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Pluralistic ignorance of campus norms

Evan Stilgenbauer
University of Northern Iowa

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PLURALISTIC IGNORANCE OF CAMPUS NORMS

An Abstract of a Thesis

Submitted

in Partial Fulfillment

of the Requirements for the Degree

Master of Arts

Evan Stilgenbauer

University of Northern Iowa

May 2020

ABSTRACT

Changes on college campuses and movements such as #MeToo have highlighted

problem behaviors such as sexual assault. Many problems and behaviors related to and

including sexual assault can be attributed to misperceptions of norms and peer beliefs,

which can lead individuals to act in ways they would not normally condone. It is unclear

whether #MeToo or other changes over time may have affected perceptions of norms and

their relation to problematic behaviors that perpetuate sexual assault.

There were three goals for the current study. My first goal was to assess the

difference among perceived norms and actual norms in a current sample of college

students on several factors related to sexual assault. My second goal was to evaluate

whether the difference between perceived norms and actual norms has changed from

previous years, based on comparisons to previous research. My final goal was to assess

attitude change in students on several variables related to sexual assault by comparing my

data to previous studies.

College students at the University of Northern Iowa ($n = 345$) reported on their

attitudes as well as what they perceived their peers to believe on measures of alcohol

consumption, gender role adherence, sexist beliefs, rape myth acceptance, and consent

norms. Male students significantly overestimated theirs same sex peers' endorsement of

alcohol consumption comfort, traditional gender role adherence, sexist beliefs, and rape

myth acceptance, but self-reported that obtaining consent was more important to

themselves than their peers. Female students only significantly overestimated their same

sex peers' endorsement of traditional gender roles. They also reported that their same sex

peers endorsed more problematic consent norms than themselves. Effects of pluralistic ignorance were captured among the current sample, but were smaller than effects in similar past studies. Lastly, endorsement of problem behaviors significantly decreased from previous research findings.

Results suggest that increasing changes in norms on college campuses and in the United States at large may have helped changed the way individuals behave, but perhaps not what they think about their peers in contexts related to sex. Personal attitudes may change, but students may still overestimate their peers' willingness to engage in problem behaviors. If differences among attitudes and perceptions of norms continue to persist, sexual assault perpetration will continue.

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This Study by: Evan Stilgenbauer

Entitled: Pluralistic Ignorance of Campus Norms

has been approved as meeting the thesis requirement for the

Degree of Master of Arts

_____   _____
Date   Dr. Helen Harton, Chair, Thesis Committee

_____   _____
Date   Dr. Elizabeth Lefler, Thesis Committee Member

_____   _____
Date   Dr. Nicholas Schwab, Thesis Committee Member

_____   _____
Date   Dr. Jennifer Waldron, Dean, Graduate College

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CHAPTER ONE

PLURALISTIC IGNORANCE AND NORMS

Social norms related to gender and male-female relationships have changed

drastically over the last few decades. Women now hold more college degrees than men

(Okahana & Zhou, 2018), more women than men are now graduating from college

(England & Li, 2006), and traditional roles of men and women in society are becoming

more egalitarian (Eagly, Nater, Miller, Kaufmann, & Sczesny, 2019). These changes

have led to differing relationships between men and women; some examples include an

increased willingness to discuss traditionally taboo subjects (e.g., hookup culture;

England, Shafer, & Fogarty, 2008) and changes in actual behavior such as engagement in

hookup culture (England et al., 2008).

As women now have more freedom to engage in nontraditional behaviors, they

have also become more outspoken about issues affecting women, culminating in social

movements such as #MeToo and Time's Up, among others. The #MeToo Movement was

designed to promote awareness and prevent sexual harassment and assault of all people,

but primarily women. The movement began in 2006 with Tarana Burke, an activist and

survivor of sexual abuse (MeToo, 2018). The hashtag MeToo went viral in 2017 and

inspired men and women to share their stories of sexual assault in the hopes of generating

a conversation and change (MeToo, 2018). Similarly, the Time's Up movement was

made partly in response to #MeToo and served a similar purpose, to support those who

had experienced sexual abuse, harassment, or assault. The effects of these social

movements can be seen on college campuses today. For instance, social norms that are

permissive of problem behaviors have come to the forefront of conversations about sexual assault on campuses. Many conversations about sexual assault revolved around students who experienced sexual assault on college campuses. These conversations have linked the perpetration of sexual assault to social norms on many college campuses.

Several social norms on college campuses have been linked to sexual assault. For example, the norm of heavy alcohol consumption is linked to misperceptions of the sexual availability of women and misconstrued understandings of appropriate behavior (Abbey & Harnish, 1995). Other examples include adherence to traditional gender roles that have been linked to comfort in situations in which women are being mistreated (Loh, Gidycz, Lobo, & Luthra, 2005) and adherence to rape myths and the minimization of sexual assault (Zillmann & Bryant, 1982). These problematic norms may be further perpetuated by the misperceptions of peer adherence to these norms and others like them. For instance, misperceptions of peers' comfort with alcohol consumption has been linked to increases in student binge drinking behaviors (Prentice & Miller, 1993; Werner, Walker, & Greene, 1996). Although social norms can guide behavior, it is unclear what effect the changing social environment may have had on deterring problematic norms and subsequent beliefs or actions related to sexual assault.

The current study examined whether and how social norms have changed among college students following these social changes. Social changes and movements such as #MeToo have provided normative feedback to individuals by describing what is considered unacceptable behavior concerning sexual conduct. The feedback provided by movements like #MeToo may change students' behaviors and attitudes. In turn, my first

goal was to assess misperceptions of college students on alcohol consumption, gender role adherence, sexist views, rape myth acceptance, and consent norms today. My second goal was to assess differences in misperceptions in college students when compared to previous literature. Social feedback from movements like #MeToo may make issues related to sexual assault more salient and cause students to be more aware of their own behavior and their peers' behaviors. Lastly, because of social feedback, students may be more aware of what is considered acceptable behavior and be less likely to report engaging in problem behaviors or thinking themselves. Thus, my final goal was to assess attitude change in students on alcohol consumption, gender role adherence, sexist beliefs, and rape myth acceptance and consent compared to literature published in 2016 or before.

The following sections of this paper describe the prevalence of sexual assault, social norm theory (i.e., informal understandings that govern group behaviors), misperceptions of social norms, pluralistic ignorance (i.e., incorrect inferences of peers' beliefs) and the connections between alcohol consumption, gender roles, sexist beliefs, rape myth acceptance, consent and the perpetuation of sexual assault.

<div align="center">Sexual Assault Prevalence</div>

Definitions of sexual assault vary, and no consistent legal definition exists (Eileraas, n.d.). Definitions used in research also vary (Muehlenhard, Powch, Phelps, & Giusti, 1992), but generally, sexual assault refers to sexual acts that are obtained by force or threat of force or without the victim's consent (Cantor et al., 2015; Sexual Assault, n.d.). In this manuscript, I use the term sexual assault to refer to physical contact such as

sexual penetration or sexual touching done without a person's consent (Sexual Assault, n.d.).

Sexual assault is a common occurrence on college campuses. Sexual assault among college students has been well documented since the 1950s (e.g., Kirkpatrick & Kanin, 1957). Research has suggested that the prevalence rate is around 20%, or that 1 in 5 college women experience sexual assault (Abbey, Ross, McDuffie, & McAuslan, 1996; Black et al., 2011; Copenhaver & Grauerholz, 1991; Koss, Gidycz, & Wisniewski, 1987; Muehlenhard & Linton, 1987; Muehlenhard, Peterson, Humphreys, & Jozkowski, 2017). Other research has suggested that the number could be even higher (Koss et al., 1987; Rich, Gidycz, Warkentin, Loh, & Weiland, 2005).

Although prevalence rates are relatively standard, they are not uniform across all campuses. A recent study across nearly 30 universities ($n = 150,072$) in the United States found prevalence rates ranging from 13% to 30% (Cantor et al., 2015, p. 16). This wide range of assault prevalence can be attributed to several factors such as gender or sexual orientations of campus members, situational and environmental factors, and personality factors, as well as methodological factors, such as differences in how sexual assault is defined or differences in how sexual assault is measured (Acierno, Resneick, & Kilpatrick, 2010; Cantor et al., 2015, p.16).

Gender and sexual orientation are strongly related to the reported prevalence of sexual assaults; women experience sexual assault at much higher rates than heterosexual cisgender men (Brener, McMahon, Warren, & Douglas, 1999; Cantor et al., 2015; Krebs, Lindquist, Warner, Fisher, & Martin, 2007). Members of the LGBTQ community, such

as men and women who identify as gay, bisexual, or transgender, are at even higher risk of being sexually assaulted (Cantor et al., 2015; Gentlewarrior, 2009; Grant et al., 2010; Rothman, Exner, & Baughman, 2011). Reports of sexual assault made by women and LGBTQ members are often underreported (Grant et al., 2010), signaling that actual statistics may be higher than official reports suggest. Campuses with more women and a more substantial LGBTQ presence may report higher prevalence rates of sexual assault.

Situational and environmental factors such as substance use can also play a role in reported sexual assault prevalence. Alcohol use and drug use significantly increase the likelihood of sexual assaults occurring (Littleton & Ullman, 2013; Parks, Hequembourg, & Dearing, 2008; Reed, Amaro, Matsumoto, & Kaysen, 2009). Approximately half of assaults involve one or more substances (i.e., alcohol or drugs; Cantor et al., 2015; Conwell et al., 1996; Krebs, Lindquist, Warner, Fisher, & Martin, 2009; Testa & Livingston, 2009). Alcohol is often used by perpetrators to incapacitate potential victims (i.e., incapacitated rape; Testa & Livingston, 2009). Campuses that make alcohol available to students have an increased risk of sexual assault perpetration (Scribner, MacKinnon, & Dwyer, 1995). School alcohol policies are not consistent across the nation; differences in alcohol availability partially explain why prevalence rates vary.

Personality traits (e.g., Voller & Long, 2010), and attitudes (e.g., Loh et al., 2005) on campus also influence the prevalence of behaviors that may be predictive of sexual assault. Furthermore, individual differences concerning alcohol consumption (Abbey, McAuslan, Zawacki, Clinton, & Buck, 2001), gender role expectations (Yamawaki, Ochoa-Shipp, Pulsipher, Harlos, & Swindler, 2012), knowledge about sex (Fabiano,

Perkins, Berkowitz, Linkenbach, & Stark, 2003), expectations of consent (Fabiano et al.,

2003), and adherence to problematic beliefs and attitudes (e.g., rape myth acceptance;

Dardis, Murphy, Bill, & Gidycz, 2016) are all factors that are associated with the

prevalence of assault on college campuses and provide insight into why some universities

may report higher prevalence of sexual assault than others.

Sexual assault perpetration is a problem and is likely underreported. Differences

in the reported prevalence of sexual assault are due to several factors; gender and sexual

orientation, situational factors, individual differences and even how sexual assault is

defined all contribute to the discrepancy in reported prevalence of sexual assault across

the country. Perhaps the most important factor relating predicting sexual assault rates on

campuses, however, is the relationship between the perceptions of social norms and

sexual assault. Social norms and perceptions of those norms have been linked to sexual

assault perpetration as well as attitudes and beliefs that may condone or support

problematic behavior (Baer & Carney, 1993; Baer, Stacy, & Larimer, 1991; Martens et

al., 2006; Perkins, Meilman, Leichliter, Cashin, & Presley, 1999).

<div align="center">Social Norms</div>

Social norms are guiding rules of conduct concerning how one should behave.

They also provide an easy way of maintaining order and making social connections

(Berkowitz & Perkins, 1986). Individuals are often pressured to conform to social norms

in order to fit in or avoid punishment, and college students are no exception (Crutchfield,

1955). To gain status or avoid social repercussions, people often use their perceptions of

their peers' norms as a baseline to compare to their own behaviors (e.g., Baer et al., 1991;

Clapp & McDonnell, 2000; Berkowitz & Perkins, 1986; Prentice & Miller, 1993), especially in ambiguous situations (Williams et al., 1992). Individuals often change their behavior to align with this perceived peer norm. Social norms can lead to positive outcomes such as altruistic behavior (Hopper & Nielsen, 1991), as well as problem beliefs and behaviors such as overconsumption of alcohol (Neighbors, Lee, Lewis, Fossos, & Larimer, 2007; Prentice & Miller, 1993), adherence to rape myths (Bohner, Siebler, & Schmelcher, 2006), or avoiding discussions of consent (Fabiano et al., 2003).

