista, killing six and injuring 14 people (Hoffman et al., 2020; Zimmerman et al., 2018). In his manifesto, he blamed his attack on women who had, and potentially would, reject him (Hoffman et al., 2020; Zimmerman et al., 2018). Since then, Rodgers has been labeled the hero of incels, sparking several attacks perpetuated by incels blaming their problems on women's rejection (Branson-Potts & Winton, 2018; Center on Extremism, 2023; Hoffman et al., 2020). A recent example of this is a man who purposefully ran his car into two schoolgirls at a bus stop, according to himself as a response to the injustice of not being able to get a girlfriend (Kapitan, 2023).

Based on the aforementioned empirical findings, it seems reasonable to conclude that recurring themes among incels are loneliness, low attractiveness, rejection, and lack of sexual and romantic relationships with women. Some studies report loneliness and lack of

relationships as prevalent also among men who do not necessarily identify as incels (Barreto et al., 2021; Cox, 2021, 2023). If loneliness is related to hostility toward women among incels, it is conceivable that this could predict hostility toward women within the general population of men as well. Support for the latter notion was found in a study by Wong, Ho, et al. (2017) where men who supported hostile attitudes toward women were likely to also experience loneliness. Grunau et al. (2022) found that unwanted celibacy, both for incels and non-incels, was a risk factor for hostility toward women. Similarly, studies suggest that men who experience more rejection may become sensitive to rejection, contributing to a tendency to react with more aggression and anger toward women than men reporting lower frequencies of rejection (Romero-Canyas et al., 2010). Thus, there is an indication that loneliness, low attractiveness, rejection, and lack of sexual and romantic relationships with women are relevant in understanding hostility toward women among men in general, which is the focus of the current study.

Considering other men who are frequently labeled as hostile toward women challenges the notion that hostile men are exclusively unattractive and sexually inexperienced. The manosphere is an umbrella term for several male-dominated groups, including incels, all united in their hostile attitudes toward women (Marwick & Lewis, 2017; Sugiura, 2021). Recent attention around famous member of the manosphere, and self-proclaimed misogynist Andrew Tate, has raised questions on hostility toward women in men on the opposite side of the spectrum to incels. Viewed and followed by millions of young men, Tate teaches them how to attract and treat women (Das, 2022). He is infamous for endorsing violence toward women and his sexist beliefs, frequently reporting numerous sexual exploits, and seemingly viewing himself as a womanizer (Das, 2022; Shammass, 2022; Smith, 2022). Tate's approach to women resembles the sexually objectifying strategies found in another community in the manosphere; pick-up artists. Pick-up artists use assertive strategies to isolate and initiate

relationships with women they are sexually interested in, and the community has been linked to hostility toward women (Hall & Canterbury, 2011). A leader in the community, Daryus Valizadeh, opposes feminism and argues for the legalization of rape, believing women should always be available to men (ADL, 2018).

There are some studies that support that high attractiveness and sexual experience may be related to hostility toward women. Ramiro-Sánchez et al. (2018) found that men who reported having sexual experience had significantly more hostile attitudes toward women than men who reported having no sexual experience. Using the Perceived Mate Value scale, which includes questions of attractiveness and relationship success, Bosson et al. (2022) found a significant positive correlation with hostility toward women. When seen together with similar groups in the manosphere, this begs the question whether men showcasing hostility toward women consider themselves *more* attractive and successful in sexually pursuing women than those with less hostile attitudes toward women. It also makes one question the stereotype that men who are hostile toward women are unattractive and lack sexual relationships.

### ***Right-Wing Authoritarianism***

Groups of men embodying hostility toward women do not seem homogenous, but rather reflect several different communities in the manosphere (Broyd et al., 2022; Marwick & Lewis, 2017; Mogensen & Rand, 2020; Sugiura, 2021; Zimmerman et al., 2018). The ADL (2018) draws a connection between pick-up artists, incels, white supremacists, and right-wing extremists, all united in their intense hatred for women. Men in these groups seem to share a sense of entitlement, believing they are owed sex, jobs, and status, and reacting negatively when not afforded it (ADL, 2018). Several reports on incels and hostility toward women also highlight the strong association with right-wing political extremists and alt-right groupings (e.g., Hoffman et al., 2020; Mogensen & Rand, 2020; Zimmerman et al., 2018), all blaming feminism for society's divergence from traditional gender norms and conservative values

(ADL, 2018). Likewise, Mogensen and Rand (2020) draw lines to mass murderer Anders Behring Breivik's anti-feminist rhetoric in his right-wing extremist manifesto and recommend further investigating the overlap with the incel culture. Several of the perpetrators of violent attacks in the last decades referred to incel- and far-right rhetoric as motivations for their violence (Center on Extremism, 2023; Prøitz et al., 2022), and antisemitic and racist comments are prevalent in incel forums (L. Williams, 2020). Wilson (2022, p. 1810) suggests that believing in white genocide and endorsing hostility toward women are "mutually escalatory" factors, and he relates incels to white nationalists in how they idealize a view of the past where white men subjugated women and ethnic minorities.

Some studies have explored the relationship with hostility toward women by measuring right-wing authoritarianism. Right-wing authoritarianism was initially explained as a personality dimension, but later understood as reflecting social and ideological attitudes about social control, submission to and respect for authorities, and conformity to traditional and religious norms (Austin & Jackson, 2019; Duckitt & Sibley, 2010, 2016). Right-wing authoritarianism has been strongly related to right-wing political attitudes (Altemeyer, 2006), and associated with hostility toward women (Austin & Jackson, 2019; Begany & Milburn, 2002; Canto et al., 2014; Christopher & Mull, 2006; Cokley et al., 2010). Begany and Milburn (2002) found that right-wing authoritarianism significantly and positively predicted likelihood of engaging in sexual harassment, mediated by hostile attitudes toward women and support of rape myth.

Research has also found positive relationships between right-wing authoritarianism and previously mentioned topics, like loneliness (Floyd, 2017) and conservative right-leaning political views and physical attractiveness (Peterson & Palmer, 2017). Mansell and Gatto (2022) found that fragile self-esteem in men was associated with higher hostility toward women and a preference for men in political leadership. Taken together, it seems then that

right-wing authoritarianism, loneliness, attractiveness, and self-esteem issues could be linked, and that these variables may be associated with hostility toward women.

### ***Gaming***

Along with online discussion forums, online video games are another arena where many young men gather and where hostility toward women is prevalent (Norwegian Media Authority, 2022). Online video games have long been male-dominated in terms of both players and design (Fox & Tang, 2014; Norwegian Media Authority, 2022). In recent times, however, there has been an increasing number of female gamers (Leonhardt, & Overå, 2021), with some suggesting a roughly equal gender distribution (Entertainment Software Association, 2021). Others have claimed that far more men than women play video games but acknowledge a move in a more gender-equal direction (Norwegian Media Authority, 2022). More importantly, despite the alleged more balanced gender distribution among gamers, hostility toward women still seems to be a problem in online video games (Fox & Tang, 2014; Norwegian Media Authority, 2022).

Sexually harassing behavior and language seems widespread in online video games and is mainly exhibited by men (Ask et al., 2016). Multiple surveys show that more than 50% of women who play online video games report experiencing gender discrimination, insults, sexual harassment, and exclusion (ADL, 2022; Reach3, 2021). According to the Norwegian Media Authority's (2022) recent report, women experience more visual and verbal sexual harassment than men while playing, with slurs toward women being especially widespread. Some examples of common things women reported hearing while playing video games are "Go back to the kitchen, cook something, stop playing!" (Norwegian Media Authority, 2022, p. 10), "whore" (Ask et al., 2016, p. 9), and "slut" (Cote, 2017, p. 138). Many women have expressed that this is problematic for them (Ask et al., 2016) and try to avoid it by using neutral or male usernames (Lopez-Fernandes, 2019; Reach3, 2021). Research suggests that

hostility toward female gamers is associated with men's hostile attitudes toward women (Fox & Tang, 2014). Closed gaming communities can become echo chambers of harassment and antisocial attitudes (Prøitz et al., 2022), spreading outside the confines of the game. A key event in the manosphere was the online harassment campaign called Gamergate (Farrell et al., 2019). Gamergate started with a false accusation of unethical behavior of a female video game developer and led to a years-long harassment campaign aimed at female gamers and journalists, evolving into rape and death threats (Chess & Shaw, 2015; Massanari, 2017; Romano, 2021; St. James, 2014).

It is not just the communication between players that can be hostile toward women; the design and content of video games often have sexist representations of female characters, presenting them in more revealing and provocative clothing than the male ones (Bègue et al., 2017; Downs & Smith, 2010; Jansz & Martis, 2007; Lopez-Fernandes, 2019; Lynch et al., 2016). Research has found that sexualization of female characters in video games impacted male players' sexist attitudes toward women (V. S. Beck et al., 2012; Bègue et al., 2017; LaCroix et al., 2018). However, this is not supported in all studies on the subject (Breuer et al., 2015; Ferguson & Donnellan, 2017). Therefore, it is still unclear whether playing online video games impact men's attitudes toward women.

There is currently little evidence on the correlations between gaming addiction and hostility toward women. Still, problematic gaming behaviors are associated with several of the negative psychological characteristics discussed previously, like aggressiveness, low sociability, depression, anxiety, stress, lower levels of life satisfaction, interpersonal difficulties, and loneliness (Gervasi et al., 2017; Kardefelt-Winther, 2014; Männikkö et al., 2020). There is some evidence that suggests that excessive gaming is a compensation strategy leading to adverse outcomes like loneliness (Kardefelt-Winther, 2014; Lemmens et al., 2011), but lower psychosocial well-being could also be a precursor to pathological gaming behavior

(Lemmens et al., 2011). An important question in this realm then is if gaming addiction also relates to hostility toward women.

