Graham Kathryn (Orcid ID: 0000-0003-3318-3598)

Abbey Antonia (Orcid ID: 0000-0002-5448-4659)

MEASURING PERPETRATION OF COMMON SEXUALLY HARASSING AND AGGRESSIVE BEHAVIOR IN DRINKING SETTINGS

Development and validation of the C-SHADE Scale for measuring perpetration of common sexually harassing and aggressive behaviors in drinking environments

Kathryn Graham, PhD[1,2], Sharon Bernards, MS[1], Antonia Abbey, Ph.D[3], Charlene Senn, PhD[4], Tara M. Dumas, PhD[5], AnnaLise Trudell, PhD[6], Peter D. Donnelly, MD2[2,7], Samantha Wells, PhD[1,2,8,9,10]

[1]Institute for Mental Health Policy Research, Campbell Family Mental Health Research Institute, Centre for Addiction and Mental Health, London/Toronto, Ontario, Canada

[2]Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada

[3]Department of Psychology, Wayne State University, Detroit, Michigan, USA

[4]Department of Psychology / Women's & Gender Studies, University of Windsor, Windsor, Ontario, Canada

[5]Department of Psychology, Huron University, London, Ontario, Canada

[6]Anova, a gender-based violence community agency in London Ontario providing shelter, counselling and prevention services, London, Ontario, Canada.

[7]Medical School, University of St Andrews, Scotland, United Kingdom

[8]Department of Epidemiology and Biostatistics, Western University, London, Ontario, Canada

[9]Department of Psychiatry, University of Toronto, Toronto, Ontario, Canada

[10]School of Psychology, Deakin University, Melbourne, Victoria, Australia

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Address correspondence to:

Kathryn Graham

Centre for Addiction and Mental Health

Suite 200, 100 Collip Circle

London, Ontario, Canada N6G 4X8

Telephone: 1-519-858-5000

FAX: 1-519-858-5199

e-mail: kgraham@uwo.ca

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Abstract

Background. Sexual aggression (SA) is ubiquitous in drinking environments, often seen as normal and acceptable; yet, targets of SA experience many negative consequences. This research aimed to develop a valid measure of common acts of SA in drinking settings for estimating prevalence and evaluating prevention initiatives.

Methods. We developed a questionnaire measure of common acts of sexual harassment and aggression in drinking environments (C-SHADE) based on descriptions of SA behavior from our own and others' research. The measure was validated in a cross-sectional survey of 335 men aged 19-25 using webpanels from an online survey company. Validation measures included: a modified version of the Sexual Experiences Survey (M-SES), measures of SA by peers in drinking environments, SA-related attitudes, expectancies about sexual effects of alcohol, and alcohol consumption.

Results. The C-SHADE showed high internal consistency (alpha = .96) and was significantly correlated with M-SES (r = .52), SA by peers (r = .61 to .70), SA-related attitudes/expectations (r = .38 to .55), and measures of alcohol consumption (r = .22 to .36). Overall, 71.9% participants reported SA using the C-SHADE versus 24.7% with the M-SES. We compared the responses of participants who reported perpetration on both measures (N = 83), only the C-SHADE (N = 141), and non-perpetrators (N = 89) (excluding 4 participants who reported perpetration only on the M-SES). The M-SES/C-SHADE perpetrators scored significantly higher than C-SHADE-only perpetrators and non-perpetrators on most SA-related and drinking measures, while C-SHADE-only perpetrators scored significantly higher than non-perpetrators on peer SA and two attitude measures.

Conclusions. The C-SHADE is suitable for measuring prevalence and evaluating interventions in

drinking settings. The C-SHADE confirmed high prevalence of SA in drinking settings and identified an important group of C-SHADE-only perpetrators for whom interventions that focus on situational precipitators of SA in drinking settings may be especially useful.

Keywords. Sexual aggression perpetration, licensed premises, measurement, prevention, survey

Development and Validation of the C-SHADE Scale for Measuring Perpetration of Common Sexually Harassing and Aggressive Behaviors in Drinking Environments

Sexual aggression (SA) occurs at extremely high rates in social drinking settings such as bars and parties (Becker and Tinkler, 2015, Fileborn, 2015, Graham et al., 2014a, Graham et al., 2014c, Kavanaugh, 2013, Mellgren et al., 2018, Tinkler et al., 2018), and is often seen as normal and acceptable (Thompson and Cracco, 2008, Tinkler et al., 2018), with both perpetrators and targets[1] likely to "discount" SA that occurs in drinking settings as not really "assault" or "aggression" (Emmers-Sommer and Allen, 1999). Most SA in drinking settings is by men toward women although some incidents involve other gender combinations (Graham et al., 2014c). Typical SA in drinking settings includes: persistence with unwanted advances; following and stalking; uninvited touching, kissing, fondling, rubbing, groping or grabbing; uninvited "grinding" from behind; making sexual comments and other non-contact harassment; and other sexual or gender-based dominating behavior; while rape and actions leading to subsequent rape (e.g., drugging a woman's drink) are rare (Becker and Tinkler, 2015, Graham et al., 2017 , Graham et al., 2014c, Graham et al., 2010, Ronen, 2010, Thompson and Cracco, 2008, Tinkler et al., 2018).

Numerous studies have documented negative consequences experienced by targets of SA, including substance abuse and depression (Carr and Szymanski, 2011), social withdrawal and restrictions on activities (Cotter and Savage, 2019, Lenton et al., 1999), and poorer academic performance (Banyard et al., 2007). Although there is less research on harms specific to SA in drinking settings (Quinn, 2002), even these more "minor" forms of SA can cause harm, including:

[1] We chose to use the word "target" because not all of those who are targeted by perpetrators identify as victims at the time or as survivors later.

feeling annoyed, violated, humiliated and fearful (Cotter and Savage, 2019, Graham et al., 2017, Lenton et al., 1999); feeling angry, worried about future victimization and restricting movements to prevent future victimization (Mellgren et al., 2018); and self-blame and self-doubt (Becker and Tinkler, 2015, Orchowski et al., 2013, Ullman and Najdowski, 2010). Women routinely minimize their experiences of SA in drinking settings and develop "deference" strategies to attempt to "cool off" perpetrators without causing offence, with this normative tolerance of SA potentially contributing to a reluctance to report more serious forms of sexual assault (Ronen, 2010).

