From Gender Microaggressions to Sexual Assault: Measure Development and Preliminary Trends Among Undergraduate Women

by

Rachel Elizabeth Gartner

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Committee in charge:

Professor Paul R. Sterzing, Chair
Professor Anu M. Gomez
Professor Julianna Deardorff

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Abstract

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Sexual violence is a substantial problem on college campuses, particularly for undergraduate women who consistently report higher rates of nonconsensual sexual contact and sexual harassment during their college careers when compared to the general student population. A wide range of mental and behavioral health concerns are associated with sexual violence, such as depression, posttraumatic stress disorder, problem drinking, and missing school. A notable gap in the current campus sexual violence literature is its exclusion of chronic gender-based slights and invalidations known as gender microaggressions. Gender microaggressions are defined as intentional and unintentional slights, insults, and invalidations based on gender and most frequently targeting women.

Presently, we lack basic information on the types, frequency, location, and impact of gender microaggressions on college campuses. This dearth of information leaves policy makers, administrators, educators, and researchers ill equipped to confront the causes of campus sexual violence. To address these gaps, this project asks the following research questions: (1) What are the types of gender microaggressions experienced by undergraduate women? (2) What are the past year frequencies of gender microaggressions, sexual harassment, and sexual assault for undergraduate women? (3) Where do gender microaggressions, sexual harassment, and sexual assault occur most frequently for undergraduate women? (4) What is the association between gender microaggressions and mental and behavioral health?

Three studies were executed to answer these questions. First, a qualitative focus group study ($N = 23$) with UCB undergraduate women was conducted and directed content analysis employed to examine gender microaggressions themes. Second, a cross-sectional measure design and validation study ($N = 220$) was conducted, implementing exploratory factor analysis (EFA) and bivariate correlations to take the first steps in validating a gender microaggressions measure for undergraduate women. Third, a cross-sectional quantitative study ($N = 220$) was carried out to examine gender microaggressions' frequency, location, and correlates. This study began by employing chi-square tests and logistic regression to examine differences in microaggressions, sexual harassment, and sexual assault frequency by race and sexual orientation. The study then used descriptive percentages to explore locations where gender microaggressions, sexual harassment and sexual assault occur. Finally, multiple linear and logistic regressions were used

to identify relationships between gender microaggressions and mental and behavioral health variables when controlling for sexual harassment and sexual assault.

For Research Question 1, the qualitative study identified four undergraduate gender microaggressions themes: (1) Assumption of Traditional Gender Roles, (2) Presumed Incompetence (3) Environmental Invalidations, and (4) Sexual Objectification. Important developmentally and contextually specific sub-themes emerged, adding nuance and specificity to the taxonomy for undergraduate women. Three sub-themes were noted under Assumption of Traditional Gender Roles: (1) Caretaker/Nurturer, (2) Women Dominated Occupations, and (3) Weak/"Damsel in Distress." In addition, Male Dominance emerged as a sub-theme of Presumed Incompetence and University/Infrastructure Invalidations emerged as a sub-theme of Environmental Invalidations. The project employed a measure design process and used EFA to identify the measure's latent factor structure. The Undergraduate Gender Microaggressions Scale (UGMS) emerged with 18-items and four factors. The factors were (a) Presumed Incompetent (Factor 1 – 8 items), being treated like you do not understand or do not have the capacity to make a substantial contribution; (b) Gender Role Stereotypes (Factor 2 – 4 items), being expected to serve as caretaker or take on administrative roles; (3) Male Dominance (Factor 3 – 4 items), experiencing situation in which men are expected to hold power or serve as the point of reference and women are inferior; and (d) Institutional Invalidations (Factor 4 – 2 items).

For Research Question 2, the frequencies of gender microaggressions, sexual harassment, and sexual assault were examined. Gender microaggressions were ubiquitous, with nearly every participant (99.6%) experiencing at least one form of gender microaggressions. The majority of the sample (87.3%) experienced sexual harassment, with sexual assault experienced less frequently (37.7%). When examining difference in frequency across race and sexual orientation, Asian undergraduate women had lower odds of upper quartile gender microaggressions, sexual harassment, and sexual assault scores. No other significant differences were noted by race or sexual orientation.

Research Question 3 was exploratory and examined the locations where gender microaggressions, sexual harassment, and sexual assault occurred on campus. Gender microaggressions were most likely to occur in classrooms and lecture halls, campus grounds, and on social media while sexual harassment was most likely to occur on campus grounds, in classroom and lecture halls and at fraternity and sororities. Sexual assault was a less frequent experience but was most reported in off campus housing and fraternity and sororities.

For Research Question 4, gender microaggressions had a significant positive relationship to depression, stress, and posttraumatic stress symptoms when controlling for sexual harassment, sexual assault and relevant demographic variables. Gender microaggressions were also positively related to school avoidance and alcohol use when controlling for sexual harassment, sexual assault, and relevant demographic variables.

This dissertation sought to more clearly operationalize and measure sexual violence and gender discrimination within college communities. The refinement of a context (i.e., college campus) and developmentally specific (i.e., undergraduate) gender microaggressions measure is the first step to understand the role of subtle gender discrimination in both sustaining sexually violent cultures and as antecedents to legally actionable sexual offenses for adolescents and emerging adults. Increasing knowledge of gender microaggressions' prevalence and location has the potential to elevate awareness among administrators, funders, practitioner, and students. Disrupting gender microaggressive climates holds the possibility of improving undergraduate

women's mental health while also creating more positive environments for women to engage fully with the university resources designed to support their success.

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LIST OF ABBREVIATIONS
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Abbreviation	Meaning
95% CI	95% Confidence Interval
AOR	Adjusted Odds Ratio
AUDIT	Alcohol Use Disorders Identification Test
CESD-10	Center for Epidemiologic Studies Depression Scale – 10
EAB	Expert Advisory Board
EFA	Exploratory Factor Analysis
GSI	Graduate Student Instructor
IRB	Institutional Review Board
KMO	Kaiser-Meyer-Olkin
PAF	Principal Axis Factoring
PI	Principal Investigator
PSS-4	Perceived Stress Scale – 4
SDRS-5	Social Desirability Response Set – 5
SEQ	Sexual Experiences Questionnaire
SES-SFV	Sexual Experiences Survey- Short Form Version
SM	Sexual Minority
STEM	Science Technology Engineering and Math
UCB	University of California, Berkeley
UGMS	Undergraduate Microaggressions Scale
UGMS-p	Undergraduate Microaggressions Scale – preliminary
URM	Under Represented Minority

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This study was brought to life by the open, honest, brave participation of Berkeley's undergraduate women. They shared their stories in focus groups, gave advice in cognitive interviews, and provided insight into their experiences through the online survey. I am deeply thankful for their support of my work and their daily acts of resilience and resistance.

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CHAPTER 1: INTRODUCTION

Background and Significance

Sexual violence is a substantial problem on college campuses, particularly for undergraduate women who consistently report higher rates of nonconsensual sexual contact (23.1% v. 11.7%) and sexual harassment (61.9% v. 47.7%) during their college careers when compared to the general student population (Cantor et al., 2015). A wide range of negative mental, physical, and behavioral health outcomes are associated with sexual violence such as depression (Campbell, Dworkin, & Cabral, 2009; Kilpatrick et al., 2003), posttraumatic stress disorder (Black et al., 2011; Campbell et al., 2009; Kilpatrick et al., 2003), problem drinking (Kilpatrick et al., 2003; Wolff, Rospenda, & Colaneri, 2016), and missing school/work (Black et al., 2011; Hill & Silva, 2005).

College campuses represent a unique social and locational context for sexual violence as students often live, study, work, and socialize in their campus community. Students report experiencing sexual harassment across campus contexts (e.g., student housing, 39%; common areas of campus buildings, 24%; classrooms and lecture halls, 20%; Hill & Silva, 2005). Current policies and practice conventions lack the primary prevention focus necessary to tackle campus sexual violence and create safer campus communities. Federal legislation has been instrumental in developing the infrastructure to hold colleges and universities accountable for sexual violence (Richards & Kafonek, 2016); however, the focus on post-assault disciplinary action has shaped the conversation to emphasize legal compliance over campus climate.

Purpose of the Project

A substantial gap in the current campus sexual violence literature is its exclusion of chronic, "low-severity" forms of gender-based slights and invalidations known as gender microaggressions. Gender microaggressions are defined as intentional and unintentional insults, invalidations, and assaults based on gender and most frequently targeting women (Sue, 2010). The literature on campus sexual violence has historically focused on sexual assault and sexual harassment, excluding gender microaggressions despite their potential role in shaping climate and culture on college campuses (Black et al., 2011; DeMatteo, Galloway, Arnold, & Patel, 2015; Hill & Silva, 2005; Koss, Gidycz, & Wisniewski, 1987; Sinozich & Langton, 2014). The exclusion of gender microaggressions (a) supports assumptions that chronic gender-based slights and invalidations are less harmful than less frequent acts of sexual violence, (b) fosters environments that may ignore or condone gender microaggressions, inadvertently normalizing cultures of sexual violence against women, and (c) hinders the identification of upstream prevention strategies targeting gender microaggressions as potential antecedents to legally actionable campus sexual violence (Gartner & Sterzing, 2016).

The challenges to understanding gender microaggressions on college campuses are threefold. First, definitional and conceptual ambiguity exists for microaggressions, as a construct (Lilienfeld, 2017). To increase the rigor of scientific investigation, gender microaggressions scholars need to increase or clarity in how the construct is operationalized. Second, the field lacks valid and reliable gender microaggressions measures and what few measures do exist have limited psychometric testing and unclear norming procedures (Lau & Williams, 2010). Third, limited developmental and contextual focus has been brought to gender microaggressions research. Traditional undergraduate students enter emerging adulthood with corresponding

individuation and identity development milestones in a new context that frequently separates them from their nuclear families, changes their living structure, and has new social expectations (Arnett, 2011).

This project addresses a limitation in current campus sexual violence research by examining gender microaggressions as a distinct form of gender-based discrimination and building the research base to examine them as potential environmental antecedents of legally actionable forms of campus sexual violence. To address this gap in the campus sexual violence literature, the proposed project will identify (a) the types of gender microaggressions experienced by undergraduate women, (b) the frequency of gender microaggressions, sexual harassment, and sexual assault, (c) the locations of campus-based gender microaggressions, sexual harassment, and sexual assault, and (d) the psychosocial correlates of campus-based gender microaggressions controlling for experiences of sexual harassment, and sexual assault.

Significance for Social Work Research and Practice

The primary contribution of this project is the development of a gender microaggressions measure for undergraduate women and an examination of preliminary trends in gender microaggressions' frequency, location, and psychosocial correlates as relates to sexual violence. A validated gender microaggressions measure for undergraduate women provides a tool for multi-campus examinations of institution-level differences in microaggressions and sexual violence. It could also allow for a measure of gender microaggressions to be integrated into campus climate surveys, which are already widely used on college campuses. In addition, understanding gender microaggressions' roles, as potential environmental antecedents to sexual violence has substantial implication for approaches to primary prevention.

This project has implications for how we measure and understand sexual violence, allocate resources to address discriminatory and sexually violent campus climates, and develop programming to engage universities in primary prevention. These findings may help inform future federal- and state-level policies related to primary prevention of sexual violence on college campuses. At the university level, it may change how administrators fund the primary prevention of sexual violence and how practitioners are able to execute prevention and intervention programming.

Research Questions

1. What are the types of gender microaggressions experienced by undergraduate women?
2. What are the frequencies of gender microaggressions, sexual harassment, and sexual assault for undergraduate women over the past year?
    a. Do these frequencies differ by race and sexual orientation?
3. Where do gender microaggressions, sexual harassment, and sexual assault occur most frequently for undergraduate women over the past year?
    a. Do these locations differ by type of campus sexual violence (i.e., gender microaggressions, sexual harassment, sexual assault)?
4. What is the association between gender microaggressions and mental and behavioral health (i.e., posttraumatic stress, depression, problem drinking, and education and mobility effects), while controlling for sexual harassment, sexual assault, and demographic variables (i.e., race, sexual orientation, age, year in school)?

CHAPTER 2: REVIEW OF THE LITERATURE

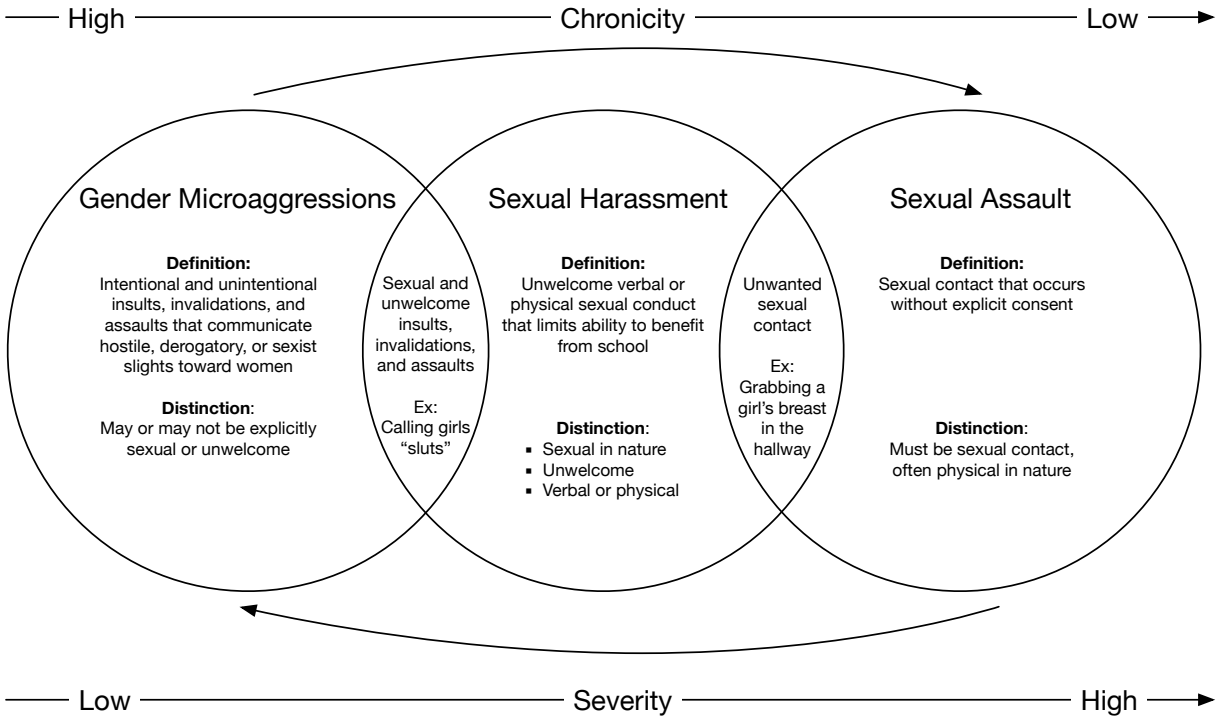
This chapter presents both the theoretical foundation and empirical literature that informed and shaped the development of the current project's research questions and methods. The chapter leads with an expanded framework for campus sexual violence – situating gender microaggressions on the sexual violence continuum. It continues with an examination of the theoretical foundation for the project. The chapter then moves to a review of empirical literature which is divided into four major sections, each corresponding to a proposed aim: 1) the current state of the gender microaggressions literature, conceptualization, and measurement, 2) rates of sexual violence on college campuses including sexual assault, sexual harassment, and gender microaggressions, 3) spatial dimensions of sexual violence on college campuses, and 4) mental and behavioral health correlates of sexual violence on college campuses.

An Expanded Framework for Campus Sexual Violence

This project employs a new framework for campus sexual violence that incorporates gender microaggressions, sexual harassment, and sexual assault (Figure 1). Drawn from a model examining gender microaggressions on the youth sexual violence continuum (Gartner & Sterzing, 2016), this conceptualization of sexual violence motivates the examination of gender microaggressions on college campuses as a potential environmental antecedent on the spectrum of campus sexual violence. As will be discussed below, the measurement of gender microaggressions on college campuses is nascent; thus, while this project will not test the model outlined in Figure 1, it is the first step in my larger research trajectory to examine gender microaggressions' relationship to sexual violence on college campuses.

As shown in Figure 1 and discussed by Gartner and Sterzing (2016), gender microaggressions' high chronicity has the potential to create and sustain environments with more objectification of women (Fredrickson & Roberts, 1997), stricter expectations for men and masculinity (Connell, 2002; Messerschmidt, 2000), and elevated male privilege (Katz, 2006). The aforementioned issues may create an environment in which the harassment and assault of women is more likely to be normative and permissible (American Psychological Association, 2007). The opposite arrow highlights the potential mechanisms by which acute events, such as sexual assault, have lasting impacts on environment and behavior, reinforcing higher-chronicity identity-motivated stressors (i.e., gender microaggressions). In other words, sexual harassment and gender microaggressions can be used after an assault to reduce women's agency in order to uphold systems of power and control (Prospero, 2007).

Figure 1. Expanded Framework for Campus Sexual Violence



Theoretical Foundation

Controlling Narratives, Constructing Gender

The power of gender microaggressions lies in the deeper systems of oppression from which they arise. These systems of oppression are born of an historical hierarchy which position white male colonizers as the hegemonic power and enacted and reinforced through social constriction and violence (McClintock, 2013). This white male power inherently relies on the supremacy of whiteness and maleness, an ascendance enabled *in and through* its relation to the oppression of the colonized (McClintock, 2013). As Hill Collins (2000) writes, "those individuals who stand at the margins of society clarify its boundaries" (p. 77). Through the construction of the Other, an outsider, a marginal entity, oppression is both justified and necessitated. Binary thinking creates spheres of opposition with the Other defined not only as different, but opposed (Hill Collins, 2000). According to this binary thinking white opposes black, male opposes female, reason opposes emotion (Hill Collins, 2000). These constructions are not natural or accidental they represent a weaving of male economic self-interest and Western imperialism that restricts access to power, inflicts violence, and systematically disadvantages women, people of color, and all those whose position on the margins solidifies and articulates white male privilege (McClintock, 2013).

The construction of a binary narrative establishes an object/subject dichotomy - the division between those who create historical narratives and those whose stories are molded to the needs and whims of hegemonic powers (Hill Collins, 1991). In the 19th century, the strict scripting of women's roles as pure Madonnas and women of the house for white women and mammies and matriarchs for Black women relegated these women to roles that serve male power either directly through their labor, or indirectly through their oppositional function (Hill Collins,

1991). As Hill Collins (1991) discusses, the controlling image of white and Black women served to clarify their relationship to the dominant class while simultaneously blaming them for their own oppression. These controlling images established narrowly defined scripts for permissible behaviors. According to John Gagnon (1986), sexual and gender scripts act like blueprints, specifying the whos, whats, whens, wheres, and whys for behavior and thought, particularly as it relates to gender and sexuality. These scripts controlled and narrowly defined women's sexuality to keep them in service. Defying scripts carried both social sanction and threat of violence.

While scripts for women's behavior have changed greatly since the 1800s when the cult of true womanhood reigned, their subjugation has not (Hill Collins, 2000; McRobbie, 2004). McRobbie (2004) describes "the new female subject" living in a post-feminist era who is subject to the "double entanglement" (p. 255) of neo-conservative values related to gender, sexuality, and family life (e.g., anti-choice campaigns, the election of Trump) and a process of liberalization regarding choice and diversity in domestic, sexual, and interpersonal relations (e.g., legalization of same sex marriage). She outlines the ways in which the feminist gains of the 1970s and 80s have been systematically undermined and the process through which popular culture has undone feminism by building it into the accepted narrative as no longer necessary. Gill and Scharff (2011) add neoliberalism and subjectivity to post-feminism in unpacking contemporary constructions of women's scripts. In contextualizing neoliberalism they write that it is intimately entwined with post-feminism as it idealizes the autonomous, calculating, and self-policing subject, with the false perception of all actions as freely chosen (Gill & Scharff, 2011). Gill and Scharff (2011) suggest that women are neoliberalism's ideal subjects as they, much more so than men, have been trained to self-regulate under the guise of free choice. It is through this evolution that we come to the contemporary power of microaggressions as a subtle tool, denying the reality of sexism, priming women to question their experiences and perceptions, and training them to turn inward and self-monitor to avoid censure.

Turning Inward: Sexualization

According to the American Psychological Association's (APA) Task Force on the Sexualization of Girls (2007), sexualization occurs when (1) a person is only taught to find value in their sexual appeal or sexual behavior; (2) when a person is taught that narrowly defined physical attractiveness is the standard for sexual appeal; (3) when a person is sexually objectified; and (4) when sexuality is imposed inappropriately on a person. When women learn to relate to the world in sexualized ways, their ability to connect with and understand their own desires is compromised (APA, 2007). As discussed by Brod (2002), "when men act in their own interests they are 'going with the flow' and their personal efforts are enforced and amplified by the social currents already at work… when women act to advance their interests, they are swimming upstream, against the current"(p. 170). This is a point where Foucauldian approaches to power as relates masculinity and femininity can be particularly illustrative. Through this lens, power is a dynamic network of noncentralized force such that power is not a possession of an individual or group. Rather than a conventional understanding of dominance sustained directly through authoritarian rule and force, we have power sustained through myriad processes designed to reinforce established hierarchy through the internalized enforcer of self-surveillance (Foucault, 1977). Foucault writes of this phenomenon stating that physical violence and constraint become unnecessary – "Just a gaze. An inspecting gaze, a gaze which each individual under its weight will end by interiorizing to the point that he is his own overseer" (Foucault, 1980, p. 155). Building on this Foucauldian conception of power, Bordo (2003) explains that once a person is initiated into a sexualized culture there is no longer a need for physical violence

or material constraints to enforce her adherence to the norm. According to Bordo (2003) in a sexualized culture the "gaze" is not an event that takes place outside of the sexualized subject. The gaze serves to make the subject paranoid and pushes her to interiorize until she becomes her own overseer, internalizing her oppression and exercising surveillance over and against herself (Bordo, 2003). Consistent with this theoretical perspective, gender microaggressions serve a similar function to this gaze in contemporary society. While more overt discrimination and active gender policing may use force and violence (such as sexual assault), gender microaggressions are theorized to subtly mold thought and behavior through everyday slights, insults, and invalidations. Microaggressions wear women down through repetition, reminding them of their prescribed roles through interpersonal interaction and modeling, societal expectations, media images, and policy constraints while maintaining the ruse of individualism and choice.

Death by a Thousand Cuts: Minority Stress Theory and Microaggressions

Consistent with minority stress theory (Meyer, 1995, 2003), the chronic and cumulative nature of gender microaggressions (colloquially described as "death by a thousand cuts") have been theorized to cause multiple mental health problems, including depression, anxiety, trauma, and lowered self-esteem (Nadal, 2010). According to minority stress theory, there are general stressors that all people may experience (e.g., forgetting your keys) and minority stressors that are unique to minority identity and are experienced in addition to general stressors (e.g., being talked over in group conversations). Meyer (1995) suggests that chronic stressors build up and can overwhelm coping resources, particularly for minority groups who must process minority stressors on top of their general stressors. Meyer (1995) specifies a further distinction in minority stress experiences with distal and proximal stressors. Distal stressors are those external social experiences of prejudice and discrimination while proximal experiences are the internalizing or subjective appraisal of distal stressors (e.g., internalized sexism). Minority stress theory proposes that members of minority groups are subject to psychosocial stress due to the ongoing negotiation of their minority status in a society that places less value on them (Meyer, 1995). Because gender microaggressions are less overt than other forms of campus sexual violence, they are often dismissed, invalidated, or viewed as harmless, which can leave the victim feeling paranoid, hypersensitive, or isolated (Nadal & Haynes, 2012). Minority stress theory provides strong theoretical foundation for the mechanisms by which microaggressions lead to deleterious impact on physical, mental, and behavioral health, particularly given the chronicity (i.e., often daily) with which these experiences occur (Meyer, 1995, 2003).

Further scholarship has suggested that the buildup of chronic stressors, as proposed by Meyer (1995), may be exponential for individuals with multiple marginalized identities (Sterzing, Gartner, Woodford, & Fisher, 2017). Microaggressions can cut across a person's identities, triggering historical and contemporary traumas associated with racism, sexism, heterosexism, transphobia, xenophobia, and ableism simultaneously (Sterzing, Gartner, Woodford, et al., 2017). This project seeks to understand and compare rates of gender microaggressions, sexual harassment, and sexual assault for racial and sexual minority women. It also attempts to account for the possible impact of multiple minority identities by controlling for race and sexual orientation when analyzing the relationship between gender microaggressions and mental and behavioral health correlates, which is a first step in deepening the conversation in the limited microaggression literature.

Intersectionality and Quantitative Inquiry

Discussing the "intersectional turn," Hancock (2013) speaks to a shift in the conceptualization of categories such as gender, race, and sexuality as more than identities but a

diffusion of power relations. Intersectionality is both an analytic approach and a broader framework which illuminates the previously marginalized and ignored effects of Black women's social, economic, and political status (Hancock, 2013). Coined by Crenshaw in 1989, intersectionality has become a framework for critical inquiry and critical praxis (Collins & Bilge, 2016). While formally coined in the late 1980's, the drive to develop a theoretical lens capable of capturing the experiences of women of color predates the formalization of intersectionality as understood today. In framing intersectionality for quantitative social science research, Bowleg (2012) outlines the following core tenants. First, social identities are multiple and intersecting, not unidimensional. Second, we start and frame our research with people from marginalized groups as the starting point and not as a deviation or afterthought. Third, social identities at the micro level intersect with structural or macro-level factors to illustrate, produce, or reproduce disparate outcomes.

For the field of Social Work, intersectionality as a frame for theory, research, and practice carries great practical relevance and importance; however, as Davis (2008) points out, part of intersectionality's success may be attributable to its ambiguity. A major challenge that intersectionality poses for positivist social science research is the absence of theoretically validated constructs that can be empirically tested (Bowleg, 2012). This poses methodological issues for the quantitative study of intersectionality such as the complexity of modeling, with investigations across and within analytic categories necessitating the use of interaction terms, multilevel or hierarchical modeling, and fuzzy set analysis which can create complex and difficult to interpret estimations or outcomes. In addition, many statistical tests rely on assumptions of linearity, unidimensionality, and uncorrelated error terms which are at odds with the major tenets of intersectionality (Bowleg, 2012). These challenges have stopped many quantitative social science researchers from engaging with intersectionality; however, Bowleg (2012) describes what she terms "an intersectionality-informed stance" which centers on a curiosity and commitment to understanding how multiple social categories intersect to identify health disparity. Bowleg (2012) goes further to outline what an intersectionality-informed stance entails. She begins with a priori development of questions and measures to facilitate analysis about intersectionality; this entails gathering in depth demographic data. I would argue that it also entails developing measures with diverse populations that speak to intersectional experiences. She goes on to discuss the interpretation of data, clarifying that the research must locate the sample within their social and historical circumstances. With this intersectionality-informed stance, a researcher situates both the conception and interpretation of their work in a rich context informed with transparency regarding known systems of privilege and power.

It is not always possible or appropriate to focus on complex interactions or construction of variables inherent in intersectional quantitative methods, but it is necessary to build research projects with the understanding that discrimination and inequalities will interact in ways that are context, place, and time specific (Scott, 2010). Developing a measure that values the voices of diverse participants in its conception, focuses on a narrow developmental period (18-25), a specific context (undergraduate education), and place (University of California, Berkeley; UCB) brings an intersectionality informed stance to measurement conception. Further, the mixed methods approach employed in the current project has the potential not only to provide a richer set of observations, but to promote nuanced theory generation. Finally, the data from this project is interpreted in context – it speaks to the location and population specific measure and sample.

Review of the Empirical Literature

Federal legislation has provided the basis for colleges and universities' conceptualization of and response to campus sexual violence. Title IX of the Education Amendments of 1972 was instituted as the predominant federal statute prohibiting sex-based discrimination in educational programs that receive federal support. Title IX states that, "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance" (Title IX Section 901(a)). Under Title IX, schools receiving federal funding are required to investigate and address reports of sexual violence in order to ensure equal educational opportunities for students (Richards & Kafonek, 2016). Title IX and subsequent rulings introduced the concept that acts of sexual imposition (i.e., sexual harassment and sexual assault) can function as mechanisms of institutional inequality and sex discrimination.

Building on the extant campus sexual violence literature, the current review introduces gender microaggressions to theoretical and empirical work related to sexual violence and gender discrimination on college campuses. Given gender microaggressions' potential role in policing and shaping expectations for women's behavior through their chronic, ubiquitous nature, understanding their frequency, location, and impact could be crucial in unpacking sexual violence on college campuses. While the study of gender microaggressions on college campuses is nascent, much can be drawn from current sexual violence work and the theoretical and empirical foundations of research on gender microaggressions. This review will begin with a discussion of the current state of gender microaggressions research and the existing taxonomy that has been developed. Capitalizing on existing campus sexual violence literature, it will go on to discuss the rates of campus sexual violence as they are currently understood for sexual assault and sexual harassment and illuminate gaps in our understanding around gender microaggressions on college campuses. The review will then discuss the role that space plays in sexual violence research and the implications that this may have for gender microaggressions. Finally, the review will examine current understandings of the mental and behavioral health impacts of campus sexual violence and the gap that exists in the empirical scholarly literature concerning gender microaggressions potential impacts on wellbeing on college campuses.