There are two types of social norms that influence people's behavior (Cialdini et al., 2006). The first type, descriptive norms, refers to what people are actually doing. People are motivated to engage in behaviors they see or what is exemplified by their peers. The second type, injunctive norms, refers to beliefs about how people should behave or what a student should do in a given situation. Injunctive norms motivate behavior through "social rewards or punishments" (Cialdini et al., 2006, p. 4). Both of these types of social norms have the power to change student behavior toward or away from problematic behavior.

Misperceptions of what peers are actually doing (i.e., descriptive norms) influence individuals' behavior (Baer et al., 1991) as students want to fit in. A student's misperception of the descriptive norm can also influence their beliefs about what attitudes are acceptable to hold (Cialdini, Reno, & Kallgren, 1990). Individuals who perceive that they are not in line with their peers' beliefs of how they should behave (i.e., injunctive norm) often see themselves as deviant members of their peer group (e.g., less knowledgeable than their classmates, more uptight than their peers, less committed, less

competent; Berkowitz & Perkins, 1986). These feelings can leave students feeling bad about themselves and alienated from their peers. Misperceptions of injunctive norms (i.e., what people should do) can lead groups to persist in practices that have lost widespread support (Miyajima, & Yamaguchi, 2017). Furthermore, misperceptions could lead to changes in behaviors such as drinking irresponsibly or not obtaining explicit consent before a sexual encounter in an attempt to meet the expectations of their peers.

<center>Social Norms Theory and Pluralistic Ignorance</center>

Social norms theory suggests that individuals often use their peers as reference points for how they should think and behave in order to fit in, receive social rewards, and/or avoid punishment (Berkowitz, 2004; 2010). Social norms theory also suggests that individuals sometimes incorrectly perceive what attitudes and behaviors their peers condone (i.e., injunctive norms; Barriger & Vélez-Blasini, 2013) and change their behavior based on those inferences. For example, a student may believe that their peers endorse drinking more than they do themselves and drink more to be like their peers, even though their peers actually do not endorse heavy drinking. This misperception of what one ought to do and the subsequent behavior change is commonly known as pluralistic ignorance (Miller & McFarland, 1987). Pluralistic ignorance occurs in situations where the majority of individuals privately reject a norm but express the norm because they incorrectly believe that most other individuals accept that norm (Miller & McFarland, 1987). False assumptions about what a student ought to do can also lead to misperceptions of what peers are actually doing (i.e., descriptive norm). In some cases individuals mistake the minority view as being the majority view (i.e., false consensus

effect; Allport, 1924) and accept that behavior or opinion as being normal. The false

assumption that one holds a majority view can lead to a "spiral of silence," where the

minority view is outspoken and the majority do not speak against the minority view

because individuals falsely assume the majority of their peers hold the minority view

(Noelle-Neumann, 1974; Taylor, 1982).

Misperceptions of what people condone are not new. Examples of pluralistic

ignorance can be found in a variety of situations. For instance, in the early 1960's

attendees of church in the southern United States were asked to report on what their peers

believed in relation to segregation. Participants tended to view their peers as more

conservative in their values than what they actually were. Specifically, participants

overestimated how many of their white peers believed in segregation and underestimated

the racial tolerance of their peers (Breed & Ktsanes, 1961; Fields & Schuman, 1976).

Similar misperceptions have been found on the national level as well, as U.S. voters

overestimated the popularity of their favored political candidate (Granberg & Brent,

1983).

Pluralistic ignorance is common among students as well. Students often

overestimate how much other students support or engage in behaviors such as drinking

alcohol (Bourgeois & Bowen, 2001; Prentice & Miller, 1993) or engaging in casual sex

(e.g., hookup culture; Lambert, Kahn, & Apple, 2003). Students also overestimate their

peers' comfort level with engaging in behaviors such as smoking, illegal drug use, and

intimate sexual behaviors (Hines, Saris, & Throckmorton-Belzer, 2002; Perkins et al.,

1999). Furthermore, men underestimated the importance their peers (both men and

women) placed on obtaining consent (Fabiano et al., 2003). These misperceptions have been linked to behavior change and, in some cases, engagement in problematic behaviors (Bohner et al., 2006; Muehlenhard, Humphreys, Jozkowski, & Peterson, 2016).

Men seem to be affected by misperceptions of social norms more so than women and may be more likely to change their attitudes and behaviors to meet the perceived norm. Men have changed their behavior in the direction of the perceived social norm for alcohol, whereas women did not (Prentice & Miller, 1993). In a study only including men, participants were also found to become more or less sexist toward women depending on their perceptions of peers' beliefs (Dardis et al., 2016). Similarly, men's beliefs concerning rape and attitudes towards women have been correlated with what they believed their peers support (i.e., injunctive norm) but not with what their peers reported doing (i.e., descriptive norm; Dardis et al., 2016). Regardless of the source or cause of misperceptions, individuals perceive that certain attitudes and behaviors are acceptable and occur more frequently than they do in reality; therefore these same individuals who misperceive the norms are more likely to hold problematic attitudes and engage in these behaviors themselves (Perkins, 2002a; Perkins, 2002b; Perkins & Wechsler, 1996).

These problem attitudes and behaviors often persist because students are frequently presented with mixed messages about what is expected of them but they desperately desire to fit in. For instance, women may be told to be attractive but not to be too open to sexual advances (Wiederman, 2005) because they may be labeled as a "slut" by their peers, whereas men are pressured to be sexually active and if they are not perceived to be active, their masculinity may be questioned by their peers (Wiederman,

2005). To fit in with these expectations students may justify actions that are problematic because they believe it is what their peers ultimately want, regardless of whether it is what they personally want (Wiederman, 2005).

One way to combat pluralistic ignorance is to provide feedback about misperceptions (Berkowitz, 2010; Neighbors, Larimer, & Lewis, 2004). Social norms theory proposes that misperceptions of norms and the subsequent engagement in a problem behavior due to the misperception (i.e., pluralistic ignorance) can be corrected by providing relevant and accurate information on actual peer norms (Berkowitz, 2010). Correcting misperceptions is likely to result in decreased problem behaviors. For example, a review of personalized feedback interventions for college alcohol misuse showed that students significantly decreased harmful alcohol misuse when provided with accurate normative information (Walters & Neighbors, 2005).

<div align="center">Why Misperceptions Occur</div>

There are a few reasons why students may misperceive social norms. One reason is that students attribute another person's behavior to an internal disposition (i.e., attributing a behavior to a person and not considering contextual variables; Perkins, 2002a). Generally, people from Western cultures are more individually focused (Ji, Peng, & Nisbett, 2000; Lewis, Goto, & Kong, 2008) and tend to attribute success or failure more on the individual person rather than on the situation or environmental context (Ji et al., 2000; Lewis et al., 2008); this is also known as the fundamental attribution error (Ross, Greene, & House, 1977). Assuming that a behavior is typical of a person makes it more likely that the person who perceives that behavior as normal will engage in the

behavior themselves (Perkins, 2002a). Without the proper contextual information, students are likely to attribute an occasional problem drinking behavior to a person's lifestyle and can misperceive that behavior as normative (Perkins, 2002a). Consequently, students are more likely to feel pressured to conform to the perceived expectations and drink more when they misperceive the norm (Berkowitz & Perkins, 1986; Perkins & Wechsler, 1996).

Another reason college students frequently misperceive norms may be that vivid behaviors are more easily recalled (i.e., availability heuristics; Berkowitz, 2005; Miller & McFarland, 1987; Perkins, 2002a; Tversky & Kahneman, 1974). For example, seeing someone intoxicated and making a fool of themselves can be more easily recalled and may be used as a heuristic for what students should do to have fun at parties. These salient behaviors can also be viewed on social media and entertainment outlets, which further normalizes the behavior (Perkins, 2002a). The frequency and memorability of these behaviors make it easier for individuals to perceive these behaviors as normal and even desirable behaviors.

It is also possible that social desirability may affect reporting, such that individuals are correctly perceiving others' attitude and behavior norms, but are underreporting their own involvement in those attitudes and behaviors to seem more socially desirable. As most research on pluralistic ignorance uses self-report data, it is entirely possible that individuals' responses are products of social desirability and not pluralistic ignorance. However, several researchers have controlled for or measured social desirability in a variety of ways in order to account for some of the possible biases

when assessing pluralistic ignorance and found no indication that individuals were answering in socially desirable ways (Hines et al., 2002; Miyajima & Yamaguchi, 2017; Schroeder & Prentice, 1998). For example, a study in 2017 assessed male attitudes toward paternity leave and found that men overestimated other men's negative attitudes toward paternity leave, and when the study was redone using a social desirability control, the results remained the same (Miyajima & Yamaguchi, 2017). Similarly, self reports of sexual behaviors (Hines et al., 2002) have also been shown to indicate pluralistic ignorance when accounting for socially desirable answers on a questionnaire. These discrepancies between self-reported beliefs and others' beliefs are due to pluralistic ignorance and not social desirability.

Individuals make mistakes in their perceptions of others, and these can happen for several reasons including attribution errors, vivid memories that lead to heuristic thinking, or social desirability. These explanations often play important roles in the perceptions of acceptable attitudes and behaviors. While there are many theories as to why misperceptions occur, pluralistic ignorance may be a more useful approach for investigating problematic attitudes and behaviors on college campuses. The following section will explain the relationship between pluralistic ignorance and several attitudes and behaviors related to sexual assault on college campuses.

<div align="center">Misperceived College Norms</div>

There are several crucial social norms related to the perpetration of sexual assault on college campuses. The most studied norms include those involving alcohol consumption (Abbey, Zawacki, Buck, Clinton, & McAuslan, 2004; Bourgeois & Bowen,

2001; Prentice & Miller, 1993), gender roles (Abbey, 1991; Dardis et al., 2016; Leichliter, Meilman, Presley, & Cashin, 1998), sexism (Eaton & Matamala, 2014; Glick & Fiske, 2001; Kilmartin et al., 2008; Kilmartin et al., 1999; Viki & Abrams, 2002), rape myth acceptance (Littleton, 2011; Lonsway & Fitzgerald, 1994; McMahon, 2010; Suarez & Gadalla, 2010), and consent for sexual activity (Beres, 2007; Fabiano et al., 2003; Masters, Casey, Wells, & Morrison, 2013).

Alcohol Consumption

College students have often reported themselves as engaging in less problematic attitudes (e.g., Bourgeois & Bowen, 2001), but the sentiment that students often believe they differ from their peers also extends to other facets of college life. For instance, college students misperceive norms related to alcohol consumption (Bourgeois & Bowen, 2001; Prentice & Miller, 1993). The average college student perceives that others drink more and hold more favorable attitudes towards drinking than they do themselves (Borsari & Carey, 2003). Students consistently overestimate the extent to which their peers engage in heavy drinking (i.e., 4 or more drinks per occasion for women or 5 or more for men; Neighbors, Dillard, Lewis, Bergstrom, & Neil, 2006; Prentice & Miller, 1993). A study conducted in 2005 found that over 70% of students nationwide ($n = 76,000$) overestimated how much alcohol their peers consumed (Perkins, Haines, & Rice, 2005).

Misperceptions of norms have also been related to increased adherence to those norms. For instance, misperceptions of peer alcohol consumption have been correlated with personal consumption (Borsari & Carey, 2001; Lewis & Neighbors, 2004; Perkins,

2002a; Perkins, 2002b; Prentice & Miller, 1993), often leading to an increase in consumption (Mooney & Corcoran, 1991). Students' perceptions of their peers' alcohol consumption norms are correlated with binge drinking, future problem drinking, and a false belief of peer comfort with alcohol consumption (Prentice & Miller, 1993; Werner et al., 1996).

Furthermore, social norms and behaviors surrounding alcohol consumption often contribute to sexual assault perpetration. There is strong evidence that alcohol consumption is linked to violent behavior (Dembo et al., 1991; White & Hansell, 1998; White, Loeber, Stouthamer-Loeber, & Farrington, 1999; Zhang, Wieczorek, & Welte, 1997), sexual coercion (i.e., pressured sexual contact using tricks, threats, or force; Fischer, 1996) and sexual assault perpetration (Abbey, Clinton, McAuslan, Zawacki, & Buck, 2002; Dardis et al., 2016; Davis, 2010; Saenz, Abbey, Buck, Zawacki, & McAuslan, 2003; Fischer, 1996; Gross, Bennett, Sloan, Marx, & Juergens, 2001; Ullman, 2003). Alcohol can and often does exacerbate aggression and problematic norms.

