

Exploring socio-demographic and mental health differences among constructed male victim severity profiles.

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Abstract

Background. Stigmas and taboos surrounding male sexual violence, stating that men cannot be sexually victimized and would not experience many adverse effect as a result, continue to shroud the issue of male sexual victimization (SV). Male victims, therefore, remain under recognized in research, policy and treatment provisions. Furthermore, knowledge regarding male SV is severely compromised by studying male victims in convenience samples with a focus on hands-on forms of sexual violence. Finally, severity of SV is often described using a one-dimensional approach based on presumed severity leading to an oversimplified image. This study addresses these various gaps in scientific research by constructing severity profiles of male SV based on self-reported consequences, prevalence and co-occurrence of SV.

Methods. A total of 1,078 male victims were selected from a Belgian nationally representative sample collected between October 2019 and January 2021. Profiles are constructed using latent class analysis. Socio-demographic differences across the profiles are examined through multinomial regression analysis. Finally, differences in current mental health problems across the profiles are assessed.

Results. Four distinct male victim profiles are detected: (1) low severity – low victimization (58.3%), (2) medium severity – hands-off victimization (21.4%), (3) medium severity – poly-victimization (13.3%), and (4) high severity – poly-victimization(7.0%). Group comparisons show how male victims in the high severity class report significantly higher rates of mental health problems such as depression, anxiety and suicide and/or self-harm. Significant differences in class membership were found for age, occupational status, relationship status, sexual orientation and financial status.

Conclusion. This study provides new insights in the patterns of male SV and highlights the presence of poly-victimization among male victims. Additionally, we point out how so-called minor forms of SV (i.e. hands-off SV) can have a large effect on male victims. The study ends with suggestions for care and future research.

Introduction

Sexual victimization (SV) is continuously portrayed as a gendered issue including a male offender and a female victim (Spiegel, 2013). Male SV is still often surrounded with various stigmas and taboos stating that men cannot be sexually victimized and that if they would experience such an event, would not be harmed by it both physically and emotionally (Chapleau et al., 2008; Clark, 2014; Turchik & Edwards, 2012). These stereotypical ideas continue to

shroud the issue of male SV and lead to an under-recognition of male victims in research, policy and treatment provisions (Davies, 2002; Depraetere et al., 2020; Donne et al., 2018; Keygnaert, 2014; Weiss, 2010).

While research regarding male victims is recently growing (for reviews, see Depraetere et al., 2020; Peterson et al., 2011; Tewksbury, 2007), many studies are biased in their applied operational definition of SV (e.g., only focusing on forms with physical contact or rape) or in their study sample (e.g., focusing on populations at risk or help-seeking populations). This limits the generalizability and scope of the research conclusions (Masho & Alvanzo, 2010; Peterson et al., 2011; Stermac et al., 2004). Results from these studies may not be representative for all male victims of a broad spectrum of sexual violence (Masho & Alvanzo, 2010; Peterson et al., 2011).

Furthermore, there is a lack of studies providing male victim severity profiles in the general population. Thus far, scholars have mostly examined the severity of SV in a one-dimensional way (Lysova & Dim, 2020) considering either the prevalence of SV or the consequences experienced. Estimates of the severity of SV are mainly based on either the most 'severe' type of assault and/or the tactics used (Davis et al., 2014; Fiebert & Osburn, 2001; French et al., 2014; Koss et al., 2006, 2007), the experienced injuries (Alempijevic et al., 2007), or the frequency of experienced assaults (Davis et al., 2014; Malamuth et al., 1991). This approach rarely considers all aspects of SV simultaneously, resulting in an oversimplified picture of sexual violence (Lysova & Dim, 2020). Researchers are, however, strongly encouraged to apply multivariate analyses, including both the prevalence of SV and the consequences experienced simultaneously, to assess victimization patterns and the influence on the victims mental health outcomes to advance knowledge about SV prevention and counselling (French et al., 2014; Macy et al., 2007)

In this study, we address this gap in scientific research by constructing male victim severity profiles within a Belgian representative sample. In the following, a literature review is provided serving as a background for this study.

Male Sexual Victimization and the Bias in Research Studies

Research is beginning to provide evidence of the presence of male SV and its adverse effects (for reviews, see Depraetere et al., 2020; Peterson et al., 2011; Tewksbury, 2007). A review study by Depraetere et al. (2020) found prevalence rates of male SV ranging between 0.2% up to 66.3% and between 4.5% up to 83.9% for female SV. Particularly, gay and bisexual men seem to have a greater risk of experiencing sexual violence compared to heterosexual men (Bullock & Beckson, 2011; Herkes et al., 2015; Schapansky et al., 2021; Walker et al., 2005b).

However, large variations are visible in these prevalence rates. One reason for this includes inconsistencies in the applied definition of sexual violence. While some scholars (see Depraetere et al., 2020; Krahe et al., 2014; Peterson et al., 2011) apply a broad definition including forms with (i.e. hands-on) and without (i.e. hands-off) physical contact between offender and victim, others apply a narrow definition only including hands-on forms. In addition, some scholars only focus on the most intrusive act, namely rape. These differences in the applied definition not only limit comparisons across studies (Krahe et al., 2014), the choice also impacts the results and thus the conclusions that can be made (Peterson et al., 2011). Broad definitions have the advantage of exposing subtle forms of sexual violence that men (and women) may experience. Additionally, broad definitions allow scholars to reveal the adverse consequences that these seemingly ‘minor’ forms may have on the victims (Peterson et al., 2011).

As such, male SV may induce long-lasting physical and mental health problems (for reviews, see Peterson et al., 2011; Tewksbury, 2007). Results from studies comparing male

with female victims, and victims with non-victims (Banyard et al., 2007; Heidt et al., 2005; Kimerling et al., 2002; Krahe & Berger, 2017; Struckman-Johnson & Struckman-Johnson, 2006; Tiet et al., 2006; Walker et al., 2005a, 2005b)¹ highlight that male SV may induce post-traumatic stress disorder (PTSD), suicidal thoughts and attempts, depression, anxiety, alcohol and drug use, poor self-esteem, affect their daily functioning, and result in a damaged masculine identity. In the guidance note of preventing and responding to sexual and domestic violence against men, Watson (2014) provides an overview of common symptoms of men who have survived sexual violence (box 5, p. 16). In addition to the aforementioned adverse effects, male victims may experience a loss of income due to work-drop out, financial difficulties due to medical treatment and costs of relocation, and have social effects due to self-imposed isolation from friends and family and induced antisocial behavior.

This initial understanding of male SV and the consequences they may suffer is, however, severely compromised by predominantly studying male SV in convenience samples among certain subpopulations or specific contexts, such as incarcerated men or men presenting themselves at treatment centers (Masho & Alvanzo, 2010; Peterson et al., 2011; Weiss, 2010). This study focus limits the generalizability and scope of the research conclusions (Masho & Alvanzo, 2010; Peterson et al., 2011; Stermac et al., 2004). While the use of convenience samples may highlight groups that are at particular risk of SV, they are less suitable for understanding male SV in the general population. The characteristics, consequences and help-care need of male victims from certain segments of the population may be different compared to male victims in the general population (Masho & Alvanzo, 2010; Peterson et al., 2011). They may bias results regarding the consequences of male SV since only individuals with high consequences may present themselves at care centers and seek out help. Similarly, studies only

¹ With the exception of the study from Heidt et al. (2005) that compared victims with non-victims and revictimized individuals.

focusing on the most intrusive acts, such as rape, include participants that are not representative for all male victims of sexual violence (Masho & Alvanzo, 2010; Peterson et al., 2011).

Despite the adverse effect, male victims often do not receive the help they require (Donne et al., 2018; Haegerich & Hall, 2011; Lowe & Balfour, 2015). Given the main focus on female SV in both research and policies, the knowledge regarding male victims is still behind that of female victims (Arttime et al., 2014; Peterson et al., 2011). Care and treatment services are more advanced for female victims and have limited accessibility for male victims (Depraetere et al., 2020; Watson et al., 2014). Many caregivers, for example, lack training to collect evidence from male victims and do not have sufficient knowledge for providing male-centered support (Davies, 2002; Hendriks et al., 2018). Additionally, sexual assault referral centers are often located in gynecological or maternity wards creating a barrier for male victims when seeking care (Hendriks et al., 2018; Larsen & Hilden, 2016).² On top of that, many men are reluctant to seek care due to the societal expectations regarding masculinity with a fear of being labelled as weak or gay (Donne et al., 2018; Lowe & Balfour, 2015; Sable et al., 2006). The lack of receiving care may, however, results in additional adverse effects and increase the risk of developing PTSD (Depraetere et al., 2020; Larsen & Hilden, 2016). It is, therefore, important to increase knowledge regarding male victims to increase and adjust treatment provisions directed towards male victims.