Gender Microaggressions: State of the Literature and Existing Taxonomy

State of the literature. Gender microaggressions scholarship currently relies heavily on research and theory targeting other marginalized identities (e.g., racial microaggressions) and a small number of qualitative studies. Pierce and colleagues (1977) proposed the construct of microaggressions to refer to unacknowledged derogatory representations of African Americans in the media and society at large. Microaggressions are defined as everyday verbal, behavioral, and environmental indignities that communicate slights or insults to a targeted group (e.g., racial minorities, women, sexual minorities; Sue et al., 2007). This field of study has expanded from its original focus on racial minorities to other marginalized groups that face societal oppression, but remains an emerging field in its application to gender, particularly as experienced during unique developmental periods of late adolescence and emerging adulthood (Arnett, 2000).

Gender microaggressions' conceptualization and measurement is not only informed by the larger microaggressions literature, but additional bodies of work related to sexism and gender discrimination. From "chilly climates" for women to "subtle sexism," gender discrimination has been the subject of empirical study for decades (Hall & Sandler, 1984; Swim & Cohen, 1997). While microaggressions literature draws largely from self-report data, these other subtle gender

discrimination literatures have used a myriad of approaches to examine mechanisms, prevalence, and impact. Their approaches include observational studies (Sternglanz & Lyberger-Ficek, 1977), attitudinal studies (Swim & Cohen, 1997), and experimental studies using priming (Fredrickson & Roberts, 1997; Harvie, Marshall-Mcaskey, & Johnston, 1998). Research modalities for understanding subtle gender discrimination and its potential impacts have been diverse and gender microaggressions measurement has the potential to grow from this strong research history. These literatures have not centered women's self-report discrimination experiences, as is frequently done in microaggressions literature. For example, one of the most empirically examined areas, benevolent and subtle sexism, has given rise to attitudinal studies that predominantly examine how sexist attitudes impact other constructs like rape myth acceptance (Chapleau, Oswald, & Russell, 2007), romantic partnerships (Travaglia, Overall, & Sibley, 2009), and career opportunities (King et al., 2012). While these studies have been instrumental in supporting broader theoretical grounding on the impact of gender discrimination, they have not advanced the self-report frequency measurement so central to contemporary understandings of microaggressions' prevalence and incidence.

In addition to this foundational research, studies have been conducted to increase the reach and specificity of gender microaggressions research. For example, Lewis and colleagues (2013), undertook a qualitative examination of racial gender microaggressions experienced by Black women. This work was then expanded to develop the Gendered Racial Microaggressions Scale for Black Women (Lewis & Neville, 2015), developing a tool to examine microaggressions intersectionally. This measure is also the only measure designed and validated in a college campus setting. Further, Owen and colleagues (2010) conducted a context specific examination of gender microaggressions as experienced by women in psychotherapy and designed a measure in this process. These foundational studies along with a few others that focus on adult populations (Judson, 2014; Oshi-Ojuri, 2013) have established an important groundwork. Building on this work, microaggressions scholarship needs further quantitative inquiry that engages both context and developmental stage when establishing measures of frequency and prevalence. With a better grasp of the scope of the problem the field can move to understand the relationship between microaggressions, sexual violence, and gender-based disparities in health, mental health, employment, and other factors (Lau & Williams, 2010).

Existing taxonomy. Expanding on Sue and colleagues' (2007) original racial microaggressions taxonomy, Capodilupo and colleagues (2010) identify a taxonomy unique to gender microaggressions. Capodilupo and colleagues (2010) conducted a qualitative study with adult women ($N = 12$), recruited both from universities and community settings, to better understand the dominant gender microaggressions themes (see Appendix A for Capodilupo et al., 2010 taxonomy). They reported six themes: (1) sexual objectification, (2) second-class citizenship, (3) assumption of inferiority, (4) assumption of traditional gender roles, (5) use of sexist language, and (6) environmental invalidations as the predominate finding of their analysis (Capodilupo et al., 2010). The study largely confirmed the application of themes proposed by Sue and colleagues (2007) which had previously been applied to racial microaggressions, but found that some themes were much more dominant in women's experiences than others. For example, participants reported sexual objectification and assumptions of traditional gender roles at higher rates than other themes like second-class citizenship or environmental invalidations (Capodilupo et al., 2010). Themes that emerged in Capodilupo and colleagues' (2010) study have also dominated examinations of sexual violence on college campuses. When examining issues of consent and sexual coercion on college campuses, assumption of traditional gender

roles and sexual objectification have consistently been identified as important factors (Adams-Curtis & Forbes, 2004; Jozkowski & Peterson, 2013). Capodilupo and colleagues' (2010) findings pertaining to gender microaggressions are consistent with foundational research on the objectification of women (Fredrickson & Roberts, 1997) as well as current research which has suggested that prolonged and sustained gender violence is intimately linked to objectification (Davidson & Gervais, 2015).

Capodilupo and colleagues (2010) confirm and contribute to the gender microaggression taxonomy; however, it is important to view their findings in context. While the majority of their sample consisted of college students (10 out of 12 participants), they did not speak specifically to the college context. If focus group members do not share a context, it would make sense that themes like environmental invalidations would be found to be less relevant. Further, prior gender microaggression research has not explored the unique developmental period that is late adolescence and emerging adulthood, particularly with the substantial social transitions inherent in the shift to a university setting (Arnett, 2000). Undergraduate college-age youth are experiencing critical neurological and identity development in an environment that includes social pressures around sex, normed and expected use and abuse of alcohol, and mores that sexualize and objectify women (Adams-Curtis & Forbes, 2004; Drieschner & Lange, 1999; Gogtay et al., 2004). This project builds on the foundational work of Sue and colleagues (2007) and Capodilupo and colleagues (2010) by constructing a gender microaggressions taxonomy specific to undergraduate women. This taxonomy both improves the current conceptualization of gender microaggressions and informs measure development to better understand their frequency and related mental and behavioral health correlates on college campuses.

Refining the undergraduate gender microaggressions taxonomy may have substantial implications for its role on the sexual violence continuum. Increased clarity pertaining to gender microaggressions unique manifestations on college campuses will enable precision and nuance in conceptualizing, measuring, and intervening in subtle gender discrimination as well as a more thorough empirical examination of the ways in which it relates to acts of violence such as sexual harassment and sexual assault. Most existing microaggression research is based on fairly small samples with selective recruiting methods (Lau & Williams, 2010). Conceptual and methodological challenges are compounded by the sheer paucity of research on gender microaggressions and the near absence of college-based samples from current gender microaggression research. Not only is measure development critical, but innovative study design employing mixed methods is the necessary next step (Lau & Williams, 2010).

Rates of Sexual Violence on College Campuses

Sexual assault. To better understand sexual violence on college campuses, this review begins with its most extreme and explicit form of aggression: sexual assault. According to the U.S. Department of Justice (n.d.), sexual assault is any sexual contact or behavior that takes place without explicit consent from the receiver. This definition is broad and it is important to note that for the purpose of research, many different behaviors fall under the definition of sexual assault including vaginal penetration, other types of penetration (e.g., oral, anal), and unwanted sexual touch (Fedina, Holmes, & Backes, 2016; U.S. Department of Justice, n.d.). Studies examining sexual assault on college campuses vary in their reported prevalence of sexual assault depending on the definition used. In a meta-analysis of 34 studies investigating campus sexual assault prevalence, Fedina and colleagues (2016) found that many studies measure broad constructs of sexual assault, typically including forcible completed or attempted rape, unwanted sexual contact, and/or sexual coercion (Fedina et al., 2016). Prevalence rates in studies

measuring completed rape range from 0.5% to 8.4%. When measuring sexual coercion (i.e. completed unwanted sexual contact) rates range from 1.7% to 32% (Fedina et al., 2016). One significant contribution of the proposed project will be to establish the prevalence of sexual assault, on the spectrum of campus sexual violence, as distinct from gender microagggressions, sexual harassment or other coercive sexual behaviors.

Sexual harassment. For the purpose of college campuses, sexual harassment has largely been defined in the context of Title IX of the Education Amendments of 1972 which defines it as conduct that is sexual, unwelcome, and denies or limits the student's ability to participate in or benefit from school (U.S. Department of Education, Office for Civil Rights, 2008). For behavior to be considered sexual harassment, the perpetrator's conduct must be explicitly sexual in nature (U.S Department of Education, Office for Civil Rights, 2008). Sexual harassment is common on college campuses. The American Association of Universities (AAU) study involved 27 colleges (N = 150,072), with 62% of undergraduate women reporting experiencing some form of sexual harassment during their college careers (Cantor et al., 2015). While sexual harassment may be most identifiable when it overlaps with sexual assault (e.g., physical grabbing), verbal and psychological sexual harassment may occur even more frequently and with a profound impact on college students' wellbeing. Sexual comments, jokes, gestures, or looks are the most common form of sexual harassment, experienced by 53% of college women, with 71% of college women reporting that they would be very upset by these behaviors (Hill & Silva, 2005).

Multiple marginalized identities and rates of sexual violence. Individuals with multiple marginalized identities have been found to experience higher rates of campus sexual violence. In the AAU study, cited above, sexual minority students reported being victimized more often than heterosexual students (60.4% vs. 45.9%; Cantor et al., 2015). While findings have been mixed, some research suggests that racial and ethnic minorities on college campus may also be more likely to report experiencing sexual violence (Calafell, 2014; Gross, 2006; Porter & Williams, 2011). The disproportionately high rates of sexual violence experienced by students with multiple marginalized identities is in keeping with theoretical literature suggesting that those most outside of the dominant scripts for women will be the most aggressively policed (Butler, 2011; Pietsch, 2009). Those who do not conform to hegemonic femininity (i.e., white, heterosexual, gender conforming) may be seen as threats to the gender binary system with sexual violence serving as a mechanism of social control (Butler, 2011; Seidman, 2003).

Rates of gender microaggressions on college campuses: A missing element. Moving across the continuum, from sexual assault to sexual harassment and finally to gender microaggressions, there is a shortage of empirical literature at the far end of the spectrum. A substantial gap exists in the current campus sexual violence literature pertaining to gender microaggressions. As discussed above, sexual jokes and comments are the most common form of sexual harassment and would be considered upsetting by those surveyed (Hill & Silva, 2005). Gender microaggressions and sexual harassment are conceptually related in that both can reinforce and perpetuate gender power differentials and may be difficult to detect and confront (Capodilupo et al., 2010; Meyer, 2003; Sue, 2010). Sexual harassment and gender microaggressions also have definitional overlap in that they encompass some of the same behaviors. Gender microaggressions, however, contain subtler forms of gender-based aggression that are excluded from the constructs of sexual assault and sexual harassment, and early empirical evidence suggests can be harmful (Capodilupo et al., 2010; Nadal & Haynes, 2012). Gaining a clearer understanding of how gender microaggressions are understood and experienced by undergraduate women on college campuses is vital to determining their

frequency and the role that they play in creating environments conducive to legally actionable offenses.

Spatial Dimensions of Sexual Violence

Women's spatial experience of sexual violence on campuses is a nascent area of research, with current knowledge coming primarily from crime reports, which notoriously underrepresent the frequency and severity of the problem. Campus "hot spots" are discussed for both middle/high school youth with research indicating that spatial interventions targeting context specific factors and student identified "hot spots" are more impactful than behavioral interventions alone (Taylor, Stein, Mumford, & Woods, 2012). The dominant understanding of college campus "hot spots" arises from police response and institutional interventions like blue light phones (i.e., strategically positioned emergency phones automatically connected to police department) and campus lighting plans (Police Executive Research Forum, 2012), but very little information exists to inform individual, relational, or even policy level primary prevention strategies. These sources may also be biased to underrepresent the experiences of women of color as there is greater legal and social sanctioning for violence against these communities (Pietch, 2009). College campuses represent unique spaces in students' lives. In the case of residential campuses (like UCB), students live, study, take classes, recreate, and carry out their daily lives in the campus context. Sexual violence can substantially impact students mobility and comfort on campus, with 27% of college women from a nationally representative stratified random sample (N = 2,036), reporting staying away from particular buildings or places on campus as a result of experiences of harassment (Hill & Silva, 2005).

Despite the impact of campus sexual violence on students' comfort and mobility-specific behaviors, relatively little research has explored the spatial experiences of campus sexual violence. Hall and Sandler's (1982, 1984) seminal work on "chilly campus climates" introduces the concept that gender based slights, subtle behaviors devaluing women, and unequal opportunities afforded women may have a broader impact on climate and women's experiences of college campuses. Subsequent research has extended this literature to understand the impact of chilly campus climates on college women's perceptions of safety, finding that subtle gendered behaviors perpetuate cultures of fear for their campus safety (Kelly & Torres, 2006). In a qualitative study (N = 38) of college women's location-specific experiences of fear (i.e., fear of stranger assault by surprise or entrapment, fear of strange people and places, and fear of or norm-violating behavior) on campus, Day (1999) concluded that disparities between locations of fear and locations where actual sexual assaults took place support a model of social control over women's use of space. Women are taught to fear certain locations and types of behaviors through direct education (e.g., sexual violence prevention education) and indirect hostility (e.g., sexual harassment and microaggressions), resulting in fear that leads to behavior change (Kelly & Torres, 2006). Exploring the spatial dimensions of the full spectrum of campus sexual violence has the potential to illuminate the ways in which it limits women's mobility through threats to their perceived safety.

Mental and Behavioral Health Correlates to Campus Sexual Violence

Sexual assault. A substantial body of literature has examined both negative associated outcomes and longitudinal impact of campus sexual violence, as it is currently conceptualized, with consistently negative mental and behavioral health outcomes. Beginning with sexual assault, the extant literature indicates adverse outcomes after sexual assault experiences, with reviews consistently demonstrating posttraumatic stress disorder, substance abuse, and delinquent behavior among sexual assault victims observed at three to five times the rate of non-

victims (Campbell et al., 2009; Kilpatrick et al., 2003). As summarized by Campbell and colleagues (2009), between 17% and 65% of women who experience sexual assault in their lifetimes develop posttraumatic stress disorder, 13% to 51% meet the diagnostic criteria for depression, and 13% to 49% become dependent on alcohol. Findings regarding differential impact of sexual assault for racial and ethnic minority are mixed with no notable difference found in most of the literature examining PTSD, depression, or anxiety for Black and Hispanic participants with few exceptions (Campbell et al., 2009).

Sexual harassment. Many victims of campus sexual harassment face immediate mental health consequences. Sexual harassment has been linked to poor mental and behavioral health outcomes such as elevated depression, anger, and alcohol consumption (Wolff et al., 2016). In addition to the impact of sexual harassment on the individual, research also suggests that sexual harassment effects student social and university connectedness, with women victimized by campus sexual harassment reacting to their victimization by avoiding the person who bothered or harassed them (48%), staying away from particular buildings or places on campus (27%), not wanting to go to school (22%), changing their seat in class (21%), and finding it hard to study or to pay attention in class (16%; Hill & Silva, 2005). Campus sexual harassment has a clear impact on college women's experience of the campus. Experiences of sexual harassment have been found to have a greater impact on college students who identify as LGBT (i.e., lesbian, gay, bisexual, or transgender). LGBT college students report higher rates of numerous emotional stressors as a result of sexual harassment when compared to their heterosexual peers (Hill & Silva, 2005). These include feeling angry (67% vs. 42%), feeling self-conscious or embarrassed (61% vs. 45%), feeling less confident or sure of themselves (42% vs. 25%), and feeling afraid or scared (32% vs. 20%). Furthermore, LGBT students report being more likely to have their educational experience disrupted by sexual harassment (e.g., finding it hard to study, avoiding the harasser, participating less in class; Hill & Silva, 2005).

Gender microaggressions. Regardless of its overt or covert delivery, the cumulative nature of gender microaggressions are associated with mental health problems such as depression, anxiety, trauma, and lowered self-esteem, similar to sexual harassment and sexual assault (Hall & Sandler, 1982; Hill & Silva, 2005; Kilpatrick et al., 2003; Nadal, 2010). There is substantial need for quantitative literature that examines gender microaggressions and associated mental and behavioral health correlates. Gender microaggressions have the potential to be impactful across the social ecology, altering interpersonal relationships, impairing connectivity to institutions (e.g., campus connectedness), reinforcing restrictive and violent gender norms (e.g., it is okay to touch women or comment their appearance), and ultimately perpetuating cycles of sexual violence. As previously discussed, acts such as sexual harassment may cause women to drop classes, have a difficult time concentrating in class, and avoid locations on campus (Hill & Silva, 2005). The cumulative impact of gender microaggressions is theorized to limit college women's comfort talking in class, utilization of campus resources, and vocational aspirations (Hall & Sandler, 1984; Nadal & Haynes, 2012). As a part of a larger system of sexual violence, gender microaggressions become agents of social control – acute acts, such as sexual assault, do not occur in a vacuum, but are most likely the result of individual, relational, and societal events and circumstances that create and establish a campus climate conducive to such acts (Connolly, Friedlander, Pepler, Craig, & Laporte, 2010).

Aims and Hypotheses

The following aims and hypotheses derive directly from the review of the literature.

1. To develop a quantitative measure of gender microaggressions for undergraduate women.
    a. Identify the types and locations of gender microaggressions experienced by a diverse sample of undergraduate women through qualitative, thematic analysis.
    b. Generate and refine a list of gender microaggression items and a list of locations where they occur for undergraduate women.
    c. Assess the reliability and validity of the new gender microaggression measure for undergraduate women.
2. To identify the frequencies of gender microaggressions, sexual harassment, and sexual assault by race and sexual orientation for undergraduate women in the last academic year.
    a. Racial and sexual minority undergraduate women will experience higher rates of gender microaggressions, sexual harassment, and sexual assault in the last academic year in comparison to their non-minority counterparts.
3. To explore the locations where gender microaggressions, sexual harassment, and sexual assault occur most frequently for undergraduate women in the last academic year.
    a. No hypotheses are proposed for this exploratory aim as literature is limited in this area of inquiry.
4. To assess the associations between campus sexual violence (i.e., gender microaggressions, sexual harassment, and sexual assault) and mental and behavioral health outcomes (i.e., depression, stress, posttraumatic stress, school avoidance, and alcohol use) for undergraduate women.
    a. Higher-levels of gender microaggressions will be associated with poorer mental and behavioral health outcomes when controlling for sexual harassment, sexual assault, and other demographic variables (i.e., race, sexual orientation, age).

CHAPTER 3: METHODS

Overview

This chapter outlines the three studies included in this project. Study 1 is a qualitative thematic development study. Study 2 is a measure design and validation study, and Study 3 employs the newly designed measure from studies 1 and 2 to examine the frequency, locations, and correlates of gender microaggressions, sexual harassment, and sexual assault. The studies are devised to (1) design and investigate the psychometric properties of the measure, (2) identify the frequency of gender microaggressions, sexual harassment, and sexual assault on UCB campus for racial and sexual minorities, (3) explore the locations where gender microaggression, sexual harassment, and sexual assault occur, and (4) assess the mental and behavioral health correlates of gender microaggressions utilizing a diverse sample of University of California, Berkeley (UCB) undergraduate women. The first two studies achieve Aim 1, while the final study achieves Aims 2 to 4.

Study 1: Developing a Gender Microaggressions Taxonomy for Undergraduate Women

The purpose of Study 1 was to develop a gender microaggressions taxonomy that was developmentally and contextually specific to undergraduate women on college campuses.

Focus Groups

Five qualitative semi-structured focus groups ($N = 23$) were conducted with UCB undergraduate women to identify the types of gender microaggressions experienced by undergraduate women and where they occur on campus. Gender microaggressions have received little empirical attention, thereby motivating a qualitative investigation (Capodilupo et al., 2010). Focus group methodology is appropriate for research in this area as it allows undergraduate women to reflect and share within a community space with other women, and allows researchers to explore a nascent area of empirical study (Krueger & Casey, 2009; Munday, 2013). Focus groups are the dominant method for examining gender microaggressions in the extent literature (e.g., Capodilupo et al., 2010; Lewis et al., 2013). Microaggressions are covert, at times challenging to identify, and frequently cause the target to question her experience (Sue et al., 2010). Focus groups create a space for members of marginalized groups to share their accounts in a generative group with support in framing their experiences (Fine, 1992).

The site. Focus groups were conducted on UCB campus. UCB is a large, public, research university with over 30,000 undergraduate students, approximately 52% of which identify as women (Division of Equity & Inclusion, 2016). In 2017-2018, 38.9% of UCB's undergraduate population identified as Asian/Pacific Islander, 29.7% as White, and 18.5% as underrepresented minorities (i.e., African American, Chicano/Latino, and Native American/Alaskan Native; "Student Enrollments," 2017). These underrepresented groups are present on campus at far lower levels than in the state of California and surrounding community. Given the small number of students in each underrepresented category, the current project mirrors UCB's grouping of underrepresented minority (URM). Science, technology, engineering, and mathematics (STEM) degree programs are a substantial component of undergraduate enrollment, with 50% of undergraduates enrolled in STEM programs such as engineering, computer science, biological sciences, and physical sciences ("UC STEM degree pipeline," 2016).

Focus group recruitment. The inclusion criteria for focus group participation mirrored that of the ultimate quantitative survey: (a) 18 to 25 years old, (b) self-identify as a woman or transgender woman, (c) currently enrolled at UCB as an undergraduate student, and (d) fluent in English. In all studies, transgender women were eligible to participate; however, no quotas were set for transgender women or specific recruitment efforts implemented. Because no participants (in focus groups or survey) identified as transwomen, the sample only includes cisgender women. To assess gender identity, participants responded to the following question during screening: "What is your current gender identity?" with response options: *Woman*, *Man*, *Transwoman*, *Transman*, *Genderqueer/gender nonconforming*, *A gender not listed here.*

Students were recruited to the focus groups by two primary means: (1) fliers and quarter sheets posted on UCB campus and (2) announcements in undergraduate courses. Promotional materials (fliers and quarter sheets) were designed by the study's Principal Investigator (PI) and contained the URL for completing the screening survey, PI's name, institution, and contact information, details on the purpose of the research, and verbiage about compensation. To ensure that promotional materials for the focus group were understood as distinct from materials produced for other components of the study (cognitive interviews, pilot testing, and survey), targeted language was used. For example, fliers had verbiage like, "Researchers at the University of California, Berkeley School of Social Welfare are conducting a series of focus groups to learn about subtle gender discrimination and the locations where discrimination and sexual violence occur on campus." Fliers were posted in areas of campus with high levels of undergraduate traffic. Emails were sent to professors for undergraduate courses requesting a brief opportunity at the start of their class to announce the focus groups and distribute quarter sheets to interested students.

To participate in focus groups, interested students entered the URL from the fliers and quarter sheets into their web browser to complete a brief online questionnaire. First, these students were presented with a consent form outlining basic study information specific to the questionnaire and focus groups, risks and benefits of participation, their rights as research participants, time commitment, contact information for the PI and Office of Human Subjects Protection at UCB. Potential participants were then presented with the questionnaire, collecting basic demographic and contact information—name, email, phone number, sexual orientation, race/ethnicity, age, gender identity, year in school, major—and scheduling availability information). Students were purposively selected for participation in the focus groups with targeted identity-based groups established for (1) Asian, (2) White, (3) URM, (4) sexual minority, and (5) a group with mixed demographics. This clustering was done to facilitate a more comfortable environment to discuss topics related to race/ethnicity and sexual orientation, as they may relate to gender microaggressions, and to make it easier to examine differences between groups in their experiences of gender microaggressions as might be related to race/ethnicity or sexual orientation (Krueger & Casey, 2009).

A total of 23 women participated in the study, forming five focus groups. Each focus group consisted of 4 to 5 participants. The women ranged in age from 18 to 24 (M = 19.7) and identified as White (n = 11), Asian/Asian American (n = 5), Latina/Hispanic (n = 3), Black/African American (n = 2), and other (n = 2). Fifteen women identified as heterosexual, while others identified as bisexual (n = 5), pansexual (n = 1), queer (n = 1), and demiheterosexual (n = 1). With regard to year in school, the group was comprised of first years (n = 8), second years (n = 4), third years (n = 5), fourth years (n = 2), and fifth years (n = 2). One

participant identified as an international student, with the remaining comprised of both in and out of state students.

The study PI scheduled five focus group meeting times based on availability indicated by those students selected for participation. Those students selected received the following contact to participate in the focus group: (1) a scheduling email – the initial email assessed the potential participant's availability and willingness to participate in one of the predetermined meeting dates and times; (2) reminder email – this email reminded the potential participant of the date, time, and location of the focus group with a calendar invite to add the event to their bCal (online calendar); (3) follow-up email – the day before the focus group, the potential participants received an email with the focus group time and location reiterated; (4) reminder text – On the morning of the focus group, potential participants received a reminder text message with the time and location of the focus group meeting. All phone communication was conducted using a Google Voice phone number and all email communication was conducted using the study PI's UCB email account.

Focus group facilitation. The PI led focus groups with a dedicated undergraduate note taker. The PI was a White, cisgender, queer, femme woman in her early 30's and the undergraduate note taker was an Asian, cisgender, heterosexual, femme woman in her early 20's. Focus groups were held on UCB campus in a private classroom that was reserved and closed to the public during each focus group session to maximize participant privacy. Consistent with recommendations for conducting feminist-oriented focus groups (Munday, 2013), a semi-structured protocol (see Appendix B) was employed to collect focus group data. The focus group interview guide was informed by Capodilupo and colleagues' (2010) guide, which was designed to better understand the extent to which theoretically anchored gender microaggressions taxonomies were in keeping with women's experiences. The protocol for the current study began with a detailed introduction to the study's purpose and provided an opportunity for all participants to introduce themselves. The guide then consisted of nine open-ended questions that sought examples of gender microaggressions. For example, "Describe a situation since you started at Berkeley, when you felt pressured to act a certain way because you are a woman." Each of these nine items were followed by questions to increase understanding of context (e.g., "Where did this happen to you?" or "Where do these types of things happen on campus?"), interpretation (e.g., "What do you think was the message being conveyed to you?"), and impact (e.g., "How did the event change your experience of campus?"). These core questions were followed by two broader questions about microaggressions in general (e.g., "What impact do these experiences of subtle gender discrimination have on your mental health?"). While the focus group guide was strongly informed by Capodilupo's (2010) taxonomy, questions were included that were general enough to allow participants to share new and emerging ideas. Focus group sessions were audio recorded with participant permission and notes were taken throughout. Focus groups lasted approximately 1.5 hours in duration and participants received a $20 gift card for their participation.

Focus group data analysis. Focus group data was transcribed and coded with directed content analysis to determine the themes most salient to the undergraduate women who participated.

Transcription. Focus group recordings were transcribed verbatim by a professional service (rev.com). Each transcript was then reviewed, cleaned to ensure accuracy, and deidentified by the PI.

Data analytic approach. Directed content analysis was used as a data analytic framework as it allowed for the application of theory and existing research findings for the use of a priori codes, as well as an inductive approach for the development of emergent codes (Hsieh & Shannon, 2005). Directed content analysis was particularly appropriate because prior research on gender microaggressions exists, but the extant literature is incomplete and would benefit from further description (Hsieh & Shannon, 2005). Directed content analysis is guided by a structured process (Hickey & Kipping, 1996), using existing research to identify key concepts or variables as initial coding categories (Potter & Levine-Donnerstein, 1999). Consequently, researchers begin the coding process by applying predetermined codes where appropriate. Data that cannot be coded is identified and analyzed later to determine if they represent a new category or subcategory of an existing code (Hsieh & Shannon, 2005). Due to the broad nature of the a priori codes developed based on the microaggressions taxonomy, coded excerpts were reexamined by coders to identify possible sub-themes and emergent themes that may have co-I with the a priori codes.

Codebook development. A codebook was developed through an iterative process in consultation with PI's dissertation chair and in collaboration with the undergraduate research assistant. A priori codes were based on Capodilupo and colleagues (2010) taxonomy and included, sexual objectification, second-class citizenship, assumption of inferiority, assumption of traditional gender roles, use of sexist language, and environmental invalidations. A codebook was generated with these codes, and included Capodilupo and colleagues (2010) definition of the theme, an example from extant literature and space for an example from focus group transcripts. After the first round of coding with a priori codes, data that could not be coded was identified to determine if they represented a new category or a subcategory of an existing code (Hsieh & Shannon, 2005). All emergent themes were added to the codebook with definitions and examples from the text. This was done with each transcript to ensure that new themes could emerge from different groups. Codes were examined to determine if there was redundancy (allowing codes to be condensed) or overgeneralizations (allowing codes for the development of sub-codes). At this stage the developed codes were finalized in the codebook.

Coding. All coding was conducted using Dedoose. The PI and an undergraduate research assistant read through each transcript prior to code application, noting their first impressions, which were recorded in memos. As described above, coding was tiered with parent (broad themes) and child (sub-themes) codes applied. The study utilized a multi-round coding process, beginning with a priori codes from Capodilupo's taxonomy of gender microaggressions (2010) followed by emergent child codes to be applied to Capodilupo's codes. After this, emergent parent codes discovered during the analysis were coded and finally emergent child codes were applied. Each focus group transcript was independently coded by two members of the research team. After each of the four rounds of coding was completed, all coding discrepancies were noted and resolved leading to 100% congruity.

