**Examining Alcohol Consumption as a Risk Factor and Sexual Interaction Competence as a Protective Factor against Sexual Victimization amongst Young Adults in the Netherlands**

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# Abstract

This present study aims to examine if sexual interaction competence could be an effective moderator on the relationship between alcohol consumption (consumed at a party or night out) and sexual victimization (whilst intoxicated). This study is focusing on the Dutch population and more specifically on those aged 16-25. The study has a cross-sectional and longitudinal design, participants (n=1340) completed self-report questionnaires which assessed these three variables. To understand the relationships between our variables, logistic regression models were conducted. From the results, the study was able to yield three predictor variables of SV for female participants: alcohol consumption, sexual interaction competence and gender. However, it was not able to yield any statistical results on sexual interaction competence's moderation effect on alcohol consumption and sexual victimization. Therefore, with these results it conveys that interaction competence may not be the most appropriate moderator on this relationship and future research needs to continue to consider other factors so that we are eventually able to find an appropriate moderator for this relationship.

# Introduction

## Problem Description

Sexual violence continues to be a critical concern amongst young people globally, and numerous studies showcase how common it is for young people to experience some form of sexual violence in their lives (Kuyper et al, 2013). Berlo & Ploem (2018) posited that "sexual violence can include any form of unwanted, unwelcome, forceful or coercive sexual contact, different terms are used to define these behaviors including: rape, sexual assault, sexual harassment and sexual abuse." In sum, the common denominator of these crimes is the use of power and control over another individual for their own benefit. It has been found that in the Netherlands many of the victims of sexual violence are under the age of 25 (De Graaf et al, 2017). Hence, the target group for this present study is 16- to 25-year-olds in the Netherlands, as sexual violence presents itself as a significant public health issue amongst them. To prevent sexual victimization (SV), we need to investigate the factors that are associated with it. In the current study, we will focus on two factors often mentioned with regard to the risk of SV among young people: alcohol consumption and sexual interaction competence. Alcohol consumption ("AC") has been found to be a prevalent risk factor to SV (Monk & Jones, 2014) and sexual interaction competence ("SIC") can be a protective factor to SV (Basile et al, 2018). However, it has not been studied whether SIC, which can be trained in interventions, may diminish the effects of alcohol consumption on the risk on SV.

AC is an important factor to investigate in this context because in connection to our target group, it has been found that adolescents often consume alcohol when they go out or are at the age where they experiment with it (Teunissen et al, 2014). Signified by how socializing and nights out (where alcohol could be present) are prominent components of social development amongst this target group (Teunissen et al, 2014). For example, student associations in the Netherlands hold considerable popularity amongst the age group we are investigating (Burger, 2022). In these associations, plenty of social gatherings occur and a considerable amount of alcohol is consumed. There have been high reports of SV in these social contexts as well (Nltimes.nl, 2023).

Similarly, SIC is also a very important factor to investigate in regard to our target group. This is due to existing interventions that are targeted to reduce SV having aspects that include improving

interaction competence (e.g., more empowerment, agency, assertiveness, sexual communication etc.) (Tomaszewska et al, 2022). SIC as defined by Tomaszewska et al (2022) in simple terms as "having the ability, skills, or knowledge to successfully engage in sexual interactions. However, it remains unclear whether SIC can also moderate the effect of alcohol use on SV.

Therefore, this present study aims to investigate if SIC has a moderating role between AC (consumed at a party or a night out) and SV. By focusing on this moderation, we investigate if SIC can counter the effects of alcohol and reduce SV, implying that individuals with higher levels of SIC can express their boundaries, recognize signs of danger and communicate clearly, despite being under the influence of alcohol. Furthermore, if a significant moderating relationship is found, educational institutions, governments and other important stakeholders can refine and create more interventions that regard SIC in their program and thus reduce alcohol related SV in the Netherlands.

**Relevance**

This study holds social and scientific relevance. This study is socially relevant because if we can find support for the moderation we are investigating, then we are able to help cultivate SIC in interventions aimed at Dutch youth who consume a lot of alcohol when they go to a party or on a night out. Such as young people who are in Dutch student associations, in university or in any social context that involves alcohol. However, if we are not able to find support for the moderation of SIC on AC and SV then it provides us insight to stop focusing on the factor of SIC amongst these groups and potentially focus on the factor of AC instead. Furthermore, this study is scientifically relevant because it is scientifically interesting to further the evidence on factors that may limit potentially negative or damaging effects of alcohol use. Additionally, SIC in relation to AC and SV has not been explored, and if this research is able to find significant results, contributions to this underexplored area can help stakeholders create interventions with the rightful knowledge.

**Overview of Existing Research**

*Characteristics of alcohol-involved sexual assaults*

Several studies have investigated the characteristics of alcohol-involved assaults, from the insinuation that sexual aggression resulting from AC contains different characteristics (e.g., settings, age and risk of victimization) than without alcohol (Davis et al, 2013).