Gender Roles

Traditional gender roles are often to blame for misperceptions of how one ought to behave. According to traditional gender roles, men are believed to be assertive, dominant, and tough, whereas women are thought to be pure, submissive, and helpful (Glick & Fiske, 1996). Students often attempt to follow these gender roles in order to fit in with their friend groups. Students misperceive gender role expectations and what their peers expect in dating situations (Lambert et al., 2003). For example, in a 2003 study, students reported that men were more comfortable with behaviors related to hooking up

than were women (Lambert et al., 2003). These findings are congruent with what is expected in traditional gender role behavior.

Adherence to traditional gender roles affects other attitudes and behaviors. Adherence to traditional gender role norms is connected to sexist attitudes (Dardis et al., 2016), alcohol consumption (Dardis et al., 2016), and aggression toward groups that do not conform to perceived gender role norms (Reidy, Shirk, Sloan, & Zeichner, 2009; Vincent, Parrott, & Peterson, 2011). These long standing gender norms for men and women have created rigid rules for behavior (Lisak & Roth, 1990; O'Neil, 1981). Studies have linked traditional gender roles to negative attitudes toward homosexual lifestyles (Kerns & Fine, 1994), as men avoid acting in traditionally feminine ways.

Students' misperceptions of norms concerning gender roles may also lead individuals to behave in more traditional ways in dating situations (Serewicz & Gale, 2007). Men and women often behave in ways that are consistent with traditional gender roles when dating (e.g., men were more likely to use sexual initiator tactics like suggesting they do more than kissing or other forms of sexual intimacy in their dating scripts). Students who adhere to traditional gender roles of masculinity are also less likely to seek out help (Berger, Levant, McMillan, Kelleher, & Sellers, 2005) and perceive that others believe that help seeking behavior is a defeat or a weakness (Hammen & Peters, 1977; Warren, 1983).

Traditional gender roles are also related to attitudes and behaviors that support sexual assault perpetration. Students who support traditional gender roles were more likely to support rape myths, felt more comfortable in situations where women were

being mistreated (Loh et al., 2005) and were more likely to perpetrate sexual assault (Abbey, 1991; Leichliter et al., 1998). Men who adhere to traditional gender roles reported being more aggressive in sexual interactions (Murnen, Wright, & Kaluzny, 2002); these men also believed that in some cases women sometimes deserved to be sexually assaulted (Murnen et al., 2002). Additionally, adherence to strict gender roles (i.e., hypergender ideology) is a predictor of future sexual assault perpetration against women (Dardis et al., 2016); masculinity norms that construe violence as "manly" lead to aggression towards women and sexual assault perpetration (Mosher & Sirkin, 1984; Murnen et al., 2002).

Sexism

College students also misperceive peer norms and attitudes related to sexism. Sexism is generally comprised of two components: hostile sexism (e.g., negative stereotypes and denigrating attitudes; Glick, Diebold, Bailey-Werner, & Zhu, 1997) and benevolent sexism (e.g., reverent attitudes towards women who act in a traditionally feminine way; Glick et al., 1997; Sibley & Wilson, 2004). Sexism has long been a part of the college experience, and ideas about how men and women should behave in dating contexts have seemingly gone unchanged over the decades. Men are often perceived as the sexual aggressors and are often thought to be responsible for choosing what actions will be taken on a date (e.g., hanging out, initiating physical contact, paying for date)(Eaton & Rose, 2012; Rose & Frieze, 1989; 1993) and controlling sex (Muehlenhard & Felts, 1998; Snell, Belk, & Hawkins, 1986). A study conducted in 1999 found that college students, especially men, overestimated the support for hostile and benevolent

sexist attitudes of their peers (Kilmartin et al., 1999). Students in past research have also underestimated other students' discomfort with sexist attitudes (Kilmartin et al., 2008); participants reported that other students would report higher hostile sexism, benevolent sexism, and adversarial sexual beliefs than themselves.

Misperceptions of peers' endorsement of sexist beliefs can affect attitudes and behavior. Students who overestimate peer support for sexist beliefs are more likely to adhere to those misperceptions and engage in sexist behaviors such as not asking for consent or acting in sexually aggressive way Fabiano et al., 2003; Wiener, Hurt, Russell, Mannen, & Gasper, 1997). Misperceiving sexist attitudes as normal can also lead women to accept unfair treatment and discriminatory behavior such as not being able to make their own decisions or justifying their lack of control to their own "vulnerability" (Moya, Glick, Expósito, de Lemus, & Hart, 2007). Furthermore, compliance with sexist beliefs can lead to rape supportive attitudes (Burt, 1980) and male dominance (Becker & Wright, 2011).

Norms and attitudes related to sexism are also linked sexual assault perpetration. College students show sexism (Eaton & Matamala, 2014), and that sexism has been associated with men's sexual aggression towards women (Masser, Viki, & Power, 2006; Yamawaki et al., 2012). For example, individuals who held sexist attitudes reported that women invited sexual advances and were to blame for their rape (Viki & Abrams, 2002). Sexist attitudes have also been used as justification for violence against women (Abrams, Viki, Masser, & Bohner, 2003), normalizing it. Not surprisingly, benevolent sexism attitudes have been linked to blaming survivors for their rape, whereas hostile sexism has

been linked to rape proclivity and sexual aggression (Abbey & McAuslan, 2004; Abrams et al., 2003; Calhoun, Bernat, Clum, & Frame, 1997; Christopher, Owens, & Stecker, 1993).

Rape Myth Acceptance

Rape myths are prejudicial and false beliefs about sexual assault survivors, perpetrators, and situations of sexual assault (Burt, 1980). Many students do not support rape myths(e.g., that women who dress sexy are "asking for it"; women who are drunk can't be raped; or women who say "no" don't really mean "no")); however, students sometimes misperceive their peers' rape myth acceptance (Hamburger et al., 1996), which can have implications for their future behavior. Students who misperceive peer beliefs about rape are more likely to engage in rape myth acceptance (e.g., Dardis et al., 2016). A study in 1982 found a positive relationship between accessibility of rape myths and the minimization of rape (individuals who viewed rape myths were more likely to believe them; Zillmann & Bryant, 1982).

Individuals' rape myth acceptance and perceived norms of rape myth acceptance also affect attitudes. Students who overestimate their peers' rape myth beliefs are more likely to hold sexually aggressive attitudes (e.g., more likely to believe that when a woman is drunk she is at least somewhat responsible for her sexual assault; Aronowitz et al., 2012; Bohner et al., 2006; Muehlenhard et al., 2016) and less likely to fight against rape myths (Hillenbrand-Gunn, Heppner, Mauch, & Park, 2010). Rape myths also encourage the use of traditional gender roles (i.e., dominant males & submissive females; Bohner et al., 2006; Dardis et al., 2016)

Perceptions of peer rape myth acceptance can influence students' sexual assault proclivity. First, adherence to rape myths are linked to behaviors of disengagement with the reality of sexual assault and the direct disagreement with published prevalence rates of sexual assault (Boakye, 2009). That disengagement normalizes rape myths and perpetuates ideas that women want to be raped (Littleton, 2011). For instance, students who had higher exposure to rape myths were more likely to be perpetrators of sexual assault (Abbey et al., 2001; Aronowitz et al., 2012; Bohner et al., 2006). Similarly, in more recent research, individuals who adhered to rape myths were more likely to act in hostile ways toward women (Suarez & Gadalla, 2010) and to be more discriminatory toward women (McMahon, 2010). Individuals who report supporting rape myths also report engaging in sexist behaviors that alienate or exploit women for sexual gains or status (Dardis et al., 2016; Hillenbrand-Gunn et al., 2010).

　　Consent. College students also misperceive social norms related to consent (Fabiano et al., 2003; Hust et al., 2013. Studies conducted in 2003 and 2013 found that misinterpreting sexual consent of a partner happens frequently among college students (Jozkowski & Peterson, 2013; Lambert et al., 2003). Similarly, in two studies published in 2003, college students often misperceived the willingness of their peers to engage in sex (Lambert et al., 2003) and other sexual activities (Fabiano et al., 2003). A study in 2010 found that men overestimated women's actual comfort levels with hooking up, and women overestimated men's comfort level with hooking up (Reiber & Garcia, 2010). The engagement in hookup norms on campus favors casual sexual contact and often devalues the obtainment of affirmative consent, which can be problematic for students' well-being

(Davis et al., 2006). Hookup culture can be especially problematic for women because the casual sexual contact often favors men who believe they do not need to obtain affirmative consent and gives men the power to engage in sexually aggressive behaviors under the guise of pursuing casual sex. Hook up culture can also be problematic because it leads students to believe that everyone is having sex, or that some students are more comfortable with hooking up than they actually are.

Misperceptions of consent can affect behavior. In some cases misperceptions of consent intentions can simply lead to embarrassment and nothing more than an indication for the need of better communication (Byers & Lewis, 1988). However, more serious behavioral outcomes are common on college campuses. For instance, because men are traditionally thought to be sexual initiators (Beres, 2007; Jozkowski & Peterson, 2013; Jozkowski, Peterson, Sanders, Dennis, & Reece, 2014), they engage in sexual advances more often when they perceive that it is what their partners want (Lambert et al., 2003). Due to the casual nature of hook ups, many students do not seek verbal consent but instead rely on nonverbal cues that can be difficult to read or entirely misleading (Beres, 2007; Fabiano et al., 2003; Hickman & Muehlenhard, 1999; Lim & Roloff, 1999). Studies from the late 90's and early 00's have found supporting evidence that the absence of affirmative consent (i.e., a knowing, voluntary, and mutual decision made among all people involved in a sexual activity) contributes to potentially unwanted sexual advances (Cohen & Shotland, 1996; Fabiano et al., 2003; Hall, 1998; Hickman & Muehlenhard, 1999; Lambert et al., 2003; Lim & Roloff, 1999).

Misperceptions of consent have been linked to sexual assault and sexual aggression. Misperceptions in consent have been linked to patterns of forced sexual activities (Hickman & Muehlenhard, 1999), sexual assault perpetration on college campuses (Abbey, 1987), and date rapes (Abbey, 1991). Furthermore, college students who have misperceived a partner's sexual intent in the past are also more likely to perpetrate sexual aggression or engage in sexual misconduct (Byers, 1980; Cohen & Shotland, 1996; Shotland & Hunter, 1995; Humphreys & Brousseau, 2010; Lambert et al., 2003). How individuals perceive the peers' support for these problematic attitudes and behaviors can impact the perpetuation of problematic norms on college campuses. It is possible that students are relying on faulty assumptions about what their peers endorse, and that these assumptions contribute to the perpetration of sexual assault.

Current Study

Social norms provide individuals with an outline of what is acceptable according to peers (i.e., injunctive norms) and what behaviors their peers actually engage in (i.e., descriptive norms; Cialdini et al., 2006). Both the injunctive and descriptive norms are often misperceived and have been linked to changes in behavior due to faulty perceptions of peer beliefs (i.e., pluralistic ignorance; Baer et al., 1991; Clapp & McDonnell, 2000; Dardis et al., 2016; Fabiano et al., 2003; Hamburger et al., 1996; Lambert et al., 2003; Lenton & Bryan, 2005; Muehlenhard & Cook, 1988; Neighbors et al., 2007; Prentice & Miller, 1993). Misperceptions of norms then may lead to the perpetuation of problem behaviors (Farris, Treat, Viken, & McFall, 2008; Hess & Hagen, 2006; Huesmann & Guerra, 1997). Furthermore, pluralistic ignorance can lead groups to persist in practices

that have lost widespread support (Miyajima & Yamaguchi, 2017), such as over-consuming alcohol, adhering to traditional gender roles, engaging in sexist beliefs, propagating rape myth acceptance, or failing to obtain affirmative consent. These misperceptions have frequently been connected to sexual assault perpetration (Abbey, 1991; Leichliter et al., 1998; Mosher & Sirkin, 1984; Dardis et al., 2016; Farris et al., 2008; Hess & Hagen, 2006; Huesmann & Guerra, 1997; Murnen et al., 2002)

Most previous studies on norms perceptions were done prior to 2016, and although that was only a few years ago, there have been several drastic changes in social norms on college campuses. For instance, the #MeToo movement in 2016 brought sexual assault to the forefront of many conversations in America, especially among young women and college students (Sexual Assault, n.d.). Other changes such as the growing number of women in college (England & Li, 2006), the increased willingness to discuss topics like sexual assault (England et al., 2008), Title IX mandates, and other social changes on college campuses have made it clear that attitudes and behaviors that were once normal (e.g., rape myths or sexism) are no longer acceptable. These social changes and their impacts on social norms may influence individuals' behaviors and may also contribute to the decrease in prevalence of sexual assault. Because of the widespread attention to several positive social movements like MeToo, more students may be aware of what constitutes a problem behavior and, subsequently, what better alternatives there are for problematic behaviors. Furthermore, in the wake of these social changes, misperceptions of peer attitudes and behaviors may have changed. Assessing college

students' attitudes, behaviors, and perceptions of norms will provide insight into whether college students have shifted towards less problematic norms.