Thematic development. Following coding, code excerpt reports were reviewed and synthesized by the PI and a research assistant to identify the most salient themes and examine patterns in the data. Codes were assessed to ensure that excerpts contained therein were conceptually distinct and directly contributed to understandings of microaggressions. The most salient themes and sub-themes were selected to comprise the new taxonomy.

Human subjects considerations. All study procedures began after receiving approval from University of California, Berkeley's Institutional Review Board (2016-12-9394). Written informed consent was obtained from all participants prior to focus groups. All participants were

informed that study participation is completely voluntary, and that they may refuse to answer any question and/or stop participation at any point without forfeiting compensation. All participants were also informed of the major risks involved with study participation, which included breach of confidentiality and the elicitation of painful memories and emotions from questions that ask about microaggressions, discrimination, and victimization. All qualitative data collection occurred in private, reserved rooms on UCB campus limiting the risk of breaching confidentiality.

All participants were provided with an information sheet (see Appendix C) on how to access campus organizations for mental health counseling, survivor support, and/or increased sense of community and solidarity. This information was provided at the beginning of each focus group meeting. Because the focus groups asked questions about potentially sensitive topics such as experiences of overt and covert discrimination, the PI established a connection with campus confidential care advocates ensuring that they were aware of the focus group meeting and would be available to respond if a student needed support. While no participants utilized this support, they were given the option to step out of the focus group if needed and the note taker was trained in connecting participants to the campus confidential care advocate.

The recordings generated by the focus groups were stored on the PI's laptop and a backup flash-drive (both password-protected and encrypted) for data redundancy. Focus group audio recordings were securely transmitted to the data transcription service using the highest level of security available (128-bit SSL encryption – rev.com). The company used to transcribe the data only makes data visible to professionals who have signed strict confidentiality agreements. Once transcribed, all identifying information was removed from focus group transcripts, the transcript for each focus group was assigned identification numbers, and each participant was assigned an identification number linking them to their transcript. The consent forms and demographic screeners were secured in a locked file cabinet in the PI's office. All electronic forms of deidentified data (e.g., Excel spreadsheets, .csv data files, transcripts) were stored in password-protected files on the PI's computer. Any identifiable data (participant contact information) was stored in password-protected and encrypted files on the PI's laptop and flash drive.

Identifying information received through the screener survey (i.e., contact information) was destroyed as soon as focus groups, cognitive interviews, and pilot activities were complete. All audio files were identified by an ID number and date of interview. Audio recordings will be retained for three years in a password-protected and encrypted file and will then be securely deleted.

Study 2: Measure Design and Validation

The purpose of Study 2 was to outline the development process of the Undergraduate Gender Microaggressions Scale-preliminary (UGMS-p). This section will outline the process for measure design, including a systematic literature review, application of the qualitative findings, feedback from an expert advisory board, and cognitive interviews. Additionally, the measure validation process will be described, including survey data collection methods, the elimination of poorly performing items and the examination of factor structure with exploratory factor analysis. The procedure for Study 2's assessment of construct validity with convergent and discriminate validity will also be summarized.

Measure Design

Undergraduate Gender Microaggressions Scale development. The Undergraduate Gender Microaggressions Scale-preliminary (UGMS-p) was constructed using the themes identified in Study 1, a systematic literature search, expert advisory board feedback, cognitive interviews, and a pilot study. The final version of the UGMS-p used in the exploratory factor analysis (EFA) included 28 items (see Appendix F). Participants rated their past year experience with microaggressions on campus using a six-point, Likert-type scale with response options: [*Never* (0), *Once or twice in the last academic year* (1), *Once or twice per semester* (2), *Monthly* (3), *Weekly* (4), *Daily or almost daily* (5)]. All items were anchored in the current academic year and needed to be attributed to gender in full or in part. An example item "Since the start of THIS ACADEMIC YEAR, how often have you had these experiences that you believe to be fully or partially because of your gender… You were expected to clean up after others." As shown in Appendix F, items were presented in a matrix. Cronbach's alpha for the 28-item UGMS-p was .95, indicating excellent internal consistency.

Item generation. An initial battery of 43 items was designed to assess the frequency of gender microaggressions for undergraduate women. The items were generated based on dominant themes from the qualitative focus groups and a review of the empirical scholarly literature. Qualitative themes were not intended as subscales, but to inform comprehensive item development. A systematic literature search and review process was undertaken to gather all relevant measures for consideration in the current study. Preexisting measures of gender microaggressions as well as covert sexism and gender discrimination measures were used to generate items (Derthick, 2015; Judson, 2014; Lewis & Neville, 2015; Oshi-Ojuri, 2013; Torissi, 2014). See Appendix F for complete list of items and sources for adaptations. Once an initial battery of 48 items was developed, the PI together with a research assistant examined the items in conjunction with the codebook for face validity, adjusting language or removing items that did not meaningfully capture experiences expressed in the focus groups. In addition, the initial battery was presented to the PI's dissertation chair for his feedback on face validity, item reduction, and scale construction. This process resulted in the removal of five items due to redundancy, conceptual overlap with harassment, and unclear wording. It also resulted in a change to response options from a five-point Likert-type scale ranging from *Never* (0) to *Very Frequently* (4) to one with specific time point options: *Never* (0), *Once or twice in the last year* (1), *Monthly* (2), *Weekly (1-3 times per week)* (3), *Almost daily to daily (4 or more times per week)* (4) as more specific time points and experience count approximations were determined to offer better clarity for participant recall and for analysis.

Expert Advisory Board (EAB*).* The EAB was comprised of five researchers and practitioners with expertise in campus sexual violence, microaggressions, and measure development. One EAB meeting was held after initial item generation was complete. Prior to the meeting, all EAB members were sent the following items: (1) a brief synopsis of the dissertation project, (2) a conceptual article examining gender microaggressions on a sexual violence continuum authored by the PI and her dissertation chair (Gartner & Sterzing, 2016), (3) an overview of the current study's qualitative findings, and (4) the study's draft measure. The EAB meeting served to provide feedback on the full battery of items with particular attention to (1) operationalization of gender microaggressions on college campus, (2) approach to gender microaggressions attribution in the measure (e.g., "because you are a woman"), (3) face validity and comprehensiveness of items, and (4) best approaches to gather information about location. A list of EAB members can be found in Appendix G, with the EAB meeting agenda found in

Appendix H. The EAB resulted in 14 items being removed. The majority of these items were related to the theme, denial of the reality of sexism (7 items). As all of these items were double barreled – a participant needed to acknowledge sexism or advocate against sexism for it to be denied – they were removed from the general microaggressions measure. In addition, attribution to gender was moved from the item level to the measure level. For example rather than asking, at the item level, "You were treated as if you were incompetent because you are a woman," participants were asked as the question stem "Since the start of THIS ACADEMIC YEAR, how often have you had these experiences that you believe to be fully or partially because of your gender…"

Cognitive interviews. Ten cognitive interviews were conducted with UCB undergraduate women meeting the study's inclusion criteria. The initial cognitive interview measure had 29 items and follow-up questions for each item. These interviews were used to ensure items and response options for the gender microaggressions measure were clear and comprehendible. Two primary types of cognitive interviewing questions were used in the interview guide, think aloud questions (e.g., "Tell me about what you are thinking when you read this question") and probing questions (e.g., "What does gender microaggression mean to you?"; García, 2011). A verbal probing technique was the dominant method employed, allowing the interviewer to evaluate the participant's understanding of each question and their process for arriving at their selected response (Willis, 1999). Probes specific to comprehension and interpretation (e.g., "What does the term microaggression mean to you?"), paraphrasing (e.g., "Can you repeat the question I just asked in your own words?"), and other general probes (e.g., "Was that easy or hard to answer?") were used (Willis, 1999). Both scripted and spontaneous probes were used throughout the interview process. Scripted probes were developed prior to the interview and informed by focus groups and the EAB feedback. Spontaneous probes were generally follow-up or diagnostic questions to gather more information about a participant's answer or get to the heart of the participants confusion about a question (Cohen & Williamson, 1988). Rather than retrospective interviewing (i.e., asking questions after the entire survey has been completed), the study used the concurrent probing method (García, 2011). In concurrent probing, questions are asked coincident with survey items. With this method (1) the participant read a survey question, (2) the participant answered the survey question, (3) the interviewer asked a probe question about the survey question, and (4) the participant answered the probe question. Cognitive interviews lasted approximately one hour and participants received $15 for their participation.

Changes to the survey as a result of cognitive interviews took place at two points in time, after the first five participants and again after the last five participants. After the first five participants, four changes to microaggressions item language were made (e.g., "A man automatically took control of a group meeting" to "A man automatically took control in a group setting"), three items were cut (e.g., "You contribution was ignored or dismissed" cut for being too vague), one item was added (e.g., "A man dominated office hours or other question and answer sessions"). In addition, the response options were adjusted from a 5-point Likert-type scale to a 6-point Likert-type scale, with the following: [*Never* (0), *Once or twice in the last academic year* (1), *Once or per semester* (2), *Monthly* (3), *Weekly* (4), *Almost daily to daily* (5)]. After the last five interviews, the survey layout was changed from multiple choice items presented individually with follow-up questions after each to a response matrix for all gender microaggressions items. The shift to a matrix was done because participants expressed a desire to scroll back and think holistically about their experiences, and they reported difficulty doing so

with individual multiple-choice items. In addition, rather than asking location questions once after all microaggressions items, they were asked twice about microaggressions experienced directly and microaggressions witnessed or experienced indirectly.

Measure Validation

Participants. A sample of 440 UCB undergraduate women were recruited for participation in the online survey between February 22, 2018 and April 21, 2018 (see below for information on power analysis calculation). The sample was randomly split, with half (n = 220) used for Study 2 (measure design and validation).

Sample inclusion and exclusion criteria. The inclusion criteria for the online survey were as follows (1) self-identification as a woman or transgender woman, (2) currently enrolled as an undergraduate college student at UCB with an active UCB email address (@berkeley.edu), (3) enrolled in UCB in the Fall 2017 and Spring 2018, (4) 18 to 25 years old, and (5) English literacy. Only women were included in the study, as the focus of the research is undergraduate women's experiences of campus sexual violence. The study required self-identification as a woman and was open to transgender women. Participants needed to be currently enrolled as undergraduate students at UCB, with an active UCB email address for two primary reasons; first, a single campus was targeted because the current study was interested in exploring location and context for gender microaggressions. In alignment with this first rationale, focusing this study on one campus reduced extraneous variables (e.g., commuter vs. residential campus, urban vs. rural campus, religious vs. secular campus). Second, undergraduates are the primary focus because preliminary data suggests that they may have different experiences of sexual violence than graduate students (e.g., higher rates of sexual violence, reduction of rate for each year students advance in college; ARC3, 2015). The active UCB email address (@berkeley.edu) served as a data integrity mechanism to ensure UCB student status. Students needed to be enrolled in both the Fall 2017 and the Spring 2018 semesters as the survey asked about experiences in the past academic year; Spring admit and Spring transfer students would have less time on UCB campus leading to two possible issues (1) suppressed rates due to shorter reference period and/or (2) reflection on campus experience prior to their time at UCB. An age range of 18 to 25 was selected as this is the normative age range for college undergraduates and a critical period in emerging adulthood (Arnett, 2000; Smith, Chein, & Steinberg, 2013). Finally, English proficiency is a requirement for UCB admission and therefore English was the only language in which the survey was offered.

Participant recruitment. Participants were recruited via three primary mechanisms (1) fliers and quarter sheets posted on UCB campus, (2) announcements in undergraduate courses, and (3) posts on UCB affiliated Facebook pages. Fliers (see Appendix D), quarter sheets, and Facebook posts (see Appendix E) were designed by the PI and contained the study website, PI's name, institution, and contact information, details on the purpose of the research, and compensation. Three undergraduate research assistants posted fliers throughout the data collection period. Fliers were strategically posted in areas with high levels of undergraduate traffic, such as Sproul Plaza, the Recreation Sports Facility (RSF), the student union (Eshleman Hall), the Caesar Chavez Student Center, and Moffitt Undergraduate Library. They were also posted in areas such as stalls and paper towel dispensers in women's restrooms as these were areas identified as high impact by undergraduate research assistants. Undergraduate research assistants tracked their flyer placement in shared Google documents to maximize campus coverage. Fliers were also distributed to targeted undergraduate groups with a focus on URM and other hard to reach populations like the Gender Equity Resource Center (with events and

subgroups targeting sexual and gender minority students) and the African American Theme Program (AATP) residential space. As fliers are often covered over or taken down, new fliers were hung on a weekly basis throughout data collection.

Announcements were also made to undergraduate courses both in person and via instructor facilitated postings on bCourses (UCB's learning management system). Emails were sent to course instructors providing them with language to post directly to students and asking for permission to make an announcement in their class. Instructors preferred to post to bCourses as this required the least use of class time. Emails were also sent to department administrators and listserv administrators requesting that they announce the survey. For example, the departments of Gender and Women Studies, African American Studies, Social Welfare, Psychology, and Public Policy all made department wide announcements. In addition, listservs such as Berkeley Women in Math, Berkeley Women in Business, the Panhellenic Council, and the Gender Equity Resource Center also posted the study.

Lastly, Facebook posts were made throughout the data collection period. Posts targeted UCB undergraduate pages such as Class of 2018, Class of 2019, Berkeley Free and For Sale, etc. To be effective, Facebook posts contained very little verbiage, but included all critical information required by the IRB and outlined in the flier description.

Procedures. The procedure for carrying out a pilot test of the full survey, collecting and monitoring data, and human subjects considerations are outlined below.

Pilot testing. The online survey was pilot tested with ten women matching the recruitment criteria for the survey. All pilot participants were recruited from the pool of individuals who took the screener for the cognitive interviews but were not selected. The PI communicated with potential pilot participants – inviting them to participate and sending reminders – following the procedures outlined in Study 1. All pilot sessions were conducted in a reserved, private classroom space on the UCB campus. Participants were asked to bring an Internet-connected, electronic device (e.g., smart phone, laptop, tablet) on which to take the survey and a laptop was available for those who did not have their own device or did not bring their device (all participants brought a personal device). As with the full survey, pilot responses were collected and hosted using Qualtrics. The pilot served to assess the functioning of the survey instrument in its entirety with all measures included. For example, the functioning of skip logic was assessed, optimal performance across device type (e.g., smartphone, tablet, laptop), platform (e.g., OS X 10.0, OS Sierra, Windows) and browser (e.g., Safari, Firefox, Chrome) were examined. Participants were given a blank sheet of paper and pen to take notes on questions that were confusing to them, challenges that they faced, or changes that they would make to the survey. A 30 to 45-minute interview followed the completion of the online survey to gain critical feedback on improving the survey's questions and format (e.g., language, time burden, response options; see Appendix I). Participants in the pilot test received a $20 gift card for their participation.

***Data collection*.** Potential participants were directed to the survey through Facebook posts, announcement links, and URLs in flyers and quarter sheets. Upon clicking the hyperlink or entering the URL, participants were directed to the study survey in Qualtrics. Qualtrics was used for data collection as it is a leading company in survey management and secure data hosting ("Qualtrics," 2019).

At the start of the survey, all potential participants were presented with an electronic version of the consent form and were asked to indicate their consent for study participation by checking a box at the bottom of the screen. Participants then complete the demographic

eligibility screener. Only those participants who (1) consented to the study and (2) met all eligibility criteria were permitted access to the rest of the online survey. At the end of the survey, participants were asked if they wanted to receive a $5 Amazon gift card sent to their @berkeley.edu email address. If they selected "Yes," their response was recorded and the @berkeley.edu email address was used to fulfill their request. At the close of the online survey, participants were able to connect to the study's website page with campus support resources (see Appendix D).

In keeping with best practices for reducing the likelihood of multiple responses from the same individual and/or careless responding (Sterzing, Gartner, & McGeough, 2017), the study employed multiple measures. These measures included: (1) asking potential participants if they have previously taken the survey during the eligibility screener, (2) regularly inspecting the dataset for indication of possible multiple submissions (e.g., < 5 minutes to complete survey), (4) including two questions in the survey that give participants specific instructions for response (i.e., "Are you paying attention to the survey?" With response options *yes*/*no* and "To respond to this question select the option that indicates that you have not had the experience" with response options ranging from *Never* to *Many times*), (5) examining identifying data provided for indications of multiple submissions or dishonest responding (i.e., duplicate email address), and (6) requiring an active @berkeley.edu email address – as students are not able to create multiple email addresses to gain more incentives. A custom validation field was created in Qualtrics which required "@berkeley.edu" be a part of the response submitted for email address.

Data were actively monitored with daily data checks and participants were marked for removal from the dataset if they (1) had a duplicate email address and (2) had two of the three indicators of dishonest or careless responding: (a) missing the first check question, (b) missing the second check question and (c) a survey completion time under 12 minutes. Any participant marked for removal was hand reviewed by the PI prior to removal. A total of 27 participants were removed through this hand review process.

Data monitoring. Data were downloaded twice per week from the Qualtrics to conduct initial examination of data quality and obtain information necessary to send incentives to participants. First, data were examined for initial quality. Data were marked for removal from the dataset (without incentive) if they (1) had a duplicate email address and (2) had two of the three indicators of dishonest or careless responding (a) missing the first check question, (b) missing the second check question and (c) a survey completion time under 12 minutes. Any participant marked for removal was hand reviewed by the study PI before being removed.

Power analysis. As two separate analyses were conducted with study data, two power analyses were needed. A sample size of 220 was determined for exploratory factor analysis as 5 to 10 cases are recommended per measure item (Russell, 2002). UGMS-p had 28 items, with a sample size of 220 determined to be adequate for analysis.

Study 2: Human subjects considerations. All study procedures began after receiving approval from University of California, Berkeley's Institutional Review Board (2016-12-9394). Electronic informed consent was obtained from all participants prior to beginning the survey. Participants read the consent form before beginning the survey, informing them of such critical protections as the voluntary nature of the study, their right to refuse to answer any question and/or stop participation at any point, PI and IRB contact information, and potential risks and benefits of participation. Potential risks involved with study participation included breach of confidentiality and the elicitation of painful memories and emotions from questions that ask about gender microaggressions, sexual harassment, and sexual assault.

Participants were presented with two prompts to assess their level of distress and ensure that they had access to resources if needed. The final placement of the prompts was determined based on asking pilot participants if there were sections that were emotionally challenging. Participants received one distress prompt after being asked about posttraumatic stress and one after the sexual assault scale. These prompts asked if they were currently feeling distressed and needed to be connected to support services. Participants who respond "No" continued in the survey. If a participant responded "Yes" the survey was immediately terminated and they were connected to the 24/7 National Sexual Assault Hotline page where they could simply click to be connected to a phone or chat based support resource. In addition, all participants who completed the survey were connected to the campus resources page of the study website with contact information for campus supportive services (see Appendix F) upon completion.

The data from the survey was collected and securely hosted using Qualtrics. Qualtrics surveys and hosting products meet industry standards for internet security and have robust protections for research participants and electronic records protection and encryption of data set via Qualtrics ("Qualtrics," 2019). The data collected in the online survey contained both email addresses and participant IP addresses. The PI employed three procedures to maintain confidentiality. First, email addresses were never stored with participant survey responses. To accomplish this separation, two surveys were used to gather information – the first was a demographic survey which gathered email address and other eligibility data but did not gather participant responses to questions about sexual violence or microaggressions and the second was the main study survey collecting the study's independent and dependent variables. Only a unique identifier linked the two surveys and email addresses were never stored in the main study survey. Second, survey data were stored in encrypted, password-protected files on password-protected computers. Third, identifiable data were deleted when data collection was completed and de-identified a dataset was generated by dropping identifiable fields and merging the demographic survey and main study survey datasets. All de-identified forms of electronic data (e.g., downloaded Excel spreadsheets, .csv data files) were stored on password-protected computers of the research team.

Existing Variables and Measures

All variables and measures used in Study 2 are summarized in Table 1.

Demographics. Survey items used to measure participant's demographic characteristics were adapted from the ARC3 campus climate survey (ARC3, 2015). The items included (a) participants age [response option: drop down list with 18-25]; (b) gender identity [response option: *Woman, Man, Transwoman, Transman, Genderqueer/gender non-conforming, Gender not listed here*:_____]; (c) race/ethnicity [response option: *Black/African, American White/Caucasian, Asian or Asian American, Hawaiian or Pacific Islander, Native American or Alaskan native, Hispanic or Latino/a, A race/ethnicity not listed here*:_____]; (d) sexual orientation [response option: *Gay, Lesbian, Bisexual, Asexual, Heterosexual/straight, Queer, A sexual orientation not listed here*:_____]; and (e) year in school [response option: *First year* (0)*, Second year* (1)*, Third year* (2)*, Fourth year* (3)*, Fifth or more year undergraduate* (4)]; (e) Spring admission [*yes/no*]. While not inclusion criteria or a part of study aims, STEM (Science, Technology, Engineering, and Math) involvement [response options: *No* (0), *Yes* (1), *Unsure* (2)] was also assessed based on focus group conversations about experiences in STEM and to assess the representativeness of the sample to UCB campus.

Sexual harassment. Sexual harassment was assessed using 20 items: 17 modified items from the Sexual Experiences Questionnaire (SEQ; Fitzgerald, Gelfand, & Drasgow, 1995) to

measure the type and frequency of sexual harassment on campus and three items to measure virtual sexual harassment on campus (Nukulkij, 2011). The SEQ demonstrated good reliability ($\alpha = 0.89$) in its original measure validation study and consists of three sub-scales: Gender Harassment ($\alpha = 0.86$), Unwanted Sexual Attention ($\alpha = 0.75$), and Sexual Coercion ($\alpha = 0.87$; Fitzgerald et al., 1995). As the measure was not designed specifically for college campuses, the questions were modified to ensure that they are campus specific (e.g., "have you been in a situation in which someone on campus made offensive comments about your appearance, body, or sexual activities?"). These modifications were in line with widely used campus climate surveys (e.g., ARC3, AAU). Three items assessing virtual sexual harassment were also integrated into the sexual harassment measure. These questions, from the AAUW Knowledge Networks Survey (Nukulkij, 2011) had strong internal consistency in the college campus specific, ARC3 Pilot study ($\alpha = 0.83$; ARC3, 2015). Based on feedback from the expert advisory board and in cognitive interviews, the reference time period was adjusted to: "Since the start of THIS ACADEMIC YEAR." Items used a 5-point Likert-type scale: [*Never* (0), *Once or twice* (1), *Sometimes* (2), *Often* (3), *Many Times* (4)]. Subscale scores were created as averages of the items in the subscale. Most subscales had good internal consistency reliability in the current study: Gender Harassment ($\alpha_{s1} = 0.90$), Unwanted Sexual Attention ($\alpha_{s1} = 0.88$), and Sexual Coercion ($\alpha_{s1} = 0.90$). Internal consistency reliability for Electronic Harassment ($\alpha_{s1} = 0.55$) was weak, which may be partly attributed to the low number of items and should be taken into consideration when interpreting results. A scale score was created summing all 20 items and taking the average with higher scores indicating more harassment. Internal consistency reliability for the overall scale was strong in the current study ($\alpha_{s1} = 0.91$).

Depression. The Center for Epidemiologic Studies Short Depression Scale (CESD-10) was used to measure depression. The CESD-10 uses ten items to assess depressive symptoms (e.g., "I could not 'get going") over the past week with response options [*Rarely or none of the time (less than 1 day)* (0), *Some or a little of the time (1-2 days)* (1), *Occasionally or a moderate amount of the time (3-4 days)* (2) to *Most or all of the time (5-7 days)* (3)]. The CESD-10 is strongly correlated ($r = 0.97$) with the full CES-D scale (Andresen, Malmgren, Carter, & Patrick, 1994). Two items were reverse coded (i.e., "I felt hopeful about the future" and "I was happy"). The items were summed to create an overall indicator of depression with higher scores indicating more severe depression. Scores of 10 or higher out of 30 indicate clinically significant depressive symptoms (Björgvinsson, Kertz, Bigda-Peyton, McCoy, & Aderka, 2013; Bradley, Bagnell, & Brannen, 2010); however the scale was maintained as a continuous scale. This scale has been validated in numerous studies (Andresen et al., 1994; Irwin, Artin, & Oxman, 1999; Zhang et al., 2012) and used successfully in previous studies with college students (Ganem, Heer, & Morera, 2009; Mason, Ullman, Long, Long, & Starzynski, 2009) with satisfactory indicators of reliability ($\alpha = 0.76$). The scale had good internal consistency reliability in the current study ($\alpha_{s1} = 0.85$).

Stress. The four-item Perceived Stress Scale (PSS-4; Cohen, Kamarck, & Mermelstein, 1983; Cohen & Williamson, 1988) was used in the current study as a brief measure of participant stress. It is designed to assess the extent to which participants judge their lives to be uncontrollable and overwhelming in the last month. The PSS-4 is the most abbreviated version of the PSS which has a 14 and 10 item version, with the four included items having the strongest correlation to the measure's 14 item version (Cohen et al., 1983). An example item includes, "In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?" The measure uses a five-point Likert-type scale with response options, [*Never* (0), *Almost never* (1), *Sometimes* (2), *Fairly often* (3), and *Often* (4)]. Two items were reverse

scored (i.e., "how often have you felt things were going your way" and "how often have you felt confident about your ability to handle your personal problems") and scores were then summed with higher scores indicating more stress. In the original measurement study, Cohen and colleagues (1983) reported internal consistency reliability at $\alpha = 0.72$ and two-month test retest reliability at 0.55. The measure has been used in microaggression studies, including studies on microaggressions and disability ($\alpha = 0.78$; Conover et al., 2017) and intersectional microaggressions ($\alpha = 0.84$; Balsam, Molina, Beadnell, Simoni, & Walters, 2011). The internal consistency reliability for the current study was $\alpha_{s1} = 0.75$.

Social Desirability. The Socially Desirable Response Set Five-Item Survey (SDRS-5; Hays et al., 1989) is a five-item self-report measure designed to assess participants' tendency toward socially desirable responses. The SDRS-5 is based on the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960), but is much shorter than their 33-item measure and has been found to be strongly correlated ($r = 0.79$; Heppner, Humphrey, Hillenbrand-Gunn, & DeBord, 1995). Example items include, "I sometimes try to get even rather than forgive and forget" and "I am always courteous even when people are disagreeable." Response options are on a five-point Likert-type scale with response options [*Definitely true* (1), *Mostly true* (2), *Don't know* (3), *Mostly false* (4), *Definitely false* (5)]. Three items were reverse scored (e.g., "There have been occasions when I took advantage of someone"). Each item was dichotomized after reverse scoring, with any response option indicating an extreme score (1) scored *1* while all other scores were scored *0*. Scores were summed with higher scores indicating greater socially desirable responding. In the measure design manuscript, Hays and colleagues (1989) reported internal consistency reliability estimates at ($\alpha = 0.66$ and 0.68) and one-month test-retest reliability at 0.75. The SDRS-5 has been used in multiple microaggressions measurement studies and has not been found to significantly correlate with participants' responses to scales of sexual minority microaggressions (Wright & Wegner, 2012) and abelist microaggressions (Conover et al., 2017). The SDRS-5 had acceptable internal consistency in the current study ($\alpha_{s1} = 0.67$).

Table 1. Summary List of Study 2 Variables, Measures, Current Study Alpha Coefficients, and Major Modifications

Variables	Measures
Demographics	
Demographics	Demographics adapted from (ARC3, 2015) • Age (1 item) • Gender (1 item) • Sexual orientation (1 item) • Race/ethnicity (1 item) • Year in school (1 item) • Spring admission (1 item) • STEM major (1 item)
Gender Microaggressions	
Gender Microaggression	Undergraduate Gender Microaggressions Scale (UGMS) Developed for the current study, with items adapted from existing measures • UGMS-p (28 items, $\alpha_{s1} = 0.94$) • UGMS (18 items, $\alpha_{s1} = 0.91$) Four subscales: • Presumed Incompetent (8 items, $\alpha_{s1} = 0.89$) • Gender Role Stereotypes (4 items, $\alpha_{s1} = 0.82$) • Male Dominance (4 items, $\alpha_{s1} = 0.78$)

	• Institutional Invalidation (2 items, $\alpha_{s1} = 0.75$) Reference period: Since the start of THIS ACADEMIC YEAR
Convergent and Discriminant Validity Variables	
Sexual Harassment	Sexual Experiences Questionnaire (SEQ; Fitzgerald, Gelfand, & Drasgow, 1995) Total Scale • Sexual Harassment (17 items, $\alpha_{s1} = 0.91$) Three sub-scales: • Gender Harassment (5 items, $\alpha_{s1} = 0.90$) • Unwanted Sexual Attention (7 items, $\alpha_{s1} = 0.88$) • Sexual Coercion (5 items, $\alpha_{s1} = 0.90$) Reference period: original – college life; modified – Since the start of THIS ACADEMIC YEAR
Depression	Center for Epidemiologic Studies Depression Scale -10 (CESD-10; Miller, Anton, & Townson, 2008) • Total scale (10 Items; $\alpha_{s1} = 0.85$) Reference period: past week
Stress	Perceived Stress Scale (PSS-4; Cohen, Kamarck, & Mermelstein, 1983) Total scale (4 items; $\alpha_{s1} = 0.84$) Reference period: last month
Social Desirability	Social Desirable Response Set – 5 Item (SDRS-5; Hays, Hayashi, & Stewart, 1989) • Total scale (5 items; $\alpha_{s1} = 0.67$) Reference period: not specified, lifetime

Data Analysis

The data analysis plan began with the identification of the factor structure for the new instrument. Once this step was complete, the analysis continued with univariate analysis for all variables yielding descriptive data. This was accomplished by examining frequencies and percentages for categorical variables and measures of central tendency and dispersion (i.e., means, medians, modes, and skewness) for continuous variables. Internal consistency reliability of each scale included in the study was tested. All necessary diagnostic techniques were executed to ensure that the assumptions were met for the statistical procedures employed.