Because of the ubiquitous occurrence of SA in drinking environments, it is important to have a valid measure of the common types of SA *perpetrated specifically in these settings*, both to document the nature and prevalence of SA perpetration and to evaluate the various preventive interventions that have been developed to address SA in bars and clubs (Arizona Safer Bars Alliance, "Ask for Angela," Good Night Out Campaign, Powers and Leili, 2018, Safe Bars.org). Quigg et al. (2020) noted: "Preventing and responding to sexual violence in nightlife settings is increasingly of global concern." Accordingly, a valid measure of SA specific to these settings is needed to develop and evaluate responses to nightlife SA.

In the present paper, we describe the development and validation of the Common acts of Sexual Harassment and Aggression in Drinking Environments (C-SHADE) scale to measure SA perpetration by men toward women in drinking settings. We include harassment in the title because some forms of harassment identified in previous research (e.g., a man following a woman around all night in a bar) are not always recognized within the definition of sexual aggression. We specify drinking "environments" rather than drinking venues or licensed premises in order to include SA that occurs at college parties and other drinking settings where SA is also common (Ronen, 2010).

The need for a measure of SA specific to drinking settings

The most commonly-used measure of sexual assault victimization and perpetration is the Sexual Experiences Survey (SES), which has been updated several times since it was first developed in 1982 (Koss and Gidycz, 1985, Koss et al., 1987, Koss and Oros, 1982), with another revision expected soon (Koss, 2022, personal communication). This self-report measure was groundbreaking because it described acts of rape, attempted rape, verbal coercion, and forced sexual contact using behaviorally-specific language rather than labeling them as criminal acts. Government agencies in the United States have adopted this format for their victimization surveys because they produce higher more valid prevalence rates than was evident from crime statistics (Basile et al., 2022, Lynch, 1996). Many different research teams have found overall good comprehension of the items, as well as good convergent and discriminant validity (Abbey et al., 2021, Anderson et al., 2021, Johnson et al., 2017, Ouimette et al., 2000, Swartout et al., 2019).

Despite evidence for the validity of the SES as a general measure of sexual assault, it does not capture many SA behaviors common in drinking settings. SA in drinking settings tends to differ from SA generally, not only in terms of including harassment and other noncontact SA, but also in the ambiguity regarding consent. Specifically, research suggests that perpetrators of SA in drinking settings do not consider the issue of consent. As described by Orchowski et al. (2022, p. NP5566-7), women in drinking settings are assumed to be open to sexual contact and "anticipating token resistance, men reported 'trying and trying again' to pursue escalating types of sexual activity" and "consent was inferred when participants did not hear 'no'." Similarly, Ronen's study of "grinding" on the dance floor (2010, p. 369) found a general endorsement of the assumption that "women are already giving implicit permission simply by dancing provocatively on the dance floor."

Moreover, because SA behaviors are considered normative and acceptable in many drinking settings, perpetrators are unlikely to view their behaviors as sexually assaultive. And, although research has identified some incidents of SA in drinking settings as clearly intentional assault (Becker and Tinkler, 2015, Graham et al., 2010, Kavanaugh, 2013), the intent of perpetrators in other incidents is ambiguous. Therefore, to measure SA behaviors in drinking settings, it is important to avoid *explicit* acknowledgement by the perpetrator that his behavior was done "without consent." Instead, we define SA in drinking settings as follows: behaviors or attention of a sexual or invasive nature intentionally perpetrated toward a target who *has not indicated that the behavior/attention is wanted or welcomed*. This is in line with current definitions of consent in many jurisdictions that require assent by the target rather than a lack of dissent.

There exists no standardized measure of SA in drinking environments. SA has generally been measured ad hoc, often with a single item (e.g., Miller et al., 2015). Although Thompson and Cracco (2008) developed a 27-item measure of sexual experiences from which six items were used to estimate "sexual aggressiveness" in bars, the items did not fully capture the types of SA in these settings and included some items that were not necessarily aggressive (e.g., "starting a sexual conversation"). Thus, there is need for a standardized validated measure focused more clearly on SA and including the types of SA that are common in drinking settings.

Convergent Validity Assessment

Convergent validity of a measure of SA in drinking settings would be demonstrated by strong positive associations with related constructs, including perpetration of SA generally, as measured, for example, by the SES (Koss et al., 2007), perpetration of SA by peers in drinking environments (see review by Tharp et al., 2013), as well as *perceived* peer perpetration and attitudes toward SA

(Dardis et al., 2016, Swartout, 2013, Thompson et al., 2011) and perceived peer willingness to intervene to stop SA by others (Brown and Messman-Moore, 2010). Convergent validity would also be supported by positive associations of SA perpetration in drinking settings with negative attitudes and SA-supportive attitudes toward women (e.g., beliefs that minimize rape and blame the victim) (Tharp et al., 2013) and with sex-related expectancies linked to alcohol such as beliefs that alcohol increases sexuality (Pegram et al., 2018) and interest in sex (Zawacki et al., 2003). SA in drinking settings would also be expected to be associated with stereotypes of drinking women such as the beliefs that women's drinking signals availability, drinking by women reflects a certain character (Pegram et al., 2018), and that women are at least partly to blame for sexual assault if they have been drinking (see review by Abbey et al., 2004, Zawacki et al., 2003).

A positive relationship between SA in drinking settings and higher alcohol consumption would also support convergent validity, given the long-established relationship between alcohol consumption and general aggression (e.g., Pernanen, 1976), strong evidence for a relationship generally between SA and drinking at the time that SA is perpetrated (Abbey et al., 2014, Crane et al., 2016, Testa, 2002), as well as evidence of a relationship between perpetration of SA and being a heavier drinker (Abbey et al., 2014, Li et al., 2010, O'Connor et al., 2021, Steele et al., 2022). Some research suggests that a positive relationship between heavy drinking and SA is found only for perpetrators who committed SA when drinking (Kingree and Thompson, 2015, Zawacki et al., 2003), suggesting that SA in drinking contexts may have a stronger relationship with drinking pattern than for SA generally. Finally, frequency of bar-going has been found to be related to SA (Testa and Cleveland, 2017), although bar-going was confounded with other variables (e.g., frequency of hooking up) that could account for the relationship.