Pluralistic Ignorance

The first goal of the current study is to evaluate pluralistic ignorance among a current sample of college students. It is possible that students will be more accurate in their perceptions of peers, but students may still misperceive peer adherence to gender roles, drinking behaviors, sexist beliefs, rape myth beliefs, and beliefs about consent. Misperceptions may occur due to the availability heuristic (Berkowitz, 2005; Miller & McFarland, 1987; Perkins, 2002a; Tversky & Kahneman, 1974), the fundamental attribution error (Perkins, 2002a; Ross et al., 1977), the false consensus effect (overestimating the extent to which their beliefs, are normal and typical of others; Allport, 1924) or because of the spiral of silence where the majority of individuals falsely assume their peers hold views that are not aligned with their own (Noelle-Neumann, 1974; Taylor, 1982). To test this goal, I had participants report their own and the perceived beliefs of the average same sex student at the University of Northern Iowa (i.e., male:male and female:female) alcohol consumption, traditional gender role adherence, sexist beliefs, rape myth acceptance, and consent norms. I assessed pluralistic ignorance by comparing the difference between self-reported attitudes and beliefs to perceived attitudes and beliefs of the same sex University of Northern Iowa Student.

Pluralistic Ignorance Change

The second goal was to evaluate the change in pluralistic ignorance among college students today when compared with previous work. Students may be more

accurate in estimating their peers' beliefs because of the exposure to social norm feedback on problem behaviors (i.e., #MeToo Movement). However, students may also persist in poorly estimating their peers' beliefs due to college environments, heuristics, attribution errors, false consensuses, or the spiral of silence. In order to assess changes in pluralistic ignorance, the obtained effect sizes of pluralistic ignorance on alcohol consumption in the current study for both men and women was compared to the effect sizes of pluralistic ignorance on alcohol consumption provided by Prentice and Miller (1993; Table 1 & Table 2). This study was chosen to serve as a comparison for pluralistic ignorance change because it has been frequently cited as a staple in pluralistic ignorance research and uses a comparable sample of undergraduate students. I did not assess pluralistic ignorance change using other variables because comparable populations (e.g., undergraduate students) and testing methods were not found for several of the variables of interest.

<div align="center">Attitude Change</div>

The third goal was to assess attitude change in students on alcohol consumption, gender role adherence, sexist views, and rape myth acceptance. Due to the recent increase in social norms approaches (e.g., the MeToo Movement), students may be more aware of what constitutes sexual misconduct or assault than they were in most previous research on social norms (e.g., Dardis et al., 2016; Prentice & Miller, 1993). In order to assess changes in attitudes of college students, students' self-reported scores were compared to self-reported scores on the same variables using previous literature. Prentice and Miller (1993) was chosen as a baseline for attitude change concerning alcohol consumption for

both men and women because it examines a comparable sample of college students and has been used widely used to understand drinking attitudes of students, although it is important to note that Prentice and Miller (1993) assessed social norms pertaining to drinking habits several decades ago and perceptions of peers' drinking behavior may have changed in recent times. Dardis and colleagues (2016) was chosen as a baseline for attitude change of men's traditional gender role adherence because it uses a similar sample of male college students from a large Midwestern university psychology participant pool and provides a comparison time point of attitudes before social movements like #MeToo. Eaton and Matamala (2014) was chosen as a baseline to assess attitude change toward sexism for both male and female students because the sample was collected prior to 2016, was comprised of a similar target age range, and had a similar composition (e.g., comprised of psychology students from a research pool), and the university was of similar size. Dardis and colleagues (2016) was chosen as a baseline for attitude change concerning rape myth acceptance for male students because the sample used is also from a large Midwestern university psychology pool.

<div align="center">Research Questions</div>

There are three specific research questions for this study.

R1: Will students in the current sample overestimate their peers' (same sex) alcohol consumption, traditional gender role adherence, sexist beliefs, and rape myth acceptance, and underestimate the importance of consent?

R2: Will students be more or less accurate than previous samples in estimating their same sex peers' behaviors and attitudes?

R3: Will students report less personal alcohol consumption, gender role adherence (only men), sexist beliefs, and rape myth adherence (only men) than in previous research?

Method

Design and Study Overview

The current study focused on perspective (self/other) and sex (male/female). Participants reported their own attitudes and beliefs and report on the perceived attitudes and beliefs of the same sex student at the university of Northern Iowa (UNI). Each participant reported on alcohol consumption, gender norms, sexism, rape myth acceptance, and consent norms. Individuals' personal beliefs were compared with the perceived beliefs and attitudes of the same sex (i.e., male:male or female:female) average UNI student in order to assess pluralistic ignorance. Effect size for differences found between individuals' own beliefs and the perceived beliefs of both the average male and female student were compared to effect sizes calculated from previous pluralistic ignorance literature in order to establish whether pluralistic ignorance has changed. Finally, individuals' own beliefs and attitudes were compared with beliefs and attitudes of students in previous literature. This study and its measures were pre-registered on the Open Science Framework (https://osf.io/nzv96/).

Participants

Previous literature has found fluctuating Cohen *d* effect sizes ranging from large to small for pluralistic ignorance (Brown & Messman-Moore, 2009; Lambert et al., 2003; Prentice & Miller, 1993), considering this I have chosen to conduct my power analysis

using a small to medium effect size. Using G*power (Faul, Erdfelder, Lang, & Buchner, 2007), I obtained a suggested sample size of 98 participants (49 participants per group) based on a 2 (self or other) x 2 (male or female) ANOVA assessment (i.e., repeated measures, between factors) with a power of .95, an alpha of .05, a correlation among measures of .32 based on estimates of previous correlations among self and other reports (e.g., Hines et al., 2002; Prentice & Miller, 1993) and a Cohen *d* of .3 based on more conservative conversions of partial eta squared effect sizes from previous literature (e.g., Lambert et al., 2003).

I recruited participants through the psychology department's electronic participant pool sign-up system for psychology classes ($n = 153$) at the UNI as well as through the use of an anonymous listserv ($n = 192$) of randomly selected students stratified by sex and academic year (see *Appendix A*). All participants who were recruited through SONA self-selected to participate in the study. A posting was made on the online system for students to view that included information on the purpose and description of study. All participants who were recruited through the participant pool sign-up system were compensated with 0.5 academic research credits toward their introductory psychology course research requirement.

Of the 3800 students who were contacted through the anonymous listserv, 793 responded (20.9% response rate). Of those responses, 192 passed all of the exclusion criteria (https://osf.io/nzv96/). All students recruited through the anonymous listserv were contacted via email and were provided a brief study description and a link that took them to the informed consent. A follow up email was sent out to participants exactly a week

after the original email to thank participants and remind those who had not yet taken the survey to do so. Participants in both samples who failed to indicate they were enrolled as a student at the University of Northern Iowa or did not indicate they were a citizen of the United States were removed from analyses. All participants who were not between the ages of 18 to 25 were removed from analyses; this decision was made because this age range is thought to best represent typical undergraduate college students and to facilitate comparisons to previous research. Students who did not report being heterosexual were also removed from analyses to facilitate comparisons to previous research and because the questionnaires used largely assess heterosexual attitudes. See the exclusion criteria section for details on how many participants' data were excluded for each reason.

The final sample of both SONA and anonymous listserv participants was comprised mostly of women ($n = 222$), and most participants identified themselves as white ($n = 331$). Most participants were between ages 18 and 20 ($M = 19.42$, $SD = 1.51$). Similarly, most participants were in their freshman year of college ($n = 167$)), whereas a minority of students were in their sophomore ($n = 59$), junior ($n = 56$), and senior ($n = 58$) years. Lastly, a majority of the participants identified as either moderate (35.9%) or liberal (35.2%) in their political ideologies.

Procedure

Data were collected through the use of an online Qualtrics survey; Participants read an informed consent on the first page of the survey (see *Appendix B*); participants were provided the option to opt out of the study before beginning and at any time during the survey. The following page asked participants to report their gender identity (i.e.,

male, female, transgender male, transgender female, gender non-binary, gender queer, not listed; see *Appendix C*). Participants who indicated anything other than "male" or "female" were allowed to finish the survey but their responses were not used in analyses. Participants who indicated "Transgender Male", "Gender non-binary", or "Not listed (Specify)" were given the male survey. Participants who indicated "Transgender Female" or "Gender Queer" were given the female survey. Each participant completed the measures of alcohol consumption comfort, hypergender ideology, ambivalent sexism, rape myth acceptance, and sexual consent in a randomized order; all scale items were also randomized. Before the rape myth scale appeared, participants were directed to a screen where they were given information that the next section of the survey contained "upsetting" and potentially triggering information related to rape and provided with an option to opt out of completing the rape myth scale ($n = 80$; see *Appendix D*). Participants reported on their own beliefs and the perceived beliefs of the same sex average student (male or female) at UNI on each scale; each question had a column for "You" and "Average (Male/Female) Student at UNI". Participants then completed the brief demographic questionnaire that included items on biological sex and sexual orientation (https://osf.io/8mhga/). Last, participants received a debriefing (see *Appendix K*) of the study's purpose and resources for any potential distress that may have occurred due to the nature of the survey.

Measures

        <u>Comfort with alcohol consumption.</u> Alcohol consumption questions (See

Appendix E) were adopted from Prentice and Miller (1993). The questions are meant to

assess how comfortable students are with drinking behavior on campus and how

comfortable they think their peers are. Alcohol consumption comfort was assessed using

two variations of a single question, "how comfortable do you/the average male/female

feel with the alcohol drinking habits of students at the University of Northern Iowa?"

Participants indicated their own comfort and the comfort of the average student of their

same gender using an 11-point Likert item (*1 = not at all comfortable to 11 = very*

comfortable; Prentice & Miller, 1993).

        <u>Stereotypical gender norms.</u> The Hypergender Ideology Scale—Short From

(Hamburger et al., 1996) was used to assess stereotypical gender role norms (see

Appendix F). The scale consists of 19 items (e.g., "A true man knows how to command

others."). Participants indicated their adherence to stereotypical gender norms and the

adherence of the average student of their same sex on a 6-point Likert scale (*1 = strongly*

agree to 6 = strongly disagree). Higher scores indicated more endorsement of

stereotypical gender role norms. The measure has previously shown a Cronbach's alpha

of .96 in an all student sample. The scale has demonstrated strong concurrent validity in

comparison to similar scales (e.g., Hypermasculinity Inventory; $r = .55$; Hamburger et al.,

1996). In the current study the Hypergender Ideology Scale had a Cronbach's alpha

between .82 (Female) and .92 (Male).

Sexism towards women. The Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996) was used to assess sexist beliefs and norms of how to treat women (see *Appendix G*). The ASI assessed two separate types of sexism towards women (i.e., hostile sexism and benevolent sexism). As summarized by Glick and Fiske (1997), hostile sexism takes more of an adversarial view of women, whereas benevolent sexism is more covert and centered around taking care of women. The scale consists of 22 items (11 benevolent and 11 hostile). Participants indicated their adherence to sexist beliefs and the adherence of the average student of their same sex on a 5-point Likert scale (*0 = disagree strongly* to *5 = agree strongly*). Higher scores on the two subscales indicated more hostile sexism or more benevolent sexism. The measure has previously shown Cronbach's alphas between .79 and .92. The Hostile Sexism and Benevolent Sexism scale are moderately correlated (between $r = .45$ and $r = .57$), demonstrating concurrent validity. Furthermore, the ASI has convergent validity with similar scales (e.g., Modern Sexism Scale; Glick & Fiske, 1997). In the current study the Ambivalent Sexism Scale had a Cronbach's alpha between .87 (Female) and .89 (Male).