Factor structure and measure development. Item performance and factor structure were examined in order to develop a concise gender microaggressions scale. First, skew and kurtosis were examined for each item to identify those items with little variation in the data (skewness < 2; kurtosis < 7; Fabrigar, Wegener, MacCallum, & Strahan, 1999). Those items flagged for little variation were examined for their potential contribution (i.e., are they tapping in to concepts identified as cogent themes in the qualitative phase) to decide if they should be removed. Inter-item correlations were then conducted to identify items that may be redundant ($r \geq 0.80$) or weakly correlated ($r \leq 0.30$; Yong & Pearce, 2013). Items found to have content redundancy and those with weak inter-item correlations were also examined for their potential contribution as discussed above to decide if they should be removed. More details on item reduction can be found in the results section.

In addition to examining the data to ensure the contribution of included items, multiple tests were carried out to ensure that the dataset was suitable for EFA. First, the correlation matrix for the UGMS-p was examined to assess for multi-collinearity. Second, Bartlett Test of Sphericity was examined – this test compares the correlation matrix of the data with a matrix of zero correlations (the identity matrix). A small p value is desired ($p < .05$) indicating that it is highly unlikely to obtain the observed correlation matrix from a population with no correlation,

suggesting that the data has a patterned relationship (Yong & Pearce, 2013). Finally, the Kaiser-Meyer Olkin Measure (KMO) of Sampling Adequacy (cutoff > .50) was conducted to ensure that the degree of common variance among the factors is sufficient for a factor to be extracted (Yong & Pearce, 2013). Once these tests were completed, principal axis factoring (PAF) was used to examine the latent structure of the items.

Principal axis factoring. PAF is an EFA approach that seeks to explain the correlations among a set of observed variables by uncovering a smaller set of unobserved underlying variables (Kabacoff, 2011). Traditional models used for PAF assume that observed variables are continuous, measured on an interval or ratio scale, and normally distributed. As the current study relies on ordinal data, it employed an underlying response variable approach which assumes that each ordinal observed variable is generated by a continuous latent variable (Jöreskog & Moustaki, 2001). With this approach, polychoric correlations are estimated by conditional maximum likelihood for first stage estimates to account for the ordinal nature of the data. To carry the analysis, first the number of common factors to extract was decided based on parallel analysis, the Kaiser-Harris criterion, and the Cattell Scree. After deciding the number of factors, PAF was used to extract common factors. Unrotated loadings with principal axis factoring are generally difficult to interpret, so oblique rotation was applied, in this case promax rotation was used. Unlike orthogonal rotation, oblique rotation allows factors to correlate leading to a less pure but more realistic factor loading matrix. Both the number of factors and patterns in factor loadings was examined (Woodford, Chonody, Kulick, Brennan, & Renn, 2015; Yong & Pearce, 2013).

After completing PAF, an overall scale score was created for the UGMS. In addition, subscale scores were calculated by summing items and dividing by the total number of items. Internal consistency reliability was tested using Cronbach's alpha for the overall measure and subscales.

Convergent and discriminant validity. Convergent and discriminant validity were tested to better establish the UGMS construct validity. As some of the included variables violated assumptions of normality, non-parametric Spearman's correlations were used to assess the strength of the relationship with scores ranging from -1 to 1. Scores with an absolute value close to 1 indicated stronger relationships. Spearman's correlations between the UGMS and three subscales of the Sexual Experiences Questionnaire (SEQ): Gender Harassment, Unwanted Sexual Attention, and Sexual Coercion (Fitzgerald et al., 1995), Perceived Stress Scale (PSS-4; Cohen & Williamson, 1988), Center for Epidemiologic Studies Depression scale (CESD-10; Miller, Anton, & Townson, 2008). These scales were selected as we would expect based on theory and prior research that experiences of microaggressions would be related to sexual harassment (Gartner & Sterzing, 2016), stress (Meyer, 2003), and depression. The three subscales of the SEQ were examined rather than the total scale score, as they range in experience from gender harassment (example item: "Made offensive remarks about your appearance, body, or sexual activities") which bears the most resemblance to gender microaggressions, to unwanted sexual advances (example item: "Touched you in a way that made you feel uncomfortable") and sexual coercion (example item: "Made you feel threatened with some sort of retaliation for not being sexually cooperative") which have the most overlap with sexual harassment and/or sexual assault (Collinsworth, Fitzgerald, & Drasgow, 2009; Fitzgerald et al., 1995; Gartner & Sterzing, 2016).

Study 3: Gender Microaggressions Frequency, Location, and Correlates

The purpose of Study 3 was to employ the UGMS to examine the frequency, locations and mental and behavioral health correlates of gender microaggressions for undergraduate women. This study addresses Aims 2 to 4 of the overarching research project.

Participants

The current study employed half of the randomly split sample ($N = 220$) described in Study 2 to address Aims 2 to 4 of the research project. As such, participants were recruited in the same way and met the same inclusion criteria as those in Study 2. See Table 3 for sample demographics (Sub-sample 2).

Procedures

The procedures for Study 3 were the same as those outlined earlier for Study 2.

Power analysis. For multiple regression analysis, power was calculated for a two-sided hypothesis test employing a significance level of .05. The power calculations were based on proposing a multiple regression model with a maximum of 7 variables (6 control variables – race, sexual orientation, age, year in school, sexual harassment, and sexual assault; 1 main predictor – gender microaggressions). A main predictor that explains 6% of the variance ($\Delta R^2 = .06$) was considered to be a statistically meaningful increase to the overall model (Cohen, 1988). Using G*Power, a sample size of 200 yielded 80% power and a small effect size of $f^2 = .06$ (Cohen, 1988). An effect size between small (.02) and medium (.15) was selected for analysis. In their study of racial microaggressions, Nadal and colleagues (2014) achieved a large effect size .35 when examining the relationship between racial microaggressions and mental health outcomes. Despite this large effect, microaggressions are often insidious and cumulative, therefore a smaller effect was indicated for the current study based on meta-analytic literature that found that the effects of perceived discrimination in published articles to be between small ($r = .10$) and medium ($r = .3$) with a finding of ($r = -.2$; Cohen, 1992; Pascoe & Smart Richman, 2009).

Variables and Measures

A summary list of all measures can be found below in Table 2.

Demographics. As the current study is a randomly split sample, participants completed the same demographic questionnaire as described in Study 2. Responses to demographic questions were used to describe the sample, examine differences in frequency by race and sexual orientation, and as control variables when examining the relationship between gender microaggressions and mental and behavioral health.

Gender microaggressions. The final 18-item version of the Undergraduate Gender Microaggressions Scale (UGMS) was used for Study 3 (see Appendix J). Participants rated their experiences with gender microaggressions "during this academic year." On a Likert-type scale ranging with response options, [*Never* (0), *Once or twice in the last academic year* (1), *Once or per semester* (2), *Monthly* (3), *Weekly* (4), *Almost daily to daily* (5)]. The UGMS has four subscales: (1) Presumed Incompetent (8 items; $\alpha_{s2} = 0.83$[1]), (2) Gender Role Stereotype (4 items; $\alpha_{s2} = 0.72$), (3) Male Dominance (4 items; $\alpha_{s2} = 0.69$), and (4) Institutional Invalidation (2 item; $\alpha_{s2} = 0.64$). An example item is, "You were assumed not to know or understand basic material". The full instrument can be found in Appendix F. The UGMS was presented to participants in a matrix. The total scale Cronbach's alpha for the current study was very good ($\alpha_{s2} = 0.88$).

[1] Cronbach's alphas reported here use the current study sample (sub-sample 2) and differ slightly

Sexual harassment. As with Study 2, sexual harassment was assessed using 20 items: 17 modified items from the Sexual Experiences Questionnaire (SEQ; Fitzgerald, Gelfand, & Drasgow, 1995) to measure the type and frequency of sexual harassment on campus and three items to measure virtual sexual harassment on campus (Nukulkij, 2011). See Study 2 for more details. The internal consistency reliability with the current sample was assessed with similar results to that noted in Study 2: Gender Harassment ($\alpha_{s2} = 0.91$), Unwanted Sexual Attention ($\alpha_{s2} = 0.94$), and Sexual Coercion ($\alpha_{s2} = 0.88$) had strong internal consistency reliability with weaker internal consistency reliability for Electronic Harassment ($\alpha_{s2} = 0.64$). A scale score was created summing all 20 items and taking the average, with higher scores indicating more harassment. Internal consistency reliability for the overall scale was strong in the current study ($\alpha_{s2} = 0.94$).

Sexual assault. The Sexual Experiences Survey Short Form Victimization (SES-SFV) was used to assess experiences of sexual assault reported by participants (Koss et al., 2007). SES-SFV has also been incorporated in many campus climate surveys such as the ARC3, American Association of Universities (AAU) and numerous others (Wood, Sulley, Kammer-Kerwick, Follingstad, & Busch-Armendariz, 2017). Tests of validity and reliability have been conducted for the original measure indicating both convergent and discriminant validity and good internal consistency ($\alpha = 0.80$; Cecil & Matson, 2006; Karabatsos, 1997). Adaptations of the SES-SFV have also indicated high reliability– with the ARC3 (2015) pilot study reporting high internal consistency for their SES-SFV derived sexual victimization scale ($\alpha = 0.92$).

The SES-SFV consists of 35 items that use a four-point scale in response to "How many times in the past 12 month months…" [*0* (0), *1* (1), *2* (2), *3*+(3)] to assess the frequency of 7 distinct kinds of unwanted sexual experiences (Koss et al., 2007). For example, participants were asked "A man put his penis into my vagina, or someone inserted fingers or objects without my consent by:" and would be presented with five response options including (e.g., "Taking advantage of me when I was too drunk or out of it to stop what was happening" and "Telling lies, threatening to end the relationship, threatening to spread rumors about me, making promises I knew were untrue, or continually verbally pressuring me after I said I didn't want to"). Consistent with Koss et al. (2007), an ordinal variable was created with non-victim (0), sexual contact (1), sexual coercion (2), attempted rape (3), and rape (4). If a participant reported any experience in one of these categories it would be counted as *1*, while no reported experience within the category would be counted as *0*.

Mental and behavioral health variables.

***Depression*.** As with Study 2, The Center for Epidemiologic Studies Depression Short Depression Scale (CESD-10) was used to measure depression. For full details on the scale see Study 2. In the current study, the scale exhibited good internal consistency reliability ($\alpha_{s2} = 0.85$).

Posttraumatic stress. Posttraumatic stress was assessed using the Short Screening Scale for the DSM-IV (Bohnert & Breslau, 2011). Seven questions with binary response options (*yes/no*) were used to address posttraumatic stress related specifically to previously reported experiences of gender microaggressions (e.g., "Did you begin to feel more isolated of distant from other people?"). The scale was modified from its lifetime time frame to refer specifically to this academic year and gender microaggressions, "Have any of the incidents of subtle forms of insults, invalidations, and rejections that you've experienced led to the following personal experiences since the start of THIS ACADEMIC YEAR?". A scale was constructed as a count of the seven items that participants endorsed in response to microaggression experiences. The measure has been used with college students (Lawler, Ouimette, & Dahlstedt, 2005) with good

indicators of reliability (α = 0.80). In the current study, the scale had acceptable internal consistency reliability with (α_{s2} = 0.69).

Stress. The four item Perceived Stress Scale (PSS-4; Cohen, Kamarck, & Mermelstein, 1983; Cohen & Williamson, 1988) was used in the current study as a brief measure of participant stress. More details on this measure can be found in Study 2. The internal consistency reliability for the current study was α_{s2} = 0.79.

School avoidance. Impact of gender microaggressions on school avoidant behavior was assessed using the School Avoidance Scale (Ramos, 2000). The 8-item measure was informed by measures used to examine organizational withdrawal (Hanisch & Hulin, 1991). Items assess the extent to which participants engaged in behaviors that are often used to disengage from education. The original scale used a past semester time period, which was modified for the current study to assess behaviors since the start of this academic year. Participants were asked, "How many times have you done the following since the start of THIS ACADEMIC YEAR" and were presented with behaviors like, "missed class," "slept in class," "thought about quitting school." Response options were presented on a five point Likert-type scale, [*Never* (0), *Almost never* (1), *Sometime* (2), *Almost always* (3), *Always* (4)]. The measure was designed for use on college campuses with a specific examination of sexual harassment (Ramos, 2000) and has been used to assess the impact of heterosexist harassment on college campuses (Silverschanz, Cortina, Konik, & Magley, 2008). The internal consistency reliability for the current study was good (α_{s2} = 0.72).

Problem Drinking. The 10-item Alcohol Use Disorder Identification Test (AUDIT) was used to measure problem drinking (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). The AUDIT covers the conceptual domains of alcohol consumption, drinking behavior/dependence, and alcohol-related problems. The majority of the items are scored according to past year frequency of occurrence (seven items: e.g., How often during the past year have you had a feeling of guilt or remorse after drinking?), with response options ranging from *Never* (0) to *Four or more times a week* (4) or *Never* (0) to *Daily or almost daily* (4). One item was scored on amount consumed (i.e., "How many drinks containing alcohol do you have on a typical day when you are drinking?") with response options ranging from *1 or 2* (0) to *10 or more* (4). Two items (e.g., "Have you or someone else been injured as a result of your drinking?") were scored using the following response options [*No* (0), *Yes, not in the last year* (2), *Yes, during the last year* (4)]. Each question was scored 0 to 4, with possible scale scores ranging from 0 to 40. The cut-off score of 6 was used, as it demonstrated a sensitivity of 91.0% and a specificity of 60.0% in the detection of high-risk drinkers in a college sample (Kokotailo et al., 2004) and is in keeping with the practice of using lower cut-off scores for women (Babor et al., 2001). Using the cut-off score of 6 a binary alcohol use variable was created such that those scoring 6 and above were *high-risk* (1) and those scoring below 6 were *low-risk* (0). The scale has been used successfully with college populations with satisfactory reliability (α = 0.81; Kokotailo et al., 2004). The internal consistency reliability for the current study prior to dichotemous transformation was (α_{s2} = 0.85).

Location. Location was assessed at multiple points in the survey. To understand gender microaggressions location, they were assessed first for direct gender microaggressions, (e.g., "When you **directly experienced** subtle insults, invalidations, and rejections during this academic year, where did it happen? (select all that apply)"), then for **overheard** subtle insults, invalidations, and rejections. All participants were presented the location questions with the option to select "I did not overhear subtle insults, invalidations, and rejections during this

academic year" or "I did not directly experience subtle insults, invalidations, and rejections during this academic year." For sexual harassment, location was assessed after each of the SEQ subscales (i.e., gender harassment, unwanted sexual attention, and sexual coercion). Display logic was used such that only participants who reported an experience of gender harassment, unwanted sexual attention, or sexual coercion would be presented the location follow-up question for that subscale. For sexual assault, a single location question was asked after participants completed the entire SES-SFV measure. As with sexual harassment, display logic was employed such that participants needed to report an experience in the SES-SFV to be asked the location follow-up item. Participants were able to check all locations that applied to their experiences. They selected from the following options, *Residence hall* (1), *Fraternity or sorority house* (2), *Off campus housing* (3), *In a locker room or bathroom on campus* (4), *In a classroom or lecture hall* (5), *In a faculty office space* (6), *In the library* (7), *In dining halls* (8), *In the gym* (RSF) (9), *In an organized club meeting (e.g., sport practice, band practice, community service meeting)* (10), *Outside on campus grounds* (11), *Social media* (12), *Text message* (13) of *A location not listed here* with the option to specify.

Table 2. Summary List of Study 3 Variables, Measures, Current Study Alpha Coefficients, and Major Modifications

Variables	Measures
Demographics	
Demographics	Demographics adapted from (ARC3, 2015) • Age (1 item) • Gender (1 item) • Sexual orientation (1 item) • Race/ethnicity (1 item) • Year in school (1 item) • STEM major (1 item) • International student (1 item) • Spring admission (1 item)
Campus Sexual Violence (Aims 2, 3, 4)	
Gender Microaggression	Undergraduate Gender Microaggressions Scale (UGMS) Developed for the current study, with items adapted from existing measures • UGMS (18 items, $\alpha_{s2} = 0.88$) Four subscales: • Presumed Incompetent (8 items, $\alpha_{s2} = 0.83$) • Gender Role Stereotypes (4 items, $\alpha_{s2} = 0.72$) • Male Dominance (4 items, $\alpha_{s2} = 0.69$) • Institutional Invalidation (2 items, $\alpha_{s2} = 0.64$) Reference period: Since the start of THIS ACADEMIC YEAR
Sexual Harassment	Sexual Experiences Questionnaire (SEQ; Fitzgerald, Gelfand, & Drasgow, 1995) Total Scale • Sexual Harassment (20 items, $\alpha_{s2} = 0.94$) Three sub-scales (17 items total): • Gender Harassment (5 items, $\alpha_{s2} = 0.91$) • Unwanted Sexual Attention (7 items, $\alpha_{s2} = 0.94$) • Sexual Coercion (5 items, $\alpha_{s2} = 0.88$) Select items from AAUW Knowledge Networks Survey (Nukulkij, 2011) • Electronic Harassment (3 items, $\alpha_{s2} = 0.64$) Reference period: original – college life; modified – Since the start of THIS ACADEMIC YEAR
Sexual Assault	Sexual Experiences Survey Short Form Victimization (SES-SFV; Koss et al., 2007) Five sub-scales: • Sexual Contact (5 items, $\alpha_{s2} = 0.72$) • Attempted Coercion (6 items, $\alpha_{s2} = 0.784$) • Coercion (6 items, $\alpha_{s2} = 0.85$) • Attempted Rape (9 items, $\alpha_{s2} = 0.92$) • Rape (9 items, $\alpha_{s2} = 0.92$) Reference period: original – past 12 months; modified – Since the start of THIS ACADEMIC YEAR
Location (Aim 3)	
Location	List of campus-related locations developed for the current study based on focus group and expert consultation

Mental and Behavioral Health (Aim 4)	
Depression	Center for Epidemiologic Studies Depression Scale -10 (CESD-10; Miller, Anton, & Townson, 2008) • (10 Items; $\alpha_{s2} = 0.85$) Reference period: past week
Posttraumatic Stress	Short Screening Scale for the DSM-IV Posttraumatic Stress Disorder; Bohnert & Breslau, 2011) • Total scale (7 items; $\alpha_{s2} = 0.69$) • Adaptation to reference experiences of subtle forms of insults, invalidations, and rejections • Cut-off of 4 used to create binary variable for analysis Reference period: original – college life; modified – Since the start of THIS ACADEMIC YEAR
Stress	Perceived Stress Scale (PSS-4; Cohen, Kamarck, & Mermelstein, 1983) • Total scale (4 items; $\alpha_{s2} = 0.79$) Reference period: last month
School Avoidance	School Avoidance Scale • Total scale (8 items; $\alpha_{s2} = 0.72$) Reference period: original – past semester; modified – Since the start of THIS ACADEMIC YEAR
Alcohol Use (Harmful Drinking)	Alcohol Use Disorders Identification Test (AUDIT; Babor, Higgins-Biddle, Saunders, & Monteiro, 2001) • Total scale (10 items; $\alpha_{s2} = 0.85$) • Cut-off of 6 used to create binary variable (Kokotailo et al., 2004) Reference period: original – past year; modified – Since the start of THIS ACADEMIC YEAR

Data Analysis

Univariate analyses were conducted to provide descriptive data for all variables. Frequency distributions were inspected for categorical variables and measures of central tendency and dispersion were examined for continuous variables. This descriptive data was used to examine variable distributions for normality and non-normality to determine which variables needed transformation, recoding, and/or the use of non-parametric statistical tests. Most variables approximated a normal distribution but some were skewed. Recoding to create binary variables and non-parametric statistical tests (e.g., Spearman rho correlation, Kruskal-Wallis test) were used when appropriate.

Analysis for Aim 2: Frequency of sexual violence. To identify the frequencies of gender microaggressions, sexual harassment, and sexual assault by race and sexual orientation for undergraduate women in the last academic year.

Aim 2 was descriptive in nature as it sought to better understand the frequency of gender microaggressions using the new UGMS, sexual harassment using the SEQ, and sexual assault using the SES-SFV. This aim also sought to understand differences by race and sexual orientation in these rates.

Gender microaggressions, sexual harassment, and sexual assault frequency. Understanding frequency for gender microaggressions and sexual harassment required identifying how pervasive they are (i.e., how many people report any experience) and how chronic they are (how many people report frequent experiences). The decision to examine frequency in this way was drawn from microaggressions and sexual assault literature that speak specifically to the pervasive and chronic nature of these stressors (Fitzgerald et al., 1995; Sue, 2010). First, the number of participants reporting at least one incident of gender microaggressions in the academic year was examined and then the number of participants reporting at least one daily or almost daily gender microaggressions experience in the academic year was examined. This rate was calculated for the total scale and subscales. For sexual harassment, first, the number of participants reporting any sexual harassment experience at least once or twice in the last academic year was examined and then the number reporting any sexual harassment experience at least often was examined. As with gender microaggressions, the rate was calculated for the total scale and for subscales. Finally, for sexual assault, the number of participants with any sexual assault experience was examined for the total scale score, unwanted sexual contact, attempted rape, and rape. Unlike gender microaggressions and sexual harassment which, by definition, are repeated and chronic, sexual assault is acute, with even a single event linked to adverse outcomes (Gartner & Sterzing, 2016).

Frequency differences by race and sexual orientation. The scales for gender microaggressions, sexual harassment, and sexual assault all used different response scales. As the sexual harassment and sexual assault measures were validated instruments and because one would expect very different rates of gender harassment and rape, these scales were not altered to create uniform response options for the current study. As the UGMS is a new scale, severity cut-offs have not been established. Upper quartile cutoffs were established for the gender microaggressions measure and related subscales as well as the sexual harassment measure and related subscales to assess high- and low- levels. High-levels were assessed as falling above the upper quartile cutoff and low levels were assessed as falling below the upper quartile cutoff. Following scoring conventions for the sexual assault measure, the presence of any assault was counted as high with no assault counted as low. Rates were first calculated for the general sample. High and low rates were examined across gender microaggressions, sexual harassment,

and sexual assault by sexual orientation and race/ethnicity (e.g., what percentage of sexual minority participants experienced high gender microaggressions). To determine if the rates were significantly different, bivariate logistic regression was used to examine differences by race and chi-square was used to examine differences by sexual orientation.

Aim 3: Locations. To explore the locations where gender microaggressions, sexual harassment, and sexual assault occur most frequently for undergraduate women in the last academic year.

The third aim was exploratory in nature. Participants were asked about the location where their reported gender microaggressions and sexual harassment experiences took place at multiple points in the survey, so the first step for this aim was to compile location data to create meaningful gender microaggressions and sexual harassment location variables. For gender microaggressions, participants reported location for direct gender microaggressions and for overheard gender microaggressions and could check all that applied. Binary location variables were created for each of the 13 locations queried by assigning a value of 1 (yes) if a participant endorsed a location for (a) direct, (b) overheard, or (c) both and value of 0 (no) if a participant did not endorse that location for direct and/or overheard gender microaggressions. For example, if a participant selected "library" in response to the question "When you **directly experienced** subtle insults, invalidations, and rejections during this academic year, where did it happen?", library would be counted as 1 and if they selected it for both overheard and direct it would be counted as 1. The same procedure was followed for sexual harassment, as participants provided location data for each SEQ subscale. Participants were only asked about the location of sexual assault at the end of the entire sexual assault scale, so each of the binary variables remained unaltered. The percent of participants who endorsed a location for gender microaggressions, sexual harassment, and sexual assault was calculated. As participants could belong to multiple categories, preliminary trends were examined but no statistical tests were conducted to examine difference by location.

Aim 4: Mental and behavioral health correlates. To assess the associations between campus sexual violence (i.e., gender microaggressions, sexual harassment, and sexual assault) and mental and behavioral health outcomes (i.e., depression, stress, posttraumatic stress, school avoidance, and alcohol use) for undergraduate women.

The fourth aim examines the relationship between gender microaggressions and mental and behavioral health indicators when controlling for sexual harassment and sexual assault. Three preliminary steps were taken before executing more complex analysis. First, the univariate distributions of all dependent and independent variables were examined and variables that violated assumptions of normality were re-coded such that highly skewed variables were transformed into binary variables. More details about recoding can be found in the results, where the descriptive statistics for each scale are outlined. Second, the relationship between demographic variables and the independent and dependent variable were examined at the bivariate level. Chi-square tests with Fisher's exact test, Kruskal Wallis tests, Spearman rho correlations, and logistic regressions were performed to identify any significant race, sexual orientation, year in school, STEM affiliation, and age differences across dependent variables. This step was taken to assess the variables that should be maintained in the models and those that could be dropped to preserve power. If a demographic variable did not have a significant bivariate relationship with either the independent or dependent variables it was not included in future models. Third, all necessary diagnostic tests for linear and logistic regression were conducted.

Multiple linear regression was then used to examine the relationship between gender microaggressions and depression, stress, and school avoidance. Multiple logistic regression was used to examine the relationship between gender microaggressions and the binary posttraumatic stress, and alcohol use variables. Other sexual violence variables (i.e., sexual harassment and sexual assault) were included in all models. Demographic covariates found to have a significant relationship with the independent or dependent variables at the bivariate level were included as control variables.

CHAPTER 4: RESULTS

Study 1: Gender Microaggressions Taxonomy for Undergraduate Women

Four gender microaggressions themes emerged as the most relevant to undergraduate women in a college campus environment. While all four of these themes were consistent with Capodilupo and colleagues (2010) gender microaggression taxonomy: (1) Assumption of Traditional Gender Roles, (2) Presumed Incompetence (3) Environmental Invalidations, and (4) Sexual Objectification. Important developmentally and contextually specific sub-themes emerged adding nuance to the taxonomy for undergraduate women. Three sub-themes were noted under Assumption of Traditional Gender Roles: (1) Caretaker/Nurturer, (2) Women-Dominated Occupations, and (3) Weak/"Damsel in Distress." In addition, Male Dominance emerged as a sub-theme of Presumed Incompetence and University/Infrastructure Invalidations emerged as a sub-theme of Environmental Invalidations.

Assumption of Traditional Gender Roles

Undergraduate women spoke about the ways in which expectations and assumptions regarding their behavior, social and academic choices, and career trajectory were different for them than their male peers. These "different" roles were not value neutral but positioned women as inferior. For example, undergraduate women shared experiences in which they were expected to have less esteemed majors, less valued roles in group work, and less prestigious career aspirations. To refine this construct with a focus on university context and developmental realities for undergraduate women, the gender roles evoked were categorized into gender-specific stereotypes or expectations.

Caretaker/Nurturer. In discussing the roles that they were expected to maintain, women often spoke about nurturance and caretaking. This expectation was communicated across different contexts, such as residence halls, jobs, clubs, and classrooms. They described how women always cleaned common spaces in residence halls, brought snacks to club meetings, and put the chairs back in order after group work in classes. One participant exemplified this experience, discussing the ways in which caretaking always seemed to be expected of her regardless of her desire or willingness to take it on. She said, "People often assume that I'm going to be the one that's going to clean things, or take care of certain things. Or if someone's upset, I'm gonna be the one to comfort them. Or I'm gonna be the one to organize certain things. I get that in a lot of different settings" (M[2], fourth year, White, heterosexual). Undergraduate women expressed frustration when their nurturance felt mandatory. This mandatory nurturance happened in situations in which participants were told that caretaking was their role for example in all-gender housing when male roommates said of the women in the suite, "They'll clean up after us." Undergraduate women also described mandatory nurturance when they were left with the responsibility because no one else was willing to do it, for example when all of the men left the class potluck without contributing to cleanup.