Profiles of Sexual Victimization

The various SV experiences and consequences men may suffer may differ for each individual. Tewksbury (2007) concludes that the mental health status of male victims may go from highly emotional responses having a large effect on their daily functioning to more

² In Belgium, Sexual Assault Care Centers (SACC) are a specific separate service not linked to a gynecological or maternity ward (Baert et al., 2021).

moderate and introspective responses. While this suggests differences in severity of sexual violence experiences, estimates of the severity usually include a uni-dimensional assessment based on specific aspects of SV (e.g. the injuries, frequency of experienced assaults, type of assault or tactics used) (Alempijevic et al., 2007; Davis et al., 2014; Fiebert & Osburn, 2001; French et al., 2014; Koss et al., 2006, 2007; Malamuth et al., 1991). The operationalization of the severity of sexual violence rarely combines these various aspects into one combined model, resulting in a simplified view of SV (Lysova & Dim, 2020).

Furthermore, to be able to distinguish subgroups of male victims of sexual violence one should research variations in prevalence and consequences within a sample of male victims. In doing so subgroups of individuals can be detected that share similar characteristics and could benefit from a common intervention (Weller et al., 2020). So far, researchers have documented adverse effects of male SV by comparing mental health outcomes between male and female victims or between male victims and non-victims within certain subpopulations (see, Peterson et al., 2011). Focusing on a sample of male victims and applying a person-centered approach, such as Latent Class Analysis (LCA), allows researchers to detect multivariate combinations to describe population subgroups (Macy et al., 2007). Such an analytical approach go beyond a mere one-dimensional description of sexual violence, based on presumed severity (French et al., 2014).

Only a few studies have conducted LCA on the broad topic of (sexual) violence (Ansara & Hindin, 2010; Cavanaugh et al., 2012; Clarke et al., 2016; French et al., 2014; Lysova & Dim, 2020; Macy et al., 2007; McMahon et al., 2019; Nelon et al., 2019; O'Connor et al., 2021). And only one study from Lysova and Dim (2020) specifically focused on male victims in the context of intimate partner violence in their ongoing relationship. The remaining studies focused on (sexual) violence within a sample of high school students, college students and children attending primary school (Clarke et al., 2016; French et al., 2014; Macy et al., 2007;

Nelson et al., 2019), intimate partner violence (Ansara & Hindin, 2010; Cavanaugh et al., 2012; Lysova & Dim, 2020) or topics related to sexual violence such as bystander intentions and exposure to sexual violence messages (McMahon et al., 2019; O'Connor et al., 2021). As such, there is a lack of studies describing severity profiles of male SV in the general population including a broad spectrum of sexual violence incidents.

Study Aims and Objectives

The current study aims to address these gaps in scientific literature in four ways. First, the present study goes beyond providing a mere summary of the prevalence rates of SV. By combining reports of psychological, physical, relational and sexual consequences directly related to the sexual violence (henceforth: self-reported consequences) and the (co)-occurrence of a broad spectrum of sexual violence incidents, both the prevalence and consequences of male SV are simultaneously explored. This multivariate approach allows one to construct profiles of male SV that go beyond the existing one-dimensional victim profiles constructed by previous scholars. Furthermore, this study is one of the first to focus on a male victim sample instead of making comparisons with female victims or non-victims. This approach allows to detect differences among male victims and points attention towards those male subgroups that require help in overcoming their SV experience.

Second, by adopting a broad definition of sexual violence we are able to detect minor' forms of SV and the adverse effect they may cause. These 'minor' forms of SV have largely been overlooked in previous profiling studies and male victim studies in general. Adapting a broad definition of SV in the current study is thus an advantage as it allows to give a voice to all male victims, regardless of what type of sexual violence they experienced and presumed severity.

Third, biasing effects due to the use of convenience samples are limited by utilizing data of male SV from a Belgian nationally representative study (Keygnaert et al., 2021)³. The use of nationally representative studies allows to understand the nature and extent of male SV and allows for the development of male victim profiles that can be generalized to the Belgian general population. This permits us to obtain reliable information on how male victims are affected by sexual violence and which subgroups may need particular care provisions. Such studies are essential for policy makers and care providers.

Fourth, this study adds to the existing knowledge of male SV. Peterson et al. (2011) argue that more research is needed, highlighting that “research on the consequences of male adult SV remains in its infancy” (p.22). By constructing male victim profiles, we contribute to the knowledge regarding male SV in general and the consequences they may suffer in particular.

Results of this study provides a basis for the development of intervention and prevention measures specifically directed at male victims and diminishes the under recognition of male SV in policy, research and treatment. Overall, with this study we identify male victims subgroups. In a next phase socio-demographic differences between the profiles are examined and differences in male victims current mental health outcomes (i.e. mostly measured in the past two weeks) are assessed providing insights in the potential long-term adverse effects of male SV.

³ This nationally representative study aimed at UNderstanding the MEchanisms, NAture, MAgnitude, and Impact of Sexual Violence in Belgium (the UN-MENAMAIS project). For more details about this study, see Keygnaert et al. (2021) and Schapansky et al. (2021).

Methodology

Sampling Procedure and Participants

This study utilized data from a large-scale Belgian national representative sexual violence survey (Keygnaert et al., 2021) with data collected in two waves between October 2019 and January 2021. The study was approved by the Medical Ethical Committee of Ghent University and Ghent University Hospital (project nr. 2018/1204) and conducted in accordance with the ethical guidelines of the WHO (2016) for researching violence.

The National Register, containing information on all Belgian residents, was used as a sampling frame from which respondents were selected to participate in an online survey. A disproportionate stratified probability sample consisting of an equal number of male and female participants in three equally divided age groups was drawn by the National Register. A total of 41,520 Belgian residents aged between 16 and 69 were contacted by post by the Belgian National Register. A link/QR code to the online survey was provided in the invitation letter. To limit self-selection bias, the study was presented as a survey about health, sexuality, and well-being. Prior to participation, respondents were provided with additional information on the study and an informed consent form. Only those who gave informed consent were able to participate in the survey. For more information regarding the data collection method, see Schapansky et al. (2021).

Out of 6,504 respondents who initiated the survey (15.7% participation rate), 1,659 were removed due to either not providing informed consent ($n = 706$), not completing victimization items in the survey ($n = 909$), not meeting the age criteria for participation (i.e., between 16 and 69 years old; $n = 6$), completing the survey more than once ($n = 37$), and concerns about the quality of the responses ($n = 1$). Next, only male participants were selected ($n = 2,397$). Out of this sample we selected men who experienced a form of sexual violence in their lives and reported about the consequences experienced directly from their SV (i.e. self-reported

consequences) and their overall mental health. This leaves a final sample of $N = 1,078$. Overall, this nationally representative study showed how almost 50% of men report a form of sexual violence in their lives, compared to almost 80% of women (Schapansky et al., 2021).

The sample of male victims were aged 36.5 (SD = 16.5) on average. The majority identified as heterosexual (87.2%), another 9.8% identified as gay, lesbian or bisexual. The remaining 3.0% identified as asexual, omnisexual or indicated 'other'. The large majority indicated that they themselves (87.3%) and their parents (75%) were born in Belgium.

Measurements

Sexual victimization.

This study's definition of sexual violence relied on the definition of sexual violence by the World Health Organization (WHO, 2015) as : [...] any sexual act that is perpetrated against someone's will". It can be committed "by any person regardless of their relationship to the victim, in any setting". It includes, but is not limited to, rape, attempted rape and sexual slavery, as well as unwanted touching, threatened sexual violence and verbal sexual harassment.