In terms of setting, it was found that sexual violence and alcohol use is likely to occur in social settings or venues that serve alcohol like bars and nightclubs (29%) compared to the victim's home (6%). This is relevant to our study as we focus on AC at parties or nights out.

Another common characteristic is that women in these settings are at a higher risk due to their own alcohol consumption, the perpetrator's alcohol consumption and how male perpetrators in these situations tend to misinterpret women's sexual intent (Davis et al, 2013).

The age group most commonly affected by alcohol-involved sexual assaults are women in their late adolescence and early adulthood (Crowell and Burgess, 1996). This is also relevant to our target group as we are investigating 16–25-year-olds. Lastly, it has been reported that these types of assaults occur between men and women who do not know each other well (e.g., strangers, acquaintances compared to steady partners) (Abbey et al, 2001).

These characteristics are crucial to investigate and are highly relevant to the target group we are examining. This allows us to gain a comprehensive understanding of the interplay between AC and SIC. Whilst background characteristics such as age and gender are not the focus of our study, we believe it is important to analyze. In terms of gender, several findings acknowledge that in general women are at higher risk for SV compared to men (Schapansky et al, 2021). Also, age is an important variable because the older you are, allows gateway for more opportunities to have SV related experiences (Ports et al, 2016). Additionally, with age the older you are can also contribute to the increase of alcohol use over time (Barry & Blow, 2016). Thus, if similar characteristics are found amongst our target group (e.g., more female victims, victims of a certain age), it can facilitate stakeholders to adhere to these characteristics in the interventions.

*SIC and its relationship to SV and AC*

The conceptualization of SIC is incredibly important and relevant for our study. Numerous studies propose their own definitions, as well as considering individuals on comprehension of the term. However, this study regards Grauvogl et al's (2015) measure for SIC, researchers screened previous models and created an overall measure which consisted of the most important components for adolescents and young adults. This comprised eight factors: "communication about sex, refusing sex, positive sexual attitudes, beliefs about male role in sexual interactions, contraceptive use, not suppressing problems and desires regarding sex, sexual assertiveness and sexual hedonism." Through this measure they found that women with higher index of sexual functioning scored higher on the proposed measure compared to women with lower levels of functioning. Based on the results of Grauvogl et al, Tomaszewska et al (2022) investigated if young adults were able to critically engage with the concepts of SIC. Both males and females produced similar results and showcased that they were critically able to engage in concepts regarding SIC and its key components. They were also able to comprehend the risks associated with low SIC. Therefore, this finding highlights how SIC interventions could be an appropriate tool used in interventions to promote respectful sexual interactions for young adults.

As SIC is an umbrella term and components such as consent are related to it, it is important to also investigate studies that explore the ability to consent while intoxicated. McNeela et al (2014) investigated this relationship. It was based in Ireland and 187 university students either filled out a questionnaire or were involved in focus group discussion where different scenarios of consent in alcohol related situations were analyzed. Participants discussed the complexity of the situation, and that consent does become ambiguous when both parties are intoxicated. Additionally, the findings showed that some of the participants were not able to define consent or what non-verbal and verbal cues the victim may make. Therefore, this study provides insights that university students (similar to the ages of our target group) struggled to comprehend significant terms that are related to SIC. Therefore, if a moderation effect is found, we need to acknowledge that interventions should develop skills that ensure individuals are able to consent and recognize verbal and non-verbal cues, even when under the influence.

Sexual agency and assertiveness are also related to SIC. Research has shown how developing the ability to negotiate consent and communicate was seen as a critical component of sexual agency (Schobert et al., 2021). Therefore, existing literature on sexual agency and assertiveness are also very relevant to our research.

Livingstone et al (2007), investigated the reciprocal relationship between SV and sexual assertiveness because it is an aspect of psychological vulnerability that may be altered through behavioral intervention. Logically, it is assumed that women with low assertiveness might struggle to refuse unwanted sexual advances and are more likely to be targeted by aggressive individuals.

Conversely, some theories indicate that the aftermath of childhood sexual abuse may create an inability to escape or avoid abuse that later leads to feelings of powerlessness, which could translate to reduced assertiveness in sexual situations (Livingstone et al, 2007). There is limited research on this relationship but two prospective studies examining this exist. Gidycz et al (1995) observed college women over a 9-month period and examined potential mediators of revictimization, which included: psychological adjustment (depression and anxiety), interpersonal functioning (sociability and assertiveness), alcohol use and number of partners (Gidycz et al, 1995). It was found that adolescent victimization, rather than child sexual abuse predicted being low in assertiveness, alcohol use and number of sexual partners. Previous victimization predicted future victimization at all time points; however interpersonal functioning did not predict any subsequent victimization. Gidycz et al (1995) used a mediator approach, however this study intends to use SIC as a moderator as it recognizes that SIC may not only influence the relationship between AC and SV, but also potentially amplify or weaken the association under certain conditions.