Discriminant validity assessment

As described above, SA in drinking settings varies in both severity and intent from SA generally; therefore, perpetrators identified with a measure of SA in drinking settings are predicted to differ from those identified with a general measure. Research suggests that both men and women see unwanted sexual contact in drinking settings as largely attributable to the setting – that is, some men who engage in SA in drinking settings would be unlikely to do so elsewhere (Becker and Tinkler, 2015, Fileborn, 2012, Ronen, 2010). SA in drinking settings also includes harassment and various types of non-contact SA (Becker and Tinkler, 2015, Fileborn, 2012, Graham et al., 2017 , Kavanaugh, 2013), behaviors not included in general measures of SA such as the SES. Therefore, discriminant validity would be demonstrated by a higher rate of self-reported SA based on questions specific to drinking settings compared to the rate identified using a measure of general SA. This is especially true if SA in drinking settings is described behaviorally (rather than using terms such as "assault" or "aggression" – see Tinkler et al., 2018) in ways that avoid asking respondents whether they acted without the target's consent, a criterion used to define SA in general measures but not necessarily something that perpetrators of SA in drinking settings consider (Orchowski et al., 2022, Ronen, 2010).

Because research suggests that perpetration of SA in drinking settings is at least partly attributable to expectations about the setting (Orchowski et al., 2022, Ronen, 2010), perpetrators of SA in drinking settings would be expected to be less internally-motivated compared to perpetrators of SA in other contexts and, therefore, have less SA-supportive attitudes and hostility toward women compared to general SA perpetrators. However, as described under convergent validity, perpetrators of SA in drinking settings would nevertheless be expected to have more SA-supportive

attitudes when compared to non-perpetrators. In terms of other variables in the study (expectations about the effects of alcohol, alcohol consumption), there is no research on which to base hypotheses about differences between general perpetrators and perpetrators of SA in drinking settings.

Objective and hypotheses

The objective of this study was to develop and conduct a preliminary validation of the 10-item self-reported Common acts of Sexual Harassment and Aggression in Drinking Environments (C-SHADE) scale. We hypothesized positive relationships with related constructs including perceived peer SA, SA-supportive attitudes, and alcohol consumption. In terms of comparisons with a general measure of SA (a modified version of the SES – M-SES), we hypothesized that the C-SHADE would identify more perpetrators, and that C-SHADE-only perpetrators (i.e., non-perpetrators as measured by the M-SES) would score lower on SA-supportive attitudes compared to M-SES perpetrators, but that both groups would score higher on SA supportive attitudes compared to non-perpetrators.

Methods

Design

The data were taken from a larger study on men's beliefs, attitudes and behavior related to SA in drinking environments, one phase of which involved a cross-sectional online survey of young adult men.

Sample

Inclusion criteria. Individuals who self-identified as male, aged 19 to 25 and living in Canada were eligible to participate in the online survey if they had been to a bar at least once in the six months prior to the COVID-19 pandemic. Of those who responded to the invitation to participate in

the survey (N=1102), 613 were ineligible and an additional 77 were excluded because they did not finish the survey. In addition, to reduce bias or errors due to inattention and response sets, those who completed the survey in 4 minutes or less were excluded (N=24). Data collection continued until 400 eligible participants had completed the survey. Additionally, the researchers excluded participants who gave the same response to 75 or more of the items on the 82-item attitude measure (N=15). We also excluded 29 participants who indicated that their primary sexual orientation was toward same sex partners. Although it is possible for men who prefer same-sex partners to perpetrate SA toward women in drinking environments, the focus of the present research and some of the validation measures is on traditional gender roles in male-to-female SA. For the present analyses, we also excluded participants with missing responses on more than 20% of the SA perpetration items (N=9). The final sample size was 335, although sample sizes for particular analyses varied depending on missing responses on specific variables.

Procedures

Participants were recruited from December 2020 to January 2021 using a commercial webpanel ("Asking Canadians") hosted by the survey firm Delvinia and their partner webpanels (e.g. Prodege, SampleGurus, Research for Good, Go Branded Research). Individuals are recruited by Delvinia through company loyalty programs (e.g., HBC reward, Aeroplan). Participants had all consented to being part of the webpanel, including being contacted by the host/provider with invitations to participate in surveys and opportunities to earn additional loyalty points or other incentives that vary by panel. Delvinia uses Statistics Canada census data to update the panel so that it reflects the Canadian population as a whole. Researchers are provided with anonymized survey responses.

At the time of the survey, the webpanels contained 63,923 Canadians who identified as male in

the eligible age range. Invitations were sent to 12,287 eligible webpanel members "to participate in a new survey being conducted by the Centre for Addiction and Mental Health (CAMH) on the topic of 'Young men's attitudes and beliefs about social and sexual behaviour in bars'." For this 30-minute survey, the equivalent value in dollars of reward points offered for completion of the survey varied with individual's status within the program (e.g., Base/Regular, Advanced, VIP member) and depending on the merchant they selected. At a base level, the points or incentives offered were usually equivalent to less than $2.00 off a purchase.

After three screening questions to ensure that potential participants identified as male, were in the criterion age group (18 – 25 years) and lived in Canada, participants were shown a page with a description of the project, the eligibility criteria, and their rights as a research participant. Participants who indicated that they had read and understood the information and consented to participate were asked the final screening question regarding frequency of bar-going prior to the COVID-19 pandemic. Those who responded, "Never" or "Prefer not to answer," were considered ineligible and exited from the survey.

Measures

Common acts of Sexual Harassment and Aggression in Drinking Environments (C-SHADE) scale. Items were drawn from descriptions of common real-life incidents of SA in barroom settings observed by researcher-observers (Graham et al., 2014c, Graham et al., 2010) and reported by female targets (Graham et al., 2017) as well as descriptions of SA reported in the literature generally (e.g., Becker and Tinkler, 2015, Thompson and Cracco, 2008). Behavioral descriptions were used rather than labelling such behaviors as "sexual assault" or "sexual aggression." This approach draws on Tinkler et al.'s (2018) finding that few respondents recalled

witnessing or being involved in incidents of SA when asked about "aggression" in drinking contexts; however, when further probed about "unwanted or uninvited sexual kissing, touching, or grabbing," most recalled such incidents.