The operationalization of the victimization items were based on the Sexual Experiences Survey (Koss et al., 2006, 2007), the National Intimate Partner and Sexual Violence Survey (NISVS) (Smith et al., 2017), the Sexual Aggression and Victimization Scale (SAV-S) (Krahé & Berger, 2013), and the Senperforto questionnaire (Keygnaert et al., 2015). The items included in this survey applied a broad definition of sexual violence and included both hands-on forms (e.g., kissing, fondling/rubbing, undressing) including rape (e.g., (attempted) oral sex, (attempted) anal penetration) and hands-off forms (e.g., comments, staring, voyeurism, exhibitionism, distribution of sexual images) (a detailed overview of the SV items and self-reported consequences is provided in appendix A). Respondents were asked whether they experienced the presented behavior ever in their lives (*yes/no*). Each item was described

behaviorally specific without the use of generic terms such as ‘rape’ or ‘assault’ in line with recommendations of previous research (Wilson & Miller, 2016). These generic terms increase ambiguity in participant interpretation which may influence correct estimations of victimization prevalence (Wilson & Miller, 2016).

Self-reported consequences.

Respondents were asked to indicate whether they experienced various outcomes as a result of the incident. If they experienced multiple incidents they were asked to think back to the incident that had the biggest impact on them. Answers were collected on a five-level Likert scale ranging from *not at all/ none (1)* to *very much/ all the time (5)*. Since the items were included in the LCA, they were dichotomized including either experiencing the outcome to some extent (including options 2 until 5) or not experiencing the outcome (including option 1) as a result of the incident.

Overall, 8 outcomes were questioned that focus on the psychological, physical, relational and sexual consequences of SV (a detailed overview of the items is provided in appendix A). These items were based on various studies focusing on the consequences of male SV (Banyard et al., 2007; Struckman-Johnson & Struckman-Johnson, 2006; Walker et al., 2005a, 2005b).

Socio-demographics.

We examined various socio-demographic differences between the identified male victim profiles. More specifically we focused on the respondents age, educational level, employment status, financial difficulties, sexual orientation, and relationship status.

Respondents educational level included five response option and was regrouped to *primary or no education, secondary education* and *higher education*. Their current occupational status included the following regrouped options: (1) active (combining the options employed/independent, contributing family member, voluntary work), (2) student, (3) inactive

or other (combining the options financial self-sufficiency or any other type of alternative choice of living, housewife/-man, not able to work because of ill health, on the job market/looking for a job, retired, other).

Respondents current financial situation was assessed by asking whether, with their monthly household income, they were able to make ends meet *easily*, *fairly easily*, *with some difficulty*, or *with great difficulty*. These four answer options were combined into a binary variable (*easy* vs. *difficult*).

Participants sexual orientation was also grouped into a binary variable (*heterosexual* vs. *non-heterosexual*) for analysis.

Finally, participants could indicate the following when asking about their current relationship status: (1) living together with a partner, (2) involved in a relationship without living together, (3) no relationship.

Current mental health.

In addition to the self-reported consequences of sexual violence, respondents general mental health was assessed. These scales were provided to the respondents before asking about potential SV experiences to ensure an ‘objective’ measurement of their current mental health without emphasizing a link with SV. These scales mostly refer to the two weeks prior to participating in the survey. As such, these measurements are applied as current mental health measures serving as potential indicators for long-term effects of SV.

To minimize data loss due to missing values, a person-mean imputation method (Imai et al., 2014) was applied to the sum scores created for the scales regarding depression, anxiety and resilience. Given that the questions did not include a forced-response answer, respondents were able to skip some questions. However, excluding these respondents would lead to additional data loss. The imputation method estimates the value of the missing answers by taking the average of the answers given to the other questions on the same scale. The imputation

method only estimates missing values at respondent level, meaning that the average is based on responses given by the same respondent on the same scale. Additionally, the imputation method is only applied on those respondents with 20% or less missing values on the scales (Imai et al., 2014). More specifically, the method was applied on respondents with a maximum of two missing items on the depression scale and 1 missing item on the anxiety and resilience scale.

Depression. Depression was measured using the Patient Health Questionnaire (PHQ)-9 from Kroenke and Spitzer (2002). Respondents were asked to indicate how often the nine items bothered them in the past two weeks prior to participation in the survey. A 4-point Likert scale was provided ranging from *not at all* (0) to *nearly every day* (4). A higher score on the constructed sum score indicates higher severity of depression ($\alpha = 0.88$; range = 0 - 27). A sum score equal to or higher than five represents mild depression symptoms (Kroenke & Spitzer, 2002)..

Anxiety. The General Anxiety Disorder (GAD)-7 by Spitzer et al. (2006) was used as a brief self-report scale for probable cases of anxiety disorders. Respondents were asked to indicate whether they experienced any of the seven anxiety symptoms in the past two weeks prior to participating in the survey on a 4-point Likert scale ranging from *not at all* (0) to *nearly every day* (4). A sum score was created where higher scores indicated higher levels of anxiety ($\alpha = .80$; range = 0 – 21).

Resilience. The Brief Resilience Scale (BRS) by Smith et al. (2008) was used to measure victims ability to bounce back or recover from stress. This 6-item scale includes statements regarding the way individuals cope with health-related stressors with answer options on a 5-point Likert scale from *strongly disagree* (1) to *strongly agree* (5). A mean sum score was created where higher scores indicated more resilience ($\alpha = .79$).

Problematic alcohol use. The Alcohol Use Disorders Identification Test Consumption (AUDIT-C) was used to measure potential problematic alcohol use among the respondents

(Babor et al., 2001; Bradley et al., 2007). This measure includes 3-items assessing respondents alcohol consumption (*How often do you have a drink containing alcohol? – Never (0) – 4 or more times a week (4)*) frequency of alcohol consumption on a typical day when drinking (*1 or 2 (0) – 10 or more (4)*) and frequency of drinking more than 6 drinks on one occasion (*Never (0) – (Almost) daily (4)*). Sum scores were created where higher scores indicate higher risk of problematic alcohol consumption ($\alpha = .79$; range = 0 – 12). As a threshold for men, a score higher or equal to 4 suggest problematic alcohol use (Bradley et al., 2007).

Suicidal thoughts and attempts. Finally, respondents were asked whether they had ever made an attempt to take their own life and/or deliberately harmed themselves without the intention of killing themselves (*yes/no*).

Data analyses

A tree-step latent class analysis (LCA) (Asparouhov & Muthén, 2014) with maximum likelihood estimation was conducted using the package (poLCA) in the statistical program R (version 4.1.1). LCA is a widely used analysis technique in the social and behavioral sciences that aims to identify meaningful subgroups or profiles within populations that share certain characteristics (Van den Bergh & Vermunt, 2019). More specifically, LCA is used to detect heterogeneity in samples, identifying subgroups based on their patterns of responses to categorical variables (Weller et al., 2020). Thus, a class/profile is characterized by a pattern of conditional probabilities. The conditional probabilities indicate a probability of saying ‘yes’ to having experienced a type of sexual violence and experiencing a type of consequence to some extent. However, the aim of most research is not only to identify meaningful profiles but also to examine how they relate to other external variables (covariates). Therefore, a three-step approach was applied. In a three-step approach, one first makes profile assignments. Only in a later phase are the covariates examined (Van den Bergh & Vermunt, 2019).

The first step includes building the latent class model without the inclusion of covariates (Van Den Bergh & Vermunt, 2019). The broad spectrum of sexual violence experiences and the self-reported consequences were included in the analyses to determine subgroups of male SV. The optimum number of profiles was determined by examining statistical model selection criteria as well as conceptual usefulness of the profiles. Since fit indices often do not point towards one solution, it is recommended to explore a set of fit indices along with substantive interpretability and utility of the profiles and classification diagnostics to decide the number of profiles to retain (Nylund-Gibson & Choi, 2018).