### **Purpose of the Present Study**

As far as we know, the reasons to why men become hostile toward women is not fully understood. Few quantitative studies have examined possible underlying factors of hostility toward women among men in general; much of the newer research has focused on incels and other sexist groups of the manosphere and is mainly qualitative in the form of interviews and observations. Despite research into hostility toward women within the gaming community, this relationship is still unclear and debated. Similarly, research has found right-wing authoritarianism to be associated with hostility toward women, but to our knowledge, no studies have investigated this relationship while controlling for loneliness, rejection, attractiveness, and romantic and sexual relationships. Against this backdrop, we conducted a quantitative study to examine whether loneliness, number of female romantic and sexual partners, rejection, attractiveness, gaming, and right-wing authoritarianism predicts men's hostility toward women. Because these attitudes are not necessarily exclusive to groups within the manosphere, we wanted to investigate these factors among men in general. The goal of our study was to find out more about men's hostility toward women, specifically if there was a relationship with the factors that are often mentioned regarding men's hostile attitudes toward women. This can contribute with knowledge about which factors should be researched further when trying to determine the causes of hostility toward women. Such knowledge is important for the women being directly affected, men who endorse such attitudes, and society (Fleming et al., 2018; Mogensen & Rand, 2020).

### ***Hypotheses***

Based on the consistent emphasis on loneliness in the existing research on incels, we expected men who report feeling lonely to hold more hostile attitudes toward women



(hypothesis 1). Given the studies that have shown rejection sensitivity to be correlated with hostility toward women, and that rejection is a recurring theme among incels, we expected men sensitive to rejection to have higher levels of hostility toward women (hypothesis 2). The high prevalence of hostility among men who seem to consider themselves attractive, and men that do not, led us to believe that men with high and low scores on attractiveness would be more hostile toward women than men with more moderate scores (hypothesis 3). The literature suggests the same pattern for sexual partners; thus, we expected both men with many and few sexual partners to have more hostile attitudes toward women than other men (hypothesis 4). Regarding romantic partners, however, we expected men with few romantic relationships to hold more hostile attitudes toward women (hypothesis 5). In line with research associating right-wing political attitudes with hostility toward women, we expected men high on right-wing authoritarianism to be more hostile toward women (hypothesis 6). Although research has given conflicting results, the prevalence of hostility toward women in the design and communication in online video games made us expect that men who spend more time on video games or have problematic gaming behaviors will have increased hostility toward women (hypothesis 7).

## **Method**

### **Respondents**

The original sample consisted of 516 men ranging in age from 18 to 35 years, with a mean age of 26.3 ( $SD = 5.0$ ). We limited the sample to single, heterosexual men, living in the UK. The number of participants was chosen based on power calculation conducted with G\*Power 3.1.9.2 (Faul et al., 2007). When the alpha level was set to .05 (two-tailed) and power to .80, it showed that a sample size of 395 respondents was required to detect a significant individual predictor with a small effect ( $f^2 = .02$ ) in a multiple regression analysis. Based on the recommendation to have more respondents than required for sufficient power

(Pallant, 2020), and taking financial constraints into account, we chose to recruit 500 participants.

Respondents were recruited via Prolific (<https://www.prolific.co>), which is a UK based company that recruits participants for paid surveys. Prolific has methods to ensure that the responses included in the survey are of a certain quality (e.g., respondents have received approval of responding to previous surveys). Respondents are also prescreened by Prolific, in which the information they provide about themselves determines which studies they are invited to participate in. Participants in the present study were selected based on demographic variables (single, heterosexual, UK-residents, men, 18–35 years). They were compensated with a sum equal to £8 for answering the questionnaire. The responses and research participants remained anonymous to the project team. Prolific automatically accepts more than the requested sample to compensate for missing or partially completed responses, providing us with a final sample of 516 respondents.

After the final data collection, 15 cases were excluded for only partially completing the questionnaire, leaving 501 respondents who had completed the whole questionnaire. Data collections, especially online surveys, are susceptible to careless responding, such as inattentive and random response styles (Meade & Craig, 2012). To ensure the data quality in the current study, three questions for identifying careless responding proposed by Brühlmann et al. (2020) were adjusted to fit seamlessly with the layout and formulation of the questionnaire: “I read every question and try to answer correctly,” “I read instructions carefully. To show that you are reading these instructions, choose the number 5,” and “I see myself as someone who did not read this statement.” Twenty-eight of the remaining respondents did not answer these statements correctly and were consequently removed for careless responding. Hence, the final analytic sample consisted of 473 single, UK-residents,

heterosexual men, ranging in age from 18 to 35, with a mean age of 26.2 ( $SD = 5.0$ ). Thus, the final sample satisfied the requirements for sufficient power.

## **Ethics**

Prior to recruiting, ethical approval was sought by the Regional Committee of Medical and Health Research Ethics, health region West. The committee deemed the project to be outside the scope of the Norwegian Health Research Act (See Appendix A). An application was therefore sent to the Norwegian Center for Research Data (NSD) but was later withdrawn following advice from the Data Protection Officer at the University of Bergen, Janecke Veim. Veim concluded that the data protection of the participant was taken care of by Prolific, still our consent form was adjusted in alignment with suggestions from NSD. The study was finally registered and approved in RETTE, a system for risk and compliance and processing of personal data in research and student projects at the University of Bergen. To strengthen the quality of the study by preventing p-hacking (selective reporting of significant findings) and HARKing (Hypothesis After Result is Known; Yamada, 2018), we formulated and pre-registered our hypotheses at the Center for Open Science in January 2023 (Registration No. M3A4). Although data collection was completed and accessible at that time, we did not inspect nor analyze the data before the pre-registration.

## ***Research Ethics Considerations***

Participation was considered to involve low risk for those who answered. Some of the questions may have been perceived as uncomfortable, especially those assessing rejection, attractiveness, loneliness, gaming addiction, and relationships with women. On the other hand, participation could have made the participants feel that their difficulties and feelings were taken seriously, and that the survey provided an opportunity to share them. Mental health in men has generally received less focus, and the threshold for seeking help is higher in men than women (Parent et al., 2018; Wang et al., 2007). The findings have the potential to

benefit the individual men, women, and society in general, with the hope to understand and change men's hostile attitudes toward women.

The survey was sent to participants recruited by Prolific and participation was voluntary. The questionnaire required active consent from the participants, and they could withdraw their consent by leaving or not completing the online questionnaire (See Appendix B). This study was conducted as a part of our final thesis of our degree at the Professional School of Psychology, and funded by the Norwegian Competence Center for Gambling and Gaming Research, University of Bergen.

## **Measures**

### ***Hostile Sexism Subscale***

To investigate men's hostility toward women, we used the hostile sexism subscale from the Ambivalent Sexism Inventory (ASI) developed and validated by Glick and Fiske (1996). For our questionnaire we used the more recent version from Glick et al. (2000), where the questions are not reverse-worded, improving their readability. As requested by the authors of the scale, permission to use this scale was granted by Glick himself. The scale consists of 11 questions answered on a 6-point Likert scale, ranging from 0 (*disagree strongly*) to 5 (*agree strongly*). Examples of questions are "Most women interpret innocent remarks or acts as being sexist" and "When women lose to men in a fair competition, they typically complain about being discriminated against." A composite score is calculated by adding the score of each item and dividing by the number of items. Results from six studies performed by the developers (Glick & Fiske, 1996) showed a good internal consistency for the hostile sexism subscale (Cronbach's  $\alpha$  ranging from .80 to .92). Later, research by Glick et al. (2000) showed that the subscale had good internal consistency across 19 nations (Cronbach's  $\alpha$  ranging from .68 to .89). In our sample, we found a high internal consistency (Cronbach's  $\alpha = .95$ ). Cronbach's alpha values above .70 is considered acceptable, although .80 is preferred

(Pallant, 2020). The hostile sexism subscale correlates well with other measures of hostility toward women but is more subtle than measures of more traditional forms (Glick et al., 2000).

### ***Misogyny Scale***

Hostility toward women was also measured by the less subtle misogyny scale developed and validated by Rottweiler and Gill (2021). The scale consists of 10 questions, where participants are asked to respond to statements on a 7-point Likert scale, from 1 (*strongly disagree*) to 7 (*strongly agree*). The scale reflects three factors: manipulative and exploitative nature of women (e.g., “Women seek to gain power by getting control over men”), distrust toward women (e.g., “It is generally safer not to trust women too much”), and devaluation of women (e.g., “I feel uncomfortable when a woman dominates the conversation”). In line with previous studies and due to the high intercorrelation between the scores of the three subscales (Rottweiler & Gill, 2021), which also was the case in the current study ( $r = .60$  to  $.82$ ), we collapsed the scores on the three subscales into one global misogyny score. The composite score is calculated by taking the mean of the score of the 10 items. According to Rottweiler et al. (2021), the Misogyny Scale has high internal consistency measured by McDonald’s omega ( $\omega = .95$ ), with values above  $.70$  being deemed acceptable. High internal consistency was also found in the current sample (Cronbach’s  $\alpha = .94$ ). The items of the misogyny scale seem to target more overt/obvious hostility toward women than hostile sexism subscale. Therefore, the two scales complement each other in terms of assessing and detecting nuances of hostility toward women.

### ***Self-Perceived Sexual Attractiveness Scale***

To measure perceived sexual attractiveness, we used the Self-Perceived Sexual Attractiveness scale (SPSA) developed by Amos and McCabe (2015). The scale consists of six statements about a person’s self-perceived sexual attractiveness, to which the participant responds on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Examples

of statements are “I believe I can attract sexual partners” and “I am sexually attractive.” The total composite score comprises the sum of the scores of the six items. According to Amos and McCabe (2015), the scale has been shown to have good psychometric properties for different genders and sexual orientations, with good internal consistency (Cronbach’s  $\alpha$  ranging from .94 to .96). In the present sample, we found a high internal consistency (Cronbach’s  $\alpha = .96$ ).