*Knowledge Gaps in Existing Research*

While previous studies have explored the relationships between AC, SIC and SV separately, this study aims to investigate the interaction effect of AC and SIC on SV, in addition to investigating main effects of AC and SIC. This relationship has not been extensively explored, and this research can shed light on how these factors jointly influence the risk of SV. Additionally, existing literature acknowledges the importance of SIC and its importance towards maintaining positive sexual health. However, this study aims to go beyond this by examining whether SIC moderates the association between AC and SV. This study also incorporates gender. Whilst previous literature tends to only focus on female victims, this study aims to investigate both male and female participants in the Netherlands. If we are to find significant or non-significant results, this can contribute to the gendered discussion of whether alcohol-related SV is more affiliated to women. Lastly, whilst SIC tools and measures are available already, with our study we would be able to contribute to understanding whether these interventions remain effective in contexts involving AC and risk of SV.

**Theoretical Framework**

As this present study uses an interdisciplinary approach, there are several applicable theoretical frameworks that can be applied. Regarding AC and SV, research implies that AC heightens some individuals' vulnerability to SV due to the combination of alcohol's physiological effects and situations involving motivated perpetrators. Therefore, to further analyze the relationship between AC and SV, we are investigating the two factors that are frequently suggested to heighten the link: the effects of alcohol and involvement in risk situations and behaviors (Testa & Livingston, 2009).

In terms of the effects of AC, alcohol's role in increasing the risk of SV stems from its physiological effects, specifically its disruption of higher-order cognitive processes (Monks et al, 2010). Alcohol can alter perception, decrease reaction time and impair decision making. Therefore, for victims, these physiological changes can lead to misinterpretation of cues, ineffective communication and difficulty in resisting, perceiving and responding to threats (Abbey et al., 2001).

The other factor, which is exposure to risky situations investigate how settings in which alcohol is consumed can place individuals at a higher risk of experiencing sexual assault (Lorenz and Ullman 2016). In line with routine activities and lifestyle theories, social contexts in which drinking entails the allowance of risky situations, potential victims, lack of support from guardians (trained bystanders) and motivated offenders (Mustaine & Tewksbury, 2002). Additionally, women who are intoxicated at a bar or party are at higher risk of facing assault rather than heavily drinking alone at home (Testa & Livingston, 2009). This is in line with our target group as we are investigating alcohol use amongst the Dutch youth on a night out, therefore if results coincide with existing research can help restructure interventions focused on social settings.

In connection to risky situations, it has been specifically found that this is particularly relevant in college environments, where consuming large amounts of alcohol is normalized as well as justification for certain behaviors (Abbey, 2002). Particularly, sorority members are more likely to be involved in alcohol related assaults compared to non-members (Mohler-Kuo et al., 2004). This aligns with the concept of routine activity theory, where assault risk is heightened due to an environment that encourages excess drinking, risky behaviors, interaction with potential offenders and unsupervised locations (Mustaine & Tewksbury, 2002). These two theories align with our target group because of how social activities (like nights out and parties) involve alcohol and are a prominent social factor for some people in this age group. Which makes them susceptible to the physiological effects of alcohol and at risk in social situations.

In regard to SIC, Van De Bongardt and De Graaf (2020) created the Socio-sexual competencies model, which combines different competencies which are important for creating positive sexual experiences, healthy relationships and sustaining sexual well-being. This model divides socio-sexual competencies into four sectors; sexual esteem, assertiveness, control and communication. Sexual esteem relates to an individual's evaluation of their sexual self (perception of their appearance or sexual performance and whether they are secure or confident with it). Sexual assertiveness is about how an individual can recognize and communicate their desires, boundaries and preferences during sex. Sexual control involves an individual's ability to regulate sexual interaction and includes both self-regulation (expressing dislikes and limits, rejecting unwanted sexual activities) and partner regulation (seducing sexual partners into a sexual activity despite partners preferences). Lastly, sexual communication consists of the open conversion between sexual partners about sexual topics. This model is beneficial for our target group because it teaches and empowers them to create positive sexual relationships, as well as recognize risky situations and the skills needed to avoid them.

Linking these theories together, we believe that higher SIC levels will have the ability to lower the risk of SV. We believe that individuals with higher SIC can navigate a risky social situation. This is because they are already aware of the risky situation (one that involves alcohol), so they could potentially deflect the negative effects of alcohol and use the rightful skills to communicate and set boundaries even when under the influence.