Women-Dominated Occupations. Undergraduate women described being taken less seriously because they did not fit the stereotype for many majors typically dominated by men. This theme was particularly salient among women in Science, Technology, Engineering, and Math (STEM) who described being pushed to channel their degrees differently than their male

[2] All initials tied to pseudonyms to protect participant identity.

peers. A woman of color studying physics[3] explained her frustration that her advisor, whom she had met with on multiple occasions to discuss her desires to enter a PhD program still relied on stereotypes when thinking of her career aspirations. She shared a memory of being the only woman in a small upper-level seminar in which her advisor was discussing the diversity of career options for physics majors. After listing jobs in academia and industry he turned to her, as the only woman in the room and said, "L, aren't you in Physics for Teachers?", which is a course for physics majors who want to become educators. She explained, "We're all studying electromagnetism. This is a very high-level course and yet, for some reason he assumed that I was the only one in the room who was planning to be a K through 12 teacher" (L, Fifth year, Mixed, bisexual). Situations like the one described above were not only discouraging, but also communicated hierarchy.

Weak/Damsel in Distress. Women often discussed the expectation that they be weak, fragile, or in need of protection. They described the discrepancy between how they are treated and how they see their male peers treated. One participant explained, "People coddle us more. Even when we don't want that at all … If it was a boy, you'd be encouraging him to take the tough route" (A, fifth year, Asian, heterosexual). Participants described feeling both thankful and frustrated at men's role as protector. The sense of conflict was particularly present when discussing walking home at night or attending parties. They resented feeling unsafe, that they felt safer with male friends, and that men were often patronizing when offering help. One participant described, "My guy friends, if I make a comment about walking home at night or something, they'll be like, 'Oh, I'll protect you.' Which is definitely good-natured, but I almost get annoyed because I wish I didn't need protection. I wish I could just walk home" (Z, First year, White, heterosexual). This theme often carried with it a hallmark of microaggressions – men appeared to be offering help or being nice; however, women often felt patronized, frustrated at their circumstances, or just conflicted.

Presumed Incompetence

Women described being treated as less competent than their male peers, despite their expertise, training, and track record. When they did achieve positions of power, like leading a class, they were often overshadowed, assigned administrative tasks, or ignored completely. One participant described her experience of working with a co-facilitator who insisted that she be note taker and administrator because she was "good at organizing" despite the reality that she had technical background in the area of interest. She explained,

> I'm involved in [a peer lead class], and I feel like I got treated differently for being a woman. It's never anything explicit… Like the first couple of weeks he [the cofacilitator] wanted me to take notes all the time, and I have more experience than him… He generally just treats me like I'm incompetent. Even though I have the technical background, I have research background that he does not have, and that's why I'm there. But he doesn't seem to process that. I think partially because I'm a woman. There are students who have similar background, but they're guys and he asked them for recommendations." (D, third year, Asian, heterosexual)

In addition to being ascribed subordinate roles, participants described being rendered invisible by their presumed incompetence. These women described situations in which their peers would completely ignore their contribution or capacity to contribute, but would seek out input and assistance from men. One participant described her experience of being completely ignored in

[3] Major and associated course names changed to protect participant confidentiality.

male-dominated academic spaces. She described sitting in the mathematics reading room and having her group table, which included many men, approached for help by other male classmates. She explained,

> They come up to me, sitting, usually with all guys and, "Oh, did anybody get this one? Does anybody know how to do this one?" And I'll stand up and be, like, "Yeah, here. I'll show you on the chalk board," and, get ignored and I'm, like, Holy shit. That's just incredibly blatant… for some reason, you don't think that I have the answer. I've been sitting in the same lecture that you've been sitting in. We've been all going to the same discussion. I'm reading the same textbook as you. I just don't understand. I mean it's just really ridiculous. (R, second year, White, heterosexual)

Women spoke about their confusion that, even after gaining entrance to an elite institution like UCB, they were still treated like they knew less than men, had less valuable contributions, and were less credible.

Male Dominance. As a sub-theme to presumed incompetence, participants described scenarios in which men controlled or dominated spaces in a way that indirectly communicated messages about competence and worthiness but also seemed to center male entitlement. Mansplaining was a pervasive experience for participants who described being spoken to like they were children and being interrupted and corrected despite having correct answers. One participant explained,

> I definitely will experience a lot of mansplaining. I have to just kind of prep myself for it... I have to explain to them that the way that they're explaining something to me is like different from how they would help other people in our group and it's just because I'm the only girl. But yeah, they get really defensive about it most of the time. And I'll have to justify myself, which is difficult. (C, first year, White, bisexual)

In addition to patronizing speech, participants also spoke about men dominating interactions, whether in classrooms or peer groups. They discussed feeling like there was no space for them to contribute or being actively discouraged from contributing. One participant described a common occurrence with her friend group:

> I'll be with a certain group of guy friends, then I notice that when they're talking about ideas they always, just talk to each other and don't really let me speak… Sometimes it really bugs me that they don't even make eye contact [with me] during these conversations, when there's clearly three of us there. And then it's, like, "Oh, wait but I have stuff to say too." And they sometimes talk over me." (E, third year, White, heterosexual)

Women described feeling invisible in male-dominated classroom spaces, office hours, club meetings, and social settings. Another participant described the ways that men shut her down by dominating conversations or signaling that she should not speak. She described her experience at a luncheon with other physics majors, where she was the only woman in attendance, when a professor seemed unhappy that she was speaking. She explained, "Apparently, every time I opened my mouth, Professor Z would make eye contact with my friend G, and roll his eyes" (L, fifth year, Mixed, bisexual). Women described the common experience of not feeling like there was space for them to talk, whether because of eye rolls, being ignored, or being talked down to.

Environmental Invalidations

Participants described ways in which they encountered microaggressions that were systemic in nature. These were experiences in which they noted larger power structures that were disempowering, unfriendly, or fully exclusionary to women. One of the dominant ways that

environmental invalidations were experienced was through gender power differentials at the departmental level. For example, participants – both in STEM and other disciplines – described not seeing women represented in faculty positions in their fields. Participants also noticed that women tended to hold lecturer positions, do more service work, and be less likely to have tenure. One participant explained,

> It actually makes me really sad how many female lecturers I've had compared to full tenure faculty members. That representation is so disproportionate, even in the sociology department. And, just, you know, it doesn't feel all that encouraging, as someone who might want to pursue academia. (J, Fourth year, White, queer).

These differences impacted how women understood who had access to power in their disciplines and the opportunities available to them.

A second way that environmental microaggressions manifested was women feeling unwelcome/unsafe in certain places. Many women spoke about their experiences at the campus gym and the discomfort that they felt occupying certain parts of the facility. One participant described her fear in entering spaces that functionally, if not officially, were designated to men. She said,

> When I started going to the [campus gym], they have three rooms that are weight rooms. They have one that looked like a huge amount of weights and the other two are off to the side. When I first started going, I felt like the big one was the guy's room, because you never saw any girls in there. And it was really scary, because before I didn't really know how to do anything. And I don't know, I just *really* didn't want to go in there. And it was ... It was kind of terror ... not, not scared, but like, I don't know what the words I'm trying to find, but I didn't want to go in there. And I would just use the smaller room." (L, Fourth year, Black, heteroflexible)

While there was not an explicit policy around women's use of the gym, the space was so unwelcoming that women described avoiding it, only entering with male friends, and trying to go at off hours. Due to the atmosphere, women lacked access to a resource designed to meet the needs of the entire campus community.

Infrastructure invalidation. Participants spoke about myriad ways that the University's policy and infrastructure inadequacies impacted them disproportionately as women. They spoke about the ways in which existing policies do not meet students' needs; for example, requisite student training in sexual violence and alcohol abuse prevention was a notable topic among participants. Women spoke to the ineffectiveness of online trainings that people can "just click through" and single dose trainings that all happen at the beginning of their college experiences. They also spoke about a desire for more in depth training, like required courses, to engage the entire campus in conversations of privilege and oppression, not only select groups (e.g., students who choose to major in Women's Studies, Sociology, African American Studies). When discussing her disappointment with student training, one participant explained that the training quality is out of line with the school's reputation, saying,

> We get this reputation for it being a safe space, but that takes work. You know? And I feel like the school prides itself on this progressive reputation and brings all these people here, as a result of it, but they do no work to actually line it up. All of the consent training, and alcohol awareness, and harm reduction, and stuff, that I did when I got here, was nothing ... Was, to me, kindergarten level, compared to what people need to be knowing and understanding. (J, Fourth year, White, queer)

Participants also spoke about the inadequacies of campus safety services such as lighting, emergency phones, campus night escort services, and security. They spoke to an incongruity between how the school portrays itself and their experiences on the ground. The campus night safety escort service came under a great deal of scrutiny. Participants described not feeling like they had access to the service because the wait times were so long – often exceeding 45 minutes – that they would either choose to leave the library early or pay for a ride. One of the major reasons participants spoke about needing a night safety escort, was a sense that the campus did not have the infrastructure needed to ensure student safety. From broken blue light phones to lack of lighting, campus after dark was a threatening place. Participants spoke to feeling like they were, "jeopardizing" their academics because they could not study on campus safely at night. One participant explained,

> The lamp posts are very, La La Land. They're very pretty and aesthetically, like, "Oh, cute." But then, I'm like, dude, it's dark as fuck... I was walking with someone because that's scary when you walk by yourself. But I couldn't see the ground, I'm like what is happening? I'm tripping over things that I should be able to see in front of me, you know. (J, second year, Latina, heterosexual).

Participants shared that they felt uncomfortable studying late at night. Many commented that their male friends walked home after dark and that they, as women, were far more impacted by the infrastructure failure than their male peers.

Sexual Objectification: "Get ready to be sexualized"

Participants described being treated like their worth was tied to their ability to capitalize on their sexuality or serve men sexually. This message was not only communicated to them in social settings (e.g., at parties), but in academic settings (e.g., in study groups) as well. Women describe feeling like they could not leave the house without being catcalled, could not go to the gym without being leered at, and could not go to parties without being groped. In describing a conversation with a male classmate, one participant explained that it was assumed she would need to use her body for academic success,

> I was in my [Class Name] discussion, and I was talking about a grade for a class saying, "Oh, I really wanna do well on this final." And the guy that I was talking to was just somebody that I normally sit with. And he was like, "Oh, you should just sleep with your GSI[4], and you'll get a good grade. That's what I would do if I was a girl." And he was joking, like, he was trying to be funny. (Z, first year, White, heterosexual)

Additionally, a participant described a broader culture that she noticed that sexualizes women on campus. She recounted overhearing men talk about women based solely on their bodies, seeing them as conquests,

> I hear that language all the time. Much more than I would expect, or I did expect, coming to Berkeley… I've been at a yoga class and had guys sitting next to me that were commenting on all of the women walking in, and commenting on their bodies and what they were wearing. (M, fourth year, White, heterosexual)

Women described feeling like UCB is superior to other schools in areas of gender equality and social justice, yet still negotiated a substantial culture of sexualization and objectification. The discordance between UCB's reputation as one of the most socially progressive institutions in the country and their experiences often made women question the veracity of their feelings and added to the ambiguity of the microaggressive behavior.

[4] At UCB, graduate level teaching assistants are referred to as GSI (Graduate Student Instructors)

Study 2: Exploratory Factor Analysis and Validity Testing

Participant Demographics

A sample of 440 UCB undergraduate women were surveyed and the sample was randomly split with half (n = 220) used in the current study. Table 3 presents participant demographics for the total sample (N = 440), the sample for Study 2 (i.e., sub-sample 1), and for Study 3 (i.e., sub-sample 2). Sub-sample 1, used in the current study, was comprised of women who ranged in age from 18 to 24 with a mean age of 19.6 (SD = 1.4). The racial/ethnic composition of the sample was 85 Asian (38.6%), 59 White (26.8%), 37 Latina (16.8%), 29 multiracial (13.2%), 5 Black (2.3%), 2 Middle Eastern/Southwest Asian/North African (0.9%), 1 Hawaiian/Pacific Islander (0.5%), and 2 'other' (0.9%). In keeping with conventions for UCB surveys of campus and climate (Division of Equity & Inclusion, 2016), Latina, multiracial, Black, Middle Eastern/Southwest Asian/North African, Hawaiian/Pacific Islander, and other were collapsed into one group, and recoded as under-represented minorities (URM) to address small cell sizes (n = 76, 34.6%). In regard to sexual orientation, 180 participants identified as straight/heterosexual (81.8%), 13 as bisexual (5.9%), 8 as questioning (3.6%), 5 as queer (2.3%), 4 as asexual (1.8%), 4 as lesbian (1.8%), 4 as pansexual (1.8%), and 2 as 'other' (0.9%). Due to small cell size, bisexual, questioning, queer, asexual, lesbian, pansexual, and other were recoded and collapsed into one sexual minority group (n = 40, 18.2%). When examining year in school, first years were the largest group (n = 87, 39.6%) with an even distribution across second, third and fourth+ years, each with approximately 20% of the sample. Similar to UCB as a whole, there was a fairly even division between students participating in STEM (n = 96, 43.8%) and those who were not (n = 105, 48.0%).

Table 3. Participant Demographics for the Total Sample and Two Random Subsamples

Demographics	Total Sample N = 440		Sub-Sample 1 n = 220		Sub-Sample 2 n = 220	
	n	% Total	*n*	% Total	*n*	% Total
Race						
Asian	176	40.0	85	38.6	91	41.3
White	112	25.5	59	26.8	53	24.1
Under Represented Minority	152	34.6	76	34.6	46	34.6
Sexual Orientation						
Heterosexual	346	78.6	180	81.8	166	75.5
Sexual Minority	94	21.4	40	18.2	54	24.6
Year in School						
First Year	147	33.4	87	39.6	60	27.3
Second Year	98	22.3	44	20.0	54	24.6
Third Year	107	24.3	44	20.0	63	28.6
Fourth Year or Higher	88	20.0	45	20.5	43	19.6
STEM Major						
Non-STEM	210	48.1	105	48.0	105	48.2
STEM	196	44.9	96	43.8	100	45.9
Undecided	31	7.1	18	8.2	13	6.0
	Mean	*SD*	Mean	*SD*	Mean	*SD*
Age	19.7	1.4	19.6	1.4	19.9	1.4

Note: Three participants chose to skip the question asking about STEM

Preliminary Analysis

Descriptive statistics, including means, standard deviations, and intercorrelations, for the 28 UGMS-p variables were examined (see Table 4). To develop a concise scale consistent with the assumptions of factor analysis, inter-item correlations were examined to identify potentially redundant items ($r \leq .80$) and items lacking sufficient relationship within any domain ($r \leq .30$; Yong & Pearce, 2013). No items were dropped in this process. To test assumptions of univariate normality, skewness and kurtosis were examined and found to be within normal range across all variables (skewness < 2; kurtosis < 7; Fabrigar, Wegener, MacCallum, & Strahan, 1999). While no true missingness existed as participants had to select a response to all questions, rates of reporting *skip* or *can't remember* were also examined. One variable ("A male student dominated the professor's time during things like office hours or review sessions") had combined *skip* and *can't remember* rate exceeding 10% (*skip* = 6.8; *can't remember* = 4.1) and was dropped from analysis. To account for violations to assumptions of normality inherent in ordinal variables, a polychoric correlation matrix was used as it is more robust to non-normality (Holgado–Tello, Chacón–Moscoso, Barbero–García, & Vila–Abad, 2008).

Descriptive statistics and univariate distributions for all variables included in validity tests were examined. As discussed below, non-normality was noted across several variables and nonparametric tests were selected for validity testing.

Exploratory factor analysis. An EFA was used to eliminate poorly performing items in the Undergraduate Gender Microaggressions Scale-preliminary (UGMS-p) and to identify the latent factor structure that best fit the data. Two tests were conducted to determine the data's suitability to EFA, the Kaiser-Meyer-Olkin (KMO) to determine adequacy of sampling (Kaiser, 1974) and Bartlett's Test of Sphericity to assess the strength of relationships among variables (Bartlett, 1954). The KMO measure was 0.92 indicating adequate sample size, with Kaiser (1974) indicating values below 0.50 to be unacceptable and all those above 0.80 to be good. Bartlett's Test of Sphericity was significant for both men and women ($p < .001$) indicating the factorability of the correlation matrix.

Table 4. Intercorrelations, Means, and Standard Deviations for UMGS-p

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	1.00																											
2	0.65	1.00																										
3	0.72	0.67	1.00																									
4	0.62	0.47	0.67	1.00																								
5	0.54	0.48	0.58	0.59	1.00																							
6	0.47	0.43	0.53	0.58	0.77	1.00																						
7	0.50	0.48	0.62	0.53	0.70	0.71	1.00																					
8	0.57	0.48	0.59	0.61	0.68	0.66	0.68	1.00																				
9	0.57	0.43	0.57	0.56	0.62	0.54	0.58	0.76	1.00																			
10	0.53	0.48	0.48	0.44	0.46	0.45	0.48	0.50	0.44	1.00																		
11	0.48	0.42	0.50	0.51	0.52	0.55	0.57	0.56	0.55	0.48	1.00																	
12	0.44	0.37	0.45	0.42	0.32	0.33	0.37	0.37	0.39	0.41	0.34	1.00																
13	0.29	0.26	0.32	0.35	0.25	0.32	0.29	0.26	0.19	0.36	0.31	0.50	1.00															
14	0.38	0.35	0.38	0.44	0.33	0.33	0.35	0.37	0.29	0.40	0.33	0.44	0.60	1.00														
15	0.33	0.32	0.35	0.44	0.33	0.40	0.42	0.34	0.31	0.34	0.26	0.47	0.63	0.58	1.00													
16	0.44	0.37	0.40	0.48	0.41	0.42	0.43	0.52	0.43	0.35	0.32	0.38	0.35	0.50	0.53	1.00												
17	0.50	0.43	0.47	0.49	0.44	0.43	0.47	0.52	0.42	0.36	0.35	0.35	0.32	0.43	0.37	0.77	1.00											
18	0.28	0.32	0.28	0.39	0.36	0.42	0.39	0.36	0.30	0.35	0.34	0.33	0.34	0.44	0.42	0.46	0.49	1.00										
19	0.42	0.39	0.44	0.40	0.43	0.43	0.37	0.44	0.39	0.37	0.34	0.37	0.24	0.39	0.34	0.60	0.60	0.52	1.00									
20	0.43	0.44	0.49	0.55	0.49	0.51	0.51	0.79	0.38	0.39	0.41	0.42	0.37	0.39	0.40	0.56	0.60	0.46	0.50	1.00								
21	0.31	0.28	0.30	0.31	0.32	0.38	0.30	0.28	0.27	0.29	0.33	0.17	0.22	0.32	0.22	0.18	0.27	0.23	0.22	0.26	1.00							
22	0.39	0.38	0.35	0.40	0.38	0.43	0.40	0.39	0.37	0.35	0.40	0.28	0.28	0.44	0.30	0.31	0.40	0.45	0.36	0.36	0.53	1.00						
23	0.38	0.34	0.43	0.34	0.33	0.27	0.37	0.36	0.35	0.32	0.30	0.31	0.17	0.30	0.22	0.38	0.46	0.18	0.29	0.40	0.21	0.30	1.00					
24	0.34	0.30	0.49	0.36	0.34	0.33	0.44	0.38	0.38	0.38	0.35	0.36	0.20	0.25	0.22	0.39	0.43	0.25	0.34	0.42	0.16	0.32	0.61	1.00				
25	0.45	0.35	0.47	0.44	0.42	0.32	0.44	0.45	0.39	0.41	0.36	0.36	0.25	0.27	0.25	0.44	0.42	0.24	0.37	0.45	0.10	0.21	0.39	0.45	1.00			
26	0.14	0.14	0.23	0.20	0.24	0.25	0.30	0.26	0.21	0.28	0.23	0.12	0.12	0.18	0.14	0.11	0.14	0.14	0.15	0.12	0.09	0.22	0.21	0.25	0.30	1.00		
27	0.24	0.19	0.28	0.27	0.25	0.28	0.28	0.31	0.20	0.31	0.26	0.18	0.22	0.18	0.17	0.21	0.24	0.18	0.25	0.20	0.06	0.23	0.17	0.24	0.37	0.60	1.00	
28	0.41	0.37	0.46	0.40	0.38	0.43	0.40	0.51	0.34	0.44	0.35	0.37	0.34	0.43	0.33	0.44	0.41	0.33	0.41	0.40	0.35	0.33	0.33	0.37	0.36	0.31	0.35	1.00
n	211	206	208	200	215	216	208	210	209	199	199	206	211	210	216	209	217	212	216	211	212	210	216	210	219	200	218	200
Mean	2.62	2.07	2.36	1.66	1.81	1.67	1.89	1.78	1.92	2.12	.92	2.48	1.05	1.25	1.69	2.49	2.16	1.17	2.15	2.09	1.32	.91	3.33	3.20	3.55	1.93	3.20	1.78
SD	1.59	1.49	1.55	1.58	1.54	1.54	1.51	1.45	1.54	1.69	1.37	1.91	1.47	1.46	1.78	1.49	1.58	1.50	1.54	1.57	1.60	1.33	1.44	1.64	1.30	1.82	1.63	1.60

Kaiser's criteria, Catell's scree test, and parallel analysis were used to determine the appropriate number of factors to extract. Parallel analysis was conducted first, and indicated a seven-factor solution; however, this process yielded a model with only four meaningful factors as three of the seven had only two items loading on them. The Kaiser's criteria and Catell's scree test both suggested a four-factor solution. Promax rotation was used as an oblique rotation was needed to account for the correlation between factors expected with this scale. A 0.50/0.30 rule was used such that factor loadings needed to be ≥ 0.50 with no cross loadings ≥ 0.30 (Matsunaga, 2010). An exception was made when the difference between the primary loading and the crossloading exceeded 0.20. Ten items were dropped due to either low loading across factors or high cross loadings.

An 18-item, four factor solution was observed and accounted for 79% of the variance. The factor loading matrix can be found below in Table 5. Proposed subscales were: (a) Presumed Incompetent (Factor 1: 8 items), being treated like you do not understand or do not have the capacity to make a substantial contribution; (b) Gender Role Stereotypes (Factor 2: 4 items), being expected to serve as caretaker or take on administrative roles; (3) Male Dominance (Factor 3: 4 items), experiencing situation in which men are expected to hold power or serve as the point of reference and women are inferior; and (d) Institutional Invalidations (Factor 4: 2 items), experiencing university infrastructural inadequacies communicating that women's safety is not a priority. Internal consistency reliability for the total scale and subscales were within acceptable range as indicated by all Cronbach's alpha scores above 0.70 (Cortina, 1993). For Presumed Incompetent $\alpha_{s1} = 0.89$, for Gender Role Stereotypes $\alpha_{s1} = 0.82$, for Male Dominance $\alpha_{s1} = 0.78$, and for Institutional invalidation $\alpha_{s1} = 0.75$. The total scale score for the 18 item UGMS was $\alpha_{s1} = 0.91$.

Table 5. Pattern Matrix of Promax Rotated Four-Factor Solution

Item Description	F1	F2	F3	F4
5. You were treated as if you were incompetent	**0.88**	−0.05	0.01	−0.02
6. You were assumed not to know or understand basic material	**0.85**	0.07	−0.12	0.08
7. People talked down to you	**0.66**	0.01	0.25	−0.01
8. Your opinion was overlooked in group discussion	**0.71**	−0.11	0.29	0.05
9. You were excluded (e.g., being ignored in a conversation)	**0.72**	−0.21	0.32	−0.01
11. Someone rolled their eyes, scoffed, or showed non-verbal signs of frustration or displeasure when you spoke	**0.58**	−0.04	0.31	0.05
21. People looked surprised when you told them your major	**0.58**	0.13	−0.05	−0.03
22. You have been discouraged from participating in Science Technology Engineering Math (STEM) fields	**0.55**	0.24	−0.16	0.21
13. You were expected to bring snacks or prepare food	−0.15	**0.96**	−0.04	0.01
14. You were expected to take on secretarial tasks (e.g., taking notes) in a group	−0.02	**0.82**	0.01	0.04
15. You were expected to clean up after others	0.02	**0.88**	<0.01	−0.02
16. You heard that women are better than men at things like cooking, shopping, and/or childcare	0.01	**0.61**	0.33	−0.08
3. You were talked over by a man	0.32	0.05	**0.58**	−0.02
23.You have heard others talking about other women in degrading terms (“bitch,” “slut,” etc.)	−0.03	−0.03	**0.83**	<.01
24. You experience situations in which men are referred to as the norm or standard (e.g., referring to all people as ‘‘men,’’ a person of an unknown gender as ‘‘he’’)	0.02	−0.06	**0.77**	0.13
25. You have been told to avoid certain locations or groups on campus to stay safe (e.g., specific fraternities, parties, areas of campus at night)	<0.01	0.16	**0.54**	0.18
26. You have needed to leave campus at night but there were no campus resources (e.g., bearwalk, UCPD) available to ensure your safety	0.08	−0.12	−0.01	**0.86**
27. There was not adequate lighting for you to walk through campus at night	−0.03	0.08	0.07	**0.80**

Note: F1: Presumed Incompetent; F2: Gender Role Stereotypes; F3: Male Dominance; F4: Institutional Invalidation

Convergent and discriminant validity. Convergent and discriminant validity were tested to better establish the UGMS construct validity. Convergent validity was measured by examining correlations between the UGMS and three subscales of the Sexual Experiences Questionnaire: Gender Harassment, Unwanted Sexual Attention, and Sexual Coercion (SEQ; Fitzgerald, Gelfand, & Drasgow, 1995), Center for Epidemiologic Studies Depression scale (CESD-10; Miller, Anton, & Townson, 2008), and Perceived Stress Scale (PSS-4; Cohen & Williamson, 1988). These measures were selected as we would expect based on theory and prior research that experiences of microaggressions would be related to sexual harassment (Gartner & Sterzing, 2016), stress (Meyer, 2003), and depression (Nadal, 2010). Descriptive statistics and univariate distributions of the UGMS and of like and related measures (see Table 6) were analyzed prior to bivariate analysis.

Table 6. Descriptive Statistics of UGMS Related Scales and Subscales

Variables	Mean	*SD*	Median	Obs. Range	Range	Skew	Kurtosis	*N*
UGMS	1.9	0.9	1.8	0-4.7	0-5	0.5	2.8	220
SEQ: Gender Harassment	0.8	0.8	0.6	0-4	0-4	1.3	4.9	220
SEQ: Unwanted Sexual Attention	0.6	0.7	0.4	0-3.4	0-4	1.5	5.6	220
SEQ: Sexual Coercion	0.1	0.4	0.0	0-3.6	0-4	5.8	44.3	220
PSS-4	9.0	3.2	9.0	0-16	0-16	−0.3	2.8	220
CESD-10	10.0	6.2	8.0	0-28	0-30	0.8	3.0	220
SDRS	1.3	1.3	1.0	0-5	0-5	0.9	3.0	220

Note: Sub-sample 1 used for all above calculations

Due to the non-normal distribution of multiple like and related measures, the non-parametric Spearman's correlations were used to assess the strength and direction of the relationship with scores ranging from -1 to 1 – scores with an absolute value close to 1 indicate stronger relationships. The three subscales of the SEQ were examined as they range in experience from gender harassment (example item: "Made offensive remarks about your appearance, body, or sexual activities") which bears the most resemblance to gender microaggressions to unwanted sexual attention (example item: "Touched you in a way that made you feel uncomfortable") and sexual coercion (example item: "Made you feel threatened with some sort of retaliation for not being sexually cooperative") which has the most overlap with sexual harassment and/or sexual assault. Of the SEQ subscales, the Gender Harassment subscale had the strongest relationship with the UGMS ($r_s = 0.49$), followed by the Unwanted Sexual Attention subscale ($r_s = 0.38$), and lastly the Sexual Coercion subscale ($r_s = 0.22$). When examining mental and behavioral health variables, a low but significant relationship was noted for all of them. The Spearman's correlation between the CESD-10 and the UGMS indicated a weak, positive relationship ($r_s = 0.33$). Similarly, a low but positive association was noted with the PSS-4 ($r_s = 0.26$). All above reported correlations were statistically significant ($p < .01$).

Discriminant validity was measured by examining the Spearman's correlation between the UGMS and the Socially Desirable Response Set (SDRS-5; Hays, Hayashi, & Stewart, 1989). The SDRS was scored as a series of binary variables summed to create a scale score. No significant relationship was found between the two measures ($r_s = -0.06$).

Study 3: Gender Microaggressions Frequency, Location, and Correlates

Participant Demographics

The sample for Study 3 (see Table 3) was randomly selected from the full quantitative sample. The Study 3 sample was comprised of 220 UCB undergraduate women who ranged in age from 18 to 25 with a mean age of 19.9 ($SD = 1.4$). The racial/ethnic composition of the sample was 85 Asian (38.6%), 59 White (26.8%), 76 URM (34.6%). In regard to sexual orientation, 166 participants identified as straight/heterosexual (75.7%) and 54 were sexual minorities (SM; 24.6%). When examining year in school, 60 were first years (27.3%), 54 were second years (24.6%), 63 were third years (28.6%) and 43 were fourth year or higher (19.6%). A

fairly even split between STEM (n = 100, 45.9%) and non-STEM (n = 105, 48.2%) was noted, with a small number of participants identifying as undecided (n = 13, 6.0%).

Aim 2: Gender Microaggression, Sexual Harassment, and Sexual Assault Frequency

Aim 2. To identify the frequencies of gender microaggressions, sexual harassment, and sexual assault by race and sexual orientation for undergraduate women in the last academic year.