Rape myth acceptance. The Illinois Rape Myth Acceptance Scale (IRMA; Payne, Lonsway, & Fitzgerald, 1999) was used to assess men and women's beliefs about common myths associated with rape (see *Appendix H*). The scale consisted of 22 items (e.g., "If a girl acts like a slut, eventually she is going to get into trouble"). Participants indicated their rape myth acceptance and the rape myth acceptance of the average student of their same sex on 5-point Likert scale (*1 = strongly disagree to 5 = strongly disagree*). Higher scores indicate greater acceptance of rape myths. The measure has previously

shown Cronbach's alphas between .86 and .93 and has been used widely in related

literature (Carmody & Washington, 2001; Hinck & Thomas, 1999; O'Donohue, Yeater,

& Fanetti, 2003). The IRMA was designed to represent commonly held beliefs about rape

and victims of assault. In the current study the IRMA received a Cronbach's Alpha

between .86 (Female) and .93 (Male).

      Consent. The Sexual Consent Scale—Revised Sexual Consent Norms Subscale

(Humphreys & Herold, 2007), was used to assess consent norms in college students (see

Appendix I). The subscale consisted of seven questions that are self-report (e.g., "I

believe that sexual intercourse is the only sexual activity that requires explicit verbal

consent") and was used to assess students' sexual consent norms. Participants indicated

the importance of obtaining consent for themselves and the importance of obtaining

consent for the average student of their same sex on a 7-point Likert scale (*1 = strongly

disagree to 7 = strongly agree*). Higher scores indicated higher adherence to problematic

consent norms. The measure has previously shown a Cronbach's alpha of .87 and has

been used in previous research (Humphreys & Brousseau, 2010). The Sexual Consent

Scale—Revised Sexual Consent Norms Subscale received a Cronbach's Alpha between

.75 (Female) and .81 (Male).

      Demographics. All participants completed a brief questionnaire to collect relevant

personal information regarding gender, sexual orientation, academic year, age, political

orientation, ethnicity, and citizenship status. Participants were also asked to respond to a

question assessing their honesty in completing the survey. Participants were asked to

provide information on why their data should not be used. If participants decided to opt

out of the study after completion, they could do so by indicating their reason in an open-ended comment box at the end of the survey (see *Appendix J*).

<div align="center">Results</div>

Exclusion Criteria and Tests of Assumptions

Participants' data were excluded based on several pre-registered criteria (https://osf.io/nzv96/). Participants who did not clearly indicate they were enrolled at the University of Northern Iowa or who did not indicate that they were United States citizens ($n = 433$) had their data excluded from analyses; many participants skipped these questions. Furthermore, participants who were not between the ages of 18 and 25 ($n = 107$), did not identify as heterosexual ($n = 116$) and/or took less than 3 minutes to complete the survey ($n = 0$) had their data removed from analyses. Furthermore, participants who indicated either "not at all honest" or "somewhat honest" ($n = 6$) on the honesty check also had their data excluded from analyses. Participants who did not provide a reasonable explanation for what the study may be have been about ($n = 61$) had their data excluded from analyses. Lastly, participants who did not complete at least half of the scales had their data excluded from analyses ($n = 0$).

Prior to analyses, outcome variables were tested for violations of assumptions. All outcome variables passed assumptions of homogeneity of variance, although the outcome variables of male alcohol comfort, female alcohol comfort, male hypergender ideology, and male rape myth acceptance violated Shapiro-Wilks tests of normality. However, upon running transformations, the variables did not normalize (see https://osf.io/bsgh9/). Generally speaking, analyses of variance are robust to violations of normality (Blanca,

Alarcón, Arnau, Bono, & Bendayan, 2017). Furthermore, hypergender ideology and rape

myth acceptance both violated assumptions of covariance. Log transformations were

done in an attempt to address violations, with similar overall findings. As these

transformations were not specified in my preregistered study criteria, the results

described below did not use the transformations. To view the transformed results, please

see the supplementary materials (https://osf.io/d82sx/). These violations, and especially

the negative skew of many of the self-reported variables, should be considered when

interpreting the following results.

Current Pluralistic Ignorance

Data analysis plan. To test my first research question, whether students in the

current sample will show pluralistic ignorance, I ran a series of six 2 (Male or Female) x

2 (Self or Other) mixed ANOVAs. Each of the six ANOVAs tested either alcohol

consumption comfort, traditional gender role adherence, sexist beliefs, rape myth

acceptance, or consent as dependent variables, (i.e., Male or Female) as a between-

subjects quasi-independent variable, and perspective (i.e., Self or Other) as a repeated-

measure quasi-independent variable. Follow ups on significant interactions were tested

using independent t-tests.

Comfortability with alcohol consumption. Male participants reported significantly

higher overall averages in their own and perceived same sex peers' comfort with alcohol

consumption than female participants reported for themselves and their perceived same

sex peers, $F (1, 338) = 14.85$, $p < .001$, $\eta_p^2 = .04$, 95% CI [0.01, 0.09]. Overall,

participants perceived that peers had higher comfort with alcohol consumption than they

had themselves (see Table 1), $F (1, 338) = 10.31$, $p = .001$, $\eta_p^2 = .03$, 95% CI [0.004,

0.073]. There was a statistically significant interaction between the effects of perspective

(i.e., self or other) and sex (i.e., male or female), $F (1, 338) = 4.45$, $p = .036$, $\eta_p^2 = .01$,

95% CI [0.00, 0.05]. Male participants ($M = 7.41$, $SD = 2.53$) perceived that their same

sex peers ($M = 8.26$, $SD = 1.79$) were more comfortable with drinking than themselves, t

$(122) = 3.17$, $p = .002$, $d = 0.38$, 95% CI [0.20, 0.57], whereas female participants did

not, $t (216) = .943$, $p = .347$, $d = 0.08$, 95% CI [-0.05, 0.21]. Male participants exhibited

pluralistic ignorance by overestimating their peers' comfort with alcohol consumption;

however, female participants did not. Male participants reported more comfortability with

alcohol consumption overall.

Table 1

Average Rating of Self and Others' Comfort with Alcohol Consumption

Measure	Self	Other	Mean Difference	Cohen's d
Men				
M	7.41	8.26	0.85**	0.38 95% CI [0.20, 0.57]
SD	2.53	1.79		
Women				
M	7.05	7.22	0.17	0.08 95% CI [-0.05, 0.21]
SD	2.40	1.80		

Note. All ratings were made on 11-point scales (1 = *strongly disagree* and 11 = *strongly agree*); Possible range = 1 to 11. Higher scores indicate more comfortability with alcohol consumption.
* = p is equal to or less than .05, ** = p is equal to or less than .01, *** = p is equal to or less than .001.

Traditional gender role adherence. Male participants reported significantly higher overall averages in their own and same sex peers' traditional gender role adherence than female participants reported for themselves and their same sex peers (see Table 2), F (1, 333) = 105.99, $p < .001$, $\eta_p^2 = .24$, 95% CI [0.17, 0.31]. Overall, participants perceived that peers had higher adherence to traditional gender roles than they had themselves, F (1, 333) = 159.35, $p < .001$, $\eta_p^2 = .32$, 95% CI [0.24, 0.40]. There was a statistically significant interaction between the effects of perspective and sex, F (1, 333) = 18.78, $p < .001$, $\eta_p^2 = .05$, 95% CI [0.02, 0.11]. Male participants ($M = 40.78$, $SD = 13.76$) perceived that others ($M = 53.74$, $SD = 15.26$) endorsed more hypergender ideology than themselves, t (121) = 8.42, $p < .001$, d = 0.89, 95% CI [0.68, 1.10]. Female participants ($M = 32.60$, $SD = 8.79$) also perceived that others ($M = 38.94$, $SD = 11.24$) endorsed hypergender ideology more than themselves, t (216) = 8.16, $p < .001$, $d = 0.62$, 95% CI [0.48, 0.77]. Both male and female participants exhibited pluralistic ignorance by overestimating their peers' adherence to traditional gender roles, but male participants did so to a greater extent.

Table 2

Summative Ratings of Self and Others' Traditional Gender Role Adherence

Measure	Self	Other	Mean Difference	*Cohen's d*
Men				
M	40.78	53.74	12.96***	0.89 95% CI [0.68, 1.10]
SD	13.76	15.26		
Women				
M	32.60	38.94	6.34***	0.62 95% CI [0.48, 0.77]
SD	8.79	11.24		

Note. All ratings were made on 6-point scales (1 = *strongly disagree* and 6 = *strongly agree*); Possible range (sums) = 19 to 114. Higher scores indicate more adherence to traditional gender roles.

* = *p* is equal to or less than .05, ** = *p* is equal to or less than .01, *** = *p* is equal to or less than .001.

Sexist beliefs. Male participants reported significantly higher overall averages for their own and same sex peers' sexist beliefs than female participants reported for themselves and their same sex peers (see Table 3), $F (1, 195) = 27.48$, $p < .001$, $\eta_p^2 = .12$, 95% CI [0.05, 0.21]. Overall, participants perceived that peers held more sexist beliefs than they held themselves, $F (1, 195) = 5.12$, $p = .025$, $\eta_p^2 = .03$, 95% CI [0.00002, 0.08336]. There was not a statistically significant interaction between the effects of perspective and sex, $F (1, 195) = 2.57$, $p = .11$, $\eta_p^2 = .01$, 95% CI [0.00, 0.06]. Participants showed pluralistic ignorance by overestimating their peers' sexist beliefs overall, but there was no significant difference between self and other for women.

Table 3

Summative Ratings of Self and Other Student's Sexist Beliefs

Measure	Self	Other	Mean Difference	*Cohen's d*
Men				
M	55.69	58.60	2.91	0.25 95% CI [0.07, 0.43]
SD	11.93	11.01		
Women				
M	48.65	49.14	0.49	0.04 95% CI [-0.09, 0.17]
SD	12.87	12.21		

Note. All ratings were made on 5-point scales (0 = *strongly disagree* and 5 = *strongly agree*); Possible range (sums) = 0 to 110. Higher scores indicate more sexist beliefs. * = *p* is equal to or less than .05, ** = *p* is equal to or less than .01, *** = *p* is equal to or less than .001.

Rape myth acceptance. Male participants reported significantly more rape myth acceptance for themselves and their same sex peers than female participants reported for themselves or their same sex peers (see Table 4), $F (1, 257) = 64.28$, $p < .001$, $\eta_p^2 = .2$, 95% CI [0.12, 0.28]. Overall, participants perceived that their peers were more accepting of rape myths than themselves, $F (1, 257) = 37.25$, $p < .001$, $\eta_p^2 = .13$, 95% CI [0.06, 0.20]. There was a statistically significant interaction between the effects of perspective and sex, $F (1, 257) = 20.97$, $p < .001$, $\eta_p^2 = .08$, 95% CI [0.02, 0.14]. Male participants ($M = 2.09$, $SD = .61$) perceived that others ($M = 2.43$, $SD = .64$) were more accepting of rape myths than themselves, $t (83) = 5.89$, $p < .001$, $d = 0.53$, 95% CI [0.22, 0.84], whereas female participants did not, $t (175) = 1.43$, $p = .16$, $d = 0.11$, 95% CI [-0.04, 0.26]. Male participants, but not female participants, exhibited pluralistic ignorance by

overestimating their peers' rape myth acceptance, and men reported more rape myth

acceptance overall.

Table 4

Average Ratings of Self and Other Student's Rape Myth Acceptance

Measure	Self	Other	Mean Difference	*Cohen's d*
Men				
M	2.09	2.43	0.34***	0.54 95% CI [0.31, 0.77]
SD	.61	.64		
Women				
M	1.75	1.80	0.05	0.11 95% CI [-0.04, 0.26]
SD	.43	.46		

Note. All ratings were made on 5-point scales (1 = *strongly disagree* and 5 = *strongly agree*); Possible range = 1 to 5. Higher scores indicate more rape myth acceptance. * = *p* is equal to or less than .05, ** = *p* is equal to or less than .01, *** = *p* is equal to or less than .001.