Based on the existing research and theoretical frameworks described, the following conceptual model was created for the present study.
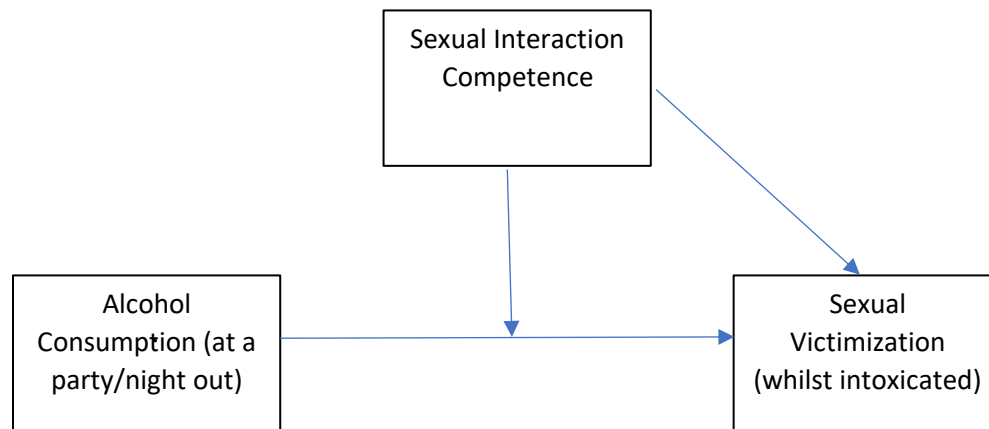


**Research Question(s)**

To what extent are alcohol consumption and sexual interaction competence associated with being sexually victimized while intoxicated, among young adults (aged 16-25) in the Netherlands? Additionally, can sexual interaction competence moderate the association between alcohol consumption on a night out and these types of sexually transgressive sexual experiences?

**Hypothesis**

- H1: High alcohol use on a night out increases the risk of sexual victimization whilst intoxicated
- H2: High sexual interaction competence decreases the risk of sexual victimization whilst intoxicated
- H3: High interaction competence decreases the impact of alcohol use (on a night out) on the risk of sexual victimization whilst intoxicated (moderation).
- H4: For the hypotheses above, we expect that the relationships would be stronger for women.

# Interdisciplinary

This study creates an interdisciplinary approach in its research by extracting knowledge and methods from psychology, sociology, and public health disciplines. More specifically, the research is relevant to psychology as we analyze the psychological effects alcohol has on cognitive processes and decision making, in combination with how young adults cope with these effects in response to sexual advances and threats. Furthermore, it is related to sociology because we acknowledge how social environments and contexts, where alcohol is prevalent, can propose high risk to our target group. Lastly, it is relevant to public health because the aim is to reduce the high relevance of SV and promote more positive and healthy sexual relationships. Therefore, this research through its interdisciplinary approach seeks to address the correlation between individual behavior and broader societal implications.

# Methodology

## Study Design

This research will be using an existing dataset from the "Laat Je nu Horen" study conducted by Utrecht University and funded by Netherlands Organization for Health Research and Development (ZonMw). The study was conducted in 2009 and targeted young people aged 16-25 years old in The Netherlands. The dataset used a combination of a cross-sectional and a longitudinal study design. The cross-sectional aspect was through data being collected through different surveys to assess the complexity, diversity and correlates of unwanted sexual experiences. The longitudinal aspect comes from the researchers assessing the incidence of unwanted sexual experiences over a one-year period (this data was not used in the present study).

## Study Sample

The recruitment process was through advertisements in youth media like radio, TV programs, print magazines, websites and mailing lists. The data was collected through online questionnaires from two different points in time, to decrease the burden on the participants all in one period. The first one

given to all 2,936 participants assessed their socio demographic and behavioral characteristics, additionally potential risk factors for coercive sexual experiences. After the first questionnaire, participants were asked if they were willing to fill in another follow-up questionnaire, the 1,375 that agreed were given a second questionnaire a month later that had a questionnaire that assessed the participants experiences with sexual coercion. In this study, we cut down to using a sample of 1340 participants because we identified outliers and invalid data (only used participants who answered all questions regarding SV, removed those with >90% missing).

## Data Measurements

*Independent, Dependent and Moderator Variables*

The variables of interest for this thesis are AC, SV and SIC. With important disclosure, the present research does not measure the relation between the three variables in the same moment that the pressure for sex is experienced by the victim. Presented below, are how each of our variables were operationalized.

*Independent Variable: Alcohol Consumption (AC)*

The independent variable of this study is 'AC during a party/night out' and was assessed by the question: 'How many alcoholic drinks do you consume on average/normally when you go out (for example at a party or night out)'? The possible answers to this question were: '11 glasses or more' (1), '7-10 glasses' (2), '6 glasses' (3), '5 glasses' (4), '4 glasses' (5), '3 glasses' (6), '2 glasses' (7), '1 glass' (8), 'I don't drink alcohol when I go out' (9), 'I don't go out' (10). Since the current coding regards '1' as being the highest number on the scale, meaning that a higher number would then mean a lower 'level of intoxication'. Thus, the scale was re-coded to be the other way round, so now '11 glasses or more' (initially 1) becomes 8 and '1 glass' (initially 8) becomes 1. Additionally, numbers 10 and 9 were coded to be 0 as both mean the participant did not consume any alcohol. Therefore, this would allow us to examine on average if higher or lower amounts of alcohol are consumed by our participants on a night out or party.