### ***Adult Rejection Sensitivity Questionnaire***

We measured rejection sensitivity to explore the relationship between hostility toward women and rejection. Rejection sensitivity can be defined as “a disposition to anxiously expect, readily perceive, and overreact to rejection” (Downey & Feldman, 1996, p. 1341). In their review on rejection sensitivity, Romero-Canyas et al. (2010) refer to research showing positive correlations between rejection sensitivity and hostility, aggression, partner violence, avoidance of social contact, and psychological distress, and an inverse relationship with number of romantic relationships. Rejection sensitivity was therefore considered an appropriate measure for rejection in the current study; specifically, we used the Adult Rejection Sensitivity Questionnaire (A-RSQ; Berenson et al., 2009) for this purpose. The A-RSQ consists of nine questions about situations that participants answer on a 6-point Likert scale in terms of how concerned they are about being rejected in given specific situations (rejection concern) ranging from 1 (*very unconcerned*) to 6 (*very concerned*), and how likely they think the rejection is (rejection expectancy) from 1 (*very unlikely*) to 6 (*very likely*). Examples of situations are “You call a friend when there is something on your mind that you feel you really need to talk about,” where the participants respond to the degree of concern: “How concerned or anxious would you be over whether or not your friend would want to listen?”, and expectancy: “I would expect that he/she would listen and support me.” Scores for each situation are calculated by multiplying scores on rejection concern with the reversed

score on rejection expectancy. The total rejection sensitivity score comprises the mean score for the nine situations. According to Berenson et al. (2009), A-RSQ has a sufficient internal consistency (Cronbach's  $\alpha = .74$ ). In our sample, we found an acceptable internal consistency (Cronbach's  $\alpha = .77$ ).

### ***Number of Female Romantic and Sexual Partners***

To investigate if there is a relationship between number of sexual and romantic female partners, and the degree of hostility toward women, we asked the participants: "How many female romantic partners have you had" and "How many female sexual partners have you had" with options from 0 to more than 50. When scoring, the option "more than 50" was given the value 51. The participants were also asked how long their most recent romantic relationships lasted from 0 to more than 50 months, and who ended the relationship with the options "me," "partner," and "both," but this data was not included in the analysis. These items were constructed for the present study.

### ***Short-Form UCLA Loneliness Scale, ULS-8***

To measure loneliness, we used the ULS-8 (Hays & DiMatteo, 1987), a short-form of the UCLA Loneliness Scale developed by Russell et al. (1978). The scale consists of eight statements that assess the extent to which the person feels socially isolated and lonely, where items 3 and 6 are positively worded, hence reverse-scored. Participants answer how often each statement is descriptive of them on a four-level frequency scale from 1 (*often*) to 4 (*never*). Examples of statements are "There is no one I can turn to" and "I lack companionship." The composite loneliness score is the sum of the eight items after reversing the scores on items 3 and 6. According to the Hays and DiMatteo (1987), the ULS-8 is a valid and reliable scale, showing high internal consistency (Cronbach's  $\alpha = .84$ ). High internal consistency was also found in a newer study among Chinese adolescents by Xu et al. (2018, Cronbach's  $\alpha = .82$ ). In our sample the internal consistency (Cronbach's  $\alpha$ ) was .86.

### ***Hours and Days Spent Gaming***

When measuring gaming, we were specifically interested in online video games because they enable communication and interaction between players (Huang et al., 2015), and are the types of games where women often report sexual discrimination and harassment (Cote, 2017; Norwegian Media Authority, 2022). We therefore asked the participants: “Do you play video games online?” with the response options “yes” and “no.” Participants who answered affirmatively were then asked: “Roughly how many hours do you spend playing online video games each day?” on a scale from 1 to 24, and “How many days do you play online video games in a week?” on a scale from 1 to 7. Participants who replied no to gaming were coded as 0 on the latter questions. We considered asking the participants to report which categories of video games they play, but decided not to include questions about that due to a lack of consensus regarding the categorization of online video games (Faisal & Peltoniemi, 2015).

### ***Game Addiction Scale for Adolescents***

We used the 7-item version of the Game Addiction Scale for Adolescents (GASA; Lemmens et al., 2009), to assess men’s addictive tendencies related to their gaming. Only the participants who had confirmed playing video games were asked to complete this scale. The questions pertained to the last 6 months and the response options ranged from 1 (*never*) to 5 (*very often*). Examples of questions are “How often during the last six months have you played games to forget about real life?” and “How often during the last six months have you neglected important activities (e.g., school, work, sports) to play games?” The composite score on gaming addiction comprises the sum of the scores on the seven items. Participants who replied “no” to gaming were coded as 1 instead of missing for each of these questions, providing the lowest possible score on the GASA. According to Lemmens et al. (2009), GASA is a valid and reliable scale, with Cronbach’s  $\alpha$  ranging from .81 to .86 demonstrating



good internal consistency. The internal consistency (Cronbach's  $\alpha$ ) in the present sample was .84.

### ***Right-Wing Authoritarianism Scale***

To investigate the relationship between hostility toward women and right-wing authoritarianism, we used the 10-item version of the Right-Wing Authoritarianism Scale (RWA Scale; Altemeyer, 2022). The scale consists of 10 statements that participants respond to on a 9-point Likert scale from -4 (*very strongly disagree*) to 4 (*very strongly agree*). Examples of questions are “Our country desperately needs a mighty leader who will do what has to be done to destroy the radical new ways and sinfulness that are ruining us” and “Gays and lesbians are just as healthy and moral as anybody else” (reversed). Five questions, items 2, 4, 7, 8, and 10 are reversed. After reversing the scores on those questions, a total score is calculated by adding the scores of the items. The RWA Scale is widely used and has been shown to have good psychometric properties in multiple countries (Monmouth University Polling Institute, 2021; Venaglia & Maxwell, 2021). According to Altemeyer (2022), the 10-item version has shown good internal consistency (Cronbach's  $\alpha = .84$ ), which also was the case in our sample (Cronbach's  $\alpha = .90$ ).

### **Procedure**

The design of the questionnaire took place from April to December 2022. The questionnaire was set up in SurveyXact, which is a web-based solution for administering online surveys. The University in Bergen has a formal data processing agreement with SurveyXact. After being adjusted and revised as explained previously, the link to the questionnaire was uploaded to Prolific's webpage, and research participants were invited to answer it (See Appendix C). Data collection took place in December 2022. Potential participants were informed about the study via a page on Prolific containing an overview of studies they can participate in. In addition, Prolific sends e-mails with information about new

surveys to a random sample of potential participants within the target demographic group. Potential participants were informed about the purpose of the study and possible advantages and disadvantages of participating before providing consent. Participants were also informed about the anonymity of the survey, and their opportunity to withdraw their consent. It was explained that participants could not have their responses deleted when the data collection was completed, as their responses were not identifiable. Only participants who confirmed that they had read the form and provided consent were given access to the online questionnaire.

After the data collection was completed, and before looking at the responses, the measures were revisited to ensure that the variables were appropriate for our analysis. The questions “How long did your most recent relationship last” and “Who ended your most recent relationship” were removed prior to analysis as the answers were deemed not to give sufficient information about the men’s relationships in general, only their most recent. It was also at this stage that we pre-registered our hypotheses.

### **Analysis**

After completing the pre-registration and removing data from respondents who partially completed the questionnaire or displayed careless responding, the variables were coded according to the scoring procedures presented under the Measures section. Statistical analyses of the data material were then conducted in SPSS, version 28, in January 2023. The bivariate relationships between the study variables were assessed using Pearson correlation coefficient. Preliminary analyses were performed to ensure no violation of linearity and normality. Regression analyses were used to assess the ability of the 11 independent variables, attractiveness (measured by SPSA scale; also squared), loneliness (measured by ULS-8), rejection (measured by A-RSQ), number of romantic partners and sexual partners (also squared), hours and days spent gaming, gaming addiction (measured by GASA) and right-wing authoritarianism (measured by RWA Scale) to predict levels of hostility toward women

(measured by hostile sexism subscale and misogyny scale), while also controlling for age. Squared versions of attractiveness and number of sexual partners were added in the regression analyses, enabling the investigation of curvilinear relationships shown as convex (positive) relationships between the quadratic terms and hostility toward women. Simple linear regression analyses were first run for each independent variable separately in relation to the two dependent variables, providing crude models. Two multiple linear regression analyses were then performed controlling for each of the other independent variables, creating adjusted models. Preliminary analyses were conducted to ensure that the assumptions of normality, linearity, multicollinearity, and homoscedasticity were met.

## Results

### Descriptives

Mean values and standard deviations for the independent and dependent variables are presented in Table 1. The descriptive analysis showed that romantic partners, sexual partners, and gaming hours were highly skewed, indicated by a skewness greater than one (Pallant, 2020). This was also confirmed by inspecting the shape of the distribution shown in the histograms. With large samples the skewness will not have a high impact on the analysis, but it is recommended to present a non-parametric statistic, such as the median and the spread of scores, in such cases (Pallant, 2020): romantic partners ( $Md = 2$ ; Interquartile range [ $IQR$ ]: 1, 4); sexual partners ( $Md = 2$ ;  $IQR$ : 0, 6); and gaming hours ( $Md = 2$ ;  $IQR$ : 1, 3). Importantly, it should be noted that as long as the residuals in the regressions are approximately normally distributed, the distribution of the dependent or independent variables is irrelevant (Habeck & Brickman, 2018).

**Table 1***Descriptive Statistics for Study Variables (N = 473)*

Variable	<i>M</i>	<i>SD</i>	Min./Max.
Age <sup>a</sup>	26.21	4.96	18/35
Hostile sexism <sup>b</sup>	2.03	1.25	0/5
Misogyny <sup>c</sup>	2.95	1.36	1/7
Right-wing authoritarianism <sup>d</sup>	34.07	15.83	10/87
Romantic partners <sup>e</sup>	3.37	5.51	0/51 <sup>f</sup>
Sexual partners <sup>e</sup>	5.58	9.12	0/51 <sup>f</sup>
Loneliness <sup>g</sup>	20.77	5.56	8/32
Rejection <sup>h</sup>	10.32	3.98	1/28
Attractiveness <sup>i</sup>	22.35	9.02	6/42
Gaming hours <sup>j</sup>	2.18	2.06	0/15
Gaming days <sup>k</sup>	3.68	2.27	0/7
Gaming addiction <sup>l</sup>	12.84	4.78	7/29

<sup>a</sup> 18–35. <sup>b</sup> Hostile sexism subscale. <sup>c</sup> Misogyny scale. <sup>d</sup> Right-Wing Authoritarianism Scale. <sup>e</sup> Number of previous partners, 0 to >50. <sup>f</sup> 51 = over 50. <sup>g</sup> UCLA Loneliness Scale ULS-8. <sup>h</sup> Adult Rejection Sensitivity Questionnaire. <sup>i</sup> Self-Perceived Sexual Attractiveness scale. <sup>j</sup> Per day. <sup>k</sup> Per week. <sup>l</sup> Game Addiction Scale for Adolescents.