The goal of the questionnaire was to measure common SA behaviors, rather than a catalogue of all possible SA behaviors that may occur in drinking venues. In terms of other criteria, SA items needed to cover the full range of common SA including physical contact (touching, groping, grabbing, rubbing against), harassment without physical contact, and persistence after refusal. An additional criterion was that behaviors must be directed toward strangers to ensure the perpetrator did not know whether the behavior was wanted by the target.

Participants were asked: "Think about times when you were at a bar or club in the 6 months prior to the COVID-19 pandemic. How often have you done anything like what the guy(s) did in each of the following? In all descriptions, both the guy(s) and the girl in their early 20s are at a bar or club and they do not know each other." They were then provided with a list of SA behaviors (e.g., A bunch of guys are making comments to girls about their bodies as they walk by; see Table 1 for the complete list of items). Response options were: 5-very often, 4-fairly often, 3-occasionally, 2-rarely, 1-never. The scale was scored by calculating the average frequency of endorsement of unwanted sexual behavior. For purposes of comparing the C-SHADE to the SES, we also calculated a dichotomous measure of ever perpetrated SA in drinking environments in the six months prior to the pandemic vs. never perpetrated SA. For the dichotomous measure, participants were classified as perpetrators if they endorsed at least one SA item (regardless of missing) and non-perpetrators if they responded negatively to *all* SA items (no missing).

General sexual aggression – Modified Sexual Experiences Survey (M-SES). We used the SES from Koss et al. (2007) which describes seven types of SA and asks participants how often they have done each type using five types of tactics (i.e., 35 questions) since age 14. Because of space limitations, we used a modified version (M-SES) in which we retained the seven questions and response scale but provided the tactics only once as clarification in parentheses following the first SA question, that is – Q1. "I fondled, kissed, or rubbed up … without her consent …(Without her consent could mean that you forced the woman to engage in sexual activities even though she said she didn't want to …)." Participants could also access a definition of "consent" from the Criminal Code of Canada if they clicked on a pop-up. For the present analyses, the M-SES was scored as "ever" or "never" with ever defined as endorsing at least one item (regardless of missing) and never as replying negative to all items with none missing (responses that were negative but included missing items were classified as missing).

Perceived perpetration by others. The participant was provided with four brief vignettes describing examples of SA perpetration occurring in a drinking venue and asked how often they had seen anything like what the guy did, how often someone in their friend group had done something like it, and how often their closest friend had done something like it (response options: 5-very often, 4-fairly often, 3-occasionally, 2-rarely, 1-never). The vignettes involved a group of men stopping girls as they walked by and making comments like "Hey beautiful", a guy grabbing a woman's behind as he walked by, a guy pursuing a woman throughout the bar after being told by her to leave her alone, and a guy thrusting his groin into the backside of a woman he doesn't know on the dance floor. Responses to the four vignettes were averaged to create three measures of peer behavior (ever seen, friends, closest friend).

Attitudes toward sexual aggression and hostility toward women. We used the **Illinois Rape Myth Acceptance Short Form (IRMA-SF)** (McMahon and Farmer, 2011) originally developed and validated by (Payne et al., 1999). The revised version includes 22 items and uses a 5-point scale: 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-agree, with higher scores meaning greater endorsement of rape myths. The **Hostility Toward Women (HTW)** scale, developed by Lonsway and Fitzgerald (1995) is a widely-used and well-validated short measure consisting of 10 items rated on the same 5-point scale as the revised **IRMA-SF,** with higher scores meaning greater hostility (items reflecting positive attitudes toward women were reverse-scored).

Two measures of the effects of alcohol on sexual drive were used: the **Alcohol and Sexual Drive (ASD-W)** subscale (for women generally) and the **Alcohol and Sexual Drive (ASD-S)** (self) from the Alcohol Expectancies Regarding Sex, Aggression, and Sexual Vulnerability Questionnaire (Abbey et al., 1999). The six-item women subscale begins with "For the following questions, please indicate how much you think a moderate amount of alcohol affects an average female when drinking" and includes six sex-related items (e.g., When drinking alcohol women feel more sexually aroused). The self version begins with a similar lead – "For the following questions, please indicate how much you think a moderate amount of alcohol affects you" with the same six items worded for self (e.g., When drinking I feel sexually aroused). Items are rated on a 5-point scale from (1) not at all to (5) very much, with higher scores indicating perceived greater sexual drive when drinking. Confirmatory factor analysis of the overall scale from previous research (Abbey et al., 1999) supported the internal consistency of the subscales, and the overall measure showed good discriminant and convergent validity

Beliefs and assumptions about women who have consumed alcohol were measured using the **Stereotypes about Drinking Women (SDW)**. The SDW is based on previous research documenting men's stereotypical views of women's sexual behavior when drinking (Jacques-Tiura et al., 2007) and has been found to be related to SA perpetration, especially perpetration toward a victim who has been drinking (Pegram et al., 2018). The same response options were used for scoring as for the IRMA-SF and HTW, with higher scores indicating greater endorsement of stereotypes.

Because multiple attitude measures were included, the attitude measures were given randomly to half the sample to minimize response burden. Subsample A received the IRMA-SF and ASD-W, while Subsample B received HTW, ASD-S and SDW

Alcohol consumption. Standard measures of alcohol consumption included: whether they were current drinkers, usual frequency of drinking converted into days per year (every day, 5 or 6 days a week, 3 or 4 days a week, once or twice a week, 1 to 3 days a month, less than once a month, and never in the past 12 months), usual number of drinks consumed on drinking occasions, and frequency of heavy episodic drinking (HED) (defined as 5 or more drinks on a single day). For number of drinks, participants were shown a picture defining standard drinks (beverage specific equivalents of 12 g of absolute alcohol). Participants were also asked frequency of going to drinking venues (number of times in 6 months prior to the start of the COVID-19 pandemic).

Demographic variables included: age, sexual orientation (provided with a list as well as the opportunity to answer an orientation not on the list); employment (working for pay full- or part-time, self-employed, student/going to school, unemployed, caring for family, long-term illness or disability); relationship status (married, living with a partner, in a relationship but not living with

the person, not in a relationship/single, other). For race, participants were provided a list of categories from the 2021 Census (https://www12.statcan.gc.ca/census-recensement/2021/ref/98-500/006/98-500-x2021006-eng.cfm) and asked which of the following best describes their family background with instructions to check all that apply. For employment and race, multiple responses were possible.