Gender microaggressions frequency. To determine the extent to which gender microaggressions experience was endorsed, participants were asked the 18 questions from the UGMS to measure the frequency of Presumed Incompetent ($\bar{x}$ = 1.6, SD = 1.1), Gender Role Stereotypes ($\bar{x}$ = 1.5, SD = 1.2), Male Dominance ($\bar{x}$ = 3.0, SD = 1.2), and Institutional Invalidation ($\bar{x}$ = 2.2, SD = 1.5), as well as the total scale score ($\bar{x}$ = 2.2, SD = 1.1; see Table 7). The response options ranged from (0) *Never* to (6) *Daily or almost daily*.

Experiencing at least one incident of gender microaggression in this academic year was nearly universal among participants: total scale (99.6%, n = 219), Presumed Incompetent (95.5%, n = 210), Gender Role Stereotypes (89.6%, n = 197), Male Dominance (99.1%, n = 218), and Institutional Invalidation (88.2%, n = 194). More than half of participants reported daily or almost daily experiences of gender microaggressions on at least one total scale item (54.1%, n = 119). When examining subscales, participants reported daily experiences for at least one item for Presumed Incompetent (18.2%, n = 40), Gender Role Stereotypes (12.7%, n = 28), Male Dominance (43.6%, n = 96), and Institutional Invalidation (25.0%, n = 55).

Sexual harassment frequency. To determine the extent to which sexual harassment was endorsed, participants were asked the three subscales of the Sexual Experiences Questionnaire (Fitzgerald et al., 1995): Gender Harassment ($\bar{x}$ = 0.9, SD = 0.9), Unwanted Sexual Attention ($\bar{x}$ = 0.7, SD = 0.9), and Sexual Coercion ($\bar{x}$ = 0.2, SD = 0.4) as well as a subscale on electronic harassment ($\bar{x}$ = 0.3, SD = 0.5) which was then averaged to create a total scale score ($\bar{x}$ = 0.5, SD = 0.6; see Table 7). When examining the total Sexual Harassment Scale Score, the majority of participants had a sexual harassment experience at least once or twice (87.3%, n =192). Most participants experienced Gender Harassment (75.5%, n = 166) and Unwanted Sexual Attention (68.2%, n = 150) at least once or twice, with fewer experiencing Sexual Coercion (21.4%, n = 47) and Electronic Harassment (39.6% n = 87) at least once or twice. In examining participants experiencing sexual harassment often, approximately one-third (33.2%; n = 73) reported any sexual harassment experience often. Broken down by scale score, Gender Harassment (23.6%, n = 52) was most common, followed by Unwanted Sexual Attention (20.5%, n = 45), Electronic Harassment (5.9%, n = 13), and Sexual Coercion (2.7%, n = 6).

Sexual assault frequency. The Sexual Experiences Survey Short Form Victimization (SES-SFV) was used to determine the extent to which participants experienced sexual assault. The scoring for this scale is generally dichotomous with any experience in the subscale counted as an endorsement (see Methods). Below the total scale, Any Sexual Assault as well as three of the composite subscales Sexual Contact, Attempted Rape, and Rape are examined. When exploring the total scale, 37.7% (n = 83) of the sample had any unwanted sexual experience including unwanted sexual contact, attempted coercion, coercion, attempted rape, and rape. When examining selected subscales, a substantial portion of the sample experienced unwanted sexual contact (30.5%, n = 67) followed by attempted rape (15.9%, n = 35), and rape (15.0%, n = 33). See Table 7 for more details on descriptive statistics.

Table 7. Descriptive Statistics for Gender Microaggressions, Sexual Harassment, and Sexual Assault

Variables	Mean	*SD*	Median	Obs. Range	Range	Skew	Kurtosis	*N*
Gender Microaggressions	1.9	1.0	1.8	0-4.9	0-5	0.4	2.6	220
Presumed Incompetent	1.6	1.1	1.4	0-5	0-5	0.7	2.8	220
Gender Role Stereotype	1.5	1.2	1.3	0-4.8	0-5	0.7	2.5	220
Male Dominance	3.0	1.2	3.1	0-5	0-5	−0.4	2.5	220
Inst. Invalidation	2.2	1.5	2.0	0-5	0-5	0.3	2.1	220
Sexual Harassment	0.5	0.6	0.4	0-3.8	0-4	1.9	7.3	220
Gender Harassment	0.9	0.9	0.6	0-4	0-4	1.3	4.2	220
Unwanted Sexual Attn.	0.7	0.9	0.3	0-4	0-4	1.7	5.6	220
Sexual Coercion	0.2	0.4	0.0	0-3.8	0-4	4.8	33.7	220
Electronic Harassment	0.3	0.5	0.0	0-3.7	0-4	2.6	12.2	220
	Yes		No					
	n	%	*n*	%				
Any Sexual Assault	83	37.7	137	62.3	-	-	-	220
Sexual Contact	67	30.5	153	69.9	-	-	-	220
Attempted Rape	35	15.9	185	84.1	-	-	-	220
Rape	33	15.0	187	85.0	-	-	-	220

Upper-quartile cutoffs. Upper-quartile cutoffs (i.e., top 25%) were used to examine high frequency of gender microaggressions and sexual harassment. These cutoffs varied for both total scale scores and associated subscales. Beginning with gender microaggressions, the upper-quartile for the overall scale translated to between once or twice per semester and monthly (q_4 = 2.6). Similarly, upper-quartile scores for Presumed Incompetent (q_4 = 2.3) and Gender Role Stereotypes (q_4 = 2.3) were between once or twice per semester and monthly. The upper-quartile score for Male Dominance (q_4 = 4.0) was weekly, and for Institutional Invalidations (q_4 = 3.3) was between monthly and weekly. When examining harassment, the overall scale had an upper-quartile score between never and once or twice in this academic year (q_4 = 0.8). When examining subscales, Gender Harassment (q_4 = 1.2) had an upper-quartile score between once or twice in this academic year and sometimes, while Unwanted Sexual Attention (q_4 = 0.9) had an upper-quartile score approaching once or twice in the last academic year. Sexual Coercion (q_4 = 0.0) was a very skewed variable and because of this, its upper-quartile score was 'never.' Electronic Harassment (q_4 = 0.3) also had a low upper-quartile score between never and once or twice in this academic year. Sexual assault was calculated such that any experience was considered high frequency.

Microaggressions and sexual violence by race. When examining gender microaggressions, sexual harassment, and sexual assault by race/ethnicity, the only significant differences emerged between Asian participants and the White comparison group (see Table 8). Beginning with gender microaggressions, Asian participants reported significantly lower odds of being in the upper-quartile for the overall scale (15.4% v. 30.2%, $p < .05$) and Male Dominance (15.4% v. 30.2%, $p < .05$) when compared to their White counterparts. For sexual harassment, Asian identified participants reported significantly lower odds of being in the upper quartile for the overall scale score (17.6% v. 35.9%, $p < .05$), Gender Harassment (18.7% v. 34.0%, $p < .05$), Unwanted Sexual Attention (17.6% v. 34.0%, $p < .05$), and Sexual Coercion (11.0% v. 30.2%, $p < .01$) than their white counterparts. Finally, when examining sexual assault, Asian participants reported significantly lower odds of having Any Sexual Assault (25.3% v. 49.1%, $p < .01$),

Unwanted Sexual Contact (17.6% v. 45.3%, $p < .01$), and Attempted Rape (11.0% v. 26.4%, $p < .05$). No other significant differences were noted by race.

Microaggressions and sexual violence by sexual orientation. No significant differences emerged for gender microaggressions, sexual harassment, and sexual assault by sexual orientation. While the trend suggests slightly higher rates for sexual minority (SM) participants across eleven of the fourteen categories, none of these differences emerged as statistically significant.

Table 8. Upper-Quartile Gender Microaggressions and Sexual Violence by Race and Sexual Orientation

		Race/Ethnicity %			Sexual Orientation %	
	Overall (N = 220)	White (n = 53)	Asian (n = 91)	URM (n = 76)	Hetero (n = 166)	SM (n = 54)
Gender Microaggressions	24.6 (n = 54)	30.2 (n = 16)	15.4* (n = 14)	31.6 (n = 24)	23.5 (n = 39)	27.8 (n = 15)
Presumed Incompetent	24.1 (n = 53)	24.5 (n = 13)	14.3 (n = 13)	35.5 (n =27)	24.1 (n = 40)	24.1 (n = 13)
Gender Role Stereotypes	24.6 (n = 54)	30.2 (n = 16)	23.1 (n = 21)	22.3 (n = 17)	24.1 (n = 40)	25.9 (n = 14)
Male Dominance	19.6 (n = 43)	30.2 (n = 16)	15.4* (n = 14)	17.1 (n = 13)	18.1 (n = 30)	24.1 (n = 13)
Institutional Invalidation	18.6 (n = 41)	18.9 (n = 10)	16.5 (n = 15)	21.1 (n = 16)	20.5 (n = 34)	13.0 (n = 7)
Sexual Harassment	25.9 (n = 57)	35.9 (n = 19)	17.6* (n = 16)	29.0 (n = 22)	24.1 (n = 40)	31.5 (n = 40)
Gender Harassment	24.6 (n = 54)	34.0 (n = 18)	18.7* (n = 17)	25.0 (n = 19)	24.1 (n = 40)	25.9 (n = 14)
Unwanted Sexual Attention	25.0 (n = 55)	34.0 (n = 18)	17.6* (n = 16)	27.6 (n = 21)	22.9 (n = 38)	31.5 (n = 17)
Sexual Coercion	21.4 (n = 47)	30.2 (n = 16)	11.0** (n = 10)	27.6 (n = 21)	20.5 (n = 34)	24.1 (n = 13)
Electronic Harassment	21.8 (n = 48)	28.3 (n = 15)	17.6 (n = 16)	22.4 (n = 17)	19.9 (n = 33)	27.8 (n = 15)
Any Sexual Assault	37.7 (n = 83)	49.1 (n = 26)	25.3** (n = 23)	44.7 (n = 34)	39.2 (n = 65)	33.3 (n = 18)
Sexual Contact	30.5 (n = 67)	45.3 (n = 24)	17.6** (n = 16)	35.5 (n = 27)	30.1 (n = 50)	30.5 (n = 17)
Attempted Rape	15.9 (n = 35)	26.4 (n = 14)	11.0* (n = 10)	14.5 (n = 11)	15.7 (n = 26)	16.7 (n = 9)
Rape	15.0 (n = 33)	20.8 (n = 11)	9.9 (n = 9)	17.1 (n = 13)	13.9 (n = 23)	18.5 (n = 10)

Notes: *$p < .05$, **$p < .01$, $p < .001$

Aim 3: Gender Microaggressions, Sexual Harassment, and Sexual Assault Locations

Aim 3. To explore the locations where gender microaggressions, sexual harassment, and sexual assault occur most frequently for undergraduate women in the last academic year.

In keeping with the exploratory nature of Aim 3, analysis examined the number and percentage of participants who experienced gender microaggressions, sexual harassment, or sexual assault in one of the specified locations. Table 9 provides a complete list of reported locations for gender microaggressions, sexual harassment, and sexual assault. Beginning with *gender microaggressions* (n = 205), the most commonly reported location was classroom/lecture

hall (57.6%, *n* = 118), followed by campus grounds (48.3%, *n* = 99), and social media (39.0%, *n* = 74). The least commonly reported location (excluding the diverse "other" category) was faculty office (9.8%, *n* = 17), followed by locker room/bathroom (9.8%, *n* = 20), and gym (12.2%, *n* = 25). When examining *sexual harassment* (*n* = 189), the most common location was campus grounds (45.5%, *n* = 86), followed by classroom/lecture hall (39.2%, *n* = 74), and fraternity or sorority (33.3%, *n* = 63), The least commonly reported location (excluding "other") was faculty office (2.7%, *n* = 5), followed by locker room/bathroom (3.2%, *n* = 6), and dining hall and gym both at 10.1% (*n* = 19). Lastly, *sexual assault* (*n* = 83) was a less frequent experience in the sample, with off campus housing (39.8%, *n* = 33) and fraternity and sororities (33.7%, *n* = 28) as the top reported locations and no participants reporting experiences in locker room/bathroom, faculty office, library, dining hall, gym, and club meeting.

Table 9. Location by Gender Microaggressions, Sexual Harassment, and Sexual Assault

	Gender Microaggressions (n = 205)	Sexual Harassment (n = 189)	Sexual Assault (n = 83)
Residence Hall	31.2 (n = 64)	28.6 (n = 58)	15.7 (n = 13)
Fraternity or Sorority	29.8 (n = 61)	33.3 (n = 63)	33.7 (n = 28)
Off Campus Housing	25.9 (n = 53)	32.3 (n = 61)	39.8 (n = 33)
Locker Room/ Bathroom	9.8 (n = 20)	3.2 (n = 6)	0.0 -
Classroom/Lecture Hall	57.6 (n = 118)	39.2 (n = 74)	1.2 (n = 1)
Faculty Office	8.3 (n = 17)	2.7 (n = 5)	0.0 -
Library	20.0 (n = 41)	12.7 (n = 24)	0.0 -
Dining Hall	18.5 (n = 38)	10.1 (n = 19)	0.0 -
Gym	12.2 (n = 25)	10.1 (n = 19)	0.0 -
Club Meeting	18.5 (n = 38)	10.6 (n = 20)	0.0 -
Campus Grounds	48.3 (n = 99)	45.5 (n = 86)	7.2 (n = 6)
Social Media	39.0 (n = 80)	32.8 (n = 62)	4.8 (n = 4)
Text	15.1 (n = 31)	18.5 (n = 35)	4.8 (n = 4)
Other	8.8 (n = 18)	6.9 (n = 13)	10.8 (n = 9)

Aim 4: Mental and Behavioral Health Correlates of Gender Microaggressions

Aim 4. To assess the associations between campus sexual violence (i.e., gender microaggressions, sexual harassment, and sexual assault) and mental and behavioral health outcomes (i.e., depression, stress, posttraumatic stress, school avoidance, and alcohol use) for undergraduate women.

Univariate distributions of dependent and independent variables. The univariate distributions for all dependent variables were examined to identify non-normal distributions that may require transformations or the use of non-parametric statistical tests in subsequent analyses (see Table 10). The CESD-10, used to measure depression ($\bar{x}$ = 10.6, SD = 6.2), had a possible range of 0 to 30 but observed range of 0 to 27, the scale had an approximately normal distribution (skew = 0.4). The perceived stress scale ($\bar{x}$ = 9.3, SD = 3.4) was used to measure stress. The scale had a possible and observed range of 0 to 16 and approximated a normal distribution (skew = −0.3). Posttraumatic stress ($\bar{x}$ = 1.5, SD = 1.6) was measured with the Short

Screening Scale for the DSM-IV, the scale had a possible and observed range of 0 to 7, but was positively skewed (skew = 1.1). Following guidance from Freedy and colleagues (2010), a cutoff of 4 was used which was found to correctly classify 78.1% of women's PTSD diagnosis. The school avoidance scale ($\bar{x}$ = 7.4, *SD* = 4.1) was used to measure school avoidance. The scale had a possible and observed range of 0 to 20 and approximated a normal distribution (skew = 0.4). Finally, the AUDIT-10 ($\bar{x}$ = 4.4, *SD* = 5.4) was used to measure alcohol use. The AUDIT-10 had a possible rang of 0-40 and an observed range of 0 to 32. The distribution was highly positively skewed (skew = 1.9). In keeping with practices in college populations (Kokotailo et al., 2004), the scale was transformed to a binary scale with a cutoff of 6 indicating high-risk drinkers. This cutoff is lower than many of the clinically suggested cutoffs (usually 8); however was found to detect 91% of high-risk drinkers in a college sample (Kokotailo et al., 2004) and is in keeping with the practice of using lower scores for women (Babor et al., 2001).

Table 10. Descriptive Statistics of Dependent Variables

Variables	**Mean**	***SD***	**Median**	**Obs. Range**	**Range**	**Skew**	**Kurtosis**	***N***
Depression	10.6	6.2	10.0	0-27	0-30	0.4	2.5	218
Stress	9.3	3.4	9.0	0-16	0-16	−0.3	2.8	220
Posttraumatic stress[1]	1.5	1.6	1.0	0-7	0-7	1.1	3.9	213
School Avoidance	7.4	4.1	7.0	0-20	0-20	0.4	2.8	220
Alcohol use[2]	4.4	5.4	3.0	0-32	0-40	1.8	7.1	218
Transformed Variables	High		Low					
	n	%	*n*	%				***N***
Posttraumatic stress[1]	31	14.6	182	85.5	-	-	-	213
Alcohol Use[2]	67	30.7	151	69.3	-	-	-	218

[1]Posttraumatic stress was transformed into a binary variable with a cutoff of 4 is indicated in Freedy et al., 2010
[2]Alcohol use was transformed into a binary variable with a cutoff if 6 as indicated by Kokotailo et al., 2004

Demographic differences across dependent variables. The primary purpose of assessing demographic differences across dependent variables was to identify potential control variables for the final multiple regression models in Aim 4. As outlined in Table 11, chi-square tests with Fisher's exact test, Kruskal Wallis tests, Spearman's rho correlations, and logistic regression was performed to identify any significant race, sexual orientation, year in school, STEM affiliation, and age differences across dependent variables.[5] Year in school, STEM affiliation, and age were not found to be significantly related to any of the dependent variables and were therefore not controlled for in any of the final multiple regression models used in Aim 4. Race was significant for both school avoidance and alcohol use and sexual orientation was significant for depression and school avoidance.

Demographic differences in independent variable. Sexual orientation, year in school, STEM involvement, and age were not significantly associated with gender microaggressions. Race was significantly associated and therefore was included in all models.

[5] Non-parametric tests were used throughout to test for group differences due to the non-normality of some dependent variables. Parametric equivalents were performed when appropriate comparable results.

Table 11. Results of Demographic Differences across Independent and Dependent Variables

Dependent Variable	Kruskal-Wallis Test				Spearman Correlation
	Race	Sexual Orientation	Year in School	STEM	Age
Depression	2.5	10.3**	2.7	0.0	0.1
Stress	4.2	2.4	1.0	0.5	<0.1
School Avoidance	7.6*	4.4*	1.3	1.3	−0.1
Gender Microaggressions	8.9*	1.2	2.5	0.6	<0.1
	Chi-square Test (Fishers Exact)				Logistic Regression
Posttraumatic Stress	1.1	0.4	3.4	0.3	1.1
Alcohol Use	9.5**	<0.1	1.3	0.5	1.0

Notes: *$p < .05$, **$p < .01$, $p < .001$

Linear regression diagnostics (ordinary least squares). For models with continuous dependent variables, regression diagnostics were performed to ensure that the model met the assumptions for ordinary least squares regression (OLS). OLS regression has four testable assumptions: (1) a linear relationship between independent and dependent variables, (2) normally distributed error terms, (3) no multicollinearity, and (4) homoscedasticity – or a variance of error consistent across all levels of the independent variables (Kabacoff, 2011). To examine linearity between independent and dependent variables, scatterplots were examined. All relationships appeared linear. To examine normal distribution of error terms, a kernel density plot was examined, plots of standardized normal probability and quartiles of the variable against quartiles of a normal distribution, and finally the Shapiro-Wilk W test for normality was conducted. Error terms were normally distributed across models. To assess for multicollinearity, the variance inflation factor was examined across models with no signs of multicollinearity. In addition, the correlation matrix was examined for gender microaggressions, sexual harassment, and sexual assault as these are the most theoretically linked variables. Gender microaggressions and sexual harassment had the strongest relationship ($r_s = 0.55$). This relationship is not strong enough to suggest collinearity and therefore the assumption was met. Finally, to test for homoscedasticity, scatterplots of plotted residuals were examined with no problems detected.

Logistic regression diagnostics. For models with binary dependent variables, regression diagnostics were run for logistic regression. As with OLS regression, multicollinearity was assessed in independent variables with no major issues detected. Pearson residual, deviance residual, and Pregibon leverage were assessed with no major separation issues indicated. Specification error was assessed for both logit models indicating that they were well specified. The Hosmer-Lemeshow test was used to examine model fit. No significance tests were found that indicated poor fit between binary dependent variables and independent variables.

Gender microaggressions and depression. The first model examined the relationship between gender microaggressions and depression controlling for sexual harassment, sexual assault, race, and sexual orientation – as indicated by preliminary tests of demographic variables (see Table 12). The model was statistically significant [$F(6,211) = 7.37$, $p < .001$; $N = 218$], explaining 17.33% of the variance of depression. Gender microaggressions had a statistically significant coefficient [$\beta = 0.19$, SE = 0.04, $t = 4.42$, $p < .001$] in the model such that for every

unit increase in the gender microaggressions scale score, a 0.19 (95% CI: 0.10, 0.27) unit increase in the depression score could be predicted when holding all other variables in the model constant. In addition, sexual orientation was associated with depression, such that being a sexual minority was associated with a 0.29 point (95% CI: 0.11, 0.48) higher depression score than heterosexuals. Sexual harassment, sexual assault, and race were not significantly associated with depression when controlling for other variables in the model.

Table 12. Depression and Gender Microaggressions: Results of Multiple Linear Regression (*N* = 218)

	β	95% CI
Gender Microaggressions	0.19***	[0.10, 0.27]
Sexual Harassment	0.02	[−.13, 0.18]
Sexual Assault	0.04	[−0.14, 0.23]
Race		
White	1	
Asian	0.11	[0.69, 3.32]
URM	0.16	[0.73, 3.35]
Sexual Orientation		
Heterosexual	1	
Sexual Minority	0.29**	[0.11, 0.48]

Notes:
a. 95% CI = 95% Confidence Interval
b. *p <.05, **p <.01, ***p <.001

Gender microaggressions and stress. The second model was also significant [$F(5, 214) = 4.11$, $p < .01$; $N = 220$] and examined the relationship between gender microaggressions and stress controlling for sexual harassment, sexual assault, and race (see Table 13). The relationship between gender microaggressions and stress was significant ($p < .001$) such that a unit increase in the gender microaggressions scale score was associated with a 0.92 (95% CI: 0.45, 1.39) unit increase in the stress scale score controlling for sexual harassment, sexual assault, and race. Sexual harassment, sexual assault, and race were not significantly associated with stress when controlling for other variables in the model.

Table 13. Stress and Gender Microaggressions: Results of Multiple Linear Regression (*N* = 220)

	β	95% CI
Gender Microaggressions	0.92***	[0.45, 1.39]
Sexual Harassment	−0.38	[−1.27, 0.51]
Sexual Assault	0.40	[−0.64, 1.44]
Race		
White	1	
Asian	0.68	[−0.47, 1.83]
URM	0.93	[−0.23, 2.09]

Notes:
a. 95% CI = 95% Confidence Interval
b. *p <.05, **p <.01, ***p <.001

Gender microaggressions and posttraumatic stress. The third model was statistically significant [$\chi^2(5) = 39.63$, $p < .001$; $N = 213$] as well (see Table 14). Gender microaggressions was significantly associated with posttraumatic stress controlling for sexual harassment, sexual assault, and race [Adjusted Odds Ratio (AOR) = 2.27 (95% CI: 1.39, 3.73)]. For every unit increase on the gender microaggressions scale, the adjusted odds of having clinically significant posttraumatic stress symptoms increased by 127.7% ($p < .01$). Sexual assault was also significant in this model [AOR = 2.69 (95% CI: 1.02, 7.12)] such that having a sexual assault experience increased the adjusted odds of having clinically significant posttraumatic stress symptoms by 168.9% ($p < .05$) when controlling for other variables in the model.

Table 14. Posttraumatic Stress and Gender Microaggressions: Results of Multiple Logistic Regression ($N = 213$)

	AOR	95% CI
Gender Microaggressions	2.27**	[1.39, 3.73]
Sexual Harassment	1.94	[0.96, 3.91]
Sexual Assault	2.69*	[1.02, 7.12]
Race		
White	1	
Asian	2.42	[0.74, 7.94]
URM	1.50	[0.47, 4.76]

Notes:

a. AOR = Adjusted Odds Ratio
b. 95% CI = 95% Confidence Interval
c. *p <.05, **p <.01, ***p <.001

Gender microaggressions and school avoidance. The fourth model examining school avoidance and gender microaggressions was significant [$F(6, 213) = 8.62$, $p < .001$; $N = 220$] and accounted for 19.5% of the variance in school avoidance (see Table 15). Gender microaggressions and school avoidance were significantly related such that a one unit change in gender microaggressions scale score was associated with a 1.50 (95% CI: 0.88, 2.12) unit change in the school avoidance scale score when controlling for sexual harassment, sexual assault, race, and sexual orientation. In addition, being Asian or an URM was significantly associated with higher school avoidance scale scores, such that for Asian participants the predicted school avoidance scale score was 2.01 (95% CI: 0.69, 3.32) points higher and for URM participants the predicted school avoidance scale score was 2.04 (95% CI: 0.73, 3.35) points higher than for White participants when controlling for all other variables in the model. The coefficient for sexual orientation was also statistically significant with sexual minority participants having a 1.34 (95% CI: 0.15, 2.52) point higher predicted school avoidance school than heterosexuals when controlling for all other variables in the model.

Table 15. School Avoidance and Gender Microaggressions: Results of Multiple Linear Regression (*N* = 220)

	β	95% CI
Gender Microaggressions	1.50***	[0.88, 2.12]
Sexual Harassment	0.24	[−0.82, 1.30]
Sexual Assault	0.03	[−1.16, 1.22]
Race		
White	1	
Asian	2.01**	[0.69, 3.32]
URM	2.04**	[0.73, 3.35]
Sexual Orientation		
Heterosexual	1	
Sexual Minority	1.34*	[0.15, 2.52]

Notes:
a. 95% CI = 95% Confidence Interval
b. *p <.05, **p <.01, ***p <.001

Gender microaggressions and alcohol use. Finally, the fifth model was statistically significant [$\chi^2(5) = 44.54$, $p < .001$; $N = 218$] (see Table 16). Gender microaggressions were significantly associated with high-risk alcohol use, controlling for sexual harassment, sexual assault, and race [AOR = 1.52 (95% CI: 1.07, 2.16)]. For every unit increase on the gender microaggressions scale, the adjusted odds of being a high-risk drinker increased by 51.7% ($p <$ .05). Sexual assault was also statistically significant in this model [AOR = 2.74 (95% CI: 1.36, 5.52)] such that having a sexual assault experience increased the adjusted odds of being a high-risk drinker by 173.6% ($p < .01$) controlling for other variables in the model.

Table 16. Alcohol Use and Gender Microaggressions: Results of Multiple Logistic Regression (*N* = 218)

	AOR	95% CI
Gender Microaggressions	1.52*	[1.07, 2.16]
Sexual Harassment	1.70	[0.93, 3.13]
Sexual Assault	2.74**	[1.36, 5.52]
Race		
White	1	
Asian	0.45	[0.20, 1.02]
URM	0.52	[0.23,1.17]

Notes:
a. AOR = Adjusted Odds Ratio
b. 95% CI = 95% Confidence Interval
c. *p <.05, **p <.01, ***p <.001

CHAPTER 5: CONCLUSION AND IMPLICATIONS

Overview of Key Findings

This chapter presents the project's key findings, contributions in the areas of gender microaggressions measure development and campus sexual violence research, and its research practice, and policy implications. The primary purpose of the project was to construct, validate, and employ the first measure of gender microaggressions for undergraduate women on college campuses with the goal of advancing the capacity for quantitative inquiry in this area. To achieve this, the project conducted three studies. Study 1 was a qualitative study aimed at developing a gender microaggressions taxonomy specific to undergraduate women on college campuses. Study 2 leveraged the themes from Study 1 as well as a systematic literature review, expert advisory panel feedback, cognitive interviews, and a pilot study to develop the preliminary Undergraduate Gender Microaggressions Scale (UGMS-p). Study 2 then implemented an exploratory factory analysis (EFA) to refine the measure and establish its factor structure. Finally, this study examined the measure's construct validity and internal consistency reliability. Study 3 employed the UGMS to examine the relationship between gender microaggressions and depression, stress, posttraumatic stress, school avoidance, and high-risk alcohol use. After reviewing the key findings in these areas, a discussion of the project's limitations is presented.

Conceptualizing Gender Microaggressions for Undergraduate Women: A New Taxonomy

Study 1 focused on the taxonomy for undergraduate gender microaggressions on college campus and the ways in which developmentally and contextually specific themes could translate to measurement. The study found that a taxonomy of gender microaggressions for undergraduate women consisted of four dominant themes with subthemes which expanded components of the taxonomy consistent with prior work (Capodilupo et al., 2010) and increased the specificity to emerging adults on college campuses.