*Dependent variable: Sexual Victimization (SV)*

To determine if participants experienced any SV whilst they were intoxicated, the following survey question was selected. The question read: 'Since your 14th birthday, how many times have you had someone take advantage of your intoxication to have sex with you.' The statement could be answered

as: 'never'(1), 'once'(2), 'more than once'(3). For this analysis, we re-coded the variable into 2 categories: 0= never experienced any SV and 1 = once or more than once experienced SV while drinking.

*Moderator Variable: Sexual Interaction Competence (SIC)*

The moderator variable SIC, was taken from the questionnaire and this was initially measured with 11 adjusted items from the scales of Morokoff et al (1997). The scale had two subscales. The first was being able to initiate desired sex (e.g., "I start having sex with my partner when I want to) and the second subscale was being able to refuse unwanted sex (e.g., "If I have said no, I won't let my partner touch my genitals, even when my partner pressures me."). All items could be answered on a 5-item scale which was as follows: 'doesn't fit at all' (1), 'doesn't fit' (2), 'doesn't fit/does fit' (3), 'does fit' (4), 'fits completely' (5). Before creating a total sum score for the SIC variables, we noticed that some statements showed different levels of SIC, and we needed to recode the variables so that they were all the same scale. We intend all questions to follow the logic that: 5 being the highest level of SIC and 1 being the lowest level of SIC. Therefore, five of the variables had to be inverted to fit the scales of the other variables (example of one of the variables that had to be recoded was: 'I wait till my partner touches my genitals. I don't let it be known that I want that'). Once the following variables were re-coded, we tested for reliability, and it was found to be unreliable as the Cronbach's Alpha for the survey was $\alpha = .44$. However, once deleting the items: "Even when I don't want it, I will kiss/lick the genitals of my partner when he/she does want it" and "I won't let my body be touched if I don't want that, even when my partner persists", the Cronbach alpha reached a reasonable number of $\alpha = .73$. Therefore, the new SIC scale consisted of 9 items and these items were added up to create the variable "totalscoreSIC" which was used in our data analysis.

*Control Variables: Age and Gender*

Both age and gender could have an impact on their experiences regarding SV and therefore will be controlled for. Controlling age is important, because the recall time is 'since the age of 14', and the participants were aged 16-25. Therefore, the time-period in which SV may have happened is substantially larger for some participants than for others. Participants gave their age in years. Controlling for gender is also important because males and females can experience different levels of SV, as literature has shown females tend to experience more SV in this context, therefore we want to see if this is relevant in our sample too. Participants answered if they were male or female.

**Data Analysis**

The quantitative data that comes from the surveys were analyzed using the IBM Statistical Package for the Social Sciences (SPSS), version 28. Firstly, the assumptions that are needed to carry out logistic regression were conducted (Field, 2017). The four assumptions that were tested were: independent observations; correct model specification, multicollinearity and linearity. All assumptions were met. Multicollinearity was tested using Collinearity Statistics. This assumption was not violated as the predictors showcased high tolerance values (alcohol consumption: tolerance =0.997, VIF = 1.004; SIC: tolerance = 0.997. VIF = 1.004). Additionally, Hair et al. (2010) and Bryne (2010) argued that data is considered to be normal if skewness is between -2 to +2 and kurtosis is between -7 to +7. In this study the variable alcohol consumption was slightly skewed but within the range of skewness n = -.38 and kurtosis n = -1.17.

The data file was split by gender and descriptive statistics, frequencies and compare means were run. Then, an interaction term was created between the independent variable (AC) and the moderator (SIC). After that, we first ran the binary logistic regression (Model 1), then ran the logistic regression including the interaction term (Model 2) and then ran the logistic regression whilst controlling for age (Model 3). After this we took off the split data file and then ran the logistic regression on the whole sample and controlled for "Gender".

The ANOVA tables assessed whether the means of AC and SIC were different for the two groups (people who experienced SV whilst intoxicated versus those that did not). Then, the first three logistic regression models were conducted to see if AC and SIC, as well as the interaction between these two, affected the odds for experiencing SV, while controlling for the background variable "Age". The final logistic model, which was run and controlled by the variable "Gender" to assess any significant gender differences. Once the models were run, the B-values and P-values were analyzed to determine any significant relationships between AC and SIC on SV.

