Embracing Identity: Exploring the Role of Pride and Self-Acceptance in Minority Stress and Health among Sexual and Gender Minority Youth

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Abstract

Sexual and gender minority youth (SGMY, 16 to 25) experience disproportionate negative effects on their health compared to the general population. Current research suggests that minority stress, such as victimisation, contributes to these negative mental and physical health outcomes. This research investigated whether victimisation negatively impacted self-rated physical health among 137 SGMY participants. Additionally, pride and self-acceptance of sexual orientation and gender identity (SOGI) were investigated as potential resilience factors as moderators for SGMY.

Contrary to expectations and existing literature, no significant relationship was found between victimisation and self-rated physical health for SGMY, sexual minority youth and gender minority youth. Pride and self-acceptance of SOGI could, therefore, not act as moderators. However, self-acceptance of sexuality was significantly positively correlated with self-reported physical health for sexual minorities ($b* = 0.50$, $SE = 0.18$, $t = 2.76$, p = .006), suggesting that interventions targeting self-acceptance of sexuality might mitigate the disproportionally negative general health scores of sexual minorities. This relationship was not found for self-acceptance of gender identity and for pride in general.

A major limitation (and finding) of the research was skewed data, especially negatively skewed victimisation scores. The study emphasizes the need for improved victimisation scales and offers suggestions for establishing these scales. Lastly, the importance of standardised language within the SGMY research is emphasised to enable the accuracy and nuance of future research.

Keywords: Minority Stress, Gender Minority Stress, Sexual and Gender Minority, Resilience, Self-Acceptance, Pride, Adolescents

1. Introduction

Sexual and gender minorities (SGM) are disproportionally negatively affected by adverse general health (Dowshen & Ford, 2019; Huijnk et al., 2022; Meyer, 2003). Sexual and gender minority (SMG) refers to individuals "whose biological sex, sexuality, gender identity, and gender expression depart from majority norms" (O'Malley & Holzinger, 2018), including lesbian, gay, bisexual, and transgender people, intersex people, gender non-conforming people, and others (LGBTI+). The Dutch LGBTI+ research published by Huijnk et al. (2022) found that SGM generally show worse psychosomatic health and report twice as many psychological issues. Comparably, 22% of the respondents to the 2015 U.S. National Transgender Survey reported their health to be "fair" or poor" compared to 18% of the general U.S. population (James et al., 2016). These statistics are examples of a trend found in recent studies on SGM health. Among sexual and gender minorities, SGMY (sexual gender minority youth) have shown significantly lower health ratings. Younger trans individuals were less likely to report excellent or good health (39% for 18-24-year-olds) than their older counterparts (53% for 45-64-year-olds) (James et al., 2016).

Exposure to severe stressors is linked to physical and mental health difficulties (Marks, 2021; Schneiderman et al., 2005). In the scoping review, Schneiderman et al. (2005) link exposure to significant stressors to a higher likelihood of a mental health disorder diagnosis. Additionally, exposure to chronic stressors was linked to poor physical health, including (but not limited to) poor cardiovascular health, sexual dysfunction, and gastrointestinal problems (Marks, 2021; Schneiderman et al., 2005). While most people experience general stressors throughout their lives that require adaptive responses (Lazarus, 1993), SGM populations endure stressors specific to their minority group, so-called *minority stressors,* which negatively impact mental and physical health (Meyer, 2003). These stressors are distinct from general stress as they are added to general stressors,

needing additional responses over general stressors (Frost & Meyer, 2023; Meyer, 2007). Furthermore, they are distinguished from general stressors as they originate in stigma and prejudice (Frost & Meyer, 2023) and are linked to social, cultural, and political structures outside the individual's control (Hoy-Ellis, 2023; Meyer, 2003). This means that minority stressors are chronic, exacerbating their impact on health and well-being (Hoy-Ellis, 2023; Meyer, 2003). The minority stress theory is one of the leading theories used to explain the impact of stigma and discrimination on the mental and physical health of SGM. This theory, which was initially proposed solely for LGB (Lesbian, Gay, Bisexual) people, has been expanded for gender minorities (Testa et al., 2015) and aims to explain why SGM are disproportionally affected by adverse mental and physical health (Meyer, 2003, 2015).

Minority Stress Theory distinguishes stressors into two dimensions based on how they interact with the individual (Meyer, 2003, 2007). *Distal stressors* are events external to the individual and originate from institutional structures, society, or people around the individual (Meyer, 2003). They include stigma, discrimination and victimisation and impact the individual indirectly via proximal stressors (Meyer & Northridge, 2007). *Proximal stressors* are the subjective internalisation of distal stressors, such as internalising discriminative beliefs, concealing one's identity, and negative expectations (Meyer, 2007). The focus of Minority Stress Theory research was centred around establishing a base framework in which stressors could be placed; this has now shifted towards exploring which and how stressors affect minority groups (Frost & Meyer, 2023; Hoy-Ellis, 2023; Meyer, 2015).

One of the distal minority stressors generally investigated is victimisation. *Victimisation* refers to direct hostile acts such as harassment, threats, physical assaults, or violence towards a person due to their sexual and gender identity (Petrou & Lemke, 2018; Testa et al., 2015; Williams

et al., 2021). Victimisation has also been coined using different terms, such as *prejudice events* or *discrimination* (Flentje et al., 2020). Williams et al.'s (2021) systematic overview shows a high prevalence of victimisation (36%) for SGMY between ages 12 and 25. This type of anti-SGM victimisation was found to harm life satisfaction (Petrou & Lemke, 2018) and increase self-harm and suicidal ideation for SGM (Testa et al., 2015; Williams et al., 2021).

While victimisation has been investigated regarding mental health (Meyer, 2007; Williams et al., 2021), its effects on physical health are unclear and inconsistent. Stress has generally been found to harm physical health (Frost et al., 2015; Thoits, 2010), but Frost et al. (2015) found inconsistent results of the impact of prejudice events on physical health dependent on the type of measurement, stressors, and way of measuring physical health (self-rated or externally rated) for sexual minorities. In their longitudinal research, worse self-rated physical health at the follow-up was associated with experiencing frequent minority stressors, such as discrimination and internalised homophobia, after the baseline measurements when using bivariate associations (Frost et al., 2015). Additionally, people who experienced an external prejudice event had almost three times the odds of experiencing a self-rated physical health problem at the one-year follow-up (Frost et al., 2015). However, this relationship with self-rated health was not found when using additional variables, such as gender, socio-economic status, and education during analysis (Frost et al., 2015). This implies that the additional variables might be confounding or mediating when measuring self-rated health. However, Frost et al. (2015) found that using externally rated variables did indicate a relationship with additional variables: externally rated measurements of minority stress predicted adverse effects on externally rated physical health. Frost et al. (2015) speculate that these disparities might be found because a person's adverse health might lead them to interpret events as stressful.

In contrast, externally rated measures reduce the likelihood of these confounding interpretations. These mixed results were also confirmed by the review conducted by Flentje et al. (2020), where out of 125 analyses, 42% found a significant relationship between minority stress and a negative health outcome, and 58% did not find such a relationship (Flentje et al.,2020). Flentje et al. (2020) explain this variation as being due to inconsistent methodology and a lack of construct consensus. Flentje et al. (2020) recommended using standardised paradigms to measure minority stressors. However, the research also concerned adult subjects, leaving a gap in the research regarding the impact of victimisation on youth (Flentje et al., 2020). It is, therefore, important for future research to closely investigate the link between SGMY victimisation experiences and the effect of it on general health.

There has been a continuous push for research to create a more equitable world for SGMY, which has led to strong recommendations from several leading researchers to move beyond examining minority stressors. Understanding minority stressors is essential but knowing how to circumvent their effect on the individual, i.e., investigating the protective factors, has also become relevant. Meyer (2015), the lead researcher and creator of the minority stress theory, wrote an overview and opinion piece of what we have already learned from the minority stress theory established in 2003 and the following research. In that paper, Meyer (2015) urges research to go beyond minority stressors and investigate the factors contributing to resilience against minority stress. They state that resilience-enhancing interventions have been 'one of the most lagging' areas (Meyer, 2015, p.212). Lucassen et al. (2022a) also made a similar call-out for more foundational research and established the research project "PRIDE", where they recommended digital interventions to help SGMY. Lastly, Delozier et al. (2020) recommend researching proximal

stressors and resilience factors, as current research is focused on single-path models, not accounting for the effect of multiple protective processes.

Resilience factors have been researched mainly within the social realm, with social support and community connectedness being the common resilience factors named within SGM literature. Community connectedness was initially proposed as the only buffer against sexual minority stress by Meyer (2003): several studies confirmed the buffering effect of community connectedness. They added research regarding the protective nature of social support (Frost & Meyer, 2023, gives a review). The success of these two resilience factors leads to a lack of research regarding resilience factors that are not dependent on social relations. There is little research on how SGMYs protect themselves from hostile environments (Lucassen et al., 2022a). This can prove detrimental, as SGMY do not always have access to socially-based resilience factors, and younger sexual and gender minorities are especially exposed to unchanging hostile environments such as family, society, and school environments (Meyer & Northridge, 2007). This shows a need for more research on intrapersonal resilience factors and their effect on physical health.

Pride is an established resilience factor within the research on gender minority stress (Testa et al., 2015). Within this research, pride is defined as individuals' positive feelings and attitudes towards their gender identity (Testa et al., 2015). Singh and McKleroy (2011) found that pride in one's gender identity was one of the six coping mechanisms that transgender people of colour used when faced with minority stressors. Testa et al. (2015) consequently used pride as one of the resilience factors while establishing their "Gender Minority Stress and Resilience" scale. They found that pride significantly protected gender minorities from the effect of minority stressors, including victimisation, on mental health. Pride has also been researched for sexual minorities, with *identity pride* being significantly linked to positive mental health (Perrin et al., 2020).

Additionally, research found that high pride was significantly associated with the high self-rated health of sexual minority adolescents (17 to 18-year-olds) (Randell et al., 2018). Still, research has not integrated these findings within the minority stress model for sexual minorities, nor has it investigated the resilience factor of pride for gender minority youth's health. Therefore, pride needs to be further investigated to understand the impact of pride within the minority stress theory for SGMY.

An additional resilience factor that has been researched within the sexual minority sphere but not as much for gender minorities is self-acceptance. Self-acceptance is defined as recognising and embracing all of one's (positive and negative) traits (MA, 2018). Camp et al. (2022) investigated self-acceptance and its conceptual validity while establishing the Self-Acceptance of Sexuality Inventory (SASI). They found that difficulties with self-acceptance of sexuality were linked to higher levels of depression and anxiety. Woodford et al. (2014) also found that self-acceptance was a mediating variable between victimisation and psychological distress in sexual minority students. There is, therefore, a potential to expand this self-acceptance of sexuality concept to gender minorities and the general SGMY population. Self-acceptance in the general US population has also been found to be a protective factor in longitudinal research (Ryff et al., 2015). Ryff et al.'s (2015) longitudinal research using ten years of well-being profiles found that individuals with consistently high general self-acceptance showed better physical health across time. Further investigation is needed to detect whether this significant relationship is also present for sexuality orientation and gender identity (SOGI) self-acceptance in SGMY.

2. The Current Research

The literature search for this project highlights that the SGM research sphere has focused on minority stressors, leaving a gap in research regarding SGMY and resilience factors. Nevertheless, the health disparities between SGMY and non-SGM youth are apparent (Huijnk et al., 2022), and an urgency for more research into how the impact of minority stress on physical health can be mitigated has become evident. This research project aims to investigate the role of already known resilience factors from different research strings in mitigating the potential negative impact of sexuality and gender victimisation on the general health of SGMY. Doing this will contribute towards establishing scientifically sound interventions beyond the individual's social environment. These findings will also inform which direction future research should head. Additionally, this research answers the call by Lucassen et al. (2022b) and Meyer (2015) for more knowledge about resilience factors to establish interventions.

The research question is, "How do pride and self-acceptance impact the relationship between minority stress and general physical health among sexual and gender minority youth (SGMY)?". Based on the literature search, a few hypotheses can be established:

(H1) Victimisation experienced by sexual and gender minority youth negatively relates to their general self-rated health.

(H2) The negative relationship between SGMY victimisation and general self-rated health is positively moderated by self-acceptance (h2a) and pride (h2b) separately, reducing the impact of victimisation on health.

3. Methods

3.1 Participants

The participants were recruited using advertisements posted to social media and applications (such as Facebook, Instagram, What's App, and Reddit), local community-based organisations such as Think With Pride and J&SV Exaltio, and personal circles. Additionally, participants were recruited using the University of Twente's test subject pool SONA, where recruited participants were rewarded with 0,25 SONA credits after completing the questionnaire. Participants under 16, participants who gave blank responses, and participants who did not give informed consent were excluded from the study, leading to an overall sample of 137 participants. Of this sample, 71 participants were exclusively a sexual minority, 3 participants were exclusively a gender minority, and 63 participants were both sexual and gender minorities (see Figure 1). The SGMY sample ranged between 16 and 27 years old, with a mean age of 21.6 ($SD = 2.84$).

Figure 1

Venn Diagram showing the Distribution of Minority Group Adherence within the Sample.
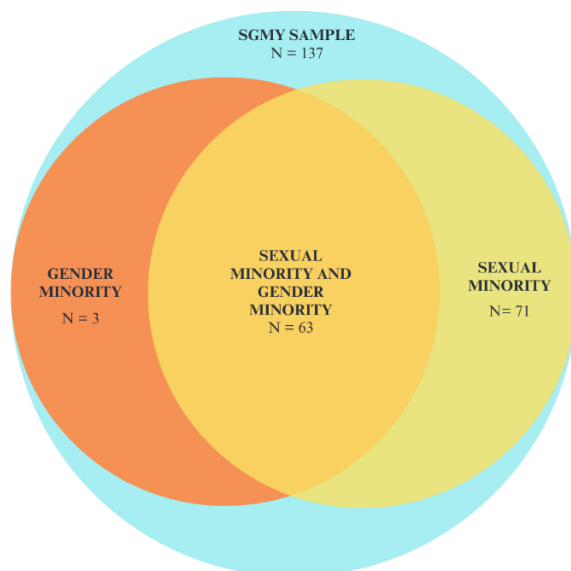
Different sexuality orientations emerged: multiple-attraction sexualities, such as bisexuality (n = 56, 26.8%) and pansexuality (n = 36, 17.2%) were the most common in our sample. These sexualities were followed by asexuality (n = 29, 13.9%) and a preference to self-identify (n = 29, 13.9%). Participants self-identified as queer 17 times, and the rest of self-identification was sexualities along the ace spectrum (Demisexual, Greysexual, et cetera). The rest of the sample identified as single-attraction sexualities (Gay [n = 23, 11.5%], Lesbian [n = 18, 8.6%] and Heterosexual, [n = 3, 1.4%]).

Additionally, different gender identities emerged as well, with female being the most represented (n = 64, 27.4%), followed by non-binary (n = 37, 15.8%) and male (n = 36, 15.4%). Important to note is that these gender identities and sexualities are not exclusive, as some participants crossed two or more gender identities, such as transmasculine nonbinary individuals, both stating they are male and nonbinary. In total, 209 different selections of sexuality were made. Two hundred thirty-four selections of gender were made. The majority of the sample was Dutch (n = 76, 55.5%), followed by German (n = 15, 10.9%) and American (USA, n = 14, 10.2%). More detailed demographic results can be found in Table 1.

Table 1

Demographic Table

Demographic Categories	Frequency	Percentage
Gender*		
Female	64	27.4
Male	36	15.4
Cis	30	12.8
Dyadic	2	0.9
Inter	1	0.4
Nonbinary	37	15.8
Questioning	14	6.0
Trans	33	13.1
Self-Identify	16	6.8
Sexuality*		
Heterosexual	3	1.4
Asexual	29	13.9
Bisexual	56	26.8
Gay	24	11.5
Lesbian	18	8.6
Pansexual	36	17.2
Questioning	13	6.2
Self-Identify	29	13.9
Sex		
Female	95	69.3
Male	39	28.5
Intersex	3	2.2
Completed Education		
Primary school or less	4	3.0
Some Secondary	10	7.2
Secondary School	28	20.4
Vocational or similar	4	2.9
Some university (no degree)	44	32.1
Bachelor's Degree	35	25.4
Graduate or professional degree	10	7.2
Birth Country		
Netherlands	76	55.5
Germany	15	10.9
USA	14	10.2
UK	5	3.6
Canada	3	2.2
France	3	2.2
Other	21	15.4

Note. *Individuals had the option to check multiple options based on what best described them.

3.2 Design and Procedure

The study received ethical approval from the BMS Ethics Committee/Domain Humanities and Social Sciences on October 17, 2023 (Number 231224). Data was collected in October and November 2023. The survey was conducted online using the Qualtrics software, version 2024.01. All questionnaires were administered in one go, and completion took an average of 12 minutes. All participants initially received information regarding the research and its purpose (see Appendix A) and an informed consent form (see Appendix B). If somebody responded negatively to the consent form, they were redirected to the end of the survey. Once they responded affirmatively to the consent form, they were guided to respond to demographic questions regarding age, education, and similar. Individuals indicating that they were less than 16 years old were redirected to the end of the survey.

All other participants continued with the rest of the demographic questions, which included questions regarding their sexuality, gender identity, sex assigned at birth, socioeconomic status, and place of birth. Afterwards, all participants answered a question about their general health and a questionnaire about their victimisation experiences. Lastly, depending on their minority status, the participants were given questionnaires investigating their SOGI self-acceptance and pride. Individuals were considered a sexual minority (SM) if they indicated they were any sexuality outside of heterosexual. Individuals were considered a gender minority (GM) if their gender identity did not match their sex assigned at birth, or if they identified as trans, and any gender identity outside of the binary (male and female). Participants with intersecting minority status got both questionnaires about their gender minority and sexual minority. The survey ended with a debriefing sheet, providing individuals with resources in cases of emotional distress due to the sensitive topic of victimisation.

3.3 Measures

3.3.1 Demographic Data

Demographic data was collected using some Diversity Minimal Item Set (DiMIS) items. The DiMIS was established to ease data collection within diversity domains, providing scientists with nine items they can use for routine data collection (Stadler et al., 2023). The full DiMIS covers the domains of gender (1), age (2), socioeconomic status (3), care responsibility (4), sexual orientation (5), ethnic-racial identity (6), religious affiliation and worldview (7), mental health (8), physical health and disability (9), and discrimination (10). As recommended in the paper by Stadler et al. (2023), only items relevant to the current research were presented to the participants: gender (1 and 1b), socioeconomic status (3), sexual orientation (5) and ethnic-racial identity (6a) (Stadler et al., 2023). The participants were also asked about their age, however instead of using the DiMIS question, "What is your year of birth?" we opted to ask for the specific age of individuals ("How old are you currently?") for the ease of filtering out individuals under 16 and individuals over 27.

3.3.2 Perceived General Physical Health

Participants' perceived general physical health was measured with the general health rating question from the SF-12 Health Survey. This measure has been used not only in the SF-12 but is recommended by the World Health Organisation as a standardised question. Additionally, it is included in the European Health Interview Survey (EHIS). The participants are presented with the question: "In general, would you say your physical health is..." and can choose between the responses Poor (1), Fair (2), Good (3), Very Good (4) and Excellent (5). This item has been used in health research as a general health measure (Turner-Bowker & Hogue, 2014; Self-perceived health, n.d.). Huo et al. (2018) found good annual test-retest correlations (adjusted ICC = .51), finding a moderate positive correlation between the Baseline and Year 3 measurements (r(415)

= .55, p = .01). As this was a 1-item-scale and no other test to measure General Health was used, the reliability of the item in the current sample was not computable.

3.3.3 Perceived Victimisation

SGMY's victimisation was measured using the modified 6-item victimisation subscale of the GMS-R by Testa et al. (2015). Respondents were asked about verbal harassment, physical harm and similar victimisation experiences using six items (for the complete Questionnaire, see Appendix D). The respondents were asked about the moment of victimisation, ranging from Never (0); Yes, before age 18 (1); Yes, after age 18 (1); and Yes, in the past year (1). They had the option to check all responses that applied. Responses are coded as "0" if they respond with never, and "1" if they respond affirmatively at any point, leading to a binary scale. The total victimisation score was calculated by summing the results of the six sub-items. The Cronbach's alpha of the original scale by Testa et al. (2015) was .77. The scale was modified to capture victimisation experiences by SGM, not only gender minorities, by replacing the wording of "gender identity or expression" with "queer identity or expression" after conferring with other SGM researchers at the University of Twente. The Cronbach's alpha of the modified scale in this study is α = .66.

3.3.4 Pride

Pride was measured using a modified version of the Pride scale of the GMS-R by Testa et al. (2015). Following the original scale, response options were based on a continuous scale from 0-4, with participants being able to respond Strongly Disagree (0), Somewhat Disagree (1), Neither Agree/Disagree (2), Somewhat Agree (3), and Strongly Agree (4). The Cronbach's alpha of the pride subscale of the GMS-R is .90. The pride of gender and sexual minorities was measured separately under the assumption that pride in sexuality and pride in gender identity are separate concepts that can be of different strengths for an individual. The scale was modified for gender

minorities, replacing the wording " that my gender is different from my sex assigned at birth" with "that I am a gender minority" (see Appendix D). For the sexuality pride measure, all mentions of gender were replaced with mentions of sexuality. The Cronbach's alpha of the modified sexuality scale in this study is $\alpha = .79$.

3.3.5 Self-Acceptance

Self-acceptance was measured using part of the self-acceptance of sexuality inventory (SASI) by Camp et al. (2022). The SASI consists of two subscales: the self-acceptance of sexuality subscale and the difficulties with self-acceptance of sexuality subscale. For this research, only the self-acceptance of sexuality subscale was used, meaning that self-acceptance of sexuality was measured using five items. Answers ranged from "Totally Untrue for Me" (1) to "Totally True for Me" (5). The SASI was found to have good internal consistency ($\alpha = .94$) and good evidence of measurement stability.

Additionally, the used subscale had an alpha of 0.92 and an interclass correlation of 0.88. The SASI overall was also found to have good concurrent and convergent validity with other self-acceptance scales and good discriminative validity (Camp et al., 2022). For gender minorities, the scale was modified, replacing mentions of "sexuality" with the terms "gender identity or expression". The Cronbach's alpha of our study for the sexuality sub-scale was $\alpha = 0.88$, and the alpha for the gender sub-scale was $\alpha = .88$.

3.4 Statistical Analysis

Before starting data collection, a power analysis was made using G*Power. A priori power analysis was established for linear multiple regression with a fixed model and a single regression coefficient. The given effect size was 0.15, the α error probability was 0.05, and the power (1-b error probability) was set at 0.8. The minimum necessary total sample size was 55. The final

sample size was 137. Once all necessary data was collected, the data analysis was conducted using R-Studio v.2023.09.1+494. The complete code can be found in Appendix C. First, the data was prepared for analysis; columns unnecessary for analysis were deleted, and the data was transformed into numeric data. All respondents who did not consent to participate in the study, were under 16 or over 27 or finished less than 70% of the questionnaire (meaning, only demographics or less) were filtered out of the dataset. Next, the demographic data was assembled, and the means, standard deviations, and percentages of relevant demographic factors were computed. The participants were assigned to different subgroups: Individuals were considered a sexual minority (SM) if they indicated they were any sexuality outside of heterosexual. Individuals were considered a gender minority (GM) if their gender identity did not match their sex assigned at birth, or if they identified as trans, and any gender identity outside of the binary (male and female). These two groups have significant overlap, as is seen in Figure 1. The SGMY dataset finally consisted of all SM and GM together.

Furthermore, the mean of the separate items on each multi-item scale was established to create a final score for each measured concept. To establish the SGM scores of Pride, which were measured separately for sexual minority and gender minorities, the following logic was used: for individuals identifying as both sexual and gender minorities, the SGM pride score was computed as the mean of their sexuality pride and gender pride score. For individuals without overlapping sexual and gender minority identities, their SGM pride score was equivalent to their respective minority pride score. This means somebody with overlapping identity had three scores: sexuality pride, gender pride and SGM pride. The same was done for the self-acceptance scale. This computation ensured a unified methodology for computing SGM scores, which accommodated individuals with overlapping identities and maintained consistency for those with non-overlapping identities. All relevant scales were compiled into a clean dataset, which was filtered for missing

values in the SGM scores, as these were the measures used to test the hypothesis. After the clean dataset was assembled, the descriptive data was computed for each scale.

Once the descriptive data was established, the different hypotheses were tested by establishing linear models. First, a linear model with victimisation as the independent variable and physical health as the dependent variable was established (h1). The assumptions of this model were checked to verify whether the model described the data well. Next, a linear model was created with victimisation as the independent variable, physical health as the dependent variable, and self-acceptance (h2a) or pride (h2b) as moderating variables. Once the models were established, they were also tested for the following assumptions: linearity and additivity, independence of errors, homoscedasticity, normality of errors, absence of multicollinearity, and outliers, as recommended by Berg (2023). The above-mentioned linear models were run for the complete SGMY data set, using the computed SGM scores, as well as the subgroups of gender minorities and sexual minorities, where their respective minority scores were used. An additional analysis was run to examine the relationship between verbal victimisation (Vict_1 of the victimisation scale) and victimisation using a linear model where verbal victimisation was treated as a binary independent variable and general physical health as the dependent variable. This was done as Vict_1 was the item of the victimisation scale with the most variable responses.

4. Results

The dataset was scanned for missing values before analysis. From the initial dataset (n = 185), 137 participants were retained for the final data analysis. Most removed participants were filtered out due to questionnaire non-completion (less than 70% of the questionnaire completion, n = 17), with most people quitting the questionnaire after responding to the demographic questionnaire. Less than 70% completion corresponds to only filling out the demographic

questionnaire, meaning the variables relevant for data analysis were missing. An additional 31 respondents were removed as they omitted several variables within the questionnaires, which resulted in NA scores for the scales. Therefore, 48 individuals were filtered out from the initial dataset, leading to our final dataset of 137 individuals. The data analysis started with computing the dataset's descriptive information, which is available in Table 2.

Table 2

Number of Respondents, Estimated Marginal Means, Standard Errors, Minimum and Maximum Scores, and Confidence Intervals of Studied Variables.

| Questionnaire	*n*	M (*SE*)	Min	Max	95% CI
SASI	134	4.35 (0.06)	2.2	5	[4.24, 4.46]
SAGI	67	3.90 (0.11)	1.4	5	[3.70, 4.12]
Self-Acceptance SGM	137	4.21 (0.06)	1.8	5	[4.10, 4.33]
General Health SM	134	2.96 (0.08)	1	5	[2.79, 3.13]
General Health GM	66	3.09 (0.12)	1	5	[2.86, 3.33]
General Health SGM	137	2.97 (0.08)	1	5	[2.80, 3.14]
SPride	134	3.40 (0.06)	1.88	5	[3.28, 3.52]
GPride	67	3.23 (0.10)	1.5	5	[3.02, 3.43]
SGMPride	137	3.34 (0.06)	1.81	5	[3.21, 3.46]
Victimisation	137	1.15 (0.11)	0	6	[0.94, 1.36]

Note. M = estimated marginal mean; *SE* = standard error; Min. = minimum score; Max. = maximum score; 95% CI = 95%; The estimates do not include confidence interval; participants removed due to NAs or attrition. SASI = Self-Acceptance of Sexuality Inventory, SAGI = Self-Acceptance of Gender Identity Inventory, SPride = Sexuality Pride, GPride = Gender Pride, SGMPride = Sexual and Gender Minority Pride.

4.1 Descriptive

Most notable is the low mean of the victimisation scale. Among the 137 respondents, 47 (34.3%) had a victimisation score of 0, 53 (38.7%) individuals had a victimisation score of 1, and 18 (13.1%) individuals had a score of 2, leading to a total of 118 (86.1%) individuals having a victimisation score lower than 3. Figure 2 shows the distribution of victimisation scores.
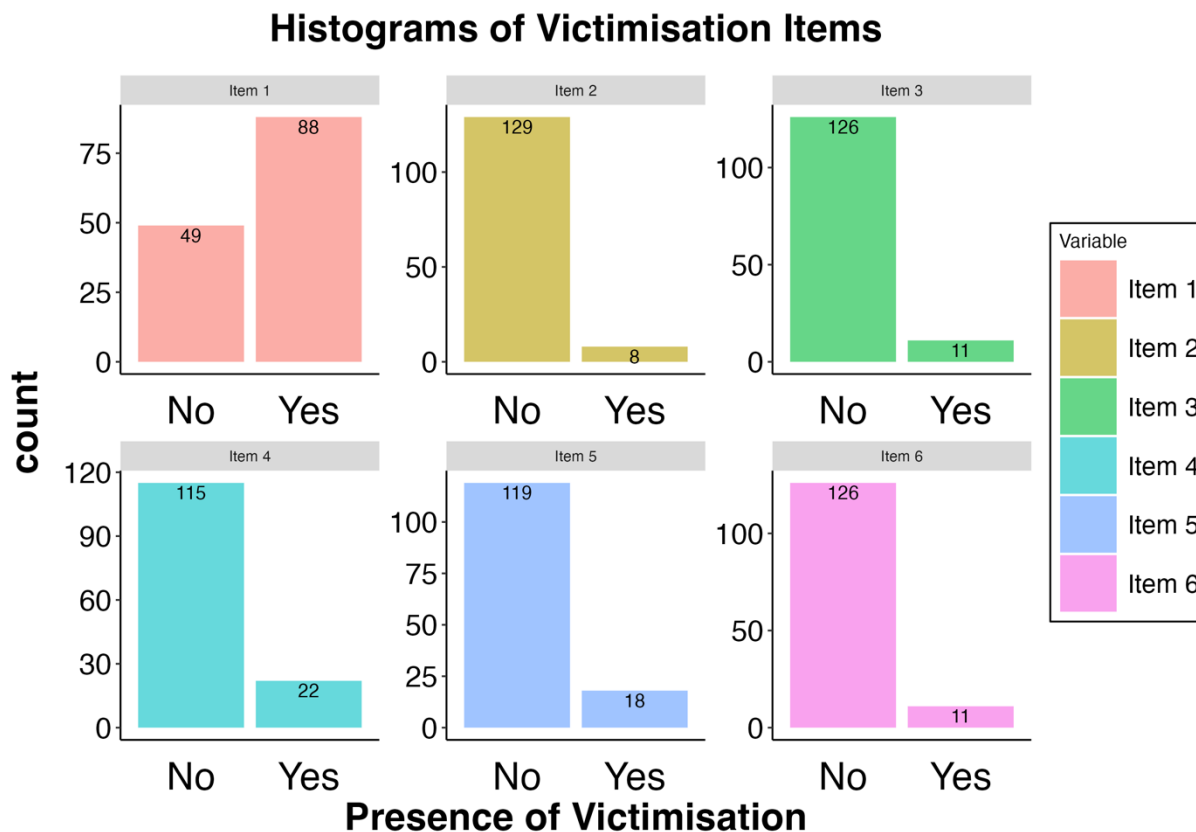
Figure 2

Bar chart of overall Victimisation Scores within the SGMY Dataset
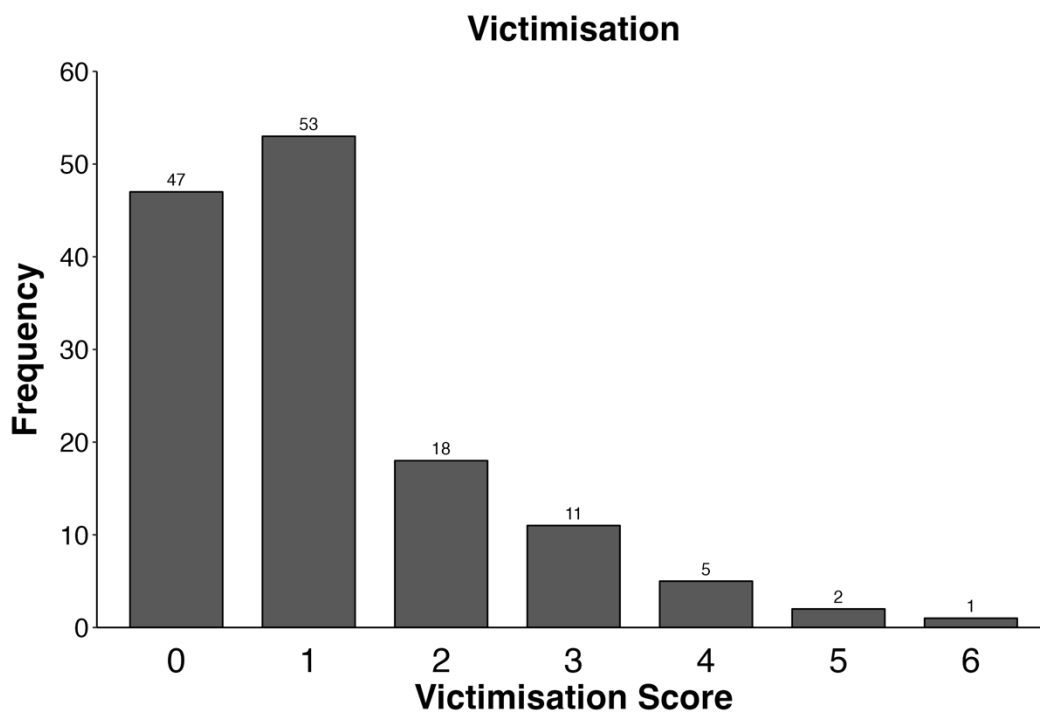
This distribution is further explained when looking at the results of the different items of the victimisation scale within the SGMY dataset, with Item 1 getting the most affirmative responses (see Figure 3).

Figure 3

Bar chart of Number of Responses for the Victimisation Items in SGMY

Note. Each bar graph corresponds to the results of one item. Yes = Yes, at any time.

The correlations between the measures of physical health, victimisation, self-acceptance, and pride are presented in Table 3 for the total SGMY sample and subsets of the sample. No significant relationship was found between victimisation and any other of the variables. Pride and self-acceptance were also significantly correlated for the whole SGMY sample and the two subgroups.

Table 3

Correlations between the measured Variables for the full Dataset and the two Subsets.

Column Label	Physical Health	Victimisation	Self-Acceptance	Pride
SGMY (*n = 137*)				
Physical Health	-	.8	.18*	.12
Victimisation	.08	-	-.01	.04
Self-Acceptance	.18*	-.01	-	.37**
Pride (*SGMY*)	.12	.04	.37**	-
Sexual Minorities (*n = 134*)				
Physical Health	-	.09	.26**	.12
Victimisation	.09	-	.06	.10
Self-Acceptance	.26**	.06	-	.36**
Pride (*Sexuality*)	.12	.10	.36**	-
Gender Minorities (*n = 66*)				
Physical Health	-	-.2	-.10	.4
Victimisation	-.02	-	-.10	-.04
Self-Acceptance	-.10	-.10	-	.47**
Pride (*Gender*)	.04	-.04	.47**	-

Note. The correlation was computed using Spearman's rho. *p <0.05, **p < 0.005

4.2 Direct Effects

The first hypothesis (h1) assumed that higher victimisation levels are associated with worse general physical health. A linear model was set up to assess this hypothesis, with victimisation as the independent variable and general physical health as the dependent variable. The linear model was tested for assumptions to assess how well it represents the data. Using a plot with the fitted residual values, it becomes apparent that the model does not show a linear relationship. Additionally, the Shapiro test shows that the residuals vary significantly from a normal distribution

($W = 0.92$, $p < 0.001$). The model also showed heteroscedasticity, meaning that the variance in this model was not equal, which both a non-constant variance score test ($\chi^2 = 1.11$, $Df = 1$, $p = .29$) and a studentised Breusch-Pagan test ($BP = 1.42$, $dr = 1$, $p = .2$) confirm. Based on the triple violation of assumptions in the linear models, a non-parametric test was used to assess the relation between victimisation and physical health. Therefore, Spearman's rank correlation was computed to assess the relationship between victimisation and general physical health. No significant correlation was found between the two variables, $\rho = 0.08$, p = .34, with 135 degrees of freedom. Therefore, the first hypothesis of this study was rejected.

4.2 Interaction Effects

4.2.1 Self-Acceptance

Hypothesis 2a assumes that self-acceptance moderates the relationship between high victimisation and worse general physical health. A linear model was set up with SGMY victimisation as the independent variable, general physical health as the dependent variable, and self-acceptance as the moderator variable. The assumptions were checked using different plots, a Shapiro test, and a non-constant variance test, which showed that the data violated all linear model assumptions. Several data transformations, such as a log, square roots, and cubing, were attempted to correct the violation of assumptions, but these transformations were unsuccessful. The moderation analysis was thus run despite violating the assumptions. The overall moderation model was not statistically significant in predicting general physical health scores ($F(3,133) = 1.60$, $p = .193$). See Table 4 for more specific results.

Table 4

Linear Regression Analysis Results between Health, Victimisation, and Self-Acceptance of SOGI for the SGMY dataset (n = 137)

Term	b^*	SE	t	p	95% CI
(Intercept)	2.04	0.79	2.58	.011*	[0.47, 3.60]
Victimisation	-0.18	0.51	-0.36	.722	[-1.20, 0.83]
Self-Acceptance	0.22	0.19	1.21	.229	[-0.14, 0.59]
Victimisation × Self-Acceptance	0.04	0.12	0.34	.737	[-0.20, 0.28]

Note. Results are computed using a linear model despite violation of assumptions. * $p < 0.05$

The main effects within this model, victimisation ($b^* = -0.18$, $SE = 0.51$, $t = -0.36$, $p = .722$) and self-acceptance ($b^* = 0.225$, $SE = 0.19$, $t = 1.21$, $p = .229$), did not significantly predict the scores of general physical health within the SGMY sample.

Additionally, the interaction effect between victimisation and self-acceptance was insignificant ($b^* = 0.04$, $SE = 0.12$, $t = 0.34$, p = .737), indicating that self-acceptance was not a moderator within this linear model. Therefore, hypothesis 2a is rejected.

4.2.2 Pride

Hypothesis 2b assumes that pride acts as a moderator within the relationship between high victimisation and worse general physical health. A linear model was set up to examine the moderating effect of pride on the relationship between victimisation and general health scores. The model was investigated for the assumptions of linear models, which were all violated. Transformations made to the data to correct this violation were unsuccessful. The moderation analysis was thus run despite violating the assumptions using the untransformed data[1]. This overall

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[1] This choice was done given in agreement with the thesis supervisor due to the constraints of time and knowledge level linked to a bachelor thesis.

moderation model was not statistically significant in predicting general physical health scores ($F(3, 133) = 0.85$, $p = .468$).

Table 5

The linear regression analysis results between Health, Victimisation and Pride for the SGMY

dataset (n = 137)

Term	b^*	*SE*	*t*	*p*	95% CI
(Intercept)	2.48	0.56	4.39	< .001***	[1.36, 3.59]
Victimisation	-0.11	0.30	-0.38	.708	[-0.71, 0.48]
Pride	0.15	0.17	0.93	.353	[-0.17, 0.48]
Victimisation × Pride	0.03	0.09	0.32	.752	[-0.15, 0.20]

Note. Results are computed using a linear model despite violation of assumptions.

The main effect within this model shows that victimisation did not significantly predict the scores of general physical health within the SGMY sample (see Table 5). Additionally, the interaction effect between victimisation and pride was insignificant ($b^* = 0.03$, $SE = 0.09$, $t = 0.32$, p = .752), indicating that pride was not a moderator within this linear model. Therefore, hypothesis 2b is rejected.

4.2.3 Additional Analysis

Besides the analysis of our linear model, Spearman's non-parametric correlation test was run to assess the relationship between verbal victimisation (Vict_1) and general physical health, as verbal victimisation was the item with the highest victimisation prevalence. The two variables had a weak positive significant correlation ($r(137) = 0.17$, $p = .048$).

4.3 Sexual Minorities

The hypothesis (h1) that higher victimisation levels are associated with worse general physical health was also assessed for only sexual minorities. A linear model was set up with sexual victimisation as the independent variable and general physical health as the dependent variable. This linear model was tested for assumptions to assess whether the model was sound. The assumption checking shows that the model violated linear relationships, showing multicollinearity, heteroscedasticity, and a non-normal distribution of residuals. No significant correlation was found between the two variables, $\rho = 0.09$, $p = .292$, with 134 degrees of freedom. Therefore, the first hypothesis of this study was rejected.

4.3.1 Interaction Effect – Self-Acceptance

Hypothesis 2a was also tested for the subgroup of sexual minorities. For this test, 132 individual responses were used. Hypothesis 2 assumes that self-acceptance moderates the relationship between high victimisation and worse general physical health. A linear model was set up with sexual minority victimisation as the independent variable, general physical health as the dependent variable and Self-Acceptance of sexuality as the moderator variable. The model was investigated for the assumptions of linear models, which showed that the data violated the assumptions of linear relationships, multicollinearity, and homoscedasticity. Transformations made to the data to correct this violation were unsuccessful. The moderation analysis was thus run despite violating the assumptions. The overall moderation model was statistically significant in predicting general physical health scores ($R^2 = 0.07$, $F(3,130) = 3.30$, $p = .023$). See Table 6 for the results of the linear model.

Table 6

The linear regression analysis results between Health, Victimisation and Self-Acceptance for the sexual minority subset (n = 134).

Term	b*	SE	t	p	95% CI
(Intercept)	0.80	0.80	1.01	.316	[-0.78, 2.38]
Victimisation	0.44	0.50	0.88	.380	[-0.55, 1.44]
Self-Acceptance (Sexuality)	0.50	0.18	2.77	.006**	[0.14, 0.86]
Victimisation × Self-Acceptance	-0.11	0.11	-0.93	.354	[-0.33, 0.12]

Note. Results are computed using a linear model despite violation of assumptions.

The independent variable victimisation ($b* = 0.44$, *SE* $= 0.50$, $t = 0.88$, $p = .380$) did not significantly predict the scores of general physical health within the sexual minority sample. On the other hand, the direct effect of self-acceptance of sexuality did significantly predict the sexual minorities' general physical health scores ($b* = 0.50$, *SE* $= 0.18$, $t = 2.76$, p $= .006$). Higher scores of self-acceptance of sexuality are linked to significantly higher scores of general physical health, and lower scores of self-acceptance of sexuality are linked to significantly lower scores of general physical health and vice versa.

Additionally, the interaction effect between victimisation and self-acceptance was found to be not significant ($b* = -.11$, *SE* $= .11$, $t = -.93$, $p = .354$), indicating that self-acceptance did not act as a moderator within this linear model. Therefore, hypothesis 2a is rejected for sexual minorities as well.

4.3.2 Interaction Effect - Pride

Hypothesis 2b assumes that pride would moderate the association between high victimisation and lower general physical health, and this model was also run for sexual minorities. However, the linear regression model built with victimisation as the independent variable, general

physical health as the dependent variable, and sexuality pride as the moderator did not meet the necessary assumptions of linear models. Despite multiple attempts to rectify these assumptions through various data transformations, the assumptions continued to be violated. Therefore, the moderation analysis was run despite the violation of assumptions. See Table 7 for an overview of all results.

Table 7

The linear regression analysis results between Health, Victimisation and Pride for the sexual minority subset (n = 130).

Term	b^*	SE	t	p	95% CI
(Intercept)	2.40	0.60	4.02	$< .001^{***}$	[1.22, 3.58]
Victimisation	-0.08	0.31	-0.26	.795	[-0.70, 0.54]
Pride (Sexuality)	0.17	0.17	0.98	.327	[-0.17, 0.52]
Victimisation × Pride	0.02	0.09	0.21	.838	[-0.16, 0.20]

Note. Results are computed using a linear model despite violation of assumptions. Three observations were deleted due to missingness.

The overall moderation model did not show any statistical significance in predicting general physical health scores ($F(3,130) = 0,81$, $p = .4896$); the model was not robust in explaining the variability in general physical health based on the provided predictors.

The main effects observed within this model for victimisation ($b^* = -0.08$, $SE = 0.31$, $t = -0.26$, $p = .795$) and sexuality pride ($b^* = 0.17$, $SE = 0.17$, $t = 0.98$, $p = .327$) did not significantly predict general physical health scores within the sexual minority sample.

Furthermore, the interaction effect between victimisation and sexuality pride was not significant ($b* = 0.02$, $SE = 0.09$, $t = 0.21$, $p = .838$), suggesting that sexuality pride did not act as a moderator within this linear model. Hypothesis H2b can, therefore, be rejected for sexual minorities as well.

4.4 Gender Minorities

The hypothesis (h1) that higher victimisation levels are associated with worse general physical health was also assessed for all gender minorities (including those who were also intersectional sexual minorities). A linear model was set up with gender victimisation as the independent variable and general physical health as the dependent variable. This linear model was tested for assumptions to assess whether the model is sound. The assumption checking shows that the model violated linear relationships, showing multicollinearity, heteroscedasticity, and non-normal distribution of residuals. A Shapiro test found no significant correlation between the two variables ($\rho = -0.02$, $p = .847$, with 64 degrees of freedom). Therefore, the first hypothesis of this study was rejected.

4.4.1 Interaction Effect - Self-Acceptance

Hypothesis 2a was also tested for the subgroup of gender minorities. For this test, all people, 66 individual responses were used. Hypothesis 2a assumes that self-acceptance moderates the relationship between high victimisation and worse general physical health. A linear model was set up with sexual minority victimisation as the independent variable, general physical health as the dependent variable and self-acceptance of gender identity as the moderator variable. The assumptions were checked, and all were violated. Transformations made to the data to correct this violation were unsuccessful. The moderation analysis was thus run despite violating the

assumptions. The overall moderation model was not statistically significant in predicting general physical health scores ($F(3,64) = 0.74$, $p = .531$, see Table 8).

Table 8

The linear regression analysis results between Health, Victimisation and Self-Acceptance of Gender Identity for the gender minority subset (n = 67)

Term	$b*$	SE	t	p	95% CI
(Intercept)	4.21	0.88	4.79	$< .001***$	[2.46, 5.97]
Victimisation	-0.51	0.44	-1.16	.250	[-1.40, 0.37]
Self-Acceptance (Gender)	-0.26	0.22	-1.18	.241	[-0.70, 0.18]
Victimisation × Self-Acceptance	0.11	0.11	0.99	.327	[-0.11, 0.34]

Note. Results are computed using a linear model despite violation of assumptions.

The independent variable victimisation ($b* = -0.51$, $SE = 0.44$, $t = -1.16$, $p = .250$) did not significantly predict the scores of general physical health within the gender minority sample. Additionally, the direct effect of self-acceptance of gender identity did not significantly predict the gender minorities' general physical health scores ($b* = -0.26$, $SE = 0.22$, $t = -1.18$, $p = .327$).

Additionally, the interaction effect between victimisation and self-acceptance was found to be not significant ($b* = 0.11$, $SE = 0.11$, $t = -0.99$, $p = .327$), indicating that self-acceptance did not act as a moderator within this linear model. Therefore, hypothesis 2a is rejected for gender minorities.

4.4.2 Interaction effect - Pride

Hypothesis 2b assumes that pride would moderate the association between high victimisation and lower general physical health, and this model was also run for gender minorities.

However, the linear regression model built with victimisation as the independent variable, general physical health as the dependent variable, and gender pride as the moderator did not meet the necessary assumptions of linear models. Despite multiple attempts to fix these violations through data transformations (e.g., logarithmic, square root, cubing), the assumptions continued to be violated. Therefore, the moderation analysis was run without transformation (see Table 9).

Table 9

The linear regression analysis results between Health, Victimisation and Pride for the gender minority subset (n = 67)

Term	$b*$	SE	t	p	95% CI
(Intercept)	3.02	0.71	4.22	< .001***	[1.59, 4.45]
Victimisation	-0.10	0.37	-0.27	.788	[-0.85, 0.65]
Pride (Gender)	0.06	0.21	0.30	.766	[-0.35, 0.48]
Victimisation × Pride	0.00	0.10	0.04	.967	[-0.21, 0.21]

The overall moderation model did not show any statistical significance in predicting general physical health scores ($F(3,62) = 0.38$, $p = .772$); the model was not robust in explaining the variability in general physical health based on the provided predictors.

The main effects observed within this model for victimisation ($b* = -0.10$, $SE = 0.37$, $t = -0.27$, p = .788) and gender pride ($b* = 0.06$, $SE = 0.21$, $t = 0.30$, $p = .766$) did not significantly predict general physical health scores within the gender minority sample.

Furthermore, the interaction effect between victimisation and gender pride was not significant ($b* = .004$, $SE = 0.15$, $t = .04$, $p = .967$), suggesting that gender pride did not act as a

moderator within this linear model. Hypothesis H2b can, therefore, be rejected for gender minorities as well.

5. Discussion

The results of this research have provided insight into the role of different factors for sexual and gender minority youth in an unexpected way. In the current SGMY sample, there is no significant relationship between overall victimisation and self-rated general physical health. Hypothesis 1, " Victimisation experienced by Sexual and Gender Minorities Youth negatively relates to their general self-rated health." is therefore rejected. This trend continued when the data was analysed specifically for sexual minorities and gender minorities separately. No significant relationship between victimisation and physical health was found during these analyses either.

This follows the results of Frost et al. (2015), whose meta-analysis found that minority stressors and physical health were not significantly linked when using self-appraised and subjective measuring methods. On the other hand, the results do not fit with the general minority stress theory (Meyer, 2003), which postulates that minority stressors, such as victimisation, negatively impact the physical health of SGM. This theory has been widely supported by evidence-based research for not only sexual minorities (Frost & Meyer, 2023; Meyer, 2015) but also gender minorities (Testa et al., 2015) and SGM youth (Goldbach & Gibbs, 2017). One reason for the deviation in these results might be the use of self-appraisal scales. As mentioned, self-appraised scales have found less significant relationships (Frost et al., 2015) within the scope of minority stress research. Self-appraisal scales measuring stressful events (such as our victimisation scale) risk not adequately distinguishing between minor and major stressors and their emotional impacts and struggle to quantify stressors accurately (Dohrenwend, 2006). The complexity of events,

subjectivity, recall bias, and a lack of standardisation within the field make these types of scales less reliable in measuring stress events (Dohrenwend, 2006).

The lack of reliability for scales measuring stressful events can be confirmed within the current research, with the adapted victimisation scale for SGM having a Cronbach's alpha of .66. Cronbach's alpha measures a scale's internal consistency and reliability, with higher values indicating higher consistency between items, with an alpha of .7 being considered the benchmark for adequate reliability (Streiner, 2003). While this lower reliability could also be created due to a less homogeneous sample (as explained in Streiner, 2003), the rest of the scales used in this research all showed an alpha coefficient > .79. This means we are inclined to assume that the issue lies with the victimisation scale, not with the potentially heterogeneous sample. These results can be considered preliminary, and more research is needed to assess how reliable the use of self-appraisal victimisation scales is for the SGMY population.

Additionally, the victimisation results (mean = 1.15, SE = 0.11) might have contributed to the lack of significant relationships found during this study. Despite the low mean score, 66% of our sample experienced at least one victimisation event in their life. The presence of victimisation in this study is almost double the 36% prevalence in Williams et al. (2021)'s systematic overview on SGMY between ages 12 and 25. The prevalent but low score of overall victimisation events might be explained by the Testa et al. (2015) scale methodology, which treats victimisation as a continuous value. Commonly, continuous scales use a "cut-off" to determine if an effect is present and when it is not. The Beck Depression Inventory 2 (BDI-II), as an example, considers scores between 0-13 to indicate no to minimal depression and 29-63 to indicate severe depression (Beck Depression Inventory, 2023). Contrastingly, the victimisation scale lacks this type of typology and measures whether the individual has gone through victimisation events during their life. Future

research could instead attempt to treat the victimisation scale as a binary scale (0 = victimisation absent, 1 = victimisation present), as this would fit the measured variable better and acknowledge the impact of a singular victimisation event.

Furthermore, individuals' responses were coded as "1" for each item they responded with "Yes" to. This led to items such as "I have been verbally harassed or teased because of my queer identity or expression" having the same weight as items like "I have had sexual contact with someone against my will because of my queer identity or expression" despite one being about verbal assault and the other one about rape. While both experiences of victimisation can strongly impact an individual, treating them equally dismisses essential differences between the two experiences. This might have led to our victimisation scale not accurately capturing victimisation in the current sample. Future studies could explore alternative coding methods that capture victimisation more accurately or try to establish a new victimisation scale that considers the different impacts and intensities of victimisation events and potentially the self-rated impact they leave on the individual.

Further investigation into the sample shows that a large majority of the sample responded positively to the item "I have been verbally harassed or teased because of my queer identity or expression", the only item that investigates verbal victimisation. Other items investigate different facets of victimisation, such as threats of physical or property harm or physical and sexual assault, which were not as prevalent. It is possible that our sample is less exposed to these physical versions of assault, or that the scale does not capture these facets adequately. One explanation for the lower mean victimisation score is that our sample was predominantly Dutch, and the victimisation scale was established with participants exclusively from the US and Canada (Testa et al., 2015). The USA and the Netherlands have had different histories with sexual and gender minority acceptance,

with the Netherlands having adopted pro-LGBT+ stances and achieving marriage equality much earlier (2001) than the USA (2015) ('Same-sex marriage', 2023). The GMS-R scale by Testa et al. (2015) has not been fully validated using Dutch datasets, requiring further research for validating and adapting the GMS-R scale for a (primarily) Dutch population, including changes in wording that allow victimisation to be captured in the cultural context of Dutch society.

As verbal victimisation was prevalent in our sample, a supplementary analysis was run between verbal victimisation and self-rated physical health. This analysis showed a weak positive correlation between the two variables, which contradicts current research. Minority Stress Theory postulates that stressors, such as victimisation, negatively impact well-being and physical health (Meyer et al., 2003) and longitudinal data shows that SGMY generally has lower health scores than the general population (Huijnk et al., 2022), meaning that our positive correlation is opposite to the previous findings. A quick literature search did not provide any papers that support this result either. This result was notable because it was only marginally significant ($p = 0.0479$). The usual significance cut-off for psychology is a p-value of 0.05, meaning that rounding would remove the significance of this result. With such marginal significance, the risk of it being a type 1 error, a false positive conclusion, should not be excluded. Using replication to investigate this outlier within the current SGMY research could shed more light on this result.

The second hypothesis, which examined the moderating role of pride and self-acceptance in the relationship between SGMY victimisation and general self-rated health, was also rejected. The moderation analyses for the SGMY group, gender minority, and sexual minority sub-groups did not have statistically significant results. All models, except the self-acceptance moderation model for sexual minorities, were not statistically significant in predicting general physical health scores. All hypotheses within the current research can, therefore, be rejected. The lack of a main

effect between victimisation and physical health has already been discussed under the results of Hypothesis 1.

Hypothesis 2 was rooted in existing research regarding the moderating effect of SM or GM pride and self-acceptance on mental health, and the literature search provided little to no indication whether this moderating effect applied to SGMY and whether it translated to physical health. Investigating this research gap was the aim of our study. The preliminary findings from our study suggest that pride and self-acceptance are not moderating variables, as the interaction terms were non-significant in both model analyses, and no relationship was found between health and victimisation, meaning there was no relationship to be moderated. In our sample, no significant correlations were found between victimisation and pride and self-acceptance, but this might be linked to how victimisation was conceptualised in our research. It is recommended to attempt to replicate these results, as the literature generally does consider self-acceptance and pride resilience factors. Research could investigate whether any relationship between self-acceptance or pride and victimisation exists, using previous recommendations of scales fit for the population it is measuring. Unfortunately, this was not possible within the timeframe of the current research.

It is worth noting that while self-acceptance did not act as a moderator variable, it was significantly related to physical health for the SGMY sample and the subset of sexual minorities. Individuals with higher self-acceptance indicated significantly higher levels of self-rated physical health and vice versa. The longitudinal findings of Ryff et al. (2015), which found that individuals with high general self-acceptance scored higher on their self-rated general health across ten years, are consistent with the results of this study. Ng et al. (2020) additionally found that high self-acceptance was generally linked to longevity and overall better physical health. Our study confirms that the self-acceptance of SOGI is also positively linked to self-rated physical health for the

general SGMY population and the subgroup of sexual minority youth. This is the only significant result within this study, making it essential to note. This result is promising for future research and potential interventions within the LGBT+ sphere, as it could be used within interventions targeting physical health. This is necessary, as SGMY are found to generally show worse physical and psychosomatic health and report twice as many psychological issues (Dowshen & Ford, 2019; Huijnk et al., 2022; James et al., 2016).

The relationship between self-rated physical health and self-acceptance was not found for gender minorities. Generally, the self-acceptance of gender identity scores was lower than the self-acceptance of sexuality and SGMY self-acceptance scores. This is potentially linked to the increasing amount of anti-trans legislation (Wareham, n.d.) and limited access to health care for trans individuals. In 2023 alone, over 589 bills were introduced in the USA, attacking the fundamental rights of gender minorities. This number reflects a trend that has spread beyond the USA into Europe, making the results of our study surprising, as one would expect the impact to be reflected in the physical health of gender minorities. Additionally, self-rated physical health scores were similar for gender minorities and sexual minorities. Investigating the differences between the GM and SM scores was beyond this project's timeframe. Therefore, further research is needed to explain the differences in the relationship between self-acceptance and physical health for sexual and gender minorities. Furthermore, research should investigate whether the systematic discrimination of gender minorities in their country and across the world leads to lower self-acceptance of gender minorities.

Additionally, our research found that self-acceptance was significantly correlated with pride for the whole sample and the two subgroups of gender and sexual minorities. Self-acceptance is a significant part of a person's feelings of self-worth and can be defined as recognising and

embracing all of one's (positive and negative) traits (MA, 2018). It can be argued that having self-acceptance regarding one's sexual orientation and gender identity (SOGI) is the first step to being able to feel pride towards one's SOGI. Further research might want to be done on how exactly the two concepts interlink and affect each other and how this affects the relationship between self-acceptance of SOGI and general physical health.

A strength of the current research is the attention to detail while using the questionnaires. Using the DiMIS (Stadler et al., 2023) to collect demographic information of participants and using the most recent terminology available within research regarding SGMY and sexual orientation and gender identity (SOGI) sets a precedent for future research to do the same. Giving people the option to self-identify and cross off which identities they feel the most comfortable with is a standard lacking within research but is heavily encouraged nowadays (Stadler et al., 2023). The usefulness of the diversified options was made clear by the results of our demographic questionnaire, shedding insightful light on the diversity of identities and multiple labels individuals used to describe themselves when allowed to do so. The "self-identify" option for sexuality was used mostly to indicate that they identified as "queer" (n = 17), which also suggests that adding queer as a sexuality option for the DiMIS would be useful.

The attention to detail is also shown within the adaptation of questionnaires of the variables. Most of the scales used within the research were adapted scales originally meant for either sexual or gender minorities, as it was not possible for us to find scales that measured the variables using the language, including all SGMs. The changes in the wording were made in consultation with an extended research team within the Think With Pride community of the University of Twente and were partly pilot-tested by this team. Pride and self-acceptance were measured separately for gender and sexual minorities, with adapted wordings for each. This was done under the assumption

that people with multiple inter-sectional identities can potentially feel a different level of self-acceptance and pride for each of their separate identities and that the recall for these items was high due to them being internal resilience factors. The victimisation scale, on the other hand, was given to all SGMY in the same format. This choice was made under the assumption that victimisation events, as they are external, were harder to pinpoint to the specific gender or sexual minority status. This follows the consensus held by researchers such as Dohrenwend (2006), which warns about self-appraisal scales measuring stressful events running the risk of not adequately distinguishing between minor and major stressors and struggling to quantify stressors accurately.

Using changed scales to fit the measured population was a first step towards fulfilling the need for thoroughly tested scales for the SGM(Y) population. Nonetheless, further research needs to be conducted to assess whether the assumed difference between SM and GM in pride and self-acceptance exists, as running the analysis was not within the limits of a bachelor thesis. Additionally, further research could attempt to establish base scales for the SGM population, with tested alternative wordings for sub-groups for relevant variables such as victimisation, self-acceptance and pride and investigating whether sub-groups of gender and sexual minorities have significantly different scores.

While this research has had significant findings, it is not without limitations. A major limitation of existing research which impacted this study is disparities and changes in language within this research topic. The interchangeable use of terms such as SGM, LGB, and LGBTQ+, as well as the evolving terminology within gender minorities research, from transsexual to gender minorities, made the literature search complicated. Furthermore, older studies' limited scope might have captured only part of the SGM community due to their more confined definitions of sexual orientation and gender identity (SOGI) during the search for participants, leaving out part of the

community (Soled et al., 2022; Suen et al., 2020). Tools such as the DiMIS (Stadler et al., 2023) as a standard demographic questionnaire within the field of SGMY research would close the gap currently present within the field and contribute to the strive for reusable and replicable research.

The limited scope of older research is seen within the minority stress research, which initially solely focused on lesbian and gay research (Meyer, 2003), only including multiple attraction sexualities and gender minorities (Testa et al., 2015) at a later point. This lack of diversity was later attempted to be rectified by Meyer et al. (2021) and Williams et al. (2021) in their scoping reviews, and current research recommends and strives for a broader definition of SOGI (Suen et al., 2020). Nonetheless, research results used to draft our hypotheses might, in retrospect, not be fully representative of the sample investigated within our research.

Furthermore, data limitations surfaced during the analysis. The dataset available was skewed, with the victimisation scores being skewed positively. Additionally, all established linear models violated the assumptions of a linear model. The violated assumption of linearity meant that the models would not adequately predict the data (Berg, 2023). The heteroscedasticity and the dependence of errors, which were also found in our data, lead to biased or inefficient estimates of the models (Berg, 2023). Recommended data transformations (logarithmic, squared, square root and cubing) were attempted to rectify the violated assumptions and skewness without success. Most non-parametric tests and analyses that exist to test these skewed data were beyond the scope of knowledge for a bachelor's student. Therefore, the data was run using linear models in their original form despite violating assumptions, leading to possibly erroneous results. If this data is reused, researchers should attempt to run a Box-Cox transformation of data, which is made to solve strongly skewed data efficiently (Box & Cox, 1964).

To conclude, the research achieved its goal of shedding more clarity into the role of embracing the self in general physical health and the role of minority stress while also uncovering several more questions that need to be answered. All hypotheses were rejected, meaning that victimisation does not significantly affect general physical health for the current sample, and self-acceptance and pride did not act as moderators within this relationship. The current research also gives several recommendations for future research, such as the need for validation of the Testa et al. (2015) GMS-R scale (as well as minority stress scales) for the SGM(Y) population and a Dutch population, as well as research gaps within the relationships of pride and self-acceptance and how these two factors interact with victimisation and how they differ for sexual minorities and gender minorities.

Lastly, our research contributed valuable insight into the importance of self-acceptance of SOGI for young sexual and gender minorities. This research can be used as a foundational basis to investigate how to use self-acceptance-based interventions, such as Acceptance and Commitment Therapy (ACT), to improve the health disparities currently present for SGMY. Additionally, this highlights a resilience factor investigated heavily within the general population and its potential to be adapted for SGMY-specific research and interventions.

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Appendix A

Information Sheet

Welcome to the research project "Embracing Identity: Exploring the Role of Pride and Self-Acceptance in Minority Stress and Health among Sexual and Gender Minority Youth". Participating involves completing a survey with several questionnaires and will take a maximum of 20 minutes.

The aim of the current study is to understand the influence of the factors Pride and Self-Acceptance on the impact of sexual and gender minority-related victimisation (i.e. violence, verbal/physical assault, and similar discrimination).

We welcome your participation if you are a sexual or gender minority and between the ages of 16 and 27. Additionally, you need to be able to understand English.

A sexual and gender minority (SGM) is defined as: people whose biological sex, sexuality, gender identity and/or gender expression depart from majority norms. The concept of sexual and gender minorities includes considerable diversity as well as a multiplicity of identities and behaviours, including lesbians, gay men, bisexuals and transgender people (LGBT); intersex people (people whose bodies do not have typically male or female sex characteristics due to variations in chromosomes, gonads, sex hormones and/or genitals); gender non-conforming people who may not see themselves as transgender; and people involved in same-sex relations who may not see themselves as lesbian, gay or bisexual, possibly preferring another word to self-identify (such as polyamorous, queer or two-spirited) or possibly preferring no label at all (O'Malley et al., 2018).

By participating in this study, you will get the benefit of earning credit points in the Sona system. Furthermore, your participation will provide valuable information to our understanding of the factors that protect SGM from the negative effect of victimisation on physical health.

Your participation in this project is completely voluntary and you may cease participation at any time. If you agree to participate, you can withdraw from participation at any time during the survey. The study of sexual and gender minority-related victimisation might evoke negative

feelings in you, in which case you are encouraged to take a break from the survey. Additionally, resources will be provided at the end of the survey for anyone who wishes to reach out for support.

The information and responses you provide will be treated confidentially and will be accessible only to members of the research team. Your responses to the questionnaire will form part of a large data response set, which will initially be stored by Qualtrics. Research data from Qualtrics will be downloaded and stored securely on the University of Twente Google Drive or OneDrive allocation. Data will be password-protected and accessible only to members of the research team. As required by the University of Twente, all research data (survey responses and analysis) will be retained in a password-protected electronic file for a minimum period of five years before being destroyed.

Research results will be reported in an academic thesis and may also be disseminated via journal articles and/or conference presentations.

Please contact the research team members if you have any questions or require further information about the project.

M. Alec Zirnheld, Bachelor Candidate

Faculty of Behaviour, Management and Social Science,

University of Twente

Dr Anne van Dongen, Supervisor

Faculty of Behaviour, Management and Social Science, Psychology, Health, and Technology,

University of Twente

No automatic feedback will be given to you about the results of this study. However, if you participate and wish to receive a summary of the research results once the study has been completed, you can email the research team members.

The University of Twente conducts research in accordance with the National Statement on Ethical Conduct in Human Research. If you do have any concerns or complaints about the

ethical conduct of the project you may contact the Manager, Research Ethics on
ethicscommittee-bms@utwente.nl. This project has received ethical approval from the
University of Twente Human Research Ethics Committee BMS/Domain Humanities and Social
Science.

Appendix B

Consent Form

1. I have read and understood the participant information sheet. I know that I may ask for more information about the project as it goes on.

2. I understand that this study contains responding to several survey questionnaires.

3. I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.

4. I understand that my participation will be included in a large data set and immediately anonymised.

5. I understand that thinking about victimisation might evoke negative feelings in me and that I may take a break/or stop my participation in the survey.

6. I understand that personal information collected about me that can identify me, such as [e.g. my email address or my identity code], will not be shared beyond the study team and immediately be de-identified once the data collection has been completed.

7. I understand that information I provided will be used for the academic thesis, and may also be disseminated via journal articles and/or conference presentations. I understand that a strictly de-identified version of the research data may be published on the online open data repository Open Science Framework (https://osf.io/).

8. I understand that all information will be treated in the strictest confidence and used for research purposes only. I understand that I will not be personally identified on any reports from this project.

9. I assign and waive all claims to patents, commercial exploitation, property or any material or products which may form part of or arise from this study.

10. I understand that this research will comply with the National Health and Medical Research Council's National Statement on Ethical Conduct in Research Involving Humans and with the privacy politics of the University of Twente.

11. I understand that this study has been approved by the University of Twente Human Research Ethics Committee and that if I have any questions I can contact them via ethicscommittee-bms@utwente.nl.

Do you agree with the above-mentioned information?

- Yes
- No

Appendix C

R Studio Code

Find downloadable R-Code via the following link:

https://github.com/aleclouisz/BachelorThesis_SGMY.git

2024-01-22

```r
1.  #Codes Bachelor Thesis on SGMY
2.  library(gvlma)
3.  library(haven)
4.  library(psych)
5.  library(foreign)
6.  library(tidyverse)
7.  library(tidyr)
8.  library(dplyr)
9.  library(janitor)
10. library(broom)
11. library(vtree)
12. library (openxlsx)
13. library(car)
14. library(readxl)
15. library(writexl)
16. library (modelr)
17. library (ltm)
18. library(ggplot2)
19. library(Hmisc)
20. library(reshape)
21. library(ez)
22. library(dplyr)
23. library(lme4)
24. library(lmtest)
25.
26. # PRE ANALYSE #
27.
28. setwd("/Users/aleczirnheld/Desktop/University/Thesis/Dataset")
29.
30. data <- read_excel("Data30112023.2.xlsx")
31.
32. ## delete unnecessary colums ##
33. data$StartDate <- NULL
34. data$EndDate <- NULL
35. data$Status <- NULL
36. data$IPAddress <- NULL
37. data$`Duration (in seconds)` <- NULL
38. data$Finished <- NULL
39. data$RecordedDate <- NULL
40. #data$ResponseId <- NULL
41. data$DistributionChannel <- NULL
42. data$UserLanguage <- NULL
43. data$Q_RecaptchaScore <- NULL
44. data$ExternalReference <- NULL
45. data$Q_StraightliningQuestions <- NULL
46. data$Q_StraightliningCount <- NULL
47. data$Q_StraightliningPercentage <- NULL
48. data$id <- NULL
49. data$Q_UnansweredPercentage <- NULL
50. data$Q_UnansweredQuestions <- NULL
51.
```

```r
52. #delete unnecessary row
53. datagood <- data [-c (1), ]
54.
55. # Removing people who are CISHETALLO, <16, >27 and/or answered NO to the
56. data1 <- datagood[datagood$Consent != "2.0",]
57. data1 <- data1[data1$Age >= "16.0",]
58. data1 <- data1[data1$Age <= "27.0",]
59. data1 <- subset(data1,!(Gender == 1 & Sex == 2.0 & Sexuality == 1))
60. data1 <- subset(data1,!(Gender == 2 & Sex == 1.0 & Sexuality == 1))
61. data1$Progress <- as.numeric(as.character(data1$Progress))
62. ProgressNotDone <- data1[data1$Progress < 69,]
63. data1 <- data1[data1$Progress >= 70,]
64. data1 <- data1 %>%
65.   filter_all(any_vars(!is.na(.)))
66.
67. #Examining Progress not Done
68. ProgressNotDone <- ProgressNotDone %>%
69.   filter_all(any_vars(!is.na(.)))
70.
71.
72. ####### SASI #######
73. data2 <- data1
74. #Combine SASI Sexuality Scores
75. SASI <- data1[, c(19:23)]
76. #Turn SASI into numeric scores
77. SASI <- lapply(SASI, function(x)
78.   as.numeric(as.character(x)))
79. SASI = data.frame(SASI)
80.
81. #Calculate mean and Sum sasi scores
82. data2$SASI_mean <- rowMeans(SASI)
83. data2$SASI_sum <- rowSums(SASI)
84.
85.
86. #chronbach's Alpha for SASI
87. psych::alpha(SASI)
88. #raw_alpha= 0,88
89.
90. ####### SAGI #######
91.
92. SAGI <- data1[, c(40:44)]
93.
94. SAGI <- lapply(SAGI, function(x)
95.   as.numeric(as.character(x)))
96. SAGI = data.frame(SAGI)
97.
98. data2$SAGI_mean <- rowMeans(SAGI)
99. data2$SAGI_sum <- rowSums(SAGI)
100.
101.
102.
103. #chronbach's Alpha for
104. psych::alpha(SAGI)
105. #rawalpha
106.
107.
108. ####### Victimisation #######
109. #Sum All Victimisation into final score from 0-6
110. Victim <- data1[, c(13:18)]
111. Victim <- lapply(Victim, function(x)
112.   as.numeric(as.character(x)))
113. Victim = data.frame(Victim)
114.
115. data2$Victim_sum <- rowSums(Victim)
116.
```

```
117.
118.  #chronbach's Alpha for Victimisation
119.  psych::alpha(Victim)
120.  #raw_alpha: 0,66
121.  #std alpha: 0,69
122.
123.
124.  ####### SPRide #######
125.  SPride <- data1[, c(24:31)]
126.  SPride <- lapply(SPride, function(x)
127.    as.numeric(as.character(x)))
128.  SPride = data.frame(SPride)
129.
130.  data2$SPride_mean <- rowMeans(SPride)
131.  data2$SPride_sum <- rowSums(SPride)
132.
133.
134.  #chronbach's Alpha
135.  psych::alpha(SPride)
136.
137.  ####### GPride #######
138.
139.  GPride <- data1[, c(32:39)]
140.  GPride <- lapply(GPride, function(x)
141.    as.numeric(as.character(x)))
142.  GPride = data.frame(GPride)
143.
144.  data2$GPride_mean <- rowMeans(GPride)
145.  data2$GPride_sum <- rowSums(GPride)
146.
147.  summary(GPride)
148.
149.
150.  #chronbach's Alpha
151.  psych::alpha(GPride)
152.
153.  ####### SF_12 #######
154.  #Rename SF-12 Column
155.  names(data2)[names(data2) == "SF-12"] <- "SF_12"
156.  # Convert 'SF_12' column to numeric
157.  data2$SF_12 <- as.numeric(as.character(data2$SF_12))
158.
159.  ####### SGM Self-Acceptance #######
160.  # Function to mean the sum rows of two columns if both are filled, otherwise copy the value
161.  mean_or_copy <- function(row) {
162.    if (!is.na(row["SASI_mean"]) && !is.na(row["SAGI_mean"])) {
163.      return((as.numeric(row["SASI_mean"]) + as.numeric(row["SAGI_mean"])) / 2)
164.    } else if (!is.na(row["SASI_mean"])) {
165.      return(as.numeric(row["SASI_mean"]))
166.    } else if (!is.na(row["SAGI_mean"])) {
167.      return(as.numeric(row["SAGI_mean"]))
168.    } else {
169.      return(NA)
170.    }
171.  }
172.
173.  # Apply the function row-wise
174.  SASISGM <- apply(data2, 1, mean_or_copy)
175.  data2$SASISGM <- SASISGM
176.
177.
178.  ####### SGM Pride #######
179.  # Function to sum rows of two columns if both are filled, otherwise copy the value
180.  mean_or_copy2 <- function(row) {
181.    if (!is.na(row["SPride_mean"]) && !is.na(row["GPride_mean"])) {
```

```r
182.        return((as.numeric(row["SPride_mean"]) + as.numeric(row["GPride_mean"])) / 2)
183.    } else if (!is.na(row["SPride_mean"])) {
184.        return(as.numeric(row["SPride_mean"]))
185.    } else if (!is.na(row["GPride_mean"])) {
186.        return(as.numeric(row["GPride_mean"]))
187.    } else {
188.        return(NA)
189.    }
190. }
191.
192. # Apply the function row-wise
193. PrideSGM <- apply(data2, 1, mean_or_copy2)
194. data2$PrideSGM <- PrideSGM
195.
196. ####Creating Clean Dataset#