One up to six class models were run. Fit indices included the (Sample-size adjusted) Bayesian Information Criterion (aBIC/BIC), the consistent Akaike Information Criterion (cAIC) as well as the entropy value. Lower values of (a)BIC/cAIC indicate a better model fit. The entropy value indicates how accurately the model defines profiles with values closer to 1 indicating better model fit. While there is no agreed cut off value for entropy, a value below .6 is considered as an indication of bad model fit (Weller et al., 2020). Finally, we considered profile size as an indication for model selection. While there are no existing guidelines on determining profile size, profiles with fewer than 50 cases and profiles containing less than 5% of the sample should be avoided (Nylund-Gibson & Choi, 2018; Weller et al., 2020). Based on the various model fit indices no one perfect solution was visible (view table 1). However, the 4 profile solution showed the best model fit with lowest BIC and cAIC score. An entropy value of .76 indicates acceptable fit and profile population shares are not below the acceptable 5%.

Table 1: Model fit indices for 1 to 6 class solutions (N = 1,078).

Model	resid. df	BIC	aBIC	cAIC	likelihood-ratio	Entropy	Class pop. share (%) ¹
1-class	1053	19205.39	19125.99	19230.39	7524.73	-	-
2-class	1027	17541.75	17379.76	17592.75	5679.53	<u>.83</u>	21.8%
3-class	1001	17340.34	17095.78	17417.34	5296.57	.75	8.8%
4-class	975	<u>17308.81</u>	16981.67	<u>17411.81</u>	5083.48	.76	7.0%
5-class	949	17370.83	16961.10	17499.83	4963.95	.76	3.9%
6-class	923	17433.32	<u>16941.01</u>	17588.32	4844.88	.72	4.0%

¹ Lowest estimated class population share.

Underlined indices indicate best fit.

The second step involves assigning respondents to profiles using their posterior membership probabilities (Van Den Bergh & Vermunt, 2019). Using model assignment, where respondents receive a weight of one for the profile with the largest posterior membership probability and zero for the other profiles, all respondents are assigned to a profile.

Given that this study is primarily an exploratory and data-driven study, the definition of the profiles was based on the conditional probabilities visible within each profile without having prior theories or definitions in mind. An overview of the resulting profiles and conditional probabilities for the SV items and self-reported consequences are provided in appendix C. A visual representation of the identified profiles is provided in graph 1. A description of these results are provided in the next section of this manuscript.

As a final step, differences between the various profiles are examined by using covariates as predictors for profile membership through multinomial regression (Van Den Bergh & Vermunt, 2019), and by examining differences in current mental health outcomes. Prior to these final analyses, weights were applied to the sample. This ensures that the male victim sample is representative for the entire Belgian male population regarding age. The weights adjust for the underrepresentation of respondents in the older age categories. An overview of the weights can be found in appendix B.

Using covariates allows us to understand how male victims profiles differ based on socio-demographics. The results of the multinomial analyses report the adjusted odd ratio's

(Exp (B)) for each unit increase of the independent variable while adjusting for the effects of the other predictor variables in the model. A value greater than 1 indicates an increase in the odds of belonging to the profile compared to the reference profile. Goodness-of-fit is reported with AIC/BIC and misclassification error. In addition, a pseudo R-square value (McFadden R^2) is reported. This value indicates how well the model explains the data compared to the null-model. However, no consensus exists on a best pseudo R-square measure and many measures are affected by the number of independent variables and sample size (Hemmert et al., 2018). This value is merely informative and we place emphasis on the other indicators of model fit.

Mean differences in current mental health outcomes across the male victim profiles are examined through analyses of variance (ANOVA), Chi-Square and post-hoc tests. Effect sizes are reported with eta squared (η^2) and Cramer's V (V). Effect sizes are referred to as small ($\phi/V \leq .20$, $\eta^2 \leq .06$), medium ($\phi/V \leq .40$, $\eta^2 < .14$) and large ($\phi/V \geq .40$, $\eta^2 \geq .14$) (Kotrlík et al., 2011; Richardson, 2011).

Results

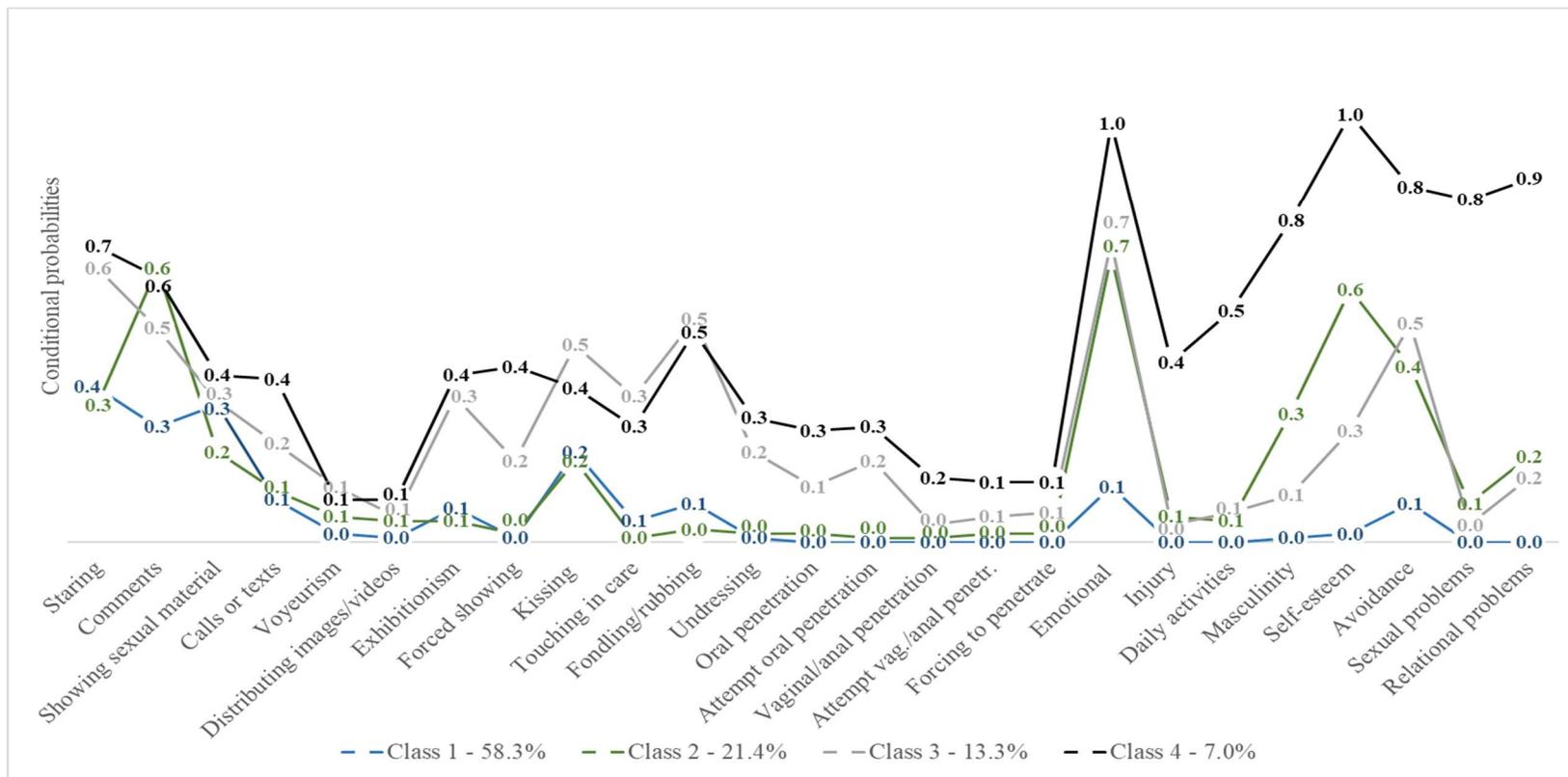
Defining the Male Victim Severity Profiles

Based on the results of the LCA, four severity profiles were found. Based on the visible conditional probabilities of experiencing certain types of sexual violence and consequences, profiles were defined ranging from low severity to high severity. The profiles and conditional probabilities are shown in graph 1 (more details are provided in appendix C). Profile 1 represents the “Low severity – low victimization” group and accounted for the majority of the male victims (i.e. 58.3%). Members of this profile have a low chance of experiencing any rape incidents. The highest probabilities are visible for experiencing sexual staring, sexual comments, showing of sexual material, and unwanted kissing (i.e. probabilities of 21% up to 36%). Victims in this profile reported almost no self-reported consequences as a result of the SV incident, with the highest probability visible among emotional consequences (i.e. 13%).