# Results

## Sample characteristics and descriptive statistics

Of the sample of the study (n=1,340), 74% were women (n=993) and 26% were men (n=347). The mean age of the male participants was 19.31 (SD=2.52). The mean age for women was 18.33 (SD=2.40). Lastly in terms of characteristics, 167 (48.1%) males reported being in a steady relationship at the time of the survey (2009). The mean for women was 639 (64.4%). In terms of the descriptive statistics of our other variables, 22% (n=220) of women experienced SV whilst intoxicated. Whereas 19% (n=66) of men experienced SV whilst intoxicated. Regarding AC, females would on average consume 4.07 (SD=2.55) drinks at a party or night out. Men would consume an average of 5.19 (SD=2.76) drinks at a party or night out. Lastly regarding SIC, females average SIC was 33.92 (SD=5.39) and for males it was 31.13 (SD=4.60). (Table 1 presents a summary of the descriptive data).

*Table1*. Descriptive data of the main variables of the sample (N=1,340)

| Variables *Min* | *Max* | Females (n=993) | | Males (n=347) | |
|---|---|---|---|---|---|
| | | *M/N* | *SD/%* | *M/N* | *SD/%* |
| Age | 16 | 25 | 18.33 | 2.40 | 19.31 | 2.52 |
| SV | 0 | 1 | 220 | 22% | 66 | 19% |
| AC | 0 | 8 | 4.07 | 2.55 | 5.19 | 2.76 |
| SIC | 12 | 45 | 33.92 | 5.39 | 31.13 | 4.60 |

**Compare Means**

*Female participants*

Firstly, the ANOVA results revealed a significant main effect of AC on SV (F(1, 991) = 54.242, p < .001), indicating that AC and SV experiences were significantly associated. Specifically, participants who reported experiencing SV while intoxicated (M = 5.15, SD = 2.25) had significantly higher mean AC scores on a night out compared to those who did not experience SV (M = 3.76, SD = 2.55).

The ANOVA results also revealed a significant main effect of SIC on SV (F (1, 991) = 5.907, p = .015), indicating a significant association between SIC and SV experiences. Particularly, female participants who reported experiencing SV while intoxicated (M = 33.14, SD = 5.993) had lower mean scores on SIC (conveying lower SIC) compared to those who did not experience SV (M = 34.14, SD = 5.181). (Table 2 presents the summary of the compare means).

*Table 2.* Means (and SDs) on alcohol consumption on a night out and sexual interaction competence for female participants who have been victimized while intoxicated and females who have not (Total N=993)

| Variables | *Experienced SV while intoxicated (n=220)* | *Not experienced SV while intoxicated (n=773)* |
|---|---|---|
| Alcohol Consumption on a night out (1-8) | 5.15 (2.25) | 3.76 (2.55) |
| Sexual Interaction Competence (11-55) | 33.14 (5.99) | 34.14 (5.18) |

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*Male Participants*

The ANOVA results revealed a significant main effect of AC on SV (F(1, 345) = 10.41, p < .00), indicating that AC and SV experiences were significantly associated. Specifically, male participants who reported experiencing SV while intoxicated (M = 6.17, SD = 2.22) had higher mean AC scores on a night out compared to those who did not experience SV (M = 4.96, SD = 2.83).

The mean SIC for male participants who reported not experiencing SV while intoxicated (M = 31.34, SD = 4.547) was compared to those who reported experiencing SV while intoxicated (M = 30.26, SD = 4.753). However, the results did not showcase a statistically significant difference in SIC between the two groups (F(1, 345) = 2.966, p = .086). (Table 3 presents the summary of the compare means).

*Table 3.* Means (and SDs) on alcohol consumption on a night out and sexual interaction competence

for male participants who have been victimized while intoxicated and males who have not (Total N=347)

| Variables | Experienced SV while intoxicated (n=66) | Not experienced SV while intoxicated (n=281) |
|---|---|---|
| AC on a night out (1-8) | 6.17 (2.22) | 4.96 (2.83) |
| SIC (11-55) | 31.34 (4.55) | 30.26 (4.75) |

## Logistic Regression: Main Effects, Interaction Effects and Control Variables by Gender
*Female participants*

Model 1 (bivariate associations) yielded significant results for the relationship between AC and SV (B= 0.24, P= 0.00). Higher AC was associated with increased risk of SV (Exp(B) = 1.27, 95% CI [1.19,1.36]). SIC was also significant (B= -0.04, P=0.02), higher levels of SIC were associated with slightly reduced risk (Exp(B) = 0.966, 95% CI [0.938, 0.994]).

Model 2 showed a non-significant relationship between AC (B=0.21, P=0.31), SIC (B=-0.04, P=0.22) and the interaction term's effect (B=-0.00, P=0.88) on SV. Therefore, the combined influence of AC and SIC did not significantly affect the risk of SV whilst intoxicated for female participants.