Consent. Male participants reported more problematic beliefs related to obtaining

consent than did female participants overall, $F (1, 335) = 11.55$, $p < .001$, $\eta_p^2 = .03$, 95%

CI [0.01, 0.08]. Overall, participants perceived that their peers did not think obtaining

consent was as important as they did (see Table 5), $F (1, 335) = 47.07$, $p < .001$, $\eta_p^2 =$

.12, 95% CI [0.06, 0.19]. There was a statistically significant interaction between the

effects of perspective and sex, $F (1, 335) = 13.38$, $p < .001$, $\eta_p^2 = .04$, 95% CI [.01, .09].

Male students ($M = 4.07$, $SD = 1.18$) perceived that obtaining consent was more

important for themselves than their same sex peers ($M = 4.63$, $SD = .96$), $t (121) = 5.86$, $p < .001$, $d = 0.52$, 95% CI [0.33, 0.71]. Female students ($M = 3.91$, $SD = 1.05$) also perceived that obtaining consent was more important to themselves than it was for their same sex peers ($M = 4.08$, $SD = .93$), $t (215) = 3.07$, $p = .002$, $d = 0.17$, 95% CI [0.04, 0.31]. Both male and female participants exhibited pluralistic ignorance by overestimating their peers' disregard for obtaining consent, but male participants did so to a greater extent.

Table 5

Average Ratings of Self and Other Student's Consent

Measure	Self	Other	Mean Difference	*Cohen's d*
Men				
M	4.07	4.63	0.56***	0.52 95% CI [0.33, 0.71]
SD	1.18	.96		
Women				
M	3.91	4.08	0.17**	0.17 95% CI [0.04, 0.31]
SD	1.05	.93		

Note. All ratings were made on 7-point scales (1 = *strongly disagree* and 7 = *strongly agree*); Possible range = 1 to 7. Higher scores indicate more problematic beliefs about consent.
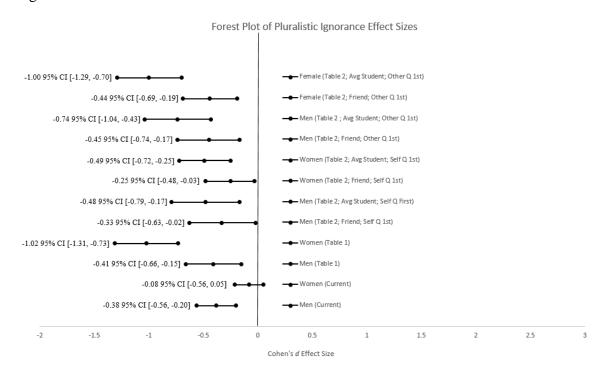* = p is equal to or less than .05, ** = p is equal to or less than .01, *** = p is equal to or less than .001.

Pluralistic Ignorance Change

Data analysis plan. In order to address the second research question, whether students in this study will be more or less accurate than students in previous research in estimating their same sex peers' behaviors and attitudes, the obtained effect sizes on pluralistic ignorance of alcohol consumption comfor were compared to the effect sizes of pluralistic ignorance on alcohol consumption comfortability found by Prentice and Miller (1993) in Table 1 and Table 2.

Effect size comparison. Previous research has reported larger effect sizes (i.e., $d =$ -0.25 to -1.02) for pluralistic ignorance than was found in the current study ($d =$ -0.08 to -0.41; see Figure 1). The smaller confidence intervals for effect sizes obtained in the current study could indicate smaller estimation errors—participants seem to show more agreement on their estimates for peers, which may suggest that they are more accurately perceiving an actual campus norm for alcohol.

Figure 1

Forest Plot of Pluralistic Ignorance Effect Sizes

Attitude and Behavior Change

Data analysis plan. In order to assess whether attitudes have changed, a series of one sample *t*-tests were used to compare current reports of alcohol comfort, hypergender ideology, benevolent sexism, hostile sexism, and rape myth acceptance to previous research. Self-reported scores on alcohol consumption for both men and women, traditional gender role adherence for men, sexism for both men and women, and rape myth acceptance for men were compared to self-reported attitudes from previous literature. Following this study's pre-registered plan for analyses, the following behavior

changes were evaluated for statistically significant changes using an alpha level of .01 and 99% confidence intervals.

      Comfortability with alcohol consumption. Men in the current sample self-reported higher alcohol consumption comfort than men in Prentice and Miller (1993; see Table 6), t (124) = 5.85, $p < .001$, $d = .52$, 99% CI [0.27, 0.77]. Female students in the current sample also reported being more comfortable with their drinking than female students in Prentice and Miller (1993), t (218) = 14.34, $p < .001$, $d = 0.97$, 99% CI [0.76, 1.82].

Table 6

Comparison of Self Alcohol Consumption Means

Measure	Current Sample	Prentice & Miller (1993)	Mean Difference	*Cohen's d*
Men				
M	7.36	6.03	1.33****	0.52 99% CI [0.27, 0.77]
SD	2.54	2.76		
Women				
M	7.03	4.68	2.35****	0.97 99% CI [0.76, 1.82]
SD	2.42	2.69		

Note. All ratings were made on 11-point scales (1 = *strongly disagree* and 11 = *strongly agree*); Possible range = 1 to 11. Higher scores indicate more comfortability with alcohol consumption.

* = p is equal to or less than .05, ** = p is equal to or less than .01, *** = p is equal to or less than .001, **** = p is less than or equal to .0001.

Traditional gender role adherence. Male students reported less hypergender ideology in the current sample than male students reported in Dardis and colleagues (2016; see Table 7), t (124) = -12.31, p < .001, d = -1.10, 99% CI [-1.39, -0.80].

Table 7

Comparison of Male Self Hypergender Ideology Means

Measure	Current Sample	Dardis et al. (2016)	Mean Difference	*Cohen's d*
Men				
M	40.50	55.87	-15.37****	-1.10 99% CI [-1.39, -0.80]
SD	14.00	16.38		

Note. All ratings were made on 6-point scales (1 = *strongly disagree* and 6 = *strongly agree*); Possible range (sums) = 19 to 114. Higher scores indicate more adherence to traditional gender roles. . * = *p* is equal to or less than .05, ** = *p* is equal to or less than .01, *** = *p* is equal to or less than .001, **** = *p* is less than or equal to .0001.

Rape myth acceptance. Male students reported less rape myth acceptance in the current sample than male students reported in Dardis and colleagues (2016; see Table 8), t (85) = -6.81, p < .001, d = -0.73, 99% CI [-1.05, -0.42].

Table 8

Comparison of Male Self Rape Myth Acceptance

Measure	Current Sample	Dardis et al. (2016)	Mean Difference	*Cohen's d*
Men				
M	45.94	55.79	-9.85****	-0.73 99% CI [-1.05, -0.42]
SD	13.41	18.10		

Note. All ratings were made on 5-point scales (1 = *strongly disagree* and 5 = *strongly agree*); Possible range = 1 to 5. Higher scores indicate more rape myth acceptance.
 * = *p* is equal to or less than .05, ** = *p* is equal to or less than .01, *** = *p* is equal to or less than .001, **** = *p* is less than or equal to .0001.

Sexist beliefs. Male students reported less benevolent sexism in the current sample than male students in Eaton and Matamala (2014; see Table 9), *t* (124) = -13.14, *p* < .001, *d* = -1.17, 99% CI [-1.47, -0.87]. Female students in the current sample also reported less benevolent sexism than female students in Eaton and Matamala (2014), *t* (218) = -23.79, *p* < .001, *d* = -1.61, 99% CI [-1.87, -1.34]. Male students in the current sample reported less hostile sexism than male students in Eaton and Matamala (2014), *t* (124) = -7.50, *p* < .001, *d* = -0.67, 99% CI [-0.93, -0.41]. Female students in the current sample also reported less hostile sexism than female students in Eaton and Matamala (2014), *t* (218) = -9.30, *p* < .001, *d* = -0.62, 99% CI [-0.81, -0.43].

Table 9

Comparison of Benevolent and Hostile Sexism

Measure	Current Sample	Dardis et al. (2016)	Mean Difference	*Cohen's d*
Men Benevolent				
M	25.20	35.14	-9.94****	-1.17 99% CI [-1.47, -0.87]
SD	8.50	7.66		
Women Benevolent				
M	21.92	34.12	-12.20****	-1.61 99% CI [-1.87, -1.34]
SD	7.60	9.30		
Men Hostile				
M	24.61	32.12	-7.51****	-0.67 99% CI [-0.93, -0.41]
SD	11.20	7.65		
Women Hostile				
M	19.96	26.18	-6.22****	-0.62 99% [-0.81, -0.43]
SD	9.99	9.21		

Note. All ratings were made on 5-point scales (0 = *strongly disagree* and 5 = *strongly agree*); Possible range (sums) = 0 to 110. Higher scores indicate more sexist beliefs. * = p is equal to or less than .05, ** = p is equal to or less than .01, *** = p is equal to or less than .001, **** = p is less than or equal to .0001.

Discussion

Students displayed pluralistic ignorance on alcohol consumption comfort, hypergender ideology, sexism, rape myth acceptance, and consent. Students in general reported that their peers engaged in and supported problematic attitudes and behaviors more than they did themselves, similar to previous research (e.g., Dardis et al., 2016;

Prentice & Miller, 1993). These overestimations of peer beliefs ranged from small effects (e.g., comfort with alcohol consumption) to large effects (e.g., traditional gender role adherence). Although I replicated the effects of pluralistic ignorance, pluralistic ignorance on alcohol comfort was lower than in previous research from the 1990's, at least in part because students reported more individual comfort with alcohol levels in the current study (e.g., Prentice & Miller, 1993).

Although all students tended to engage in pluralistic ignorance, there were several sex differences among the current sample. Specifically, male students reported more pluralistic ignorance than female participants on every attitude and behavior of interest. Furthermore, female students did not exhibit pluralistic ignorance when it came to estimating their same sex peers' attitudes and behaviors on comfort with alcohol consumption, sexism, or rape myth acceptance. It could be that female students may have exhibited less pluralistic ignorance because they talk to their female friends about these topics more often than men do, helping them to have a better sense of their peers' beliefs. The sex difference in pluralistic ignorance may also be due to personal relevance of the topics presented in the study. For instance, gender roles may be more personally relevant to women than to men, which could also lead to less variability in beliefs about peers' endorsement of traditional gender roles. Male students may overestimate peer beliefs because of the need for social acceptance and the salience of their peers' attitudes on concepts such as gender roles (e.g., Iwamoto, Cheng, Lee, Takamatsu, & Gordon, 2011). It is also likely that comfort with alcohol consumption, traditional gender roles (i.e., hypergender ideology), sexism, rape myths, and consent are topics that are more central

to interventions for men than they are for women in the current social landscape. The increased exposure to these topics and sexual assault statistics may skew male students' perceptions of their peers and cause them to incorrectly estimate what their same sex peers actually believe and do.

Students reported less problematic attitudes related to hypergender ideology, sexism, rape myth acceptance, and consent norms than students in previous research (Dardis et al., 2016; Eaton & Matamala, 2014; Prentice & Miller, 1993), although they reported more comfort with alcohol consumption compared to past research. Despite these decreases, male students still reported higher overall engagement in these problematic attitudes and behaviors than their female counterparts. Results suggest that overall, engagement in problem attitudes and behaviors may be decreasing, but that men are still at higher risk of engaging in these attitudes and behaviors than women.

Pluralistic Ignorance

In pluralistic ignorance, individuals privately reject but publicly support an attitude or behavior, which results in misperceptions where individuals over or underestimate support for an attitude or behavior (Miller & McFarland, 1987). Misperceptions often occur because many people comply with problematic norms without thinking carefully about the impacts of compliance, because it is often easier to accept the longstanding familiar norm than to go against it and risk social backlash (Miller & Prentice, 1994). Public behavior is also guided by perceived norms because of fear of losing social acceptance (Prentice & Miller, 1996). Individuals often engage in

pluralistic ignorance because they do not think critically and because they want to fit in with their peers.

Social Norm Theory (Berkowitz, 2004; 2010) directly explains the presence of pluralistic ignorance in the current study. The theory states that individuals may make mistakes when interpreting what they ought to do based on what their peers would condone (i.e., injunctive norms; Barriger & Vélez-Blasini, 2013) and change their behavior based on those inferences because they are more concerned with fitting in than with critically evaluating the attitude or behavior at hand. Secondly, the theory states that individuals often use their peers as reference points for how they should think and behave (Berkowitz, 2004; 2010) in order to fit in, receive social rewards, and avoid social punishments. In short, students likely exhibited tendencies consistent with pluralistic ignorance in the current study because of the desire to fit in with the perceived attitudes and behaviors of their peers.