Ethics

This study received approval from the Centre for Addiction and Mental Health (CAMH) Research Ethics Review Board.

Analysis Plan

Analyses included descriptive statistics (means, percentages), correlations and other measures of association, and comparison of means using Analysis of Variance with post hoc pairwise comparisons and *t*-tests. Scale scores were calculated for participants with 80% of items nonmissing, and Cronbach's alpha used listwise deletion for missing items.

Results

The average age of participants was 22.66 years; 60.36% were working for pay or self-employed, 27.33% were students (25% also worked for pay or were self-employed), 6.61% unemployed, 4.80% self-employed, and .90% long-term illness or disability or caring for family; 59.58% were not in a relationship/single, 16.47% in a relationship but not living with the person, 15.57% living with a partner and 8.38% married. In terms of racial background, the two most frequently endorsed options were White (46.53%) and Chinese (14.20%). In addition, each of the following ethnic groups was endorsed by four to six percent of the sample: Arab or West Asian, South Asian, Black, Filipino, and belonging to multiple groups. And each of the following was

endorsed by one to two percent: Indian, Central American, South East Asian, and Pakistan. The following groups were endorsed by less than one percent: Indigenous, Korean, and South American.

Descriptive results for C-SHADE questions are shown in Table 1. As shown, at least one type of SA perpetration during the six months previous to the pandemic was reported by 241 (71.9%) participants. Making comments about girls' bodies was most frequently endorsed, while lifting a woman's skirt was least frequent. Cronbach's alpha and item-total correlations were high. A factor analysis of the ten C-SHADE items found strong evidence of a single factor (accounting for 75% of the variance).

In terms of demographic variables, age, race and employment status were not significantly related to C-SHADE scores (results not shown). Relationship status was significantly related to the C-SHADE ($F = 5.35$, $p = 001$), with the highest C-SHADE score for married men (M=2.63, SD=1.02), followed by those living with a partner (M=2.26, SD=1.04), not in relationship (M=1.97, SD=1.05), and in a relationship/dating but not living with someone (M=1.78, SD=.95).

Evidence of convergent validity

Table 2 shows descriptive statistics for each validation measure and correlations of each measure with the C-SHADE. Just over one-quarter of participants reported perpetrating SA since age 14 based on the M-SES. General SA (M-SES), peer SA in drinking settings, and all attitudinal measures were positively and significantly correlated with the C-SHADE. Over 90% of participants had consumed alcohol in the past year, and all alcohol consumption measures except past year drinking were positively and significantly correlated with the C-SHADE; however, the relationship of the C-SHADE with frequency of going to drinking venues was not statistically significant.

Evidence of discriminant validity – comparison with the modified SES

Overall, 87 participants reported SA on the M-SES, with frequency of endorsement varying from N = 65 for: "fondled, kissed, or rubbed up against the private areas of a woman's body… or removed some of her clothes …" to N = 39 for "tried but did not complete penis, fingers or object in vagina (Cronbach's alpha = .93). Of the 87 who reported SA perpetration on the M-SES since age 14, 83 also reported SA perpetration on the C-SHADE in the six months prior to the pandemic. SA perpetration on the C-SHADE but not on the M-SES was reported by 141 participants (an additional 17 reported SA perpetration on the C-SHADE and were missing on one or more items of the M-SES).

To assess differences between C-SHADE-only perpetrators with those identified as general SA perpetrators, our analyses compared: (1) 83 M-SES /C-SHADE perpetrators (perpetrators on both the M-SES and the C-SHADE); (2) 141 C-SHADE-only perpetrators; and (3) 89 non-perpetrators on both the M-SES and the C-SHADE. As shown in Table 3, the three groups did not differ significantly on demographic variables other than for the relationship variable, with married or cohabiting participants more likely to be M-SES/C-SHADE perpetrators compared to participants not living with their partner or not in a relationship.

The M-SES/C-SHADE group had the highest scores on peer SA perpetration, SA-supportive attitudes, and alcohol consumption measures followed by the C-SHADE-only group, and lowest for the non-perpetrator group. The M-SES/C-SHADE group scored significantly higher than both C-SHADE-only and non-perpetrators on all attitude measures and most alcohol consumption measures; however, the C-SHADE-only group scored significantly higher than non-perpetrators on only two (IRMA, ASD(W)) of the five attitude measures. Group comparisons were not significant for past year drinking/abstaining or frequency of going to drinking venues.

To better understand the differences between the C-SHADE-only group and the M-SES/C-SHADE group, we compared the two groups on endorsement of C-SHADE items. Overall, M-SES/C-SHADE perpetrators had significantly higher mean scores on the C-SHADE than did participants in the C-SHADE-only group. In addition, the M-SES/C-SHADE group scored significantly higher than the C-SHADE-only group on all ten items of the C-SHADE (results not shown); however, the difference on endorsement of specific C-SHADE items varied considerably. As shown in Figure 1, the percent of C-SHADE-only perpetrators who reported perpetrating each C-SHADE behavior declined more sharply as SA behaviors became more "severe" or less common compared to the percent of M-SES/C-SHADE perpetrators reporting each behavior. For example, 86.9% of M-SES/C-SHADE perpetrators and 81.6% of C-SHADE-only perpetrators reported making comments to girls as they walked by, while 75.6% of M-SES/C-SHADE perpetrators versus 41.1% of C-SHADE-only perpetrators reported lifting up a girl's skirt so friends could see her underwear.

Discussion

The Common acts of Sexual Harassment and Aggression in Drinking Environments (C-SHADE) identified a high rate of SA (over 70%). The scale also showed high internal consistency. Convergent validity was supported by significant positive relationships between the C-SHADE and other measures known to be related to SA (peer SA, SA-supportive attitudes, greater expectations about the effects of alcohol on sexual behavior, heavier alcohol consumption). However, the analyses failed to confirm previous research findings of a relationship between frequency of bar-going and SA (Testa and Cleveland, 2017). One possible explanation for the difference in findings between the two studies is that the present study included only bar-goers, while the study by Testa

and Cleveland included participants who never went to bars. Thus, the relationship may be more related to any bar-going rather than frequency. Another possible explanation is that the study took place early during the COVID-19 pandemic, and participants may have been less accurate in remembering/reporting their frequency of bar-going from this earlier time period.