## Correlations

Preliminary analyses showed violation of normality for sexual and romantic partners, and gaming hours. Their bivariate associations were analyzed using Spearman's *rho* in line with Pallant's (2020) recommendation. As shown in Table 2, correlations ranged from -.425 to .891. Right-wing authoritarianism, gaming hours and addiction had significant positive correlations with hostile sexism and misogyny. Rejection and romantic and sexual partners had significant positive correlations with misogyny. There were also significant correlations between several independent variables. Strength of correlation was interpreted in line with Cohen's (1988) suggestion of .10 to .29 as weak, .30 to .49 as moderate, and .50 as strong. Strong correlations were found between the gaming variables; hostile sexism and misogyny; right-wing authoritarianism and the two measures of hostility toward women; loneliness and rejection; and romantic and sexual partners. The other correlations were weak to moderate.

**Table 2***Bivariate Correlations Between the Study Variables (N = 473)*

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Age <sup>a</sup>	–											
2. Hostile sexism <sup>b</sup>	-.050	–										
3. Misogyny <sup>c</sup>	-.055	.891**	–									
4. Right-wing authoritarianism <sup>d</sup>	-.081	.599**	.558**	–								
5. Romantic partners <sup>e</sup>	.394**	.063	.113*	-.020	–							
6. Sexual partners <sup>e</sup>	.379**	.048	.093*	-.101*	.805**	–						
7. Loneliness <sup>f</sup>	.090	.004	.039	-.091*	-.085	-.085	–					
8. Rejection <sup>g</sup>	.108**	.035	.110*	-.028	-.048	-.083	.512**	–				
9. Attractiveness <sup>h</sup>	-.011	.072	.076	.052	.313**	.342**	-.425**	-.335**	–			
10. Gaming hours <sup>i</sup>	-.144**	.115*	.119**	.060	-.007	-.018	.090	.059	-.144**	–		
11. Gaming days <sup>j</sup>	-.098*	.077	.191	-.011	-.036	-.062	.087	-.006	-.135**	.673**	–	
12. Gaming addiction <sup>k</sup>	-.108*	.176**	.227**	.111*	<-.001	-.048	.235**	.178**	-.113*	.684**	.566**	–

<sup>a</sup> 18–35. <sup>b</sup> Hostile sexism subscale. <sup>c</sup> Misogyny scale. <sup>d</sup> Right-Wing Authoritarianism Scale. <sup>e</sup> Number of previous partners, Spearman's *rho*. <sup>f</sup> UCLA

Loneliness Scale ULS-8. <sup>g</sup> Adult Rejection Sensitivity Questionnaire. <sup>h</sup> Self-Perceived Sexual Attractiveness scale. <sup>i</sup> Per day, Spearman's *rho*. <sup>j</sup> Per week.

<sup>k</sup> Game Addiction Scale for Adolescents.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

## Multiple Regression Analyses

Preliminary analyses showed no major deviations from normality. There was no multicollinearity between the independent variables, except the expected high correlations between the non-squared and squared versions of attractiveness and sexual partners, as all other Variance Inflation Factors were below 2. A few outliers were identified, but the amount was within what is expected in large samples (Pallant, 2020), so none of these cases were removed. The results of the regression analyses (crude and adjusted) for hostile sexism and misogyny are presented in Tables 3 and 4 respectively. The standardized betas were interpreted in line with Acock's (2014) suggestion of  $\beta < .20$  as weak,  $.20$  to  $.50$  as moderate, and  $\beta > .50$  as strong effect. In the following sections, we highlight the significant findings.

As shown in Tables 3 and 4, right-wing authoritarianism significantly predicted hostile sexism ( $\beta = .599, p < .001$ ) and misogyny ( $\beta = .558, p < .001$ ). This remained when controlling for the other independent variables in the adjusted model: hostile sexism ( $\beta = .606, p < .001$ ) and misogyny ( $\beta = .556, p < .001$ ). The strong positive relationship showed that men who scored higher on right-wing authoritarianism had more hostile attitudes toward women than men with lower right-wing authoritarianism.

In the crude models of attractiveness, only the squared version significantly, but weakly, predicted hostile sexism ( $\beta = .098, p = .032$ ) and misogyny ( $\beta = .102, p = .027$ ). In the adjusted models, non-squared and squared versions significantly predicted hostile sexism (non-squared:  $\beta = -.500, p = .002$ ; squared:  $\beta = .580, p < .001$ ) and misogyny (non-squared:  $\beta = -.467, p = .005$ ; squared:  $\beta = .553, p < .001$ ). The strong positive relationships for the squared version showed a convex curvilinear relationship, meaning that those who viewed themselves as least and most attractive were more hostile toward women than men with more average scores on attractiveness. The moderate to strong negative linear relationships for non-

squared version showed a tendency for hostility toward woman to decrease with higher attractiveness.

For sexual partners, the non-squared and squared versions significantly and moderately predicted hostile sexism (non-squared:  $\beta = .279, p = .008$ ; squared:  $\beta = -.253, p = .010$ ) and misogyny (non-squared:  $\beta = .313, p = .003$ ; squared:  $\beta = -.255, p = .010$ ) in the adjusted model only. The negative relationship for the squared version showed a concave curvilinear relationship, meaning men with the lowest and highest numbers of sexual partners were less hostile toward women than men with more average numbers of sexual partners. The positive linear relationships for non-squared attractiveness showed a tendency for hostility toward women to increase with increased number of sexual partners. Rejection significantly and positively, but weakly, predicted misogyny ( $\beta = .110, p = .017$ ) in the crude model only.

Gaming hours significantly, albeit weakly, predicted hostile sexism ( $\beta = .124, p = .007$ ) and misogyny ( $\beta = .143, p = .002$ ) in the crude model. The positive relationships indicated an increase in hostility toward women with an increase in gaming hours. However, this relationship was not significant in the adjusted model. Gaming addiction significantly, but weakly, predicted hostile sexism ( $\beta = .124, p = .007$ ) and misogyny ( $\beta = .143, p = .002$ ) in the crude model, but only misogyny in the adjusted model ( $\beta = .134, p = .008$ ). The positive relationships indicated that hostility toward women increased with more problematic gaming.

For the adjusted model as a whole, the independent variables significantly predicted hostile sexism  $F(12, 460) = 26.62, p < .001$ , and misogyny,  $F(12, 460) = 24.83, p < .001$ . The total variance explained by the adjusted model was 41.0% for hostile sexism, and 39.3% for misogyny. Right-wing authoritarianism made the largest unique contribution explaining 34.7% for hostile sexism and, 29.3% for misogyny. Attractiveness (non-squared and squared), sexual partners (non-squared and squared), gaming addiction, and rejection also made significant, but small, contributions to one or both dependent variables.

**Table 3***Regression Coefficients of the Independent Variables on the Hostile Sexism Subscale (N = 473)*

Variable	Model 1			Model 2			Partial corr.
	<i>B (SE)</i>	$\beta$	<i>p</i>	<i>B (SE)</i>	$\beta$	<i>p</i>	
Age <sup>a</sup>	-.0126 (.0116)	-.050	.278	-.0035 (.0100)	-.014	.725	-.016
Right-wing authoritarianism <sup>b</sup>	.0473 (.0029)	.599	<.001***	.0479 (.0029)	.606	<.001***	.609
Attractiveness <sup>c</sup>	.0100 (.0064)	.072	.118	-.0692 (.0224)	-.500	.002**	-.143
Attractiveness (squared)	.0003 (.0001)	.098	.032*	.0018 (.0005)	.580	<.001***	.168
Sexual partners <sup>d</sup>	-.0016 (.0063)	-.012	.789	.0382 (.0144)	.279	.008**	.123
Sexual partners (squared)	-.0001 (.0002)	-.032	.493	-.0009 (.0003)	-.253	.010**	-.120
Romantic partners <sup>d</sup>	-.0031 (.0104)	-.014	.764	-.0078 (.0114)	-.034	.493	-.032
Loneliness <sup>e</sup>	.0009 (.0104)	.004	.933	.0106 (.0101)	.047	.296	.049
Rejection <sup>f</sup>	.0110 (.0145)	.035	.449	.0114 (.0135)	.036	.400	.039
Gaming hours <sup>g</sup>	.0753 (.0277)	.124	.007**	.0268 (.0293)	.044	.362	.043
Gaming days <sup>h</sup>	.0422 (.0253)	.077	.095	.0199 (.0264)	.036	.451	.035
Gaming addiction <sup>i</sup>	.0462 (.0119)	.176	<.001***	.0147 (.0139)	.056	.256	.053

*Note.* In model 1, we used simple linear regressions for the independent variables separately on the hostile sexism subscale to create a crude model. In

model 2, we used multiple regression analysis including all variables to create a fully adjusted model. Partial corr. = Partial correlation coefficient.

<sup>a</sup> 18–35. <sup>b</sup> Right-Wing Authoritarianism Scale. <sup>c</sup> Self-Perceived Sexual Attractiveness scale. <sup>d</sup> Number of previous partners, 0 to > 50. <sup>e</sup> UCLA Loneliness

Scale ULS-8. <sup>f</sup> Adult Rejection Sensitivity Questionnaire. <sup>g</sup> Per day. <sup>h</sup> Per week. <sup>i</sup> Game Addiction Scale for Adolescents.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .



**Table 4***Regression Coefficients of the Independent Variables on the Misogyny Scale (N = 473)*

Variable	Model 1			Model 2			Partial corr.
	<i>B</i> ( <i>SE</i> )	$\beta$	<i>p</i>	<i>B</i> ( <i>SE</i> )	$\beta$	<i>p</i>	
Age <sup>a</sup>	-.0149 (.0126)	-.055	.236	-.0135 (.0110)	-.049	.221	-.057
Right-wing authoritarianism <sup>b</sup>	.0479 (.0033)	.558	<.001***	.0477 (.0032)	.556	<.001***	.571
Attractiveness <sup>c</sup>	.0114 (.0069)	.076	.099	-.0703 (.0247)	-.467	.005**	-.132
Attractiveness (squared)	.0003 (.0002)	.102	.027*	.0018 (.0005)	.553	<.001***	.158
Sexual partners <sup>d</sup>	.0073 (.0068)	.049	.289	.0465 (.0158)	.313	.003**	.136
Sexual partners (squared)	.0001 (.0002)	.026	.577	-.0009 (.0004)	-.255	.010**	-.119
Romantic partners <sup>d</sup>	.0138 (.0113)	.056	.224	.0053 (.0126)	.022	.671	.020
Loneliness <sup>e</sup>	.0095 (.0112)	.039	.399	.0095 (.0111)	.039	.394	.040
Rejection <sup>f</sup>	.0375 (.0156)	.110	.017*	.0369 (.0148)	.108	.013	.115
Gaming hours <sup>g</sup>	.0939 (.0300)	.143	.002**	.0318 (.0323)	.048	.325	.046
Gaming days <sup>h</sup>	.0360 (.0275)	.060	.191	-.0160 (.0290)	-.027	.581	-.026
Gaming addiction <sup>i</sup>	.0644 (.0128)	.227	<.001***	.0380 (.0142)	.134	.008**	.124

*Note.* In model 1, we used simple linear regressions for the independent variables separately on the misogyny scale to create a crude model. In model 2, we used multiple regression analysis including all variables to create a fully adjusted model. Partial corr. = Partial correlation coefficient.

<sup>a</sup> 18–35. <sup>b</sup> Right-Wing Authoritarianism Scale. <sup>c</sup> Self-Perceived Sexual Attractiveness scale. <sup>d</sup> Number of previous partners, 0 to > 50. <sup>e</sup> UCLA Loneliness Scale ULS-8. <sup>f</sup> Adult Rejection Sensitivity Questionnaire. <sup>g</sup> Per day. <sup>h</sup> Per week. <sup>i</sup> Game Addiction Scale for Adolescents.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

## Discussion

This study explored the relationship between hostility toward women investigating several factors that could be related to it: loneliness, rejection, attractiveness, number of sexual and romantic partners, gaming, and right-wing authoritarianism. Based on previous research, we postulated seven hypotheses outlining our expected findings. The analyses showed that some of our independent variables significantly predicted hostility toward women. Right-wing authoritarianism was the strongest predictor, with a significant strong positive relationship with hostility toward women supporting hypothesis 6. As expected, the squared version of attractiveness significantly and positively predicted hostility toward women, supporting the convex curvilinear relationship postulated in hypothesis 3. A significant curvilinear relationship was also found between sexual partners and hostility toward women, but with the opposite shape (concave) than we expected, thus not supporting hypothesis 4. Surprisingly, loneliness, rejection, and romantic partners did not significantly predict hostility toward women, and hypotheses 1, 2, and 5 were not supported. The analyses provided varied support of the relationship between gaming and hostility toward women; only gaming addiction significantly predicted hostility toward women in the adjusted model, although a weak relationship with misogyny and not hostile sexism. Thus, our findings do not provide sufficient support for hypothesis 7.

### Interpretation of results

#### *Loneliness, Rejection, Romantic and Sexual Partners*

The lack of support for our hypotheses (1, 2, 4, 5) regarding loneliness, rejection, and romantic and sexual partners in our sample is surprising considering the vast amount of literature linking incels and hostility toward women (e.g., Broyd et al., 2022; Mogensen & Rand, 2020; O'Malley, 2022; Zimmerman et al., 2018). Our findings do not necessarily refute previous research showing that these factors are important among incels, but instead lead us to

question the often-assumed direct link between loneliness, lack of romantic and sexual partners, rejection, and hostility toward women implying that men are hostile toward women because of such experiences and feelings. It is surprising that for number of sexual partners, we not only failed to find support for hypothesis 4, but rather the positive linear and concave curvilinear relationships showed that the men with few sexual partners were less hostile than other men. Incels might undoubtedly have had few or no romantic and sexual partners, be lonely, and sensitive to rejection, but these might just be common characteristics among incels who are also hostile toward women. On the other hand, these factors may in fact influence attitudes toward women among incels but still appear not to do so in our sample.

We considered that a lower mean and distribution of scores on hostility toward women for non-incels compared to incels might explain the discrepancy between our findings and those previously found among incels. Comparing the mean scores in our sample with samples of incels and non-incels from Grunau et al. (2022), we found that men in the current study and non-incels scored in the lower part of measures of hostility toward women, whereas incels scored in the higher end of the Hostility Toward Women scale that they used. However, upon comparing the distributing of scores on hostility toward women, we found that the spread in our sample (hostile sexism:  $SD = 1.25$ ; misogyny:  $SD = 1.36$ ) was higher than the spread for both incels ( $SD = 1.25$ ) and non-incels ( $SD = 1.07$ ) reported by Grunau et al. (2022). With a larger spread there is a bigger opportunity to explain the variance, thus our results are likely to be better understood in light of other explanations.

A way of understanding our findings is that the men in our sample differ from incels in terms of their psychological makeup, leading to different outcomes when faced with similar difficulties (loneliness, rejection, and celibacy). People experience the same life circumstances quite differently depending on their coping mechanisms, which are the ways in which a person cognitively and emotionally handles stressors (Compas et al., 2017; Folkman

& Moskowitz, 2004). Certain coping strategies are more effective or maladaptive depending on the situation (Compas et al., 2017; Folkman & Moskowitz, 2004). While loneliness, rejection, and celibacy are potentially painful experiences, the lack of support for hypotheses 1, 2, 4, and 5 show that they are not necessarily associated with increased hostile attitudes towards women among men in general. It might not be that loneliness, rejection, and lack of romantic and sexual partners in itself predict hostility toward women, but rather men's cognitive processing and how they perceive and cope with their own situation that lead to or buffer against hostility toward women.

This interpretation is supported by recent research that has found that non-incels cope with rejection and loneliness in more helpful ways than incels (Sparks et al., 2022b). Sparks et al. (2022c) found that when faced with difficult experiences, such as loneliness and rejection, non-incels were less likely to use externalizing coping strategies, like blaming their misfortunes on women, than incels. Non-incel men were also more likely to seek support from their social circle and interpret their experience in a more positive light than incels (Sparks et al., 2022c). Being able to seek support from others helps to deal with difficult feelings and prevents isolation, reducing the chance of poor mental health (Reform, 2022). Depression and anxiety may exacerbate cognitive distortions (A. T. Beck & Dozois, 2011), and seeking social support can counteract overgeneralizations, fixating on women for one's problems and all-or-nothing thinking, which are seemingly common cognitive patterns among incels (Sparks et al., 2022c; D. J. Williams & Arntfield, 2020; D. J. Williams et al., 2021; Zimmerman et al., 2018). Sharing thoughts and feelings with others also opens the possibility for alternative explanations, which can influence beliefs that women are at fault for men's predicaments.

Research suggests that non-incels place less importance on relationship status than incels, who to a greater degree, fear being single and are more frequently rejected (Grunau et

al., 2022; Sparks et al., 2022a). This means loneliness, rejection, and infrequent romantic and sexual contact may be less detrimental experiences for the men in our sample than for incels, possibly making it easier to cope compared to incels. Thus, we suggest that although some men in our sample reported high levels of loneliness, rejection and few romantic and sexual partners, the ability to use helpful coping strategies may have counteracted hostile attitudes toward women. This might explain why we did not find that loneliness, rejection, and lack of romantic and sexual relationships predicted higher hostility toward women in the present sample of men. However, these are merely reflections based on other studies comparing incels and non-incels. Future studies targeting our variables with a sample of incels and non-incels could further enlighten this proposition, especially if taking the mediating abilities of coping mechanisms into consideration.

### ***Attractiveness and Hostility Toward Women***

Our findings for attractiveness turned out as expected regarding the relationship with hostile attitudes towards women; high and low attractiveness was associated with higher hostility toward women (hypothesis 3). Based on the aforementioned theory and research on coping, we suggest understanding the relationship between low attractiveness and hostility toward women in light of coping mechanisms. If men struggle with feeling unattractive and use externalization in the form of blaming women to cope with this feeling, this can lead them to project their anger onto women, fueling hostility toward women. The relationship can be bidirectional; men who are hostile toward women might also be less likely to form relationships with them, and in turn blame this on their physical looks. Cowan and Mills (2004) found that when a man was more hostile toward women, he was also more likely to have low self-esteem and a lower sense of internal control. The researchers suggest that men's feelings of inadequacy relates to hostility toward women by enabling men to see women as a scapegoat to project their insecurities onto (Cowan & Mills, 2004). Although not specifically

related to sexual attractiveness, as in our study, feeling unattractive can be one type of inadequacy. Thus, coping strategies and a self-serving attributional style might be the underlying mechanism between attractiveness and hostility toward women.

Considering studies showing that incels and non-incels cope with difficult experiences and feelings differently, makes us question why low attractiveness was significantly associated with higher hostility toward women among the men in our sample. As is seen in our correlational analysis, attractiveness was significantly, positively, and moderately correlated with number of romantic and sexual partners, suggesting that unattractive men also are less likely to have had many sexual and romantic partners. Also, attractiveness was significantly, negatively, and moderately correlated with loneliness and rejection, suggesting that the less attractive a man considers himself, the more likely he is to be lonely and sensitive to rejection. However, our multiple regression analyses showed that when controlling for each other, attractiveness (and sexual partners to some extent) was the only of these factors that significantly predicted hostility toward women. Thus, these factors are associated with each other, but when it comes to hostility toward women, attractiveness seems to be the most important predicting factor of these.

Revisiting studies on incels and their ideology can help explain why attractiveness stands out. Attractiveness is a central part of the incel ideology; a lot of the animosity aimed at women is related to how unattractive incels consider themselves, labeling women as superficial (Broyd et al., 2022; Hoffman et al., 2020; Zimmerman et al., 2018). The importance of attractiveness was also demonstrated by the polls from ADL (2020), which showed that the majority of the incels that were asked reported their attractiveness as the biggest reason for their problems. A way to understand how attractiveness differs from loneliness, rejection, and lack of romantic and sexual partners, is that if attractiveness is of such importance and saliency to all men, this might more frequently activate the use of

maladaptive coping mechanisms and projection, contributing to increased hostility toward women in the men in our sample. Loneliness, rejection, and lack of sexual and romantic partners might not sufficiently motivate men in general to employ maladaptive coping mechanisms, and therefore not turn to hostility toward women. However, these are reflections based on information derived about incels, and not studies on how important attractiveness is for men in general.