For Model 3, the interaction term was removed because interaction terms that are not statistically significant can lead to incorrect conclusions (Beck, 2014). In this model we controlled for age. AC remained significant (B=0.24, P=0.00) and SIC also remained significant (B=-0,04, P=0.01). However, age did not have a significant relationship (B=0.05, P= 0.14) with SV. (See Table 4 for a full overview.)

Table 4. *logistic regression results for female participants*

| Variable | Coefficient (B) | Odds Ratio | CI (95) Lower | CI (95) Upper | Sig |
|---|---|---|---|---|---|
| **Female** | | | | | |
| (n = 993) | | | | | |
| **Model 1** | | | | | |
| AC | 0.24 | 1.27 | 1.19 | 1.36 | 0.00 |
| SIC | -0.04 | 0.97 | 0.94 | 0.99 | 0.02 |
| **Model 2** | | | | | |
| AC | 0.21 | 1.23 | 0.82 | 1.84 | 0.31 |
| SIC | -0.04 | 0.96 | 0.90 | 1.02 | 0.22 |
| Interaction term (ACxSIC) | 0.00 | 1.00 | 0.99 | 1.01 | 0.88 |
| **Model 3** | | | | | |
| AC | 0.24 | 1.27 | 1.19 | 1.36 | 0.00 |
| SIC | -0,04 | 0.96 | 0.93 | 0.99 | 0.01 |

| Age | 0.05 | 1.05 | 0.98 | 1.12 | 0.14 |
|-----|------|------|------|------|------|

*Male Participants*

Model 1 (bivariate associations) produced a significant relationship between AC and SV (B= 0.18, P= 0.00). Higher AC was associated with increased risk of SV (Exp(B) = 1.20, 95% CI [0.90,1.01]). However, SIC did not have a significant relationship (B= -0.05, P=0.11) to SV.

Model 2 showed a non-significant relationship between AC (B=0.41, P=0.30), SIC (B=-0.01, P=0.95) and the interaction term's effect (B=-0.01, P=0.56) on SV. Therefore, the combined influence of AC and SIC did not significantly affect the risk of SV whilst intoxicated for male participants.

Once again, due to the non-significant interaction result, we removed the interaction term before we performed model 3, to avoid incorrect conclusions. In Model 3 there was a lack of significant results for AC (B= 0.40, P= 0.32), SIC (B= -0.01, P= 0.90), when controlled with age (B= 0.05, P= 0.38) on SV. (See table 5 for a full overview of results).

Table 5. *Logistic regression results for male participants*

| Variable | Coefficient (B) | Odds Ratio | CI (95) Lower | CI (95) Upper | Sig. |
|----------|-----------------|------------|---------------|---------------|------|
| | | | male (n = 347) | | |
| **Model 1** | | | | | |
| AC | 0.18 | 1.20 | 1.07 | 1.35 | 0.00 |
| SIC | -0.05 | 0.95 | 0.90 | 1.01 | 0.11 |
| **Model 2** | | | | | |
| AC | 0.41 | 1.51 | 0.69 | 3.30 | 0.30 |
| SIC | -0.01 | 0.99 | 0.85 | 1.17 | 0.95 |
| Interaction term | -0.01 | 0.99 | 0.97 | 1.02 | 0.56 |

| (ACxSIC) | | | | | |
|---|---|---|---|---|---|
| | | Model 3 | | | |
| AC | 0.40 | 1.50 | 0.68 | 3.29 | 0.32 |
| SIC | -0.01 | 0.99 | 0.84 | 1.16 | 0.90 |
| Age | 0.05 | 1.05 | 0.94 | 1.17 | 0.38 |

*Controlling for Gender*

To check if gender was a significant predictor, we reran the regression analyses for the total sample while adding gender as a factor (we controlled for age as well). The results of controlling for gender indicated that being female (B=0.64, P=0.00) was a significant predictor of experiencing SV whilst intoxicated. AC (B=0.23, P=0.00), SIC (B=-0.04, P=0.00) also had significant relationships to SV. However, age (B=0.05, P=0.93) did not yield any statically significant results. (View Table 6 for an overview of the results).

Table 6. *logistic regression results for Gender*

| Variable | Coefficient (B) | Odds Ratio | CI (95) Lower | CI (95) Upper | Sig. |
|---|---|---|---|---|---|
| | | Participants (n = 1,340) | | | |
| | | Model 1 | | | |
| AC | 0.23 | 1.26 | 1.18 | 1.33 | 0.00 |
| SIC | -0.04 | 0.96 | 0.94 | 0.99 | 0.00 |
| Gender | 0.64 | 1.89 | 1.34 | 2.66 | 0.00 |
| Age | 0.05 | 1.05 | 0.99 | 1.11 | 0.93 |

# Discussion

From our results we found differences in the responses from male and female participants regarding our investigation. The logistic regression results conducted on female participants yielded some significant insights into the relationships we set out to test. In line with our first hypothesis (H1), the bivariate associations indicated that higher AC is significantly associated with higher risk of SV whilst intoxicated. This finding is in line with prior research (Davis et al, 2013 & Testa & Livingston 2009) women who are intoxicated at a bar or party are at higher risk of facing SV.