Profile 2 (“Medium severity – hands off SV”) accounted for 21.4% of the sample. While the probability of experiencing sexual violence incidents is relatively similar to members in profile 1 (with the exception of a 64% probability of experiencing unwanted sexual comments), these victims show a high probability of experiencing various self-reported consequences to some extent. As such, these victims had a .67 probability of reporting emotional consequences, .59 probability of reporting an impact on their self-esteem, and .41 probability of avoiding certain places or persons. Additionally, these male victims had a 30% probability of reporting that the incident made them question their feelings of masculinity.

Profile 3 (“Medium severity - poly-victimization) made up 13.3% of the male victims. These victims had a relatively high probability of experiencing hands-off, hands-on and rape incidents with probabilities going up to 64%. Victims in this profile had a particular high chance of experiencing sexual staring and comments (i.e. 64% and 50% respectively), and unwanted kissing and fondling (i.e. 46% and 52% respectively). With regard to rape incidents, these male victims had a 13% up to 19% chance of experiencing unwanted (attempts of) oral penetration. The probability of experiencing adverse effects from these various SV experiences are highest among the emotional consequences (70%) and avoidance behaviors (51%). These male victims showed a .11 up to .26 probability of having an impact on their feelings of masculinity and self-esteem respectively.

Graph 1. Conditional class probabilities of responding affirmative ($N = 1,078$)



Note: Class 1 (i.e. Low severity – low victimization), Class 2 (i.e. Medium severity – hands-off SV), Class 3 (i.e. Medium severity – poly-victimization), Class 4 (i.e. High severity – poly-victimization).

Finally, profile 4 ('High severity – poly-victimization') accounted for the remaining 7.0% of the male victims. Victims in this profile show high probability of experiencing both hands-on and hands-off sexual victimization. They also show the highest probability of experiencing (attempt to) anal penetration and being forced to penetrate someone (i.e. chance of up to 15%) compared to profiles 1 until 3. Additionally, the male victims in profile 4 show high probabilities of experiencing adverse effects (i.e. 42% up to 100%). Compared to the other profiles, only this profile shows a relatively high probability of having injuries (probability of 42%).

While all victim profiles show relatively high conditional probabilities of experiencing various forms of sexual violence, only profile 3 and 4 show probabilities of 50% and higher on both hands-off and hands-on items. Therefore, the term poly-victimization in this study refers to a high probability of experiencing both hands-off and -on forms of SV.

Univariate Analysis

Table 2 provides descriptive information regarding the socio-demographic variables across the various profiles. It shows that the age distributions are broadly similar across the various profiles, with slightly younger victims on average visible in profiles 2 and 4. The male victims in this sample are mostly represented by men having attained secondary or higher education. The distribution of the educational level is relatively similar in profiles 1 until 3. The distribution in profile 4, on the other hand, shows a shift from higher educated victims (i.e. 38.8%) to male victims with secondary education (i.e. 58.8%) compared to the other profiles. In addition, the majority of the male victims in profiles 1 until 3 are represented by men with an active occupational status. Contrarily, in profile 4 a large shift is visible between the active (i.e. 44.3%) and inactive (i.e. 37.7%) occupational status compared to the other profiles.

The financial status of the male victims seems to be decreasing as the severity of the profiles increase with the majority (i.e. 55.8%) of the male victim in profile 4 reporting financial difficulties. Similarly, an increase in the number of male victims identifying as non-heterosexual is visible as the severity of the profiles increase, with the highest number (i.e. 26.8%) visible in profile 4. Finally, the majority of the male victim in all profiles report living with their current partner. The highest proportion of male victims indicating not having a partner is visible in profile 2 and 4 with approx. 34%.

Table 2. Description of classes, weighted ($N = 1,079.5$)

% (n) or mean (SD)	Class 1 ($n = 647.2$)	Class 2 ($n = 195.5$)	Class 3 ($n = 135.5$)	Class 4 ($n = 74.2$)
Socio-demographics				
Age	43.3 (15.1)	37.5 (14.8)	44.2 (15.6)	39.8 (14.4)
Educational level (%)				
Primary or none	4.2 (28.2)	4.7 (9.2)	5.1 (6.9)	2.4 (1.8)
Secondary	44.4 (299.2)	45.3 (88.5)	39.6 (53.6)	58.8 (43.6)
Higher	51.4 (346.6)	50.0 (97.7)	55.4 (75)	38.8 (28.8)
Occupational status (%)				
Active	67.5 (455.1)	63.3 (123.7)	61.6 (83.4)	44.3 (32.9)
Inactive or other	20.2 (136.1)	18.6 (36.3)	26.2 (35.4)	37.7 (27.9)
Student	12.3 (83.1)	18.2 (35.5)	12.3 (16.6)	18.0 (13.3)
Financial status (difficult; %)	26.5 (178.4)	31.8 (62.1)	39.9 (54.1)	55.8 (41.4)
Sexual orientation (non-hetero; %)	8.0 (54)	13.7 (26.7)	21.5 (29.2)	26.8 (19.8)
Relationship status (%)				
Living with partner	65.9 (444.2)	54.9 (107.3)	51.7 (70.0)	48.8 (36.2)
No partner	20.9 (140.7)	34.5 (67.4)	28.1 (38.1)	34.7 (25.7)
Partner but not living together	13.3 (89.3)	10.6 (20.8)	20.2 (27.4)	16.5 (12.3)

Note: Class 1 (i.e. Low severity – low victimization), Class 2 (i.e. Medium severity – hands-off SV), Class 3 (i.e. Medium severity – poly-victimization), Class 4 (i.e. High severity – poly-victimization).

As for the current mental health outcomes (view table 3), the mental health of male victims seem to be worsening as the severity of the profiles increase. As such, male victims report lower resilience and an increase of anxiety and depression with every increase in severity with the ‘worst’ mental health outcomes visible in profile 4. Significant differences with regards to resilience are, however, only visible when comparing the various severity profiles (i.e. Profile

2, 3 and 4) with profile 1. With regards to anxiety, male victims in profile 1 report significantly lower rates of anxiety compared to all other profiles. Additionally, male victims in profiles 2 and 3 report significantly lower rates of anxiety compared to profile 4. Male victims in profiles 2 up to 4 show mean depression scores representing mild (i.e. score equal to or higher than 5, see profile 2 and 3) and close to moderate (score higher than 10, see profile 4) depression symptoms. Male victims in profile 1 report significantly lower depression rates compared to the other profiles. Furthermore, profile 4 shows significantly higher depression rates compared to all other profiles⁴.

Table 3. Group comparisons of current mental health outcomes, weighted ($N = 1,079.5$)

Mental health outcomes	Classes	Mean (SD) / % (N)	F-test / X ² test	η^2 / V
Resilience (range 0-5)	Class 1 ($n = 674.2$)	3.5 (0.7) ^{2,3,4}	11.02 ^{***}	.03 (S)
	Class 2 ($n = 195.5$)	3.3 (0.7) ¹		
	Class 3 ($n = 135.5$)	3.2 (0.8) ¹		
	Class 4 ($n = 74.2$)	3.1 (0.7) ¹		
Anxiety (range 0 -21)	Class 1 ($n = 674.2$)	4.2 (4.4) ^{2,3,4}	21.75 ^{***}	.06 (S)
	Class 2 ($n = 195.5$)	6.2 (4.5) ^{1,4}		
	Class 3 ($n = 135.5$)	5.6 (5.1) ^{1,4}		
	Class 4 ($n = 74.2$)	8.0 (5.5) ^{1,2,3}		
Depression (range 0 – 12)	Class 1 ($n = 674.2$)	4.3 (4.6) ^{2,3,4}	31.47 ^{***}	.08 (M)
	Class 2 ($n = 195.5$)	6.1 (5.6) ^{1,4}		
	Class 3 ($n = 135.5$)	6.7 (6.0) ^{1,4}		
	Class 4 ($n = 74.2$)	9.8 (7.0) ^{1,2,3}		
Problematic alcohol use (range 0 – 12)	Class 1 ($n = 674.2$)	4.3 (2.7)	1.28	/
	Class 2 ($n = 195.5$)	4.0 (2.7)		
	Class 3 ($n = 135.5$)	4.3 (2.8)		
	Class 4 ($n = 74.2$)	3.9 (2.9)		
Suicide and/or self- harm (ref. yes)	Class 1 ($n = 674.2$)	11.3 (75.9) ^{2, 4}	35.56 ^{***}	.18 (S)
	Class 2 ($n = 195.5$)	19.0 (37.1) ^{1,4}		
	Class 3 ($n = 135.5$)	18.3 (24.9)		
	Class 4 ($n = 74.2$)	35.7 (26.5) ^{1,2}		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$. Subscripts refer to the classes with significant mean differences between the groups at .05 level. S = small effect, M = medium effect, L = large effect.