Assumption of Traditional Gender Roles was a theme identified in Study 1 that was consistent with previous work by Capodilupo and colleagues (2010). A major innovation of the current study was the identification of subthemes to increase its specificity and relevance to undergraduate women. The subthemes Caretaker/Nurturer, Women Dominated Occupations, and Weak/"Damsel in Distress" were identified as the roles that participants often found themselves pushed towards at UCB. As previously discussed, women are prescribed narrowly defined scripts for permissible behavior (Hill Collins, 2000). These scripts are generally established such that femininity exists in service of masculinity, positioning women who step outside of their roles as threats to masculinity and the status quo. As undergraduates at a dominantly residential university, participants were generally living outside of their families of origin for the first time, selecting majors and career paths, and navigating a new city. These critical developmental tasks shaped the gender role assumptions to which they were subject. For example, the transition into dorms and shared housing meant developing a distribution of labor for most students. For many participants, this was the first time when traditional gender roles prescribing women as matriarchs or caretakers was experienced outside of their nuclear family or home communities. Similarly, as women navigated selecting majors and career paths, which all UCB undergraduates need to do, those entering STEM and other fields dominated by men were met with prejudice for stepping outside of women-dominated professions. The choice to participate in STEM, for example, is incongruous with the gender role dichotomy that positions men as intellectual, inclined towards math and science, and destined to be doctors and engineers and women as

emotional, women of the home (Eagly & Karau, 2002). To confront Assumptions of Traditional Gender Roles, it is critical to examine the gender binaries from which they arise.

The theme, Presumed Incompetence, was drawn from participant statements like, "he generally just treats me like I'm incompetent." The theme was also informed by the work of women of color in the academy who address the ways in which race, class, and gender power hierarchies in academia lead to impossible standards and presumptions for marginalized groups (Muhs, Niemann, González, & Harris, 2012). While the Presumed Incompetence theme had similarities to Assumptions of Inferiority, as outlined by Capodilupo and colleagues (2010), it was heavily tied to context. In the university setting, in which the primary aim for most students is knowledge and skill acquisition, incompetence is an extreme version of inferiority. Participants described feeling confused by the presumptions made about their lack of capacity to hold or produce knowledge. Male Dominance was a subtheme of this category, which is fitting in light of the object/subject dichotomy that Hill Collins (Hill Collins, 2000) discusses in the construction of gendered power differentials. For male hegemony and dominance to be maintained, women's incompetence is necessary as it is used to counterpose and define male competence. The gender microaggressions described are examples of the reinforcement of this imperative of control (Hill Collins, 2000).

Environmental Invalidations was another theme, with Infrastructure Invalidations as a subtheme. Consistent with previous microaggressions scholarship broadly (Gartner & Sterzing, 2018; Sue et al., 2007; Woodford et al., 2015) and gender microaggressions scholarship specifically (Capodilupo et al., 2010), participants described witnessing or being subject to university policies and practices that disadvantaged women. Expanding this theme for greater applicability to the university context, participants also described the physical (e.g., inadequate lighting) and space-based (e.g., male-dominated weight room) constraints that the university was not actively addressing, which were generally captured under the subtheme Infrastructure Invalidations. In recounting their experiences of environmental invalidations, participants spoke about the strong implications of the exclusionary practices for their perceived options and paths. For example, the lack of tenured women faculty in their disciplines made it difficult for women to envision a future for themselves in academia. In their use of university infrastructure, women described being fearful of the campus and feeling like their safety was not a priority. As Kelly and Torres discuss (2006), women's use of space is confined through direct education and indirect hostility that leads to behavior change. While Assumption of Traditional Gender Roles and Presumed Incompetence serve to shrink women's options through confined, oppositional scripts, Environmental Invalidations shrink their physical space and access to support services such as campus escort services.

Sexual Objectification was a theme that was very conceptually consistent with Capodilupo and colleagues' (2010) work. Women described ways in which their worth was tied to their bodies or capacity to serve men sexually. They also spoke to the ways in which this changed their experience of campus. Participants' described bracing themselves, with statements like, "get ready to be sexualized." They also described questioning their outfits, walking routes, and activities because they expected to be objectified. While the manifestation of sexual objectification microaggressions at UCB was conceptually consistent with prior work, contextualizing this theme in the university setting is crucial. Studies have shown that women primed to think about their body in objectified ways perform less well on tests and have increased body shame and restrained eating (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998). In a setting in which women are being tested on a regular basis and developmentally

individuating, microaggressions that are sexually objectifying have the potential to have both immediate and lasting effects.

The themes established in this study offer detail critical to a well-defined undergraduate-centered taxonomy. This detail was crucial to the item development undertaken in Study 2 to design and validate an undergraduate gender microaggressions scale.

Measuring Gender Microaggressions among Undergraduate Women

The UGMS, with four subscales – Presumed Incompetent, Gender Role Stereotypes, Male Dominance, and Institutional Invalidations – offers a brief, psychometrically sound measure to examine gender microaggressions as experienced by undergraduate women on college campuses. Gender microaggressions subtlety and ambiguity are hallmarks of their conceptualization and part of what makes them so impactful (Capodilupo et al., 2010; Nadal, 2010), it also makes a scale that has undergone a rigorous development process and psychometric testing critical to understanding this often overlooked aspect of campus climate.

Factor structure. The first factor, Presumed Incompetent, contains eight items that pertain to being treated as if you lack skills, knowledge, and general capacity to succeed. This maps directly on to the theme presumed incompetence outlined in Study 1 and relates to Capidolupo and colleagues' (2010) theme assumption of inferiority with items like "You were assumed not to know or understand basic material" and "People talked down to you." This factor pushes against academia's persistent belief in meritocracy to indicate the insidious ways in which subtle behavioral experiences communicate a rigid social order.

The second factor, Gender Role Stereotypes, is comprised of four items and maps on to the theme Assumption of Traditional Gender Roles from Study 1 as well as Capodilupo and colleagues (2010) theme by the same name. Not all subthemes from Study 1 were well represented in the four items. Caretaker/Nurturer was captured with items like, "You were expected to bring snacks or prepare food." Women Dominated Occupations was represented with "You were expected to take on secretarial tasks (e.g., taking notes) in a group. Weak/"Damsel in Distress" was not well represented in the items maintained for this factor. This type of microaggression is based on a deep assumption about women's roles in society and the scripts that they should follow. These microaggressions may be enacted by people who genuinely think that women are better at certain tasks (e.g., more organized for administrative roles) and are often a part of the social order that is challenging to confront (e.g., expectations to clean up). Role congruity theory can be used to better understand the ways in which gender roles function to enforce sex differences. In understanding the, often unintentional, interpersonal interactions that comprised this factor, role congruity theory draws our focus to the ways in which prejudice may arise when women's behavior is incongruous with expectations of their prescribed role (Eagly & Karau, 2002). Women taking on leadership responsibilities or participating in STEM fields assume social roles that counter gender role expectations, with microaggressions serving as subtle indicators of societal prejudice.

The third factor, Male Dominance, is also comprised of four items. The theme of Male Dominance was a subtheme to Presumed Incompetence in Study 1 and here emerged as a factor. This factor consisted of very direct items like, "You were talked over by a man" as well as more environmental experiences, such as, "You have heard others talking about women in degrading terms ("bitch," "slut," etc.)." This factor functioned differently from the Study 1 subtheme which was much more direct. In focus groups, participants spoke about mansplaining, being talked over, and experiencing men taking control in spaces like meetings, groups, and even office hours unnecessarily. While this very direct experience was a part of the third factor, it was less

dominant than the environmental expressions of male hegemony which comprised most the items (e.g., "You experience situations in which men are referred to as the norm or standard (e.g., referring to all people as ''men,'' a person of an unknown gender as 'he'"). This factor may benefit from further development to isolate the interpersonal and environmental experiences that women experience in the Male Dominance category. Generating a larger battery of items for this theme related to direct and indirect experiences may allow future studies to capture more nuance in how male dominance is experienced by undergraduate women,

The fourth factor, Institutional Invalidation, was comprised of two items related to infrastructural inadequacies that communicate a lack of consideration about women's safety. With items like, "You have needed to leave campus at night but there were no campus resources (e.g., bearwalk, UCPD) available to ensure your safety," this factor was very congruent with the experiences described in Study 1 when examining institutional invalidation as a subtheme of environmental microaggressions. With only two items in the factor, this construct could use further development. For example, blue light phones were a physical infrastructure issue that arose in Study 1 and could be included under this theme. Also underrepresented were broader institutional issues like representation of female faculty. Some of these items were eliminated in the item reduction and refinement process, for example, "When you interact with authority figures, they are usually male" and "You have few female role models in your major or desired career" were removed after the expert panel as their structure did not fit the response scale for the measure. As this is a newer theme and factor, future studies should further explore the theme of institutional invalidation and the corresponding factor for undergraduate women.

The UGMS displayed promising psychometric properties but would benefit from scale improvements in future studies. First, not all themes identified in Study 1 remained as factors in Study 2. Specifically, sexual objectification, despite being a prominent part of Study 1, and integral to microaggressions conceptualization (Capodilupo et al., 2010; Nadal & Haynes, 2012), did not emerge as a unique factor. While items, such as "You have heard others talking about women in degrading terms ("bitch," "slut," etc.)" remained, there were too few items associated with this theme to represent a unique factor. This may be due to inadequate representation of the construct in initial item generation. A major challenge with this theme in developing a gender microaggressions scale specific to college campuses is its substantial overlap with sexual harassment. A great deal of the sexual objectification literature speaks to environmental factors such as the media representations of women and sexual objectification (American Psychological Association, 2007). While critical to sexual objectification, media representation is generally not campus specific. When sexual objectification manifests interpersonally, it often takes the form leering, catcalls, or other more overt behaviors that overlap with harassment (Szymanski, Moffitt, & Carr, 2010). While the scale's factor structure did not perfectly match the taxonomy developed in Study 1, it mapped very closely. Further measure development, with a priori subscales, would likely create a more exact mapping of the qualitative and quantitative conceptualizations.

Convergent and discriminant validity. The formative work undertaken to develop a scale that captures experiences of diverse undergraduate women increased both its validity and generalizability. Further, the use of EFA to examine the scale's initial factor structure is an important step in the rigorous psychometric testing needed to establish a sound measure. The identification of four subscales further contributes to the conceptualization of gender microaggressions for undergraduate women. As expected, the UGMS showed no relationship with the scale used to examine discriminant validity, and positive relationships with scales used

to measure convergent validity. In line with measurement and definitional expectations, gender microaggressions was most strongly positively correlated with gender harassment, which is a type of hostile environment sexual harassment that typically requires a pattern of offensive behavior and least related to sexual coercion which is comprised of items examining quid pro quo harassment where a single instance is often sufficient to trigger a legal response (Fitzgerald et al., 1995). Further, consistent with expectations based on objectification theory (Fredrickson, Hendler, Nilsen, O'Barr, & Roberts, 2011; Fredrickson et al., 1998), minority stress theory (Meyer, 1995), and examinations of sexism (Judson, 2014; Nadal & Haynes, 2012), gender microaggressions were positively associated with depression symptom severity and stress. The UGMS also exhibited high internal consistency reliability for the total scale score and acceptable internal consistency reliability for all subscales.

Gender Microaggressions, Sexual Harassment, and Sexual Assault Frequency

Any past year experience. The experience of gender microaggressions was ubiquitous in the sample with less than 0.5% of the 220 participants not endorsing any of the microaggressions included in the UGMS (n = 1) and over half of the sample reporting daily gender microaggressions experiences (54.1%, n = 119). This finding was fairly consistent across subscales, with 88% or more of the sample reporting experiences in each of the three subscales. This alone is an important contribution as little research has examined the frequency of gender microaggressions experiences of undergraduate women. As expected, sexual harassment experiences were lower with 87.3% (n = 192) of the sample reporting sexual harassment experiences at least once or twice in the last academic year. Sexual assault was the lowest with 37.7% (n = 83) of the sample reporting at least one unwanted sexual experience in the past year. These findings are in keeping with the framework outlined in the introduction to the project with gender microaggressions represented as high chronicity events and sexual assaults as lower chronicity events.

Differences by race and sexual orientation. Few differences emerged by race; these findings could indicate that gender microaggressions are experienced with similar frequency across different racial and ethnic groups but could also suggest that the measure did an inadequate job capturing the intersection of race and gender. The most substantial trend was that Asian participants were less likely to report high frequency (upper quartile) gender microaggressions and sexual harassment or to report any experience of sexual assault than were White participants. This finding is consistent with findings from the National Intimate Partner and Sexual Violence Survey 2010-2012 (NISVS; N = 10,081) which found that Asian and Pacific Islander participants reported lower rates than White participants across contact sexual violence (22.9% v. 38.9%), rape (9.5% v. 19.9%), and non-contact unwanted sexual experiences (29.5% v. 34.1%; Smith et al., 2017). In addition, campus sexual violence studies report that Asian participants were less likely to report being victims of sexual violence – for example 37.9% of Asian participants reported being sexually harassed compared to 51.3% of their White peers (Cantor et al., 2015). This could also be an issue of treating Asian and Pacific Islander as a single group and losing the heterogeneity in their experiences and opinions. For example, Lee and Law (2001; N = 186) found that Chinese respondents were the least likely to agree that sexual violence was a big problem for Asian Americans when compared to Japanese, Korean, and Southeast Asian respondents. They also write about culturally endowed privacy and secrecy regarding issues pertaining to sex for Asian women that might suppress reporting despite the confidential nature of the online survey (Lee & Law, 2001). Future research should examine within group differences for Asian women's experiences of gender microaggressions and should

ensure that sufficient measure norming has been done with diverse Asian populations. This would entail a more detailed demographic screener to allow for a better examination of within group differences.

No significant differences were found between under represented minority (URM) participants and White participants. In one of the focus groups, a Black participant stated, "I always assume that the microaggressions I face are honed in on because of my color" (H, third year, Black, heterosexual). While beyond the scope of the current study, data was collected based on intersectional attribution of microaggressions, which may shine further light on this issue. In addition, the clustering of URM for power may have obscured important within group differences. For example, according to the NISVS 2010-2012 average annual estimate of lifetime sexual violence, Black and Hispanic participants had lower rates of contact sexual violence, rape, and non-contact unwanted sexual experiences than their White counterparts. In contrast, American Indian or Alaskan Native, and Multiracial participants had higher rates across categories than their White counterparts (Smith et al., 2017). These groups are all collapsed in the current study, which may contribute to the lack of significant difference. More measure norming should be done on campuses with higher percentages of URM (e.g., historically Black colleges) to ensure adequate cell size for examining measure functioning among these groups.

No significant differences were noted between heterosexual and sexual minority participants in odds of falling into a high frequency group for gender microaggressions, sexual harassment, or sexual assault. This finding is counter to other campus sexual violence literature that finds that sexual minority students report having been victimized more often than their heterosexual peers, with 60.4% of gays and lesbians reporting sexual harassment compared to 45.8% of heterosexual students in a large national study (Cantor et al., 2015). The trend across victimization categories in the current study was that sexual minority participants had higher, but not statistically significantly different rates. The lack of significant difference may, in part, be due to power.

Gender Microaggressions Locations on College Campus

Gender microaggressions and sexual harassment took place across all 13 of the different campus locations queried with sexual assault reported across eight locations. Gender microaggressions were most likely to occur in highly public locations such as classroom/lecture halls, outside on campus grounds, and via social media. By contrast, sexual assault was most likely to occur in more private and residential locations such as off campus housing and fraternity and sorority houses. This is consistent with the underlying theory behind microaggressions as socially acceptable subtle discrimination. As Sue (2010) explains, obvious discriminatory actions, like sexual harassment or sexual assault, are more likely to be seen as bigoted and thus are socially sanctioned. Microaggressions have thus morphed into a more ambiguous and subtle form of censure that can take place in plain sight (Sue, 2010). Understanding the locations where these types of experiences occur most frequently has major implications for prevention. Banyard (2011) writes about the importance of situational context to bystander intervention and sexual violence prevention. She discusses the application of behavior-setting theory to sexual violence prevention pointing out that physical spaces elicit different, and predictable, patterns of behavior (Banyard, 2011). The settings are not only physical spaces but also sets of roles and associated behavioral scripts. Gender microaggressions took place most frequently in public spaces where gender scripts were able to play out subtly but openly. By contrast, sexual assault was report in more residential and/or party locations with less oversight. These behaviors carry different societal sanctions and therefore happened more frequently in

private spaces. The public nature of gender microaggressions can heighten their ambiguity, increasing the cognitive burden that women experiencing them face (Sterzing, Gartner, Woodford, et al., 2017; Sue, 2010; Sue et al., 2007). Women are left to question the validity of their hurt, discomfort, or anxiety given that a room full of people silently witnessed or actively participated in the slight.

Gender Microaggressions and Mental and Behavioral Health

Gender microaggressions were associated with all mental and behavioral health challenges examined in the study, even when controlling for more severe forms of sexual violence such as sexual harassment and sexual assault. Beginning with mental health, gender microaggressions were significantly positively related to depression, perceived stress, and posttraumatic stress scores. This finding is consistent with qualitatively informed research indicating that gender microaggressions are associated with depression, anxiety, and trauma (Nadal, 2010). It is also aligned with sexual violence research indicating that blatant forms of violence such as physical assault and intimate partner violence have been linked to increased health and mental health challenges (Campbell, Sefl, & Ahrens, 2003; National Academies of Sciences, Engineering, and Medicine, 2017). Given the prior connections between sexual violence and mental health challenges, it was unexpected that sexual harassment and sexual assault would not also be significant in these models. This finding is likely due to the shared variance in these two variables, meaning that their associations with the mental health variables were partially accounted for by gender microaggressions. Thus, when holding gender microaggressions constant in the model, sexual harassment and sexual assault were not significant. Future studies could employ hierarchical multiple regression to better understand the portion of variance explained by each of the independent variables.

When examining microaggressions and behavioral health, Study 3 found that microaggressions were significantly associated with school avoidance and alcohol use even when controlling for more severe forms of sexual violence (harassment and assault). This finding is consistent with research linking alcohol use with environments that foster gender discriminatory and sexually violent behaviors (Abbey, McAuslan, Zawacki, Clinton, & Buck, 2001). The findings are also consistent with research suggesting that gender microaggressions and "chilly campus climates" limit college women's comfort talking in class, utilization of campus resources, and vocational aspirations (Hall & Sandler, 1984; Nadal & Haynes, 2012).

While increasing information is available about gender disparities in mental and behavioral health, the mechanisms underlying these differences are less understood. While not causal, the current study suggests that gender microaggressions are significantly associated with mental and behavioral health outcomes even when controlling for more severe forms of sexual violence. Further study is needed to examine causal mechanisms that may help us to better understand the role that microaggressions play in these disparities. A notable body of scholarly and popular press literature has spoken to the ways in which the increased visibility of microaggressions on college campuses is part of the emergence of a victimhood culture (Campbell & Manning, 2014). These critiques come along with challenges to microaggressions conceptual and empirical foundation. Lilienfeld (2017), for example, has called the field to task for insufficient clarity in operationalization for proper measurement. He refers to microaggressions as open concepts (Meehl, 1990) with fuzzy boundaries, flexible lists of indicators, and unclear core nature. The current study seeks to respond to this critique in two ways. First it employs a feminist lens to refine a population and context specific gender microaggressions taxonomy. Second it validates a new measure to assess gender

microaggressions for undergraduate women on college campuses. This process not only increases rigor, but also resists approaches to knowledge production that promote a single gender microaggression experience that can be measured universally. Rather, this applies a critical lens to quantitative inquiry by centering the experiences of the specific target population. Similar claims have been made about sexual violence in terms of definitional inconsistency (Fedina et al., 2016); therefore, the current study sought to employ instruments that have been both implemented and validated with the target population. In addition, the current study examined gender microaggressions, sexual harassment, and sexual assault in relation to one another, seeking to gain further insight into their shared and distinct features. As research assembles not only on microaggressions prevalence, but on mental and behavioral health correlates, and eventually causal pathways, microaggressions scholars will be able to address these critiques and speak to the power of chronic and cumulative identity stressors in the lives of emerging adults.

Limitations

This project contributed to the literature by further conceptualizing gender microaggressions for undergraduate women, designing and validating a measure, and examining gender microaggressions as relates to notable mental and behavioral health challenges that may be experienced on college campuses. The project has several limitations related to study design, sampling, online methods, measurement, and the use of self-report data.

Study 1 Limitations

Study design. In keeping with microaggressions research conventions, Study 1 employed focus group methods with purposive sampling to examine gender microaggressions themes among undergraduate women. Lilienfeld (2017) discusses the ways in which focus group approaches, while common, may bias groups toward interpreting innocuous behaviors as aggressive by selecting individuals to participate and lead who are predisposed to interpret experiences as such. He further suggests that using a group setting may exert social pressure on individuals who may not otherwise view an experience as microaggressive to agree with larger group interpretations. The current study used focus group design because they are the dominant method for examining gender microaggressions in the extant literature (e.g., Capodilupo et al., 2010; Lewis et al., 2013) and may facilitate space for members of marginalized groups to share their accounts in a generative setting with support in framing their experiences (Fine, 1992). Unlike the studies Lilienfeld (2017) critiques, the purposive sampling strategies used for this study strove toward inclusivity of racial and sexual minorities and did not necessitate reporting microaggressive experiences. With this approach, undergraduate women with a substantial microaggressions history and those with no or few microaggressions experiences participated in groups together.

Sampling. While not striving to be a representative sample, it should be noted that the current study sampled from a single university. While diverse in many ways, this university is not representative of all university contexts. This may pose challenges in applying the current taxonomy to non-residential universities, rural universities, and gender segregated universities. In addition, while Study 1 strove to hear the voices of underrepresented minorities, we had a very small number of students who identified as Black with none identifying in some categories such as Native or Indigenous. While this limitation may be an accurate reflection of UCB demographics (3% Black/African American and 1% Native American), it has major limitations representing the experiences of Black women and other women of color (Division of Equity &

Inclusion, 2016). In addition, the grouping of URM women in one focus group may have decreased the specificity and nuance of findings for subgroups represented within this category and limited the study's ability to capture microaggressions at the intersection of race and gender for this group. For example, Lewis and colleagues (2013) write about the gendered racial microaggressions experienced by Black women as very conceptually distinct from those experienced by other groups. Further, due to level of interest in the study, from sexual minority women, this category represented a wide array of different sexual minority identity categories. Gender microaggressions experiences for non-monosexuals (e.g., bisexual, pansexual) and monosexual (e.g., lesbian, gay) may differ (Dyar, Feinstein, Schick, & Davila, 2017). Further, while the study was open to anyone who self-identified as a woman, no one in the focus groups or surveys identified as transgender; therefore, these data not speak to the experiences of transgender women. A substantial body of literature examines gender identity microaggressions as experienced in the trans community as a separate phenomenon from gender microaggressions as experienced by cisgender women (Chang & Chung, 2015; Fisher, Woodford, Gartner, Sterzing, & Victor, 2018).

Studies 2 and 3 Limitations

Study design. These studies used a cross-sectional design to examine factor structure, reliability, and mental and behavioral health correlates of gender microaggressions for undergraduate women. A longitudinal design would have benefits to both studies increasing rigor and capacity for causal inference; however, due to time and resource limitations in the dissertation project, a cross-sectional approach was utilized. In addition, most microaggressions measurement work to date has relied on similar cross-sectional designs. A longitudinal design would have been beneficial for Study 2 in allowing a test-retest reliability as well as predictive validity. In Study 3, longitudinal data could have allowed for the testing of causal pathways and potential bi-directional influences between gender microaggressions and mental and behavioral health measures. For example, a great deal has been written about sexual violence and alcohol with Abbey and colleagues (2001) stating that alcohol can provide cover for toxic values and behaviors, while others have written about posttraumatic alcohol usage in the aftermath of assault (Deliramich & Gray, 2008) – the current study design is unable to speak to the direction of causality.

In addition, due to the exploratory nature of research questions 2, a large number of bivariate and multivariate statistical tests were performed. The findings should be interpreted with caution because of the increased probability that statistically significant differences were due to chance (Streiner & Norman, 2011). Further, while the study took initial steps to validate the UGMS measure, further work should be done with a separate sample to confirm its factor structure.

Sampling. Studies 2 and 3 utilized a convenience sample recruited from a single university between February and April of 2018. While using a convenience sample was advantageous in terms of cost, data are not generalizable. For example, while the sample was closely aligned with the university demographics in terms of participant race, the university's student body incudes only approximately 3% Black and 13% Latino/a students, which is neither nationally representative nor representative of the city or state in which the campus is located (Division of Equity & Inclusion, 2016). Further measure development, testing, and implementation should be done on campuses with differing geographic and demographic diversity. For example, the measure could be validated in a rural setting, with commuter campuses, and with Historically Black Colleges and Universities. Finally, like Study 1, this

sample did not include any transgender women and therefore does not speak to the experiences of this population.

A convenience sample also has the potential for self-selection bias, where only certain undergraduate women chose to participate (e.g., more motivated; more frequently victimized; Heckman, 1990). Because of the online nature of the study, there was low burden to participating (e.g., the survey could be taken whenever, wherever), which may have mediated some selection bias. In examining the challenge of selection bias, Arvey and Cavanaugh (1995), speak to the concern that in some studies reviewed, participants with histories of sexual violence were more likely to take sexual violence oriented surveys because they wanted to share their stories but in others they were less likely to participate because they did not want to relive the experience.

Online methods. Online surveys provide unique opportunities, but can also pose many challenges. Data integrity can be a particularly challenging issue with online surveys. As there is no direct encounter with a researcher, there is potential for dishonest and repeat responders attempting to receive additional incentives (Huang, 2006; Pequegnat et al., 2007; Sterzing, Gartner, & McGeough, 2017). The current study employed best practices in online survey methods to account for this limitation (Alessi & Martin, 2010; Pequegnat et al., 2007; Sterzing, Gartner, & McGeough, 2017). Stringent data monitoring practices were used to ensure data quality, for example 27 surveys were removed for failing daily data checks which entailed marking participants for removal from the dataset if they (1) had a duplicate email address and/or (2) had two of the three indicators of dishonest or careless responding (a) missing the first check question, (b) missing the second check question and (c) a survey completion time under 12 minutes. In addition, a modest compensation level of $5 was set, which is commensurate with compensation given in similar prior surveys (Banyard, Plante, & Moynihan, 2005; Krebs, Lindquist, Warner, Fisher, & Martin, 2009; Potter, 2016) to maximize participation without inducing undue influence.

Measurement. Some of the measures used in Studies 2 and 3 had low internal consistency. In Study 2, the SDRS-5 had low internal consistency reliability and in Study 3 the Male Dominance and Institutional Invalidation subscale of the UGMS, the Electronic Harassment subscale, and the Short Screening Scale for the DSM-IV Posttraumatic Stress Disorder all displayed low internal consistency reliability. For validated measures like the SDRS-5 and Electronic Harassment, other slightly longer measures might have improved internal consistency such as the Marlowe-Crown Social Desirability Scale (Crowne & Marlowe, 1960). In the case of the Short Screening Scale for the DSM-IV Posttraumatic Stress Disorder, future studies could use the PTSD Checklist for DSM-5 (PCL-5) which is both longer and has a Likert-type scale response (Wortmann et al., 2016). In the case of the Institutional Invalidation subscale, which only had two items, further subscale development and the addition of items may improve internal consistency reliability.

The measurement of location also posed challenges in the current study for two dominant reasons. First, chronic behaviors like gender microaggressions happen across contexts meaning that a single participant might report many locations for experiences of gender microaggressions. In addition, participants reporting locations for gender microaggressions frequently also reported locations for sexual harassment and sexual assault. As participants could contribute to more than one cell both within (i.e., many locations for gender microaggressions) and across (i.e., reporting locations for gender microaggressions and sexual harassment), it was not possible to make statistical comparisons for this aim. In addition to descriptive questions like those included in the current study, future studies could query larger categories by ask participants whether events

took place in public, private, or both public and private locations. Future work could also gather single locations as a follow-up at the item level to allow for more detail. A second challenge with location data is the gathering of virtual location information. Constructs of direct and indirect experiences may not apply as well to virtual realms. Future studies should examine microaggressions specifically in virtual contexts to ensure they are being adequately represented and appropriately queried.

Self-report data. The use of self-report data can pose challenges when asking about sensitive topics like sexual violence, mental health concerns, school avoidance, and alcohol use. Self-report data are prone to memory recall and social desirability biases. Arvey and Cavanaugh (1995) write about the problems with retrospective self-report surveys of sexual harassment. Retrospective self-report is very common for sexual harassment and other sexual violence research in part because these types of events may not be observable to others and may not occur with regularity making them difficult to investigate with other methods. Studies of subtle sexism in classrooms and on campuses have used approaches like observational data (Boersma, Gay, Jones, Morrison, & Remick, 1981) and experimental laboratory environments (Fredrickson & Roberts, 1997; Harvie et al., 1998) while sexual violence has relied on the limited capacity of administrative data (Sinozich & Langton, 2014), but these methods may not be ideal to capture gender microaggressions as they are both subtle and subjective. The current study attempted to limit memory recall bias by limiting the sample to current undergraduate students and only asking them to reflect on experiences in the last academic year. While social desirability can be an issue with any self-report data, the current study found no relationship between socially desirable responding (as indicated with the SDRS-5) and gender microaggressions.