Comparing participants who scored positive only on the C-SHADE with those who also scored positive on the M-SES provided support for discriminant validity. As predicted the C-SHADE identified many more SA perpetrators than did the SES, an especially large difference considering the C-SHADE applied to a six month period while the SES applied to any SA since age 14. C-SHADE-only perpetrators also scored lower on all SA-related peer and attitude measures and on drinking measures compared to C-SHADE/ M-SES perpetrators. In addition, general perpetrators (i.e., identified on the M-SES as well as the C-SHADE) scored higher on the frequency of engaging in SA in drinking settings as measured by the C-SHADE and were more likely to endorse less common, forms of SA in these settings. Thus, perpetrators identified by the C-SHADE include both general perpetrators of SA, also identifiable by existing measures of SA, as well as a larger group of perpetrators who reported engaging *only* in common forms of SA in drinking settings. This suggests that the C-SHADE is not only a valid measure of propensity to engage in SA in drinking settings, higher scores may also indicate more severe SA in those settings.

In terms of demographic variables, only relationship status was related to SA perpetration, with married and cohabiting participants scoring highest on the C-SHADE; married and cohabiting participants were also much more likely to report SA measured by the M-SES (see Table 3). This finding was unexpected and may simply be an anomaly of these data. It is also possible that married or cohabiting men in this age group have attributes that make them more likely to be SA

perpetrators. Further analyses of data provided partial support for this interpretation, with married men scoring significantly higher than men in other relationship statuses on stereotypes about drinking women, drinking frequency and frequency of HED. Given the finding was unexpected, however, further research is needed to better understand the association of SA perpetration with relationship status in young men.

In sum, the C-SHADE provides a valid measure of prevalence of SA in bars and clubs and possibly other drinking settings as well as an important tool for evaluating interventions to reduce SA, as increasingly, communities across a number of countries are developing ways to reduce SA in drinking venues.

The importance of identifying C-SHADE-only perpetrators

Identification of a large number of C-SHADE-only perpetrators has potentially important implications for prevention. Situational crime prevention theory posits that some people, who might otherwise not consider committing a crime, will commit that crime given the right circumstances, and that some types of crimes can be prevented by changing the situation to make the crime more difficult/risky and less rewarding/excusable (Clarke, 1997). Applying this theory, C-SHADE-only perpetrators may be more likely to be situational offenders, that is, men willing to commit SA given certain circumstances (such as the bar environment), while M-SES perpetrators may be more "determined" offenders (i.e., less dependent on the situation). This interpretation is consistent with M-SES perpetrators' higher scores on SA-supportive attitudes and hostility toward women, beliefs about the role of alcohol in sexual behavior and stereotypes about drinking women.

In terms of prevention, the acceptability of SA in drinking settings, the lack of negative consequences for SA and the presence of situational precipitators (see Wortley, 2001) (such as

pressure on men to demonstrate sexual power) all contribute to an ideal situation for opportunistic perpetration of SA. This setting also allows perpetrators to excuse their behaviour as not really "aggression" (Tinkler et al., 2018). To the extent the C-SHADE-only perpetrators are mainly situational perpetrators, situational prevention measures such as increasing negative consequences for SA, making SA less rewarding (e.g., changing the culture where SA in bars is rewarded by positive attention from peers), removing excuses (e.g., clarifying what constitutes SA in drinking settings), and making SA more difficult to perpetrate (e.g., more attentive security staff) (Graham, 2009) could reduce SA in drinking settings substantially among this group of perpetrators in particular.

Although C-SHADE-only perpetrators appear to be more likely to engage mostly in "more minor" forms of SA, reducing even "minor" SA is nevertheless important because (a) the target may not perceive the SA as minor, and (b) women will be less likely overall to be targets of *any* SA when they go to drinking venues. Perhaps even more importantly, reducing SA by C-SHADE-only perpetrators can have a substantial impact on SA by *all* perpetrators by changing the environment where SA is common and accepted, and by reducing opportunities for more internally-driven perpetrators to use the high level of SA in the drinking venue as cover for their own SA.

Strengths and limitations

A limitation is that the survey was conducted during the COVID-19 pandemic when typical bar behavior was not happening because of various restrictions. To minimize memory limitations, we restricted reporting of SA in drinking settings to the six months previous to the lockdowns; thus, an additional limitation is that timing for standard measures of alcohol consumption (12 months) does not match the timing for reporting of SA on the C-SHADE, although the frequency of bar-going

was asked for the same six months. One direction for future research might be to compare responses with a six-month timeframe to those with a 12-month timeframe. The pandemic also affected recruitment; the sample was recruited through an online survey company rather than the originally planned street recruitment of a random sample of bar-goers (Graham et al., 2014b). Although online sampling produces a diverse sample in the age group of interest, it is important that the C-SHADE scale be subjected to further testing with other relevant samples, including bar-goers, students and other subgroups who report high rates of SA (Thompson and Cracco, 2008), as well as persons in other age groups.

Because a modified SES (Koss et al., 2007) was used, comparisons of the M-SES with the C-SHADE may not reflect exactly the same results that would be found with the full SES. Nevertheless, inclusion of the M-SES provided useful information relating to the difference between a drinking environment-specific measure (the C-SHADE) and a general measure of SA. In addition, the omission of the tactics after each perpetration item may have been less important as cues for reporting because the M-SES questions were asked at the end of the questionnaire – following all of the SA perpetration items on the C-SHADE and various other perpetration measures (e.g., by friends in others in bars) that would be expected to stimulate memories of SA. The validity of the M-SES as an alternative to the SES was further supported by perpetration rates similar to those found in some other samples from a similar age group (Dardis et al., 2016, Koss et al., 1987).