Chi-square post-hoc analyses are applied with bonferroni correction. Anova post hoc tests are applied with TukeyHSD. Class 1 (i.e. Low severity – low victimization), Class 2 (i.e. Medium severity – hands-off SV), Class 3 (i.e. Medium severity – poly-victimization), Class 4 (i.e. High severity – poly-victimization).

⁴ More details about the mental health measures, including a symptom profile, can be provided upon request with the authors.

No significant differences are visible in the scores of problematic alcohol use between the various profiles. Moreover, the mean scores of alcohol use barely meet the threshold of 4 or higher as an indication of problematic alcohol use with a highest score visible among profile 1 (i.e. 4.3) and lowest score visible among profile 4 (i.e. 3.9).

Large differences are visible regarding suicidal attempts and/or self-harm among the male victim profiles. Approximately 35.7% of the male victims in profile 4 reported either of these behaviors compared to 11.3% in profile 1. This difference was also found to be significant, as were comparisons between profile 2 against profile 1 and 4. One should, however, keep in mind that the effect sizes of the majority of the comparisons are small, with the exception of depression where a medium effect size is visible.

Table 4. Multinomial analyses against reference Class 1 (i.e. ‘Low severity – low victimization’, $n = 674.2$), weighted ($N = 1,079.5$)

OR (95% CI)	Class 2 ($n = 195.5$)	Class 3 ($n = 135.5$)	Class 4 ($n = 74.2$)
Model 1. Socio-demographics			
Age	.97 (.96 - .98)***	1.01 (.99 – 1.03)	.98(.95 – 1.00)
Educational level (ref. higher)			
Primary or none	.78 (.34 – 1.78)	.94 (.38 – 2.34)	.41 (.08 - 2.04)
secondary	.86 (.60 – 1.22)	.70 (.46 – 1.05)	1.12 (.65 - 1.91)
Occupational status (ref. active)			
Inactive or other	1.35 (.85 – 2.13)	1.24 (.76 – 2.04)	3.19 (1.74 – 5.85) ***
Student	0.89 (.50 -1.56)	1.08 (.53 – 2.20)	1.48 (.64 – 3.44)
Financial Status (ref. easy)	1.27 (.88 – 1.84)	1.70 (1.13 – 2.56) *	2.85 (1.68 – 4.84) ***
Sexual orientation (ref. hetero)	1.67 (1.00 – 2.77) *	2.82 (1.69 – 4.69) ***	3.79 (2.05 – 7.02) ***
Relationship status (ref. partner ¹)			
No partner	1.29 (.84 – 1.99)	1.72 (1.04 – 2.84) *	1.19 (.63 – 2.28)
Partner but not living together	.63 (.35 – 1.13)	1.90 (1.08 – 3.32) *	.92 (.41 – 2.05)
Fit measures			
AIC/ BIC nullmodel		2,268.48 / 2,283.43	
AIC/ BIC Full model		2,199.25 / 2,348.78	
Nagelkerke R ²		0.14	
Misclassification error		38.68%	

Note: * $p < .05$; ** $p < .01$; *** $p < .001$. Class 2 (i.e. Medium severity – hands-off SV), Class 3 (i.e. Medium severity – poly-victimization), Class 4 (i.e. High severity – poly-victimization). ¹ This refers to the option ‘living with partner’.

Multinomial Analysis

Table 4 reports the results of the multinomial regression analyses to examine differences in profile membership based on socio-demographics. As such, older male victims are less likely to be in profile 2 compared to profile 1. Male victims who have an inactive occupational status at the time of participating in the survey (as opposed to active) are approx. 3 times more likely to be in the profile 4 compared to profile 1. Additionally, male victims in profile 3 are 1.7 and 1.9 times more likely to have no partner or not live with their partner respectively (as opposed to living together with their partner) compared to profile 1.

The largest effects were visible with the financial status of the male victims and their sexual orientation. As such, male victims with a difficult financial status are 1.7 up to 2.9 times more likely to be in profile 3 and 4 compared to the reference group (profile 1). Additionally, male victims who identified as non-heterosexual were 1.7 up to 3.8 times more likely to be in profiles 2 up to 4 compared to the profile 1.

Discussion

Researchers have mainly focused on female SV. Knowledge regarding male SV is, therefore, behind that of female SV (Peterson, 2011; Davies, 2002). As such, male SV and the adverse effect these men encounter is still often denied, leading to an under recognition of male victims in research, policy and treatment provisions (Davies, 2002; Depraetere et al., 2020; Keygnaert, 2014; Weiss, 2010). Additionally, scholars examining sexual violence typically construct severity profiles based on presumed severity using a one-dimensional approach (French et al., 2014; Lysova & Dim, 2020; Macy et al., 2007). While multivariate combination studies have been performed for (sexual) victimization, studies focusing on the broad spectrum of male SV in the general population are lacking. This study fills a particular gap in scientific research by constructing severity profiles of male SV among a Belgian representative sample. The combination of the self-reported consequences, prevalence and co-occurrence of various

incidents into one model has the particular advantage of describing subgroups of male victims in a multidimensional way.

Results of the LCA showed four distinct profiles going from ‘low severity – low victimization’ with low probability of experiencing various forms of sexual violence and low probability of experiencing adverse effects to ‘high severity – poly-victimization’ including high probability of experiencing multiple forms of hands-off, hands-on and rape incidents and showing high probability of experiencing approximately all self-reported consequences. In particular, this study demonstrates that while 58.3% of the male victims in this sample fall within the ‘low severity’ group, the remaining 41.7% of the male victims fall in the medium to high severity groups including exposure to various forms of sexual violence and showing high probability of experiencing adverse effects to some extent. This finding, confirms some of the adverse effects of male SV found in previous studies (Banyard et al., 2007; Walker et al., 2005a, 2005b).

In addition to findings from previous studies, this study reveals how so called ‘minor’ forms of sexual violence may still have a big impact on male victims. Profile 2 demonstrates how hands-off incidents (such as unwanted staring, sexual comments, and showing of sexual material) may induce a relatively high probability of emotional consequences, may impact male victims’ self-esteem, feelings of masculinity and result in avoidance behavior. This finding demonstrates the importance of applying a broad definition and looking at these so called ‘minor’ forms of SV to better grasp the consequences of sexual violence (Peterson et al., 2011). Furthermore, it shows that one should not underestimate the adverse effects hands-off forms of SV may have on male victims.

Another noticeable finding is the presence of poly-victimization among male victims, particularly in Profile 3 and 4. These male victims show high probabilities (e.g., probabilities off approx. 40% or higher) of experiencing various forms of hands-on and hands-off SV and

accounted for 20.3% of the male victims in the sample. It shows that while the number of male victims may be lower compared to female victims (see Depraetere et al., 2020), almost 1 out of 5 of the male victims have a high probability of experiencing multiple forms of sexual violence in their lives. This provides additional evidence to counter the stereotypical view that men do not experience sexual SV and are only offenders (Clark, 2014; Spiegel, 2013).

Results showed that the current mental health outcomes worsen as the severity profiles increase. This confirms findings in previous studies examining the adverse effects of male SV (Banyard et al., 2007; Heidt et al., 2005; Kimerling et al., 2002; Krahe & Berger, 2017; Struckman-Johnson & Struckman-Johnson, 2006; Tiet et al., 2006; Walker et al., 2005a, 2005b). However, with the exception of Heidt et al. (2005), these scholars have only made comparisons between male and female victims, and between victims and non-victims. As such, knowledge regarding differences in mental health outcomes across male victims was lacking. Heidt et al. (2005) compared the mental health outcomes between non-victims, victims and revictimized individuals of SV. Their results showed how revictimized individuals report greater psychological distress compared to singly victimized individuals. They suggest a cumulative effect of multiple sexual violence incidents. However, this study only included gay, bisexual and lesbian individuals. The current study confirms these findings within a broad male victim sample. Male victims with a high probability of poly-victimization (i.e. Profile 3 and/or 4) show the biggest impact on their current mental health outcomes, suggesting that the consequences experienced may be exacerbated among men who experience both hands-off and hands-on SV.