Conclusion

This dissertation expands the conceptualization of sexual violence on college campuses by increasing its developmental and contextual specificity while capturing a full range of interpersonal and institutional behaviors from subtle to overt. While substantial work has been done in conceptualizing and measuring overt behaviors like sexual harassment and sexual assault, the refinement of a context (i.e., college campus) and developmentally specific (i.e., undergraduate emerging adults) gender microaggressions measure is the first step to understand the role of subtle gender discrimination in both sustaining sexually violent cultures and as antecedents to legally actionable sexual offenses. Advancements in measurement and empirical study will enable practitioners and researchers to approach prevention, intervention, and scholarship with more tools to enact lasting change. Designing a measure of gender microaggressions is an important step in moving social work research toward accurately assessing the scope (prevalence and incidence) of the problem, its relation to sexual harassment and sexual assault (conceptually and construct clarity), and the causal mechanisms responsible for associated mental and behavioral health outcomes.

Study 1 advanced the conceptualization of gender microaggressions among a diverse sample of undergraduate women. The four main themes that emerged were well aligned with prior qualitative thematic development (Capodilupo et al., 2010), with the subthemes providing crucial population specific nuance to aid in conceptual clarity and item generation. Combined with Study 2, this dissertation addresses some of the criticism levied against microaggressions research, namely that the construct is underconceptualized with psychometrically questionable measures (Lilienfeld, 2017). Study 3 begins to address major gaps in our knowledge of gender microaggressions on college campuses by identifying frequency, location, and mental and

behavioral health correlates necessary to understand their presence and potential impact on campus.

Gender microaggressions were a nearly universal experience at UCB and took place in highly public spaces. These high numbers come with a cost – not only are women being treated as if they are incompetent, being pushed into narrowly defined gender roles, and being discouraged and blocked from academic aspirations, but these experiences are related to depression, stress, posttraumatic stress, school avoidance, and high-risk alcohol use. These findings are a first step in identifying both the prevalence and human cost of gender microaggressions on college campuses and can be used to support targeted primary prevention efforts. For example, classrooms and lecture halls, which were among the locations in which gender microaggressions occurred most frequently, may be an important target for preventive interventions. Gender microaggressions' significant relationship to mental and behavioral health outcomes suggests that more research is needed to both understand the direction of causality and the nature of the impact. Gender microaggressions research needs to ask, is the stress that gender microaggressions cause as physically harmful as the stress caused by physical violence? As this research continues, further exploring findings related to the intersections of gender, race, and sexual orientation will provide important nuance and generalizability in future models. This study found that Asian participants had lower rates of gender microaggressions experiences but also had higher school avoidance scores. Future research is needed to unpack differential experiences of gender microaggressions and variation in their impact.

Increasing knowledge of gender microaggressions' prevalence and location has the potential to elevate awareness among administrators, funders, practitioner, and students. Disrupting gender microaggressive climates holds the possibility of improving undergraduate women's sense of belonging on campus, increasing the accessibility of majors and career paths traditionally dominated by men (e.g., STEM), and improving their academic performance (e.g., increased focus and confidence). Sexual violence prevention is about more than stopping an assault before it happens – it is about disrupting the gender microaggressive culture on college campuses that may maintain inequality and enable sexual violence. To enact change at a national level, we need policy advocates, practitioners, and researchers to move upstream, engaging in sexual violence prevention that addresses gender microaggressions, builds awareness, and promotes communities free of campus sexual violence.

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APPENDIX

Appendix A. A Taxonomy of Gender Microaggression*

Theme	Example	Message
Sexual objectification: Occurs when a woman is treated as a sexual object	Stating "I'd tap that" when finding a woman attractive.	Women's value is in their bodies.
Second-class citizen: Occurs when a woman is overlooked and/or when men are given preferential treatment	Calling on men more in class Allotting fewer resources to women's athletic teams	Women's contributions are not as valuable as men's.
Assumptions of interiority: Occurs when a woman is assumed to be less competent than a man (e.g., physically or intellectually)	Stating "you are really good at physics, for a girl!"	Women are not as capable as men and should be subservient.
Assumptions of traditional gender roles: Occurs when an individual assumes that a woman should maintain traditional gender roles	Expecting women to clean common space in co-ed dorms Referring to women who take organizational or caretaking roles in residential life as "floor mom" or "dorm mom"	Women's primary role is in the home.
Use of sexist language: Occurs when language is used to degrade women	Referring to women with sexual experience as "sluts" while men with similar experience are lauded as being "the man"	There are different standards for men and women when it comes to sex.
Environmental invalidations: Ambient or indirect aggressions that occur on a systemic and environmental level	Sexual images of women used to advertise fraternity parties and concerts	Men have a right to sexualize women.

*Adapted from Capodilupo, C. M., Nadal, K. L., Corman, L., Hamit, S., Lyons, O., B., & Weinberg, A. (2010). The manifestation of gender microaggression. In D. W. Sue (Ed.), *Microaggressions and marginality: Manifestation, dynamics, and impact* (pp. 193–216). New Jersey: John Wiley & Sons, Inc.

Appendix B. Semi-Structured Focus Group Interview Guide

Focus Group Semi-Structured Interview Guide[6]

[Note: Not every question will be asked of each group, the guide below represents a full battery of questions that could be asked in the focus groups]

Hi, my name is Rachel, I am a Doctoral Candidate in the School of Social Welfare here at Berkeley. Thank you so much for coming to participate today. As you likely know, the purpose of today's conversation is to understand experiences and locations of subtle gender discrimination on Berkeley campus. You may not have experienced all of the things that we discuss today – I am interested in hearing from people with a range of experiences. Some of the things we talk about today may bring some painful emotions, please know, that I am available as a resource to you after we talk today. I have also put together a list of campus support resources for you if you want more information or support in processing anything we discuss today [hand out Campus Resource Sheet].

I am going to give you a consent form that states that your participation in the group is voluntary and outlines your rights as a research participant– please read the form carefully before you sign it. It discusses potential risks and benefits of participation as well the use of audiotaping during our session today. I am going to walk through each section of the form with you – if you have any questions about anything that I say, please feel free to ask. [Interviewer will then summarize each section of the consent form].

I encourage you to share your experiences openly and honestly. I will be using a recorder for the session to make sure that I maintain the integrity of your words and experiences – I will also be taking some notes to make sure that I do not miss anything while we talk. Throughout the research process, I will use strict procedures to protect your confidentiality and only members of the research team will have access to the tape. I hope that everyone participating today will respect each other's confidentiality by not sharing or reporting anything discussed here outside of the session. Do you all agree to keep the content of today's group discussion confidential?

<u>Opening Question</u>

So today we will be talking about those subtle ways that you may have been insulted, put down, invalidated or made to feel inferior because you are a woman. These experiences are sometimes called subtle gender discrimination or gender microaggressions. One of the hard things about gender microaggressions is that they are often really tiny things. Today we are gathered here to discuss our experiences of gender microaggressions. As a reminder, there are no wrong answers to the questions we will discuss today, just different points of views and experiences.

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[6] Adapted from Capodilupo, C. M., Nadal, K. L., Corman, L., Hamit, S., Lyons, O., B., & Weinberg, A. (2010). The manifestation of gender microaggression. In D. W. Sue (Ed.), *Microaggressions and marginality: Manifestation, dynamics, and impact* (pp. 193–216). New Jersey: John Wiley & Sons, Inc.

At this time, I would like you to introduce yourself – you can just share you name and what year you are in here at Cal and if there is something particular that made you interested in coming to this group.

Interview Questions

Now we are going to jump into some of our questions. I hope you feel comfortable sharing honestly – you do not need to raise your hand, but please try not to interrupt people who are talking. Also, if you notice that you have been speaking for a long time, choose to step back so that other people have a chance to share.

1. Think about a time, since you started at Berkeley, when you may have been frustrated or hurt by something that another student, faculty member, or other member of campus said to you because you are a woman.
    a. Let's talk about some of these experiences
    b. Where did this happen to you?
        i. Where do these types of things happen on campus?
    c. What do you think was the message being conveyed to you?
    d. How did the event change your experience of campus?
2. Think about a time when you may have been subtly sexually harassed or discriminated against because of your gender on Berkeley campus. Describe the scenario as best you can.
    a. Let's talk about some of these experiences
    b. Where did this happen to you?
        i. Where do these types of things happen on campus?
    c. What do you think was the message being conveyed to you?
    d. How did the event change your experience of campus?
3. Describe a time since you started at Berkeley when a man has made you uncomfortable because you are a woman.
    a. Let's talk about some of these experiences
    b. Where did this happen to you?
        i. Where do these types of things happen on campus?
    c. What do you think was the message being conveyed to you?
    d. How did the event change your experience of campus?
4. Describe a time since you started at Berkeley when someone made a disparaging remark or used derogatory language about you as a woman.
    a. Let's talk about some of these experiences
    b. Where did this happen to you?
        i. Where do these types of things happen on campus?
    c. What do you think was the message being conveyed to you?
    d. How did the event change your experience of campus?
5. Describe a circumstance since you started at Berkeley when someone's behavior made you uncomfortable, hurt, devalued, or even scared because you are a woman.
    a. Let's talk about some of these experiences
    b. Where did this happen to you?
        i. Where do these types of things happen on campus?
    c. What do you think was the message being conveyed to you?

    d. How did the event change your experience of campus?
6. Describe a time since you started at Berkeley, when you felt physically or emotionally unsafe because you are a woman.
    a. Let's talk about some of these experiences
    b. Where did this happen to you?
        i. Where do these types of things happen on campus?
    c. What do you think was the message being conveyed to you?
    d. How did the event change your experience of campus?
7. Describe a situation since you started at Berkeley, when you felt pressured to act a certain way because you are a woman.
    a. Let's talk about some of these experiences
    b. Where did this happen to you?
        i. Where do these types of things happen on campus?
    c. What do you think was the message being conveyed to you?
    d. How did the event change your experience of campus?
8. Describe a situation since you started at Berkeley, when you felt someone treated you differently because of stereotypes about your gender.
    a. Let's talk about some of these experiences
    b. Where did this happen to you?
        i. Where do these types of things happen on campus?
    c. What do you think was the message being conveyed to you?
    d. How did the event change your experience of campus?
9. Describe a time when you felt that the university or its representatives may have sent negative messages to you because you are a woman.
    a. Let's talk about some of these experiences
    b. Where did this happen to you?
        i. Where do these types of things happen on campus?
    c. What do you think was the message being conveyed to you?
    d. How did the event change your experience of campus?
10. What impact do these experiences of subtle gender discrimination have on your mental health?
11. Where do these types of subtle experiences of gender microaggressions happen most often on campus?

I want to thank you all for your openness, honesty, and respect throughout today's meeting.

Appendix C. Campus Support Resources

Campus Support Resources
University of California, Berkeley

Counseling and Psychological Services

- Brief Counseling at the Tang Center Monday to Wednesday, 8 a.m. to 5:30 p.m., Thursday 9 a.m. to 5:30 p.m., and Friday 8 a.m. to 5:30 p.m. The first five visits are free.
- All UC Berkeley undergraduates are eligible for CPS, regardless of insurance coverage.
- To schedule an initial appointment, call CPS **(510) 642-9494**, visit the eTang patient portal, or stop by CPS at the Tang Center
- For consultation when CPS is closed, call the After Hours line **(855) 817-5667**

Path to Care Center

- The PATH to Care Center provides affirming, empowering, and confidential support for survivors and those who have experienced gendered violence, including: sexual harassment, dating and intimate partner violence, sexual assault, stalking, and sexual exploitation. Confidential advocates bring a non-judgmental, caring approach to exploring all options, rights, and resources.
- It is always the victim's/survivor's decision to pursue any of the available resources or to report an incident to the police or the university. We are here to support your decisions.
- You can set up an appointment with the advocate by calling **(510) 642-1988**.
- The advocate can usually meet within the same business day, or at the earliest convenience of the person seeking support.

Gender Equity Resource Center

- The Gender Equity Resource Center, fondly referred to as GenEq, is a UC Berkeley campus community center committed to fostering an inclusive Cal experience for all. GenEq is the campus location where students, faculty, staff and alumni connect for resources, services, education and leadership programs related to gender and sexuality.
- They are open Monday-Friday 9am-5pm at 202 Cesar Chavez #2440. They have community space available as well
- For support from GenEq you can contact Marisa Boyce by phone (**510-643-5730**) or e-mail: **ejce@berkeley.edu**

Office for the Prevention of Harassment and Discrimination

- The Office for the Prevention of Harassment and Discrimination (OPHD) is responsible for ensuring the University provides an environment for faculty, staff and students that is free from discrimination and harassment on the basis of categories including race, color national origin, gender, age and sexual orientation/identity.
- The OPHD Office has the specific responsibility for providing prompt and effective responses to all complaints of sex discrimination or harassment for faculty, staff and students. The Office also responds to concerns from faculty and students regarding other forms of discrimination as covered by University Nondiscrimination policies-- such as, age, religion, national origin, etc.
- For general inquires, call the main office line at **510-643-7985** or email: **ask_ophd@berkeley.edu**

Appendix D. Studies 2 and 3 Flyer

Take a survey and get a $5 gift card!

Are you a UC Berkeley undergraduate woman between 18 and 25? We want to hear you! Take a survey about your gender discrimination and sexual violence experiences.

www.tinyurl.com/itaddsupsurvey

Study conducted by the University of California, Berkeley
Learn more at www.itaddsupberkeley.com

Questions: Rachel Gartner
rachelgart@berkeley.edu

Appendix E. Studies 2 and 3 Facebook Advertisement

Headline

a. Take a survey and get a $5 gift card!
b. Take the It Adds Up Survey and get a $5 gift card!

Main Text

a. Are you a UC Berkeley undergraduate woman between 18-25? We want to hear you! Take a survey about your gender discrimination and sexual violence experiences on campus.
b. Are you a UC Berkeley undergraduate woman age 18-25? We want to hear from you! Take a survey about your sexual violence and subtle gender discrimination experiences on campus.
c. Are you a UC Berkeley undergraduate woman between 18 and 25? We want to hear from you! Take a survey about your subtle gender discrimination and sexual violence experiences on campus.
d. Are you a UC Berkeley undergraduate woman between 18-25? We want to hear you! Take a survey about sexual violence and the subtle slights, insults, and invalidations that women experience on campus daily.
e. We want to hear your story! Are you a UC Berkeley undergraduate woman between 18-25? Take a survey to tell us about your experiences of subtle gender discrimination and sexual violence on campus.
f. Tell us your story! Are you a UC Berkeley undergraduate woman between 18-25? Take our survey about sexual violence and the subtle slights, insults, and invalidations that women experience on campus daily. For more information visit www.itaddsupberkeley.com

Link Description

Study conducted by the University of California, Berkeley
To take the survey visit: www.itaddsupberkeley.com

a. To take the survey visit: www.tinyurl.com/itaddsupsurvey

Potential Images

Appendix F. Undergraduate Gender Microaggression Measure Evolution

Original Battery of Items

We are interested in the subtle insults, invalidations, and rejections that women experience on college campuses. These experiences can be words (e.g., being called names like skank, bitch), actions (e.g., being ignored or talked down to because you are a woman), or stereotypes (e.g., someone expressing surprise when you tell them you are a STEM major) that put down women. Sometimes the insults are intentional, but people are often not aware that they are being hurtful. This can make women who have been offended feel confused or unsure about their negative experiences. We are not only interested in experiences that target you directly, but also things that you overhear or experience around you.

We want you to focus on experiences that you have had on campus, which may include the following settings:

- Academic - such as lecture, discussion sections, seminars, and lab meetings
- Social - such as club meetings, sporting events, and spending time with friends
- Residential - such as dorms, campus apartments, fraternity and sorority housing
- Other campus contexts - such as at the gym (RSF), in dining areas, and walking between classes.

Response Options
(0) Never, (1) Once or twice in the last year, (2) monthly, (3) weekly (1-3 times per week), (4) almost daily to daily (4 or more times per week)

[In campus locations, how often have you experienced these incidents over the PAST YEAR because you are a woman]
Over the PAST YEAR on campus how often have you experienced these incidents [because you are a woman]

Item	Original/Adapted and Source
1. A man automatically took control of a group meeting	Original
2. A man automatically set the agenda for a group meeting	Adapted from (Derthick, 2015)
3. A man automatically assumed the leadership role in a group	Adapted from (Derthick, 2015)
4. A man has spoken for you because you are a woman	Adapted from (Derthick, 2015)
5. You have been talked over by a man	Adapted from (Judson, 2014)
6. Your contribution was ignored or dismissed because you are a woman	Adapted from (Derthick, 2015)
7. Your contributions were not taken as seriously as your male peers	Adapted from (Torissi, 2014)
8. Your idea was ignored or dismissed when you contributed it but praised when a man contributed something similar	Adapted from (Derthick, 2015; Lewis & Neville, 2015)

9. You were treated as if you were incompetent because you are a woman	Adapted from (Judson, 2014)
10. You were assumed not to know or understand basic material because you are a woman	Original
11. People talked down to you because you are a woman	Original
12. Your opinion was overlooked in a group discussion because you are a woman	Adapted from (Torissi, 2014)
13. You were excluded because you are a woman (e.g., being ignored in a conversation)	Adapted from (Judson, 2014)
14. A man was acknowledged before you in class because you are a woman	Adapted from (Oshi-Ojuri, 2013)
15. Someone rolled their eyes, scoffed, or showed other non-verbal signs of frustration or displeasure when you spoke because you are a woman	Adapted from (Judson, 2014)
16. You were expected to provide emotional support to others because you are a woman	Original
17. You were expected to bring snacks or prepare food because you are a woman	Original
18. You were expected to take on secretarial tasks (e.g., taking notes) in a group because you are a woman	Original
19. You were expected to clean up after others because you are a woman	Original
20. You heard that women are better than men at cooking, shopping, and/or child care	Adapted from (Judson, 2014)
21. You heard that women are worse than men at math, sports, cars, leadership	Adapted from (Judson, 2014)
22. You were given career advice to prioritize family and children (e.g., avoiding PhD programs or careers with long hours)	Original
23. People looked surprised when you told them your major because you are a woman	Adapted from (Judson, 2014)
24. You have been discouraged from participating in Science Technology Engineering Math (STEM) fields	Adapted from (Oshi-Ojuri, 2013)
25. You have been assumed to know less about male dominated activities such as sports, politics, or cars because you are a woman	Adapted from (Judson, 2014)
26. Someone has made a joke about women's roles (e.g., get in the kitchen and make me a sandwich)	Original
27. You have expressed concern about sexist discrimination and you were told that you were too sensitive, crazy, or wrong	Adapted from (Derthick, 2015)
28. You have shared a time when you were treated differently as woman, and that person told you that *they* were not sexist and/or would not treat you poorly because you are a woman	Original
29. You were not taken seriously when you complained about a sexist incident on campus	Adapted from (Judson, 2014)
30. Your experiences of sexism were denied or invalidated by others	Adapted from (Oshi-Ojuri, 2013)
31. You received hostile or dismissive responses when you confronted others about their sexist attitudes	Adapted from (Oshi-Ojuri, 2013)
32. You experienced sexism or unfair treatment because you are a woman and it went unnoticed	Original

33. You were told to fight back or "just ignore it" when you told someone about your experience of sexism	Adapted from (Oshi-Ojuri, 2013)
34. Women are not represented in positions of authority on campus (e.g., tenure professors, high level administrators)	Adapted from (Lewis & Neville, 2015)
35. You have heard others talking about other women in degrading terms ("bitch," "slut,", etc.)	Adapted from (Derthick, 2015)
36. When you interact with authority figures, they are usually male.	Adapted from (Torissi, 2014)
37. You have few female role models in your major or desired career	Adapted from (Torissi, 2014)
38. You experience situations in which men are referred to as the norm or standard (e.g., referring to all people as ''men,'' a person of an unknown gender as ''he,'' or using non parallel structure such as refer to women as ''girls'' while not calling men ''boys'')	Adapted from (Judson, 2014)
39. You have needed to leave campus late at night but there were not campus resources (e.g., Bearwalk, UCPD) available to ensure your safety	Original
40. You made a complaint about sexism, harassment, or discrimination to a university representative (department head, RA, Title IX office) and no action was taken	Original
41. Due to lack of lighting, campus was too dark at night, when you needed to walk through it	Original
42. People mocked or did not take seriously a policy designed to reduce sexual violence (e.g., making fun of consent trainings, blowing off sexual harassment trainings)	Original
43. You have been told to avoid certain locations or groups on campus to stay safe (e.g., specific fraternities, parties)	Original

Sources:

Derthick, A. O. (2015). The sexist mess: Development and initial validation of the sexist microaggressions experiences and stress scale and the relationship of sexist microaggressions to women's mental health (Doctoral Dissertation). University of Alaska Anchorage, Anchorage, Alaska.

Judson, S. S. (2014). Sexist discrimination and gender microaggressions: An exploration of current conceptualizations of women's expriences of sexism (Doctoral Dissertation). The University of Akron.

Lewis, J. A., & Neville, H. A. (2015). Construction and initial validation of the Gendered Racial Microaggressions Scale for Black women. Journal of Counseling Psychology, 62(2), 289–302. http://dx.doi.org/10.1037/cou0000062

Oshi-Ojuri, M. F. (2013). A quantitative look at the impact of microaggressions on the intersecting identities of African American lesbians (Doctoral Dissertation). John F. Kennedy University, Pleasant Hill, California.

Torissi, L. (2014). Correlates of Perpetrating and Being the Victim of Women's Hostility Toward Women (Doctoral Dissertation). Alliant International University, San Francisco, California.

Undergraduate Gender Microaggressions Scale (Preliminary)[7]

	Never (0)	Once or twice in the last academic year (1)	Once or twice per semester (2)	Monthly (3)	Weekly (4)	Daily or almost daily (5)	Can't Remember (8)	Skip Question (-999)
A man automatically took control in a group setting (MICRO1)	○	○	○	○	○	○	○	○
A man spoke for you (MICRO2)	○	○	○	○	○	○	○	○
You were talked over by a man (MICRO3)	○	○	○	○	○	○	○	○
Your idea was ignored or dismissed when you contributed it but praised when a man contributed something similar (MICRO4)	○	○	○	○	○	○	○	○
You were treated as if you were incompetent (MICRO5)	○	○	○	○	○	○	○	○
You were assumed not to know or understand basic material (MICRO6)	○	○	○	○	○	○	○	○
People talked down to you (MICRO7)	○	○	○	○	○	○	○	○
Your opinion was overlooked in group discussion	○	○	○	○	○	○	○	○

[7] UGMS-p as presented in online survey. Bolded items represent the 18 item UGMS used

(MICRO8)								
You were excluded (e.g., being ignored in a conversation) (MICRO9)	○	○	○	○	○	○	○	○
A male student dominated the professor's time during things like office hours or review sessions (MICRO10)	○	○	○	○	○	○	○	○
Someone rolled their eyes, scoffed, or showed non-verbal signs of frustration or displeasure when you spoke (MICRO11)	○	○	○	○	○	○	○	○
You were expected to provide emotional support to others (MICRO12)	○	○	○	○	○	○	○	○
You were expected to bring snacks or prepare food (MICRO13)	○	○	○	○	○	○	○	○
You were expected to take on secretarial tasks (e.g., taking notes) in a group (MICRO14)	○	○	○	○	○	○	○	○
You were expected to clean up after others (MICRO15)	○	○	○	○	○	○	○	○
You heard that women are better than men at things like cooking,	○	○	○	○	○	○	○	○

shopping, and/or childcare (MICRO16)								
You heard that men are better than women at things like math, sports, cars, leadership (MICRO17)	○	○	○	○	○	○	○	○
You were given career advice to prioritize family and children (e.g., avoiding PhD programs or careers with long hours) (MICRO18)	○	○	○	○	○	○	○	○
You have been assumed to know less about male dominated activities such as sports, politics, or cars (MICRO19)	○	○	○	○	○	○	○	○
Someone has made a joke about women's roles (e.g., get in the kitchen and make me a sandwich) (MICRO20)	○	○	○	○	○	○	○	○
People looked surprised when you told them your major (MICRO21)	○	○	○	○	○	○	○	○
You have been discouraged from participating in Science Technology Engineering Math (STEM) fields (MICRO22)	○	○	○	○	○	○	○	○

You have heard others talking about other women in degrading terms (“bitch,” “slut,”, etc.) (MICRO23)	○	○	○	○	○	○	○	○
You experience situations in which men are referred to as the norm or standard (e.g., referring to all people as ‘‘men,’’ a person of an unknown gender as ‘‘he’’) (MICRO24)	○	○	○	○	○	○	○	○
You have been told to avoid certain locations or groups on campus to stay safe (e.g., specific fraternities, parties, areas of campus at night) (MICRO25)	○	○	○	○	○	○	○	○
You have needed to leave campus at night but there were no campus resources (e.g., bearwalk, UCPD) available to ensure your safety (MICRO26)	○	○	○	○	○	○	○	○
There was not adequate lighting for you to walk through campus at night (MICRO27)	○	○	○	○	○	○	○	○

You saw sexual or degrading post about women on UC Berkeley related social media (e.g., class pages) (MICRO28)	○	○	○	○	○	○	○	○

Appendix G. Expert Advisory Board Members and Areas of Expertise

Member	Expertise
Carrie A. Moylan Assistant Professor Michigan State University	Campus sexual violence - Institutional responses
Michael Woodford Associate Professor Wilfrid Laurier University	Microaggression Measure development
Victoria Banyard Professor Rutgers University	Campus sexual violence - Bystander and space specific interventions
Mari Knuth-Bouracee Director of Sexual Assault Prevention & Student Advocacy University of California, Berkeley	Campus sexual violence response Campus sexual violence prevention Berkeley campus sexual violence resources
Paul Sterzing Associate Professor University of California, Berkeley	Microaggressions - Discrimination and violence against marginalized groups

Appendix H. Expert Advisory Board Agenda

The Spectrum of Campus Sexual Violence
Date: Thursday, September 14, 2017
Time: 11:00am – 1:00pm PST

Expert Advisory Board Meeting
Joining information:
Go to link (in calendar invite):
meet.google.com/afd-kotn-ger

The Spectrum of Campus Sexual Violence
Expert Advisory Board Meeting
Agenda: September 14, 2017

OBJECTIVES:

1) Discuss the operationalization of gender microaggressions for the current study
2) Discuss measure framing (i.e., introductory language) for participants for the measure
3) Discuss best approach to attribution (e.g., "because you are a woman") in the measure
4) Discuss face validity and comprehensiveness of measure items
5) Discuss best method to develop follow-up items for location, perpetrator, impact

AGENDA:

11:00-11:15 **Introductions**

- Expert Advisory Board members briefly introduce themselves
- Study overview and role of expert advisory board
- Review agenda and materials sent out

11:15-11:35 **Operationalization of gender microaggressions on college campus**

- Guiding questions:
    - How do/should I think about a spectrum of gender microaggressions, are some worse than others or should I only think about more and less frequent?
    - Should there be a firm distinction between environmental and interpersonal microaggression?
    - What is the best way to conceptualize "University Failure/Structural Issues?" does this fall under environmental microaggressions?

11:35-12:00 **Measure framing**

- Guiding questions:
    - What is the best way to introduce the concept of gender microaggressions?
    - Are the campus settings adequate? Should I clarify experiences that I am NOT interested in?
    - What are best practices and/or suggestions for response options?

12:00-12:15 **Attribution in the measure**

- Guiding questions:

- Should an attribution, such as "because you are a woman," be included after each item?
- Can these types of attribution be left out based on actor in the situation?
- Should these attributions occur at the item level or in the question stem?

12:15-12:40 **Face validity and comprehensiveness of items**

- Guiding questions:
  - Does the current measure adequately capture gender microaggressions?
    - What aspects of gender microaggressions are not being captured with the current measure
  - Suggestions on items that should be altered or new items that should be introduced?

12:40-12:55 **Gathering location, perpetrator, and impact data**

- Guiding questions:
  - What are best approaches to gathering location, perpetrator, and impact data?
  - For people who have multiple experiences what are best approaches? (e.g., the *last time* this happened to you…?)

12:55-1:00 **Wrap up and thank you**

- Thank you for your contribution to my dissertation study!
- I may contact you individually to follow up on areas that we had to cut short or that particularly match your expertise.

Attachments by agenda topic (5 including agenda)

Introduction:

- The Spectrum of Campus Sexual Violence Brief Synopsis

Operationalization of gender microaggressions on college campus:

- Gender microaggressions conceptual article
- The spectrum of campus sexual violence qualitative overview

Measure framing, Attribution in the current measure, Face validity and comprehensiveness of current items

- The Spectrum of Campus Sexual Violence Measure Draft

Thank you for participating!!

Appendix I. Pilot interview Guide

Pilot Study:
Follow-up Interview Guide

Icebreaker

- Without feeling like you have to share any overly personal information, what parts of the survey were the most relevant to you and your experience?

General

- If you found out about the survey from a Facebook advertisement or a poster on campus, and were taking it at home, what would be the greatest barriers to completing it?
    - Do you think you would start the survey?
    - Do you think you would finish it?

- Tell me about your feelings regarding the length of the survey, what did you all think?

- If you could change anything in the survey, what would it be?

- What words were confusing in the survey?

- Tell me which questions were the most confusing or did not make sense to you?

- Tell me about any words or questions that were offensive?

- In what areas did you have the greatest trouble?

- Did you have any technical difficulties when taking the survey? If yes, what were they?