Another possible limitation is that the C-SHADE included exemplars of common SA behaviors in drinking settings and did not include all possible SA behaviors; it also did not include items on more severe forms of SA such as rape, attempted rape and involuntary incapacitation because these

tend to be less common in public drinking settings (Graham et al., 2017 , Kavanaugh, 2013, Tinkler et al., 2018). Thus, additional items or measures (e.g., the SES or a modified version of the SES specific to drinking environments) might need to be added to the C-SHADE depending on the research goal.

Although the study is limited to a national Canadian sample, this limitation is mitigated by the fact that the C-SHADE drew on research from the US, the UK, Australia, and Sweden as well as from Canada. A further limitation is the reference to commercial drinking venues in the items (bars, clubs), suggesting the possibility that additional items might be needed for measuring SA in other settings such as parties. A final limitation is that the study focused on SA reported by men whose sexual partners were women (although not necessarily only women). There is no reason that the C-SHADE could not be applied to SA between all gender identities; however, the results of the present study would be expected to apply mainly to heterosexual cismen.

The study also had notable strengths. The sample of webpanel members was diverse and included both students and non-students while most previous research on SA has included those incarcerated and college students (Abbey et al., 2004). The C-SHADE included typical SA behaviors using behavioral descriptors, as recommended by (Koss et al., 2007) and others; that is, the study included exemplars of SA that are commonly observed and experienced in drinking settings and normalized and accepted by bar patrons, including types of SA not currently addressed by other measures, such as non-contact measures of SA (e.g., harassment) commonly reported by women in drinking settings (Koller Alonso, 2021).

Conclusions

This research describes the convergent and discriminant validity of a brief questionnaire

comprised of behavioral descriptions of common acts of sexual harassment and aggression in drinking environments (the C-SHADE). The C-SHADE is suitable for measuring SA prevalence and evaluating interventions to reduce SA in drinking environments. The C-SHADE demonstrated the high prevalence of SA perpetration in drinking settings and identified an important group of drinking setting-only perpetrators for whom preventive interventions to increase situational deterrents and decrease situational precipitators may be especially effective.

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Table 1. Descriptive (means, percent positive) results for each C-SHADE item, Cronbach's alpha, and item-total correlations (items ordered by most to least frequent endorsement)

How often have you done anything like what the guy(s) did in each of the following?[a]	**Mean (SD)**	**Number (%) who report ever doing each behavior**	**Item-total correlations for subscale**
1. A bunch of guys are making comments to girls about their bodies as they walk by	2.27 (1.27)	203 (60.6%)	.77
2. A guy walks up and puts his arm around the waist of a girl he doesn't know	2.23 (1.25)	199 (59.8%)	.83
3. A guy keeps trying to kiss a girl he doesn't know after she has pushed him away	2.21 (1.30)	190 (57.4%)	.88
4. A guy pretends to grab a girl's butt/breast to make his friends laugh	2.02 (1.23)	171 (51.2%)	.82
5. A guy intentionally rubs his groin against a girl he doesn't know in a crowd	2.05 (1.25)	170 (50.9%)	.81
6. A guy backs a girl he doesn't know into a corner of the bar and tries to kiss her	2.02 (1.27)	164 (49.1%)	.88
7. A guy grabs a girl he doesn't know in a bar and kisses her on the mouth	1.99 (1.28)	158 (47.3%)	.85
8. Two guys corner a girl they don't know on the dance floor and block her as she tries to get away	1.98 (1.25)	156 (47.0%)	.82
9. A guy sitting at a table pulls a girl he doesn't know onto his lap as she is walking by.	1.86 (1.15)	148 (44.6%)	.87
10. A guy lifts up a girl's skirt so his friends can see her underwear	1.78 (1.15)	134 (40.4%)	.78
Overall mean, N and % any SA on at least one item, Cronbach's alpha	**2.04 (1.06) (Range 1– 5)**	**241 (71.9%)**	**alpha = .96**

Note: N for individual items varied from 331 to 335. Mean scores were calculated if participants provided valid responses on at least 80% of items; otherwise the scale mean was scored missing. Cronbach's alpha and item-total correlations were calculated using listwise deletion of missing data.

[a]Response options: 5-very often, 4-fairly often, 3-occasionally, 2-rarely, 1-never.

Table 2. Means and standard deviations (or % positive) for M-SES, perceived peer SA, attitude measures, and alcohol consumption measures; Pearson correlations (point-biserial correlation for dichotomous measures) with the C-SHADE

Mean/%	Mean (SD) or %	Correlation with C-SHADE
Sexual assault perpetration generally (modified SES) (N = 325)		
% responded positively to at least one item on SES	27.4%	.52
Perceived perpetration of SA in drinking venues by peers[a]		
Frequency of having seen anything like what the guy did at a bar or club (alpha = .89) (N = 334)	2.76 (1.10)	.61
Frequency that a guy in your friend group has done anything like what the guy did at a bar or club (alpha = .91) (N = 334)	2.05 (1.11)	.70
Frequency that the guy that you are closest to in your friend group did anything like what the guy did at a bar or club (alpha = .92) (N = 334)	1.87 (1.10)	.70
Attitudes related to women and expected effects of alcohol		
Illinois Rape Myth Acceptance Short Form (IRMA)[b] (alpha =.96) (Subsample A) (N = 155)	2.73 (.96)	.46
Hostility Toward Women (HTW)[b] (alpha = .80) (Subsample B) (N = 164)	2.63 (.80)	.39
Alcohol and sexual drive subscale (women) ASD(W)[c] (alpha = .95) (Subsample A) (N = 153)	2.82 (1.16)	.38
Alcohol and sexual drive subscale (self) ASD(S)[c] (alpha = .95) (Subsample B) (N = 166)	2.68 (1.26)	.42
Stereotypes about Drinking Women (SDW)[b] (alpha = .92) (Subsample B) (N = 161)	2.11 (1.14)	.55
Alcohol consumption		
% Ever consumed alcohol in past year (N = 335)	92.5%	.05[ns]
Drinking frequency (days per year)[d] (N = 310)	112.3 (101.51)	.26
Usual quantity consumed on drinking occasions[d] (N = 307)	4.21 (4.23)	.22
Frequency of Heavy Episodic Drinking (HED)[ad] (days per year) (N = 310)	62.89 (98.19)	.36

Mean/%	Mean (SD) or %	Correlation with C-SHADE
Any HED in past year[d] (N = 310)	84.2%	.19**
Frequency of going to bars, clubs or pubs (number of times in 6 months before pandemic) (N = 335)	8.59 (16.15)	.06[ns]

Note: Mean scores for C-SHADE and attitude scales were calculated if participants provided valid responses on at least 80% of items; otherwise the scale mean was scored missing. Cronbach's alpha was calculated using listwise deletion of missing data.