Similar to previous studies (Struckman-Johnson & Struckman-Johnson, 2006; Tiet et al., 2006; Walker et al., 2005a, 2005b) male victims of hands-on sexual violence and rape have the highest probability of attempting suicide and/or self-harm. An alarming 35.7% of the male victims in the high severity profile engaged in such behaviors and show rates that are up to three

times higher compared to the other severity profiles. This confirms the high impact of the most intrusive incidents, such as rape, on male victims. However, one should keep in mind that this high rate may also be influenced by other factors in the male victims lives as this question measured suicide attempts over the life course.

Contrary to previous findings (Walker et al., 2005b), this study did not find high rates of problematic alcohol use among male victims, nor were differences found across male victim profiles. Walker et al. (2005b) found 62.5% of male rape victims reporting abuse of alcohol. However, no comparisons were made with non-victims which may explain these different findings. Comparisons between victims and non-victims were made among older adults (i.e. aged 70+), sampled within the nationally representative project using face-to-face interviews (Keygnaert et al., 2021). No significant differences regarding problematic alcohol use were visible among men. Yet female victims reported higher odds of problematic alcohol use compared to non-victimized women (Keygnaert et al., 2021). As such, (problematic) alcohol use may be different for male victims compared to female victims.

As for socio-demographic differences, male victims in the low severity group are mostly represented by heterosexual middle-aged men who are currently living together with their partner, obtained secondary or higher education, and have an active occupational status with limited financial difficulties. When comparing against the reference group (profile 1), male victims in Profile 2 are significantly younger. Younger victims were also visible in Profile 4. Male victims in Profile 2 and 4 also show similarities regarding their relationship status and mostly represent men without a partner. These victims also have the highest probability of reporting relational problems, lower self-esteem and questioning their feelings of masculinity. One potential explanation could be related to the amount of time that passed between the sexual violence and reporting of the consequences in this study. These victims are on average mid thirty and may have experienced the sexual violence relatively recently compared to victims in

profiles 1 and 3. Another explanation may be found in the type of sexual violence experienced. These male victims show the highest probability of receiving sexual comments across all profiles. This experience may, therefore, have particularly affected their general self-esteem and feelings of masculinity. This, however, remain hypothetical and more research is needed to explain these findings.

The strongest influence to predict profile membership was visible within victims sexual orientation and financial status. A non-heterosexual orientation increases the likelihood of membership of all medium to high severity profiles compared to profile 1. This finding could be linked to the general higher risk of being exposed to sexual violence among sexual minorities (Bullock & Beckson, 2011; Herkes et al., 2015; Schapansky et al., 2021; Walker et al., 2005b). Additionally, difficulties in male victims financial status worsens as their severity profile increases. This finding could be related to the increase in current mental health problems and need of care for these victims. Furthermore, approximately one third of the male victims in the high severity group report an inactive occupational status. This may, on the one hand, influence their financial status but may also be linked to work drop-out and time investment in care upon their SV experiences (Watson et al., 2014). Yet, one should keep in mind that the study design does not allow us to make causal claims. As such, the financial status may also increase the risk of SV. Men who are employed may have several structural constraints that affect their possible behavioral choices. Unemployed men with financial difficulties experience different constraints. They are not “bound” to a work rhythm and have no role expectations related to their employment. This lifestyle may be accompanied by higher criminogenic exposure (e.g. going to a bar more frequently during working hours, or staying in a bar longer after working hours), increasing the risk of SV. However, future research is needed to confirm this hypothesis.

While male SV may impact men’s masculine identity, the masculine identity may also influence the processing of and consequences from their SV. These stereotypes suggest that

men are able to stop potential offenders and defend themselves against sexual violence and rape in particular (Clark, 2014; Turchik & Edwards, 2012). By “letting it happen” they may no longer feel like they are “real” men (Clark, 2014) or they may believe that their experience does not qualify as rape and remain silent about it. Therefore, men may be more reluctant to report hands-on forms of sexual violence, and rape in particular, and seek out help than hands-off forms. Many men may not want to admit that they have experienced a form of sexual violence due to difficulties in the processing of the SV and the threat it poses to their feelings of masculinity (Donne et al., 2018; Haegerich & Hall, 2011; Lowe & Balfour, 2015). This may be reflected in higher probabilities of self-reported consequences among the highest severity profiles.

Limitations

There are some limitations that must be observed when interpreting the results. First, part of the data collection (i.e. wave 2) took place during the outbreak of the covid-19 pandemic and the associated lockdown measurements in Belgium. This may have affected both the prevalence of SV and mental health outcomes. While victims are asked to think back to the event that had the biggest impact on them when reporting about the consequences as a result from this incident, the current mental health outcomes mostly focused on the two weeks prior to participating in the survey. However, chi-square and t-tests focusing on differences in SV rates and mental health outcomes did not show any significant difference between the male victims participating in wave 1 or 2. Therefore, we believe that the influence of the Covid-19 pandemic on the results of this study is limited.

Second, the results of this study may be affected by recall bias. Similar to all victimization studies, this study relies on retrospective memories of sexual violence experiences in men’s lives. One may wonder as to how accurate participants may recall events and the consequences associated with it. The impact of this limitation is constrained by focusing on the

incident with the biggest impact with regard to the self-reported consequences. Additionally, current mental health outcomes generally focus on male victims mental health status in the past two weeks, which already limits recall bias.

As Peterson et al. (2011) already stated, ‘it is difficult to interpret associations between having experienced sexual violence and having various psychological, physical, or sexual problems. Did the sexual violence cause the problem or did the problem place the man at risk for sexual violence?’ (p. 18). The cross-sectional nature of this study makes it impossible to make causal claims and predict the direction of the relationship.

Due to statistical limitations, the gender of the offender was not considered in the development of male victim profiles. In fact, including the gender of the offender yielded three additional profiles. In three of these profiles, the conditional probability that the offender was male or female was largely the same. The "low severity" profile would be further grouped into three separate profiles with a male, female or unknown offender. However, with this additional distinction in profiles, we could not make any statements on the effect on severity, as the higher severity profiles included both male and female offenders. Moreover, the sample size of the profiles decreases as the number of profiles increases. This affects the stability of the multinomial analyses when socio-demographic differences between these profiles are examined. A similar reasoning applies to the relationship with the offender. However, we would recommend future researchers to further examine the circumstances of male SV when analyzing profiles of male victims.

Finally, we are aware of the relatively poor fit of the multinomial model with a high misclassification error (38.7%). Therefore, the results of this model should be interpreted with caution and replication studies are advised. In addition, by assigning respondents to a specific profile from the LCA, classification error inevitably occurs (Van Den Bergh & Vermunt, 2019). However, by assigning respondents based on the largest estimated posterior membership

probabilities, the error is already minimized. Second, the LCA was performed using 3000 iterations which guarantees more robust findings. Finally, the optimal model was selected based on various fit indices. These elements ensure us that the results are trustworthy.

Conclusion and Implications

In conclusion, the severity profiles defined in this study shows large variations in the experiences of sexual violence among men. Similar to the conclusion of Tewksbury (2007), male victims adverse effects may include highly emotional responses having a large effect on their daily functioning to more moderate and introspective responses. While previous studies provided evidence of the adverse effects of male SV, none of them have made inter-comparisons among male victims of the broad spectrum of sexual violence to detect subgroups of male SV.

Results of our study emphasize the importance of including a broad description of sexual violence in order to detect ‘minor’ forms of sexual violence and the adverse effects they may cause. Current interventions are mostly aimed towards female victims and many focus on the most intrusive acts (i.e. existence of rape care centers) (Donne et al., 2018; Hendriks et al., 2018; Larsen & Hilden, 2016; Lowe & Balfour, 2015). This not only limits accessibility for male victims in general but particularly excludes male victims who experience various adverse effects from hands-off forms of sexual violence. These male victims, accounting for approximately 21% of the victims in this sample, are left to deal with the adverse effects themselves and often do not receive the care they need (Donne et al., 2018; Haegerich & Hall, 2011; Lowe & Balfour, 2015). However, not receiving the help they need may worsen the mental health problems, result in additional effects and increase the risk of developing PTSD (Depraetere et al., 2020; Larsen & Hilden, 2016).