Men who perceive themselves as highly attractive might be driven by different mechanisms that explain their hostility toward women. High self-belief has been seen in men with narcissist traits, which has been found to be related to hostile attitudes toward women (Keiller, 2010). Hostility toward women has been found to be the most robust predictor of narcissism compared to hostility toward homosexual men and women, suggesting that hostility toward women is not a consequence of general hostility toward others but a distinctive belief of narcissistic men (Keiller, 2010). Related to this is sexual narcissism, which refers to a feeling of entitlement to sex regardless of circumstance and a sense of victimization if this is denied (Klement et al., 2019). Klement et al. (2019, p. 1286) associate this type of entitlement with the pick-up artist community and their strategies, who believe their strategies give them “their deserved allotment of sex from women.” Sexual narcissists show a potential for an inflated view of their sexual superiority and has been related to higher sexual self-esteem (Wryobeck & Wiederman, 1999), which might have affected our sample’s scores on the Self-Perceived Sexual Attractiveness scale. Narcissistic traits might then explain both why the men rated themselves as highly attractive, and their higher hostility toward women. The men in our study who considered themselves attractive might be more prone to a narcissistic self-evaluation, and consequently take offense if women do not share their high-self view. This in turn can cause them to lash out by devaluing women and endorsing traditional gendered norms, to rebalance the perceived slight to their self-esteem. Although

attractiveness positively correlated with sexual partners, there is no support for high sexual partners as a predictor in the regression analysis. We suggest men's subjective feelings about their own attractiveness, possibly shaped by narcissistic traits, rather than the number of sexual partners they have had, are influential in shaping their attitudes toward women.

### ***Right-Wing Authoritarianism and Hostility Toward Women***

The support for hypothesis 6 regarding right-wing authoritarianism in the current study is in line with previous research (e.g., Austin & Jackson, 2019; Begany & Milburn, 2002; Canto et al., 2014; Christopher & Mull, 2006; Cokley et al., 2010). One reason for the positive relationship between right-wing authoritarianism and hostility toward women is the overlap in the items on the scales as the scales seem conceptually similar. Some of the RWA Scale items directly refer to beliefs about career women and traditional gender roles, while others indirectly reference traditional values and lifestyles. Thus, people with high right-wing authoritarianism will naturally agree with several items on the hostile sexism subscale and misogyny scale (if they answer consistently).

A way of understanding the mechanisms behind right-wing authoritarianism and hostility toward women relates to the dual process motivational model by Duckitt (2001). The model proposes that individual differences in prejudice arise from two distinct sets of motivational goals: threat-driven goals of collective security (e.g., societal cohesion, stability, and tradition) measured as right-wing authoritarianism; and competitively driven goals of status and power measured as social dominance orientation (Duckitt, 2001; Duckitt & Sibley, 2010; Sibley et al., 2007). According to this theory, a person's right-wing authoritarianism activates when there is a perceived threat to the ingroup's collective security, motivating the person to direct prejudice toward the outgroups that are deviant or socially threatening, to protect the established system (Duckitt, 2001; Duckitt & Sibley, 2010, 2016; Sibley et al., 2007). How important these values are is reflected in a person's level of right-wing



authoritarianism, contributing to differences in reactivity to threats to collective security, explaining why some are more prejudiced than others (Duckitt & Sibley, 2010). Research including longitudinal studies has provided strong support for this model and has indicated that right-wing authoritarianism has a causal effect on prejudice (Duckitt & Sibley, 2010, 2016; Sibley et al., 2007).

Interpreting our results in light of this model suggests that men with high right-wing authoritarianism more readily perceive women as socially threatening. To protect the established norms in society, which they fear are being threatened, they are motivated to direct hostility toward women, especially those challenging the established system and traditional roles. This could explain why feminists and career women are particularly targeted (Duckitt, 2006; Duckitt & Sibley, 2007). Men with lower right-wing authoritarianism are less threatened, and do not feel as strongly about these values, and consequently are less motivated to be hostile toward women. The same mechanisms account for differences in politics, in which the threat and fear reflected in high right-wing authoritarianism often leads to the adoption of right-wing politics (Duckitt & Sibley, 2010). This could explain some of the overlap between groups of the manosphere and right-wing extremism. Because we did not include measures of the participants' worldview and background and due to the study's design, we are precluded from making inferences about causation. Hence, the tentative explanations above are merely speculations based on the theory and supporting research.

These underlying mechanisms might explain the current findings, although research has shown that right-wing authoritarianism predicts benevolent sexism more strongly than hostility toward women (Christopher & Mull, 2006; Sibley et al., 2007). The latter seems to be better explained by social dominance orientation (e.g., Christopher & Mull, 2006; Sibley et al., 2007), although this is not always the case (e.g., Cokley et al., 2010). Right-wing authoritarianism has still significantly predicted hostility toward women in studies, but with a

smaller effect size than social dominance orientation (e.g., Sibley et al., 2007). It has also been found that hostility toward women (measured as hostile sexism) and benevolent sexism are correlated; people rarely support only one form of sexism (Glick & Fiske, 2001a; Sibley & Becker, 2012). The dual process motivational model states that when women are perceived as competitive (activating social dominance orientation), this will generally threaten the ingroup's stability and cohesion, thus also promoting hostile attitudes related to right-wing authoritarianism (Duckitt & Sibley, 2010). Further research has suggested that right-wing authoritarianism is better understood as consisting of several facets (Duckitt et al., 2010; Perry et al., 2013), in which the facet conservatism – the desire to maintain the status quo – predominantly predicts hostility toward women (Austin & Jackson, 2019). Overall, understanding the relationship between right-wing authoritarianism and hostility toward women in this framework seems meaningful.

### ***Gaming and Hostility Toward Women***

Our study gave mixed results regarding the relationship between gaming and hostility toward women, reflecting inconsistent results from previous research (Bègue et al., 2017; Breuer et al., 2015; Ferguson & Donnellan, 2017; LaCroix et al., 2018). The number of hours, but not days, spent video gaming significantly predicted hostility toward women in the crude model only. Similarly, the simple linear regression showed a significant, but small positive, relationship between gaming addiction and hostility toward women. However, this effect was even smaller for misogyny and diminished for hostile sexism when controlling for other variables in the multiple linear regression. As seen in Table 2, our gaming variables were significantly correlated with each other and several of the other variables, including attractiveness which was shown to be a significant predictor. This leads us to think that high scores on the gaming variables among men in our sample might be related to some of our other variables that were better predictors.

Another possible explanation for the lack of support for hypothesis 7 is that we did not differentiate between different video game categories. Research suggests that some categories, such as fighting games, have more sexist content than others (Lynch et al., 2016). Some games are also more male-dominated due to the over-sexualization of female characters, contributing to fewer women playing these types of video games (Lynch et al., 2016). When lumping all categories together, the less sexist and male-dominated video games can cancel out the effects of other game categories that might be related to hostile attitudes toward women. It is then possible that further studies into more sexist video game categories could find a stronger relationship with hostility toward women.

Alternatively, men who play video games are not more hostile toward women than men who play less or not at all. Instead, hostility toward women within gaming may be a consequence of the anonymity gaming allows. Research has shown that when anonymous, people tend to do or say things they usually would not do face-to-face (Haines et al., 2014). Furthermore, anonymity in video games seems to facilitate hostility towards other players in forms of aggression, bullying, and foul language (McInroy & Mishna, 2017). It might be that the format and sexualizing content of many video games weakens the threshold for expressing sexist jokes, slurs, and threats rather than making the players more hostile toward women. Considering video games are male-dominated, female gamers may be perceived as intruders, promoting aggression and hostility toward women who play video games (Fox & Tang, 2014). According to the social identity model of deindividuation (Reicher et al., 1995) when given anonymity, the group's identity becomes more important than one's individual identity and thus facilitates conformity to the group. Studies have shown that when exposed to anonymous environments online, like in video games, participants are more likely to go along with other players' antisocial or malevolent behaviors (Chen & Wu, 2015; Rösner & Krämer, 2016). It could then be that when watching other players display hostility toward women,

some players temporarily adopt the group's hostile attitudes and behaviors. The presence of hostility toward women in gaming communities might then be a feature of the medium and platform on which gaming occurs, and not a consequence or antecedent of gaming itself.

### **Limitations**

As with any research, there are limitations to our study. The current study relied on cross-sectional data, which cannot be used for determining causal relationships between variables. Although right-wing authoritarianism and attractiveness significantly predicted hostility toward women, our results cannot determine whether they cause it; the relationship can go the other way or be bidirectional. Interaction effects between the study variables (e.g., rejection sensitivity and attractiveness on hostility toward women) cannot be determined, as this was not investigated due to no specific hypotheses about interactions. Longitudinal and experimental studies would be useful in investigating the directional relationships between the study variables and hostility toward women, as well as exploring interaction effects. There is also a possibility that confounding variables influenced our study variables. Of particular importance is the limited demographic information available to us about our respondents, such as socio-economic status, income, and education. Our study also did not include data on mental health, the men's environment growing up, or the number of siblings, specifically if the men grew up with sisters. As we did not ask our respondents if they considered themselves incels, we cannot determine if they were part of our sample or not. Including these measures in future research would be valuable in determining the effect of our study variables and understanding the complexity of hostility toward women.

The men in our sample are not representative of men in general, and caution must be taken before generalizing the results. Selection bias, when the selection method causes the sample to differ from the population it was drawn from, might have influenced our results and the extent to which we can generalize our findings (Porta, 2014). Our sample consisted of

men within our desired demographic, who voluntarily signed up for Prolific. Peer et al. (2017) report that the participants in Prolific consist of 60% men, 70% are Caucasian, and half are students. Thus, the men that sign up for Prolific are not necessarily representative of men in general. Also, the participants that agreed to answer our questionnaire might have different characteristics than the participants who chose not to or dropped out along the way. One possibility is that the participants that declined or dropped out were uncomfortable with the subject matter, making the sample self-selected for a particular kind of man. However, these are just speculations.