Another plausible explanation may be that the differences are due to reporting biases. For instance, students may not actually think they are different from their peers but may have reported themselves as different to stand out, be socially desirable (e.g., altering responses to seem more sympathetic to issues of sexual assault), or provide the researcher with what they believed the researcher wanted. Although possible, this explanation for the results seems unlikely because participants were given a completely anonymous survey that they could complete at any time or place of their choosing. Furthermore, there was no interaction between the researcher and the participants other than an email asking for their participation, which likely helped control for demand

characteristics that may be present in typical laboratory data collection. This freedom and anonymity of participation would have provided participants with very little reason to make themselves "different" than their peers.

Another possibility is that students may be accurately reporting the norm and that participants who responded to the current survey were truly different than their peers (these students actually do not engage in these problem attitudes and norms but everyone else really does). It is possible that what the students in the current sample reported about the average UNI student is true, and the current respondents were outliers, the few students in the distribution that do not engage in these problem attitudes or behaviors. Of the students across the university who received an email to participate in the study, only 20.9% responded, and many of those were excluded from analyses because of less than careful completion of the survey. It may be that individuals who were especially likely to respond carefully to my survey were individuals who felt strongly about these topics and also believed them to an issue and held false consensuses of their peers.

It might also be that students are engaging in a false consensus. Generally, the data show participants believe that their peers endorse problem behaviors more so than themselves and in some cases those beliefs are less variable (e.g., comfort with alcohol consumption and sexism) than their own attitudes. The smaller variabilities found in these overestimations could indicate a false consensus effect where students see these behaviors as relatively common among their peer group. Students may be using this false consensus about their peers to feel better about themselves.

Change Over Time

        Although pluralistic ignorance still existed within the current sample, students did seem to exhibit smaller overestimations of their peers' engagement in problematic attitudes and behaviors than students in the early 90's. Specifically, effect sizes for comfort with alcohol consumption were smaller than in Prentice and Miller (1993). The current sample of students displayed pluralistic ignorance on comfortability with alcohol consumption but were more accurate in their estimations than in Prentice and Miller (1993). However, the lower levels of pluralistic ignorance could also be due to sample differences. Students in the current sample were from a Midwestern public university, whereas the comparison group was from a private Ivy league institution; student norms as well as the student body composition may have led to differing comfort levels with alcohol consumption. Although regional differences in alcohol use and attitudes tend to be small (Klein & Pittman, 1993), people in the Midwest and East Coast have higher populations who had more than five drinks in the past month (Kerr, 2010).

        There may have also been differences because of different interpretations of the measure. Students were asked, "*How comfortable do you feel with the alcohol drinking habits of students at the University of Northern Iowa?*", which was taken from the original wording from Prentice and Miller (1993) in order to make a direct comparison. However, the question asked about comfort, rather than drinking levels. It may be that students are drinking as much or more in this sample than in Prentice and Miller's, but that students are more "comfortable" with those high levels now. Alcohol consumption may be more normal on college campuses than it was in the early 90's.

Behavior Changes

Overall, students reported significantly fewer problematic attitudes and behaviors than they had in previous years (i.e., 1993 & 2016). The decrease in problematic attitudes and behaviors, such as comfort with alcohol consumption, hypergender ideology, sexism, and rape myth acceptance may mean that social movements, such as #MeToo, have provided students with alternatives to these problematic attitudes and behaviors. In the wake of #MeToo, movements like Its On Us and others have targeted college students directly with programming, advertisements, and merchandise to decrease sexual assault and create safer environments for students through social change. The availability of information and normative feedback to students who come into contact with these movements may explain decreases in problem behaviors. Changes in attitudes and behavior may also indicate that college campus administrators are doing more to promote healthier environments for their students by including more and better tactics for targeting problem behavior (e.g., strategic sexual assault prevention plans, policies). For example, many institutions now include mandatory sexual assault prevention programs prior to enrollment as well as a battery of presentations and resources during orientation and regular reminders throughout the year due to Clery Act guidelines passed in 1990. Furthermore, universities have been pushed to go further than simply treating the symptoms of sexual assault (i.e., working with survivors; Fox & Fowler, 2015) and have now taken steps to prevent problem behaviors before they arise.

Other potential reasons for the decline in self-reported problematic attitudes and behaviors may be that college students are not as similar across colleges and universities

as people suspect they are. Students in the current study may significantly differ from the type of student who attended Princeton or even another Midwestern university. It may also be that students in the current sample were particularly motivated to respond to the survey and those same students would normally be considered a non-representative sample of the student population at UNI. Although these explanations are plausible, they seem unlikely as many students agree that these attitudes and behaviors are problematic (e.g., Kamdar, Kosambiya, Chawada, Verma, & Kadia, 2017).

Limitations

The current study only examined students at one Midwestern regional university, which may limit generalizability. The current sample was largely comprised of White male and female students and had very low representation of other ethnicities. Furthermore, Midwestern students may differ in personalities, political orientations, and perceptions from those in other regions (Rentfrow, 2010; Rentfrow, Gosling, & Potter, 2008). The final sample was comprised of only a few hundred students when several thousand were contacted (20.9% response rate), which also suggests that there may have been selection bias. There is some evidence that students who respond to voluntary surveys may perceive the topics as more important than the average student and be less likely to report engagement in the problem behaviors while reporting their peers would engage in them more (e.g., Khazaal et al., 2014). Furthermore, the skews in the current study data suggest that most participants were particularly *good* in the sense that they believed these attitudes and behaviors were problematic and did not endorse them like they believed their peers to. It is possible that participants who self-selected into the

current study are not representative of their typical college population; this possibility could mean that participants were reporting on a very real difference between themselves and their peers, although it is also possible that they were showing pluralistic ignorance. Despite some of these limitations, the composition of the sample was similar to previous research that used convenience samples (Dardis et al., 2016; Prentice & Miller, 1993), and in the case of Dardis et al. (2016), a Midwestern university sample. Dardis and colleagues (2016) also recruited participants through a self-selection format by using an introductory psychology participant pool and found similar results for pluralistic ignorance. Both of these studies also studied primarily White male and female college students. Although the current sample may be limited in its generalizability, it yielded similar results to previous research. Furthermore, it should be noted that attitudes and behaviors across university and college students are likely more similar than they are different. In a recent study of college students from various majors and several universities, over 90% of students agreed that sexual assault was wrong and that a 7-year imprisonment for committing sexual assault is not long enough (Kamdar et al., 2017).

Additionally, I cannot claim that misperception of norms necessarily lead to perpetration of assault; I can only speculate based on previous literature that the presence of pluralistic ignorance on comfortability with alcohol consumption, hypergender ideology, sexism, rape myth acceptance, and consent is indicative of potential sexual misconduct and assault (Cohen & Shotland, 1996; Dardis et al., 2016; Eaton & Matamala, 2014). Despite this limitation, it is clear that salient norms are important for predicting and changing behavior. Individuals have friends and are members of groups

and part of larger communities. Each of these groups have their own norms and these norms effect how people think and behave. Dynamic impact theory (Latané, 1996) also supports this notion and suggests that individuals are often influenced by the people they spend the most time with. For example, students who lived in the same residence hall floor developed more similar attitudes (Cullum & Harton, 2007) and behaviors (Schwab, Harton, & Cullum, 2014) across a semester. This similarity suggests that students are influenced by their social connections (e.g., their close peers or students in their immediate vicinity).

<u>Future Research</u>

Although several behaviors related to sexual assault and misconduct were assessed in this proposal, future research should assess other related variables such as normative language used by students and willingness to intervene to stop problematic behaviors. Providing additional information on which norms are changing and which ones are not will provide future interventions targeted areas for improvement.

The current study used a cross-sectional technique to investigate changes in pluralistic ignorance, which can be insightful, but is limited in the information it provides. Using a longitudinal design may give a more explicit indication of changing social norms in one group and provide correlational evidence for changes in norms that correspond with social movements. If longitudinal studies investigate these issues, they may also provide insight into the relationship between accurate and inaccurate perceptions of peer norms and how they are related to sexual assault perpetration.

Future research on pluralistic ignorance should also consider cross-gender differences (male perceptions of female view and vice versa) in perceptions. Perceptions of what the other genders believe is often a contributing factor in the way students behave (Abbey, 1987; Abbey & Harnish, 1995; Lambert et al., 2003). For instance, men behave in sexual ways toward women when they perceive that it is what women want (Abbey & Harnish, 1995). Most of these misperceptions are handled swiftly and without problem, but in some cases these misperceptions are linked to men's perpetration of sexual assault and sexual harassment (e.g., Abbey, 1987). Future research should investigate why men seem to engage in pluralistic ignorance more so than women as well as why they seem to be more likely to change their behaviors to fit the perceived norm as shown in previous research (e.g., Prentice & Miller, 1993).

Implications

The current study's findings are consistent with Social Norms Theory. According to Social Norms Theory (Berkowitz, 2004; 2010), individuals' perceptions of their peers' attitudes toward sexual assault will influence their own attitudes and behaviors (Fabiano et al., 2003), and individuals are likely to make mistakes in their perceptions. The current study examined errors made by students and provided evidence that is consistent with the theory and the idea that students often make mistakes in their perceptions.

Students in the current sample overestimated their peers' engagement in problem attitudes and behaviors, which suggests that problematic attitudes and behaviors may still persist. However, reports of engagement in problematic attitudes and behaviors, with the exception of alcohol, had decreased since previous investigations. The current decrease in

behavior despite the presence of pluralistic ignorance may indicate that attitudes and behaviors are influenced by other groups that are not the average students on a college campus. Perhaps students are influenced by more salient closer peer norms and are not as influenced by perceived norms of the average student.

These discrepancies have implications for universities and their administrations as well. Many universities use social norm approaches in their bystander intervention programs and even more rely on providing students with corrective feedback to students who may hold problematic attitudes or engage in problematic behaviors that perpetrate undesired norms. The current findings suggest that these are strong interventions but can likely be improved. Prevention programs that rely on norm feedback should target groups by providing more accurate descriptive behaviors (i.e., what students do) as well as injunctive norms (i.e., what students approve of and do not approve of). Previous findings have indicated that individuals who perceive higher rates of problematic attitudes and behaviors among their peers are more likely to engage in those attitudes and behaviors to avoid deviation from the norm (Paul & Gray, 2010; Paul, Gray, Elhai, & Davis, 2009); Combining these two norms (i.e., descriptive & injunctive) in a targeted program may prove useful in correcting pluralistic ignorance. If it is made clear that students do not engage in the problem attitudes and behaviors and that they strongly do not endorse those behaviors, these interventions will be much more impactful. Furthermore, universities may consider tailoring programs toward male students as they have been shown, in the current study and in previous literature, to overestimate their peers' attitudes and behaviors more than so women, as well as to be more likely to change their attitudes and

behaviors to fit the perceived norm (Prentice & Miller, 1993). When tailoring programs toward men it is important to use an influential reference group that strongly does not endorse these problem behaviors and attitudes in order to make the intervention effective.

Although this study did not directly test the impact of social movements on changes in pluralistic ignorance or behavior change, there are also some implications for social movements such as #MeToo and others. Social movements have largely focused on changing problematic norms by providing information on descriptive norms, much like universities have. The current research suggests that students are not actually engaging in the attitudes and behavior, but that they believe their peers do support them. This finding suggests that although decreases in self-report of these problem behaviors is a necessary step to ending sexual violence, it is not sufficient. Social campaigns and interventions have yet to completely alleviate misperceptions of peer norms, and as long as these misperceptions persist, students may feel pressure to engage in problematic behaviors regardless of their self-reports. Social movements may be an effective avenue for behavior change but social movements should also focus on the dissemination of peer beliefs concerning important norms to alleviate social pressures to engage in problem behavior.

<div align="center">Conclusion</div>

In conclusion, students are still engaging in pluralistic ignorance but there is hope for meaningful change. Despite the presence of pluralistic ignorance, students reported pluralistic ignorance to a lesser degree and reported less problematic attitudes and behaviors. The declines visible in the current study may, in part, be due to social

movements such as #MeToo that have brought sexual assault to the forefront of public concern. Although it is unclear to what effect social movements and interventions have had on the changes documented in the current study, it is more clear what future steps need to be taken to address sexual assault on college campuses; misperceptions of the norms must be addressed. Knowing that students report less engagement in these attitudes and behaviors is a step in the right direction, however, because pluralistic ignorance still exists on these topics, these norms may continue to thrive. Future interventions should address both descriptive and injunctive norms in their prevention efforts. If these misperceptions can be eliminated, students will be able to more easily change social norms on college campuses for the better.