[a]Response options: 5-very often, 4-fairly often, 3-occasionally, 2-rarely, 1-never.

[b]Response options: 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-agree.

[c]Response options: 1-not at all to 5-very much.

[d]Includes only those who had consumed alcohol in the past year (N = 310).

All are significant at $p < .001$ unless marked otherwise: *$p < .05$, **$p < .01$, NS (nonsignificant)

Table 3. Mean scores on perceived peer SA, attitude scales, alcohol consumption scales and demographics for participants who were non-perpetrators, C-SHADE-only perpetrators or M-SES/C-SHADE perpetrators

	Non-perpetrators (N = 89)	C-SHADE-only perpetrators (N = 141)	M-SES/C-SHADE perpetrators (N = 83)	F and p values from ANOVA or Chi-square
Demographic variables				
Age (mean) NS (N = 313)	22.75	22.70	22.70	F=.024, p=.977
Occupation				
• Working for pay or self-employed (N = 205)	24.4%	45.9%	29.8%	Chi-square=8.257, df=4, p=.083
• Student (N = 84)	34.5%	41.7%	23.8%	
• Other (N = 22)	45.5%	45.5%	9.1%	
In relationship (N = 129)	24.0%	39.5%	36.4%	Chi-square=11.115, df=2, p=.004
Not in relationship (N = 184)	31.5%	48.9%	19.6%	
Relationship status				
• Married (N = 28)	10.7%	32.1%	57.1%	Chi-square=23.851, df=6, p=.001
• Living with a partner (N = 47)	23.4%	36.2%	40.4%	
• In relationship but not living with the person (N = 54)	31.5%	46.3%	22.2%	
• Not in a relationship (N = 184)	31.5%	48.9%	19.6%	
C-SHADE score	NA	2.07	2.96	t = 7.34, p<.001
Perceived perpetration of SA by peers[a]				
Frequency of having seen anything like what the guy did at a bar or club (N = 313)	2.12^{xz}	2.72^{xy}	3.36^{yz}	F=33.79, p<.001
Frequency that a guy in your friend group has done anything like what the guy did at a bar or club (N = 313)	1.37^{xz}	1.86^{xy}	2.92^{yz}	F=65.84, p<.001
Frequency that the guy that you are closest to in your friend group did anything like what the guy did at a bar or club (N = 313)	1.24^{xz}	1.64^{xy}	2.75^{yz}	F=65.60, p<.001

	Non-perpetrators (N = 89)	C-SHADE-only perpetrators (N = 141)	M-SES/C-SHADE perpetrators (N = 83)	F and p values from ANOVA or Chi-square
Attitudes related to women, rape and sexual effects of alcohol				
Illinois Rape Myth Acceptance Short Form (IRMA)[b] (N = 144)	2.24[xz]	2.67 [xy]	3.23 [yz]	F=13.08, p<.001
Hostility Toward Women (HTW)[b] (N = 157)	2.31[x]	2.54[y]	3.07[xy]	F=10.90, p<.001
Alcohol and sexual drive subscale (women) ASD(W)[c] (N = 145)	2.23[xz]	2.85[xy]	3.34[yz]	F=11.60, p<.001
Alcohol and sexual drive subscale (self) ASD(S)[c] (N = 153)	2.19[x]	2.48[y]	3.36[xy]	F=10.62, p<.001
Stereotypes about Drinking Women (SDW)[b] (N = 157)	1.69[x]	1.82[y]	2.87[xy]	F=17.76, p<.001
Alcohol consumption				
Ever consumed alcohol past year (N = 291)	28.2%	45.7%	26.1%	Chi-square=.742, df=2, p=.690
Never consumed alcohol past year (N = 22)	31.8%	36.4%	31.8%	
Drinking frequency (days per year)[d] (N = 291)	95.11[x]	102.85[y]	146.29[xy]	F=6.22, p=.002
Usual quantity consumed on drinking occasions[d] (N = 291)	3.30[x]	3.82[y]	5.84[xy]	F=6.28, p=.002
Frequency of Heavy Episodic Drinking (HED)[d] (days per year) (N = 291)	38.41[x]	44.29[y]	113.34[xy]	F=17.01, p<.001
Ever consumed 5 or more drinks past year (N = 243)	25.5%	44.9%	29.6%	Chi-square=10.904, df=2, p=.004
Never consumed 5 or more drinks past year (N = 48)	41.7%	50.0%	8.3%	
Frequency of going to bars, clubs or pubs (days in 6 months) (N = 313)	6.58	9.80	8.45	F=1.03, p=.359

[a]Response options: 5-very often, 4-fairly often, 3-occasionally, 2-rarely, 1-never.

[b]Response options: 1-strongly disagree, 2-somewhat disagree, 3-neither agree nor disagree, 4-somewhat agree, 5-agree.

[c]Response options: 1-not at all to 5-very much.

[d]Includes only those who had consumed alcohol in the past year.

[xyz]Matching superscripts indicates that the two means are significantly different ($p < .05$).

Title:
Figure 1. Percent endorsing each item on the SHADE by whether participants was an SES/SHADE perpetrator or a SHADE-only perpetrator (items ordered by overall frequency of endorsement)

Note for Figure 1.
Note: M-SES/SHADE perpetrator (N = 83) defined as endorsing at least one perpetration item on the M-SES and on the SHADE; SHADE-only perpetrators endorsed at least on item on the SHADE but endorsed no items on the M-SES. SHADE items are ordered the same as listed in Table 1.

Legend for Figure 1.

	Item 1	**Item 2**	**Item 3**	**Item 4**	**Item 5**	**Item 6**	**Item 7**	**Item 8**	**Item 9**	**Item 10**
- - SES	83.9	87.1	85.1	79.3	82.6	81.6	77.9	75.9	78.2	75.6
— C-SHADE only	81.6	78.0	72.7	62.9	60.3	57.1	53.5	54.0	48.2	41.1