Using a self-report questionnaire in the current study could have given issues related to anonymity and careless responding, which are commonly found in online surveys (Meade & Craig, 2012). The survey's anonymity may have contributed to some participants caring less about their responses, although it may also have facilitated more honest responses. The financial compensation for completing surveys at Prolific might motivate some respondents to reply fast and randomly, which could have affected our results. As mentioned previously, Prolific has a system for excluding respondents with a record of haphazardly responding to surveys. Prolific as a survey platform has also shown adequate measures of reliability, attention, and reproducibility, providing high data quality (Peer et al., 2017). We also implemented items to detect careless responding. However, we cannot be certain that we were able to identify all such cases.

Studies using the same response method for independent and dependent variable, like ours, are susceptible to common method bias, creating variance in results attributable to the method, and not the concepts measured (Kock et al., 2021; Podsakoff et al., 2003). Measuring the independent and dependent variables simultaneously and with the same method (e.g., self-report, Likert-scale questionnaire) can create an artificial relationship between variables (Podsakoff et al., 2003). Social desirability bias, the tendency to reply in a way deemed

socially appropriate, is another source of common method bias (Krumpal, 2013; Podsakoff et al., 2003). For the more sensitive topics, like rejection, some men might have replied untruthfully to avoid feelings of shame or to portray themselves in a better light. This also applies to measures of hostility toward women and right-wing authoritarianism; attitudes that might seem socially undesirable. Podsakoff et al. (2003) recommend ensuring respondents of their anonymity to counter some of this effect, which we made clear in the consent form.

Respondents misrepresenting themselves can also result from memory failure in the form of recall bias, which is typical in studies using self-report (APA, n.d.). Recall bias affects retrospective reporting, causing it to be inaccurate (APA, n.d.). This can especially happen when respondents are asked to recall events that are of particular importance to them, which events related to relationships, rejection and ideological beliefs might be (National Cancer Institute, n.d.). If the men had salient memories associated with relationships, loneliness, rejection, or their ideological beliefs, they might have inadvertently exaggerated or downplayed their responses.

The scales that were used and wording of the questions in our questionnaire could have impacted the results. Our measure of female romantic partners allowed for possibly varying interpretations, depending on the respondent's understanding of romantic partners as exclusive relationships or casual dating. There is also some uncertainty regarding the psychometric properties of the A-RSQ measuring rejection sensitivity. Innamorati et al. (2014) have raised concerns regarding the validity of the scale. Lord et al. (2022) found good internal consistency but suggest the scale's total score might not be a good measure of the variable. As mentioned previously, our data regarding video game behaviors might have given different results if the types of video games were categorized, making it possible to compare the categories in regard to hostility toward women. This should be a central part in

further research on how hostility toward women exists in online gaming, and whether different types of games predict men's hostility.

### **Implications**

Our findings lend more nuance to the image of hostility toward women as a problem isolated to online hate groups and incel communities, where hating women is framed as an inevitability of being celibate and rejected. Our findings regarding loneliness, rejection, and lack of romantic and sexual partners in our sample suggest that when researching hostility toward women, different variables are relevant for men in general than what has been proposed in incel studies. Hostility toward women in groups like incels and the manosphere might have separate underlying mechanisms or take different routes than for non-incels and cannot necessarily be transferred onto men in general. However, further research should compare samples of incels and non-incels to investigate how the study variables are differently related toward hostility toward women. Although there has already been done some research into practices for detecting and intervening in the development of hostility toward women in incel forums online (e.g., Broyd et al., 2022; Zimmerman et al., 2018) our study suggests that preventing hostility in men in general, may require other measures, although this needs more research.

Although the relationship between right-wing authoritarianism and hostility toward women is robustly studied, our study places the relationship in a new context, controlling for new variables like gaming, attractiveness, loneliness, and rejection. Our study helps strengthen the role of right-wing authoritarianism in hostility toward women. In line with the dual process motivational model and longitudinal studies supporting that right-wing authoritarian has a causal effect on hostility toward women (Duckitt & Sibley, 2010, 2016; Sibley et al., 2007), this has implications for factors that are important to consider when managing and preventing hostility toward women. Considering right-wing authoritarianism is

rooted in social dynamics and experiences (Duckitt, 2001), it is also susceptible to change (Duckitt & Sibley, 2010). Understanding right-wing authoritarianism as a motivational mechanism implies that preventing hostility toward women necessitates working with the underlying assumption that the world is unsafe and that women are a threat. This also extends to right-wing extremism and other prejudices, and the consequent discrimination.

The current study showed that self-perceived attractiveness (low and high) is relevant in understanding hostility toward women, implying that men's self-judgments are important to their relationship with women. The dynamic between this relationship for both the high and low end of the attractiveness spectrum highlights the inaccuracy of a black-and-white approach to prejudice and warrants further study. As suggested, coping mechanisms and personality traits might influence this dynamic, and we recommend further studies to include measures of narcissistic traits and coping. Including others' rating of men's attractiveness would also be of interest in future studies.

Our findings on gaming suggest it might be related to other factors, like attractiveness, and not hostility toward women directly. Although we did not find sufficient evidence supporting our hypothesis of excessive and addictive gaming behavior influencing hostility toward women, the varied results indicate that some sort of relationship cannot be ruled out. We suggest continued investigations of the relationship between gaming and hostility toward women. Additional studies of specific categories of online video games, and potential effects of anonymity and the online platform might further elucidate the relationship.

### **Conclusion**

Despite its prevalence and detrimental effect, men's hostility toward women is still not fully understood. This study sought to increase the understanding of relevant factors related to men's hostility toward women. Inspired by previous research into groups where hostility toward women is prevalent, we investigated how the variables loneliness, rejection,



attractiveness, number of romantic and sexual partners, right-wing authoritarianism, and gaming relate to hostility toward women in a general sample of men. This study is the first to integrate all these variables into one analysis, contributing a new understanding of their association with hostility toward women. Our findings suggest that high right-wing authoritarianism and low and high attractiveness predicts increases in men's hostile attitudes toward women. Further research, particularly longitudinal studies, is needed to understand causal relationships between these predictive factors and hostility toward women. Future studies should also include measures of family background, socioeconomic indices, coping strategies, and pathological personality traits investigating their associations (including their interactions and potential roles as mediators) with hostility toward women. Despite the surprising results regarding loneliness, rejection, romantic and sexual partners, and gaming, we encourage other researchers to include the same variables with different samples of men to explore this further.

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## Appendix A

### Approval from Regional Ethical Committee



<b>Region:</b>	<b>Saksbehandler:</b>	<b>Telefon:</b>	<b>Vår dato:</b>	<b>Vår referanse:</b>
REK vest	Fredrik Kolstad Rongved	55589715	07.07.2022	499137

Eilin Kristine Erevik

**Fremleggingsvurdering:** Kvinnefiendtlighet blant menn: Sammenheng med selvopplevd attraktivitet, avvising, ensomhet, høyreorienterte holdninger og gaming

**Søknadsnummer:** 499137

**Forskningsansvarlig institusjon:** Universitetet i Bergen

### Prosjektet vurderes som ikke fremleggingspliktig

#### Søkers beskrivelse

*I denne studien ønsker vi å se om det er en sammenheng mellom kvinnefiendtlighet hos unge menn og selvopplevd attraktivitet, avvising, ensomhet, frekvens av romantiske/seksuelle forhold, høyreorienterte politiske holdninger og gaming. Studien foregår i sammenheng med en hovedoppgave på 12. semester på profesjonsstudiet i psykologi (UiB). Det er lite forskning på mulige risikofaktorer for kvinnefiendtlighet. Og vi tenker at økt kunnskap om slike risikofaktorer kan komme hele samfunnet til gode.*

Vi viser til fremleggingsvurdering mottatt den 14.06.2022.

#### REKs vurdering

##### Søknadsplikt:

Bare medisinsk og helsefaglig forskning på mennesker, humant biologisk materiale, eller helseopplysninger skal søke REK om forhåndsgodkjenning, jf. helseforskningsloven § 2. "Medisinsk og helsefaglig forskning" er definert i loven som en "virksomhet som utføres med vitenskapelig metodikk for å skaffe til veie ny kunnskap om helse og sykdom", jf. § 4 bokstav a.

##### Vurdering:

Formålet med denne studien er å undersøke risikofaktorer for kvinnefiendtlighet hos unge menn. Vi vurderer at dette ikke er helseforskning som søker å skaffe til veie ny kunnskap om helse og sykdom. Dermed faller prosjektet utenfor helseforskningslovens saklige virkeområde og REKs mandat. Du trenger ikke søke REK om forhåndsgodkjenning.

Du skriver at data innsamles anonymt. Det gjelder å være varsom ved bruken av begrepet "anonym" fordi anonyme data faller utenfor både personopplysningsloven og helseforskningsloven. Man skal dermed være svært sikker på at enkeltpersoner ikke kan bakveidentifiseres når datamaterialet beskrives som anonymt. Data er ikke å regne som anonyme før eller under anonymiseringsprosessen, men i noen tilfeller er det mulig å samle inn data anonymt fra starten av. SurveyXact er et eksempel på et verktøy som kan tilrettelegge for anonym datainnsamling. Det kan imidlertid hende at Prolific vil være i

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#### REK vest

**Besøksadresse:** Armauer Hansens Hus, nordre fløy, 2. etasje,  
Haukelandsveien 28, Bergen

| E-post: [rek-vest@uib.no](mailto:rek-vest@uib.no)  
Web: <https://rekportalen.no>

stand til å identifisere deltakerne, og da vil ikke datainnsamlingen være å regne som anonym. Jeg vil be deg om å ta kontakt med UiBs personvernombud for råd om veien videre.

**Konklusjon**

*Konklusjonen er at du ikke trenger å søke REK om forhåndsgodkjenning.*

Vi gjør oppmerksom på at konklusjonen er å anse som veiledning, jf. forvaltningsloven § 11. Komiteen er ikke bundet av de råd som er gitt i dette brev. Du har fortsatt anledning til å søke REK, og da vil du få et vedtak i saken.

Med vennlig hilsen  
Fredrik Rongved  
rådgiver

*Kopi til:*  
Universitetet i Bergen

## Appendix B

### Consent Form

Do you want to participate in the research project “attractiveness, loneliness, gaming, politics and attitudes towards women”?