The results also provide support for our second hypothesis (H2) as higher levels of SIC were associated with slightly reduced risk of victimization. This also relates to existing research, as studies by Grauvogl et al (2015) and Tomaszewska et al (2022), presented that individuals with higher SIC levels may be better equipped to navigate potentially risky situations and avoid victimization.

When we tested our third hypothesis (H3) there was no significant interaction effect between AC and SIC on SV, for both male and female participants. This means that the impact of AC on SV does not appear to be significantly influenced by the level of SIC in this sample. This coincides with the lack of research available on the interaction effect of these two variables on SV, showcasing its complex relationship. Additionally, AC and SIC remained significant predictors for female participants, when we controlled for gender and age.

For our male participants, there was only a significant relationship found between the bivariate association between AC and SV. However, the association could not be replicated, when we controlled for covariates and added the interaction term. All other associations were non-significant in all models.

Our final hypothesis (H4) wanted to examine if there were gender differences in our sample. When we controlled for gender in the total sample, the results emphasized the gender disparities in SV experiences. Being female remained a significant predictor of experiencing SV whilst intoxicated. This is in accordance with numerous existing studies that focus on female victim's experiences rather than of males (Davis et al, 2013 & Abbey et al 2001).

On the other hand, our other control variable, which was age, did not yield any statistically significant result for either male or female participants. We expected there to be some effect because the recall time is 'since the age of 14', and the participants were aged 16-25. Therefore, we expected the time period in which SV may have happened to be larger for some than others. Additionally, Crowell and Burgess (1996) found that women in their late adolescence and early adulthood were more likely to be victims of alcohol related SV. However, these results and expectations did not coincide with our results.

**Methodological Limitations**

The research conducted had several methodological limitations. The researcher of the present study was not involved in developing the questionnaire, data collection and any other contributions related to the data. The limitations related to the use of secondary data can cause a burden on the present research. For example, we had to measure AC in general and not in reference to the same night of the assault. This could have caused the shift in results for our present study. Additionally, the researchers of the original dataset used the SIC scales by Morokoff et al (1997), the statements of assertiveness were always about "a partner". We are unsure if participants who answered these questions actually related it to a partner they knew or just used it as a baseline for whoever the perpetrator was (stranger, acquaintance, friend, partner, family) in that sexually coercive situation. Regarding that, we were not able to assess the victim's relationship to the perpetrator, which could've been another significant covariate for this present study. (Davis et al, 2013)

Also, for AC, we were only able to test how many drinks an individual consumed on a night out on average. However, we were not able to evaluate what type of drinks (e.g.: gin/whiskey stronger than beer/cider) and individual differences in levels of intoxication. This is a difficult factor to control because despite there being guidelines available on what is considered high intoxication and low intoxication. We still consider that an individual's weight, experience with drinking and type of alcoholic beverage consumed, can also affect their intoxication levels. Thus, a victim could have consumed a lot of alcoholic beverages and remained sober but could've had other risk factors prohibiting them from refusing the unwanted sexual experience.

**Implications for Future Work**

We wanted to investigate if SIC could combat the effects of alcohol and thus be a moderator on the relationship between AC and SV. Through existing literature on the separate associations, we believed that SIC could counteract the physiological and risk effects related to alcohol. This was not supported by the results of our study. Therefore, future research needs to potentially focus on the factor of AC instead, exploring the environmental, social and cultural factors that influence risky drinking behaviors. With more research conducted on this factor, it highlights potential for interventions to focus on reducing excessive AC on nights out. Which could be more relevant to our target group, who are in student associations, university or are experimenting with alcohol in general.

Existing literature has accounted for other factors related to the relationship between AC, SIC and SV. Considering this, future research should consider the influence of other factors such as, relationship to

the perpetrator, trauma history, relationship with alcohol and personality traits to comprehend whether they have predictive roles in this relationship or not.

This study also supported how women (n= 220) were more likely to be victims of SV whilst intoxicated than men (N=66). However, despite a smaller number of victims, male victims still do exist and need more research on what risk and protective factors are suited to them. Therefore, in the future it is recommended to use a bigger sample of boys who have been victims of SV and explore what relevant risk and protective factors are suited to them. Which can contribute to the lack of research available for male victims in this area.

## Conclusion

Overall, the present research attempted to shed some light to the complex relationship between AC, SIC and SV, amongst young adults in the Netherlands. We intended to investigate if SIC could combat the effects of alcohol and thus be a moderator on the relationship between AC and SV. This was not supported by our study. However, we did find that AC, SIC and gender were significant predictors of SV for women. This research allows for future researchers to investigate other factors that could be more suited to moderate the relationship between AC and SV.

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