With this study we provide more insights into the distinctive severity profiles of male SV. This knowledge regarding the patterning of sexual violence, the existence of poly-

victimization and the various adverse effects detected within each severity group provides a basis to develop services and treatment measures specifically targeted at male victims. We, therefore, recommend care services to increase gender-sensitive care and place specific attention towards hands-off SV and the adverse effects they may cause, with particular focus on the emotional consequences, effects on their self-esteem and avoidance behavior. Next, we would emphasize that care services welcome all male victims regardless of the so-called ‘severity’ of the sexual acts. Finally, care services need to be aware of the high probability of poly-victimization among approx. 20% of the male victims and the accompanying current mental health problems. As such, prevention measures against revictimization are strongly advised, taking the socio-demographic differences across the severity profiles into account as potential risk factors.

While this study provided some new perspectives about male SV, various aspects are yet to be researched. As such, details about the circumstances of the SV (e.g. the gender of the perpetrator, relation with the perpetrator, the coercion tactics used) may provide additional insights into the severity of the consequences experienced. We would, therefore, encourage future scholars to look into the details of the circumstances to develop male victim profiles. Furthermore, given that the strongest influence of profile membership was visible with the sexual orientation of the male victims, future research is recommended to compare heterosexual and non-heterosexual male victims in terms of severity profiles. Since non-heterosexual men appear to be at higher risk of SV, a specific study among this population will help to identify victim profiles for which more specific treatment and prevention measures can be developed. Finally, given the lack of research on male SV among general samples, we strongly encourage future scholars to replicate current findings and approach male SV with a multidimensional approach when researching their risks, consequences and help-seeking behavior.

Overall, our findings emphasize the need for profiling analyses among male victims to increase knowledge regarding male SV. The findings also demonstrate that approximately half of the male victims report adverse effects to some extent and a significant influence on their current mental health. As such, findings of this study provide additional evidence against the stigmas stating that men cannot be sexually victimized and that if they would experience such an event, would not be harmed by it both physically and emotionally (Chapleau et al., 2008; Turchik & Edwards, 2012). Increasing awareness of male SV may bring about an attitude change among victims, policymakers, police and health care providers. Research has shown that victim blaming attitudes and rape myths are still widely accepted and affect the decisions of police officers, prosecutors and jury members (Chapleau et al., 2008). Judges and police officers have a particular “ideal” rape scenario in mind when examining a rape case (Maddox et al., 2012). Given that male victims generally do not fall within this ideal rape scenario, they are often not believed, which causes them additional trauma and stress. Addressing these attitudes and persisting perspectives about male SV creates an overall less threatening climate, while reducing barriers for male victims to disclose their SV. We therefore hope that with this research, we have made the first step in providing a different perspective to male SV and motivated scholars in taking the next steps.

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APPENDICES

Appendix A – Included items in LCA

Table A. Items included in the LCA

<i>Abbreviation</i>	<i>Item</i>
<i>Hands-off sexual victimization</i>	
Staring	Someone stared at me in a sexual way or looked at my intimate body parts (e.g., breasts, vagina, penis, anus) when I didn't want it to happen.
Comments	Someone made teasing comments of a sexual nature about my body or appearance even though I didn't want it to happen.
Showing sexual material	Someone showed me sexual or obscene materials such as pictures, videos, ... directly or over the internet even though I didn't want to look at them.
Calls or texts	Someone made unwelcome sexual or obscene phone calls or texts to me.
Voyeurism	Someone watched me, took photos or filmed me when I didn't want it to happen while I was undressing, nude, or having sex.
Distributing images/videos	Someone distributed naked pictures or videos of me directly or over the internet when I didn't want it to happen.
Exhibitionism	Someone showed their intimate body parts (e.g., breasts, vagina, penis, anus) to me in a sexual way and/or masturbated in front of me when I didn't want to see it.
Forced showing	Someone made me show my intimate body parts (e.g., breasts, vagina, penis, anus) (online or face-to-face) when I didn't want to do it.
<i>Hands-on sexual victimization</i>	
Kissing	Someone kissed me against my will.
Touching in care	Someone touched my intimate body parts (e.g., breasts, vagina, penis, anus) during care against my will.
Fondling/rubbing	Someone fondled or rubbed up against my intimate body parts (e.g., breasts, vagina, penis, anus) against my will.
Undressing	Someone removed (some of) my clothes against my will.
<i>Rape</i>	
Oral penetration	Someone had oral sex with me or made me give oral sex against my will.
Attempt oral penetration	Someone tried, but did not succeed, to have oral sex with me or tried to make me give oral sex against my will.
Vaginal/anal penetration	Someone put their penis, finger(s) or object(s) into my vagina or anus against my will.
Attempt vag./anal penetr.	Someone tried, but did not succeed, to put their penis, finger(s) or object(s) into my vagina or anus against my will.
Forcing to penetrate	Someone made me put my penis, finger(s) or object(s) into their vagina or anus against my will.
<i>Self-reported consequences linked to sexual victimization</i>	
Emotional	I had emotional consequences (anger, fear, sadness, shame, guilt,...).

Injuries	I had physical consequences (pain, injuries, bruises, ...).
Daily activities	I was not able to perform my daily activities anymore (school, job, hobbies, ...).
Masculinity	I questioned my feelings of being masculine.
Self-esteem	My self-esteem decreased.
Avoidance	I avoided some places and/or persons.
Sexual problems	I experienced sexual problems.
Relational problems	I experienced relational problems.

Appendix B – Calculation of sample weights

Table B. Sample weights

Age group	Wave	Population N	Population proportion	Sample <i>n</i>	Sample proportion	Population proportion/ Sample proportion
16-24 year old	1	601 426	.15	187	.42	.37
	2	603 407	.15	218	.35	.44
25-49 years old	1	1 883 527	.48	154	.34	1.39
	2	1 882 695	.48	213	.34	1.41
50-69 years old	1	1 458 421	.37	108	.24	1.54
	2	1 468 224	.37	198	.31	1.18
Total wave 1		3 943 374	.50	449	.42	-
Total Wave 2		3 954 326	.50	629	.58	-
Total		7 897 700	1.00	1078	1.00	1.05

Appendix C – Detailed conditional probabilities

Table C. Conditional class probabilities of responding affirmative ($N = 1,078$)

		Male victim severity profiles			
		Class 1 - Low severity – low victimization	Class 2 - Medium severity hands- off SV	Class 3 - Medium severity poly- victimization	Class 4 - High severity – poly-victimization
Items					
Estimated class population share		58.3%	21.4%	13.3%	7.0%
Hands-off	Staring	.36	.32	.64	.69
	Comments	.27	.64	.50	.62
	Showing sexual material	.32	.21	.33	.39
	Calls or texts	.10	.12	.23	.38
	Voyeurism	.02	.06	.13	.10
	Distributing images/videos	.01	.05	.06	.10
	Exhibitionism	.08	.05	.34	.39
	Forced showing	.01	.02	.19	.41
Hands-on	Kissing	.21	.19	.46	.36
	Touching in care	.05	.01	.34	.27
	Fondling/rubbing	.09	.03	.52	.49
	Undressing	.01	.02	.21	.29
Rape	Oral penetration	.00	.02	.13	.26
	Attempt oral penetration	.00	.01	.19	.27
	Vaginal/anal penetration	.00	.01	.04	.15
	Attempt vag./anal penetr.	.00	.02	.06	.14
	Forcing to penetrate	.00	.02	.07	.14
Self-reported	Emotional	.13	.67	.70	.98
	Injury	.00	.06	.04	.42
	Daily activities	.00	.05	.07	.54
	Masculinity	.01	.30	.11	.75
	Self-esteem	.02	.59	.26	1.00
	Avoidance	.09	.41	.51	.83
	Sexual problems	.00	.09	.04	.80
	Relational problems	.00	.20	.15	.85

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