#### **Purpose of the project and why you are being invited to participate**

Would you like to participate in a research project aimed at investigating the relationship between attractiveness, loneliness, gaming, political views, and attitudes towards women? We seek single, heterosexual, male participants who are between 18 and 35 years old and UK residents. You are registered in Prolific as a single, heterosexual man between 18 and 35 years and an UK resident and that is why you are invited to participate.

#### **What does the project entail?**

The project is comprised of survey questions that will approximately take 10-15 minutes to complete. The survey includes questions concerning attractiveness, loneliness, romantic and sexual experiences, gaming, political views, and attitudes towards women. The information collected from your survey answers will be anonymous to the researchers. The data will be stored and handled using a secure server system.

#### **Possible advantages and disadvantages**

The advantage for answering our question is that you will get to contribute to research. Some questions might seem personal and private, but be assured your reply will not be linked to your personal information, and will only be used for research purposes. For some, answering the questions regarding these topics might give discomfort.

#### **Voluntary participation and right to withdraw consent**

Participation is voluntary. If you would like to participate, please mark this by choosing “I have read the form, and consent to participate” on the bottom of this page. You can withdraw your consent at any time without giving a reason. There will be no negative consequences for you if you do not want to participate, but you will only receive payment if you complete the survey. Unfortunately, we cannot delete your data after you have participated, as it will not be possible for the researchers to identify your answers in the dataset.

#### **What happens to the data held on you?**

The data registered about you will only be used as described under the purpose of the project and is planned for use in 2022-2030. You can lodge a complaint about the processing of your data to the Norwegian Data Protection Authority and the institution’s Data Protection Officer Janecke Helene Veim (telephone number: 0047 55 58 20 29, email address [Janecke.Veim@uib.no](mailto:Janecke.Veim@uib.no)).

#### **Finances**

This project is funded by the Norwegian Competence Center for Gambling and Gaming Research at University of Bergen. The funder has no involvement in deciding research design, analyses or similar. There is no conflict of interest.

#### **Approvals**

The University of Bergen and the project manager Eilin Erevik are responsible for privacy and data protection in this project. Our data processing is based on the General Data Protection Regulation.

#### **Contact details**

If you have questions about the project, you can contact Eilin Erevik at (email address: [Eilin.Erevik@uib.no](mailto:Eilin.Erevik@uib.no)). If you have questions about data protection in the project, you can contact the Data Protection Officer at the institution: Janecke Helene Veim (telephone number: 0047 55 58 20 29, email address [Janecke.Veim@uib.no](mailto:Janecke.Veim@uib.no))

I have read the form, and consent to participate

Yes

## Appendix C

### Questionnaire in its Entirety

#### Adult Rejection Sensitivity Questionnaire (A-RSQ)

Indicate the number that best reflects your feelings about the question/statement:

**Answer options:** a) 1: very unconcerned, ..., 6: very concerned. b) 1: very unlikely, ..., 6: very likely

**1. You ask your parents or another family member for a loan to help you through a difficult financial time.**

- a) How concerned or anxious would you be over whether or not your family would want to help you?
- b) I would expect that they would agree to help as much as they can.

**2. You approach a close friend to talk after doing or saying something that seriously upset him/her.**

- a) How concerned or anxious would you be over whether or not your friend would want to talk with you?
- b) I would expect that he/she would want to talk with me to try to work things out.

**3. You bring up the issue of sexual protection with your significant other and tell him/her how important you think it is.**

- a) How concerned or anxious would you be over his or her reaction?
- b) I would expect that he/she would be willing to discuss our possible options without getting defensive.

**4. You ask your supervisor for help with a problem you have been having at work.**

- a) How concerned or anxious would you be over whether or not the person would want to help you?
- b) I would expect that he/she would want to try to help me out.

**5. After a bitter argument, you call or approach your significant other because you want to make up.**

- a) How concerned or anxious would you be over whether or not your significant other would want to make up with you?
- b) I would expect that he/she would be at least as eager to make up as I would be.

**6. You ask your parents or other family member to come to an occasion important to you.**

- a) How concerned or anxious would you be over whether or not they would want to come?
- b) I would expect that they would want to come.

**7. At a party, you notice someone on the other side of the room that you'd like to get to know, and you approach him or her to try to start a conversation.**

- a) How concerned or anxious would you be over whether or not the person would want to talk with you?
- b) I would expect that he/she would want to talk with me.

**8. Lately you've been noticing some distance between yourself and your significant other, and you ask him/her if there is something wrong.**

- a) How concerned or anxious would you be over whether or not he/she still loves you and wants to be with you?
- b) I would expect that he/she will show sincere love and commitment to our relationship no matter what else may be going on.

**9. You call a friend when there is something on your mind that you feel you really need to talk about.**

- a) How concerned or anxious would you be over whether or not your friend would want to listen?
- b) I would expect that he/she would listen and support me.

Questions Regarding Sexual and Romantic Relationships

How many female romantic partners have you had?

**Answer options:** 0, 1, 2, ..., 50, more than 50

How long did your most recent relationships last? (In months) \*

**Answer options:** 1, 2, 3, ..., 50, more than 50

Who ended your most recent relationship? \*

**Answer options:** me, my partner, both

How many female sexual partners have you had?

**Answer options:** 0, 1, 2, ..., 50, more than 50

\*The question was only visible to participants that answered 1 or more romantic. Data was excluded from analysis.

UCLA Loneliness Scale (ULS-8)

Indicate how often each of the statements below is descriptive of you:

**Answer options:** never, rarely, sometimes, often

1. I lack companionship.
2. There is no one I can turn to.
3. I am an outgoing person. \*
4. I feel left out.
5. I feel isolation from others.
6. I can find companionship when I want it. \*
7. I am unhappy being so withdrawn.
8. People are around me but not with me.

\*Reversed items

Self-Perceived Sexual Attractiveness Scale (SPSA)

Indicate your level of agreement with each statement:

**Answer options:** 1: strongly disagree, 2, 3, 4, 5, 6, 7: strongly agree

1. I believe I can attract sexual partners.
2. I believe I can elicit sexual desire in other people.
3. I feel I am sexy.
4. I feel other people would want to be involved in a sexual relationship with me.
5. I am sexually attractive.
6. I feel that others may perceive that a sexual relationship with me would be sexually fulfilling.
7. I read every question and try to answer correctly. (Careless responding item)

Questions Regarding Gaming

Do you play online video games?

**Answer options:** Yes, No

Roughly how many hours do you spend playing online video games each day?

**Answer options:** 1, 2, 3, ..., 24

On average, how many days do you play online video games in a week?

**Answer options:** 1, 2, 3, ..., 7

#### Game Addiction Scale for Adolescents (GASA)

How often during the last six months...?

**Answer options:** Never, rarely, sometimes, often, very often

1. Did you think about playing a game all day long?
2. Did you spend increasing amounts of time on games?
3. Did you play games to forget about real life?
4. Have others unsuccessfully tried to reduce your game use?
5. Have you felt bad when you were unable to play?
6. Did you have fights with others (e.g., family, friends) over your time spent on games?
7. Have you neglected others (e.g., family, friends) because you were playing games?

#### Hostile Sexism Subscale

Indicate your level of agreement with each statement:

**Answer options:** strongly disagree, somewhat disagree, slightly disagree, slightly agree, somewhat agree, strongly agree

1. Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality."
2. Most women interpret innocent remarks or acts as being sexist.
3. Women are too easily offended.
4. Feminists are seeking for women to have more power than men.
5. Most women fail to appreciate fully all that men do for them.
6. Women seek to gain power by getting control over men.
7. Women exaggerate problems they have at work.
8. Once a woman gets a man to commit to her, she usually tries to put him on a tight leash.
9. When women lose to men in a fair competition, they typically complain about being discriminated against.
10. Many women get a kick out of teasing men by seeming sexually available and then refusing male advances.
11. Feminists are making unreasonable demands of men.

#### Misogyny Scale

Reply with the number that best represents how you feel about the statement:

**Answer options:** 1: strongly disagree, 2, 3, 4, 5, 6, 7: strongly agree

1. Women seek to gain power by getting control over men.
2. Women use their sexuality to manipulate men.
3. Women exploit men for their own agendas.
4. If things don't go their way, women will play the victim.
5. It is generally safer not to trust women too much.
6. When it comes down to it a lot of women are deceitful.
7. I think that most women would lie just to get ahead.
8. I think I get a raw deal from women in my life.
9. Sometimes women bother me by just being around.
10. I feel uncomfortable when a woman dominates the conversation.
11. I read instructions carefully. To show that you are reading these instructions, choose the number 5.  
(Careless responding item)

Right-Wing Authoritarianism Scale, 10-Item Version

Indicate your level of agreement with each statement:

**Answer options:** very strongly disagree, strongly disagree, moderately disagree, slightly disagree, neutral/no opinion, slightly agree, moderately agree, strongly agree, very strongly agree

1. Our country desperately needs a mighty leader who will do what has to be done to destroy the radical new ways and sinfulness that are ruining us.
2. Gays and lesbians are just as healthy and moral as anybody else. \*
3. The “old-fashioned ways” and the “old-fashioned values” still show the best way to live.
4. Atheists and others who have rebelled against the established religions are no doubt every bit as good and virtuous as those who attend church regularly. \*
5. God’s laws about abortion, pornography and marriage must be strictly followed before it is too late, and those who break them must be strongly punished.
6. What our country really needs is a strong, determined leader who will crush evil and take us back to our true path.
7. You have to admire those who challenged the law and the majority’s view by protesting for women’s abortion rights, for animal rights, or to abolish school prayer. \*
8. Homosexuals and feminists should be praised for being brave enough to defy “traditional family values.” \*
9. The only way our country can get through the crisis ahead is to get back to our traditional values, put some tough leaders in power, and silence the troublemakers spreading bad ideas.
10. Everyone should have their own lifestyle, religious beliefs, and sexual preferences, even if it makes them different from everyone else. \*
11. I see myself as someone who did not read this statement. (Careless responding item)

\*Reversed items.

**To complete the survey, it is very important that you click on the following link before moving forward to the next page:**

<https://app.prolific.co/submissions/complete?cc=C7YKRL75>

In order for your participation to be registered, it is important that you complete the survey by confirming that you have followed the link:

I have seen and followed the link.

- Yes

Thank you for participating in our study.