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APPENDIX A

RECRUITMENT MESSAGE

Initial email:

Re: UNI student in need of participants for masters thesis

Fellow University of Northern Iowa Student,

I am a graduate student at UNI. I am doing my masters thesis on attitudes and behaviors of college students, and your email address was randomly chosen to help represent UNI students. I know the semester is really busy for you, but I would greatly appreciate your taking about 10 minutes to respond to this anonymous survey. You can find out more at the link below.

LINK

Thank you so much for your help!

Evan Stilgenbauer

M. A. Candidate, Psychology, Social Emphasis

Graduate Research Assistant

University of Northern Iowa

stilgene@uni.edu

Follow up email:

Re: UNI student in need of participants for masters thesis

Fellow University of Northern Iowa Student,

I sent you an email last week about a study I'm doing concerning college students'
attitudes and behaviors for my masters thesis here at UNI. If you have already completed
the survey, thank you! If you have yet to complete it, there is still time and I am still in
need of your help. It will only take around 10 minutes to respond to the anonymous
survey. You can find out more at the link below.

LINK

I hope your semester is going well. I appreciate your help!

Evan Stilgenbauer

M. A. Candidate, Psychology, Social Emphasis

Graduate Research Assistant

University of Northern Iowa

stilgene@uni.edu

APPENDIX B

UNIVERSITY OF NORTHERN IOWA INFORMED CONSENT

Project Title: Attitudes, Behaviors, and Perceptions of College Students

Investigators: Evan Stilgenbauer, & Helen C. Harton

Invitation to Participate: You are invited to participate in a research study assessing attitudes, behaviors, and perceptions of students on college campuses. The following information is provided to help you make an informed decision about whether or not to participate.

Nature and Purpose: The purpose of this study is to evaluate attitudes, behaviors and perceptions of current college students.

Explanation of Procedures: You will be asked to complete an online survey. The survey will contain questions about your thoughts on attitudes and behaviors about alcohol consumption, gender roles, and behaviors. You will also be asked to share your beliefs and what you think the average student believes. Participation in this study should take no more than XX minutes.

Discomfort and Risks: There are minimal risks to your participation in this study. You may experience some minor feelings of distress or discomfort thinking about your attitudes and behaviors related to these topics.

Benefits: Your participation will contribute to the current social psychology literature on the behaviors and attitudes of college students.

Confidentiality: Your participation in this study will remain anonymous. Your confidentiality will be maintained to the degree permitted by the technology used.

Specifically, no guarantees can be made regarding the interception of data sent via the Internet by any third parties. The summarized findings with no identifying information may be published in an academic journal or presented at a local or national conference. The data may also be made public in data repository. IP address identification will be removed from the data collected.

Right to Refuse or Withdraw: Your participation is completely voluntary. You are free to withdraw from this study, leave out any questions, or choose not to participate without any penalties.

Questions: If you have any questions, or wish to have further information about your participation in this study or further information about the study in general, please contact Evan L. Stilgenbauer at stilgene@uni.edu, or Helen C. Harton at helen.harton@uni.edu. For questions about your rights as a research participant, you can contact the UNI IRB at anita.gordon@uni.edu.

Agreement:

I am fully aware of the nature and extent of my participation in this project as stated above and the possible risks arising from it. I hereby agree to participate in this project. I am 17 years of age or older and a UNI student, and I consent to participate in this project.

• I agree to participate in this study

• I do not agree to participate in this study

APPENDIX C

GENDER QUESTIONS

Please indicate the gender assigned to you at birth:

- Male

- Female

Please indicate the gender you most identify with:

- Male

- Female

- Gender non-binary

- Genderqueer

- Not listed [Text box]

APPENDIX D

RAPE MYTH ACCEPTANCE WARNING MESSAGE

The following section asks about your agreement with beliefs related to rape. If you feel
that this will be upsetting to you, you can skip this section. If you do not feel comfortable
completing the following section click "skip" below. If you wish to continue please click
"continue" below.

APPENDIX E

ALCOHOL CONSUMPTION QUESTIONNAIRE

(PRENTICE & MILLER, 1993)

1 = not at all comfortable to 11 = very comfortable

1. How comfortable do you feel with the alcohol drinking habits of students at the
   University of Northern Iowa?

2. How comfortable does the average (same sex) University of Northern Iowa
   undergraduate feel with the alcohol drinking habits of students at Northern Iowa?

APPENDIX F

HYPGENDER IDEOLOGY SCALE—SHORT FORM

(HAMBURGER ET AL., 1996)

Instructions: Please indicate how much (you/average same sex student at UNI) agree(s) with the following items:

1 = strongly agree to 6 = strongly disagree

1. A true man knows how to command others.

2. The only thing a lesbian needs is a good, stiff cock.

3. Men should be ready to take any risk, if the payoff is large enough.

4. *No wife is obliged to provide sex for anybody, even her husband.

5. Women should break dates with female friends when guys ask them out.

6. Men have to expect that most women will be something of a prick-tease.

7. A real man can get any woman to have sex with him.

8. Women instinctively try to manipulate men.

9. Get a woman drunk, high, or hot and she'll let you do whatever you want.

10. Men should be in charge during sex.

11. It's okay for a man to be a little forceful to get sex.

12. Women don't mind a little force in sex sometimes because they know it means they must be attractive.

13. *Homosexuals can be just as good at parenting as heterosexuals.

14. *Gays and lesbians are generally just like everybody else.

15. Pickups should expect to put out.

16. If men pay for a date, they deserve something in return.

17. Effeminate men deserve to be ridiculed.

18. Any man who is a man needs to have sex regularly.

19. *I believe some women lead happy lives without having male partners.

APPENDIX G

AMBIVALENT SEXISM INVENTORY

(GLICK & FISKE, 1996)

Instructions: Please indicate how much (you/average same sex student at UNI) agree(s) with the following items:

0 = disagree strongly to 5 = agree strongly

1. No matter how accomplished be is, a man is not truly complete as a person unless he has the love of a woman.

2. 2. Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality."

3. *In a disaster, women ought not necessarily to be rescued before men.

4. Most women interpret innocent remarks or acts as being sexist.

5. Women are too easily offended.

6. *People are often truly happy in life without being romantically involved with a member of the other sex.

7. *Feminists are not seeking for women to have more power than men.

8. Many women have a quality of purity that few men possess.

9. Women should be cherished and protected by men.

10. Most women fail to appreciate fully all that men do for them.

11. Women seek to gain power by getting control over men.

12. Every man ought to have a woman whom he adores.

13. *Men are complete without women.

14. Women exaggerate problems they have at work.

15. Once a woman gets a man to commit to her, she usually tries to put him on a tight leash.

16. When women lose to men in a fair competition, they typically complain about being discriminated against.

17. A good woman should be set on a pedestal by her man.

18. *There are actually very few women who get a kick out of teasing men by seeming sexually available and then refusing male advances.

19. Women, compared to men, tend to have a superior moral sensibility.

20. Men should be willing to sacrifice their own well being in order to provide financially for the women in their lives.

21. *Feminists are making entirely reasonable demands of men.

22. Women, as compared to men, tend to have a more refined sense of culture and good taste.

APPENDIX H

UPDATED ILLINOIS RAPE MYTH ACCEPTANCE SCALE

(PAYNE, LONSWAY, & FITZGERALD, 1999)

Instructions: Please indicate how much (you/average same sex student at UNI) agree(s) with the following items:

1 = strongly disagree to 5 = strongly disagree

1. If a girl is raped while she is drunk, she is at least somewhat responsible for letting things get out of hand.

2. When girls go to parties wearing slutty clothes, they are asking for trouble.

3. If a girl goes to a room alone with a guy at a party, it is her own fault if she is raped.

4. If a girl acts like a slut, eventually she is going to get into trouble.

5. When girls get raped, it's often because the way they said "no" was unclear.

6. If a girl initiates kissing or hooking up, she should not be surprised if a guy assumes she wants to have sex.

7. When guys rape, it is usually because of their strong desire for sex.

8. Guys don't usually intend to force sex on a girl, but sometimes they get too sexually carried away.

9. Rape happens when a guy's sex drive goes out of control.

10. If a guy is drunk, he might rape someone unintentionally.

11. It shouldn't be considered rape if a guy is drunk and didn't realize what he was doing.

12. If both people are drunk, it can't be rape.

13. If a girl doesn't physically resist sex—even if protesting verbally—it can't be considered rape.

14. If a girl doesn't physically fight back, you can't really say it was rape.

15. A rape probably doesn't happen if a girl doesn't have any bruises or marks.

16. If the accused "rapist" doesn't have a weapon, you really can't call it rape.

17. If a girl doesn't say "no" she can't claim rape.

18. A lot of times, girls who say they were raped agreed to have sex and then regret it.

19. Rape accusations are often used as a way of getting back at guys.

20. A lot of times, girls who say they were raped often led the guy on and then had regrets.

21. A lot of times, girls who claim they were raped have emotional problems.

22. Girls who are caught cheating on their boyfriends sometimes claim it was rape.

APPENDIX I

SEXUAL CONSENT SCALE—REVISED SEXUAL CONSENT NORMS

(HUMPHREYS & HEROLD, 2007)

Instructions: Please indicate how much (you/average same sex student at UNI) agree(s) with the following items:

1 = strongly disagree to 7 = strongly agree

1. I think that obtaining sexual consent is more necessary in a new relationship than in a committed relationship.

2. I think that obtaining sexual consent is more necessary in a casual sexual encounter than in a committed relationship.

3. I believe that the need for asking for sexual consent decreases as the length of an intimate relationship increases.

4. I believe it is enough to ask for consent at the beginning of a sexual encounter.

5. I believe that sexual intercourse is the only sexual activity that requires explicit verbal consent.

6. I believe that partners are less likely to ask for sexual consent the longer they are in a relationship.

7. If consent for sexual intercourse is established, petting and fondling can be assumed

APPENDIX J

DEMOGRAPHICS

Please indicate your age:

- (17-99)

Please indicate your academic year in school:

- Freshman

- Sophomore

- Junior

- Senior

- Other [Text box]

Please indicate your political orientation:

- Republican

- Democrat

- Unaffiliated

- I don't know

Please indicate the sexual orientation you most identify with:

- Heterosexual

- Bisexual

- Pansexual

- Asexual

- Homosexual

- Not listed [Text box]

Please indicate with which ethnic group or groups you most identify:

- American Indian/Native American

- Asian or Asian American

- Black or African American

- Hispanic or LantinX

- Pacific Islander

- White or Caucasian

- Prefer not to answer

- Not listed [Text box]

Are you a citizen of the United States of America?

- Yes

- No

How honest were you in completing the survey?

- Not all honest

- Somewhat honest

- Mostly honest

- Completely honest

Is there any reason your data should not be used?

- Yes

- No [added text box for explanation]

Comments for researcher

- [open text box]

APPENDIX K

DEBRIEFING SCRIPT

Thank you for participating in this study. The goals of this study are a) to compare student attitudes and behaviors to those in past research, to see to whether they may have changed; and b) to see what students perceive the norms about these attitudes and behaviors to be. Research has shown that sometimes people may go along with behaviors that they disapprove of, because they believe, sometimes wrongly, that other students believe these behaviors are the correct way to act. Combatting misperceptions that behaviors such as heavy drinking or not asking for consent for sexual activity are the norm among college students is an important component of combatting problematic behaviors that may lead to sexual assault on college campuses.

Please do not discuss this study with any of your classmates that could potentially be participating in this study – this is very important in regards to the validity of the study. If you have any questions about the research you may contact Evan L. Stilgenbauer at stilgene@uni.edu.

If you feel you are having trouble with alcohol, harassment, anxiety, or have other concerns you wish to talk to a confidential professional about please contact the University of Northern Iowa Counseling Center at (319) 273-2676; basic services are free for enrolled students. For 24/7 urgent crisis care you may also contact the Counseling Center at 319-273-2676 and press 2 to speak to a crisis counselor or text HOME to 741741 to speak to a trained professional about any concerns you may have. If you have experienced sexual assault and are seeking counseling, you can contact the Riverview

Center at 888-557-0310. If you wish to file a formal complaint for sexual assault or

harassment, please contact that the Title IX Office at 319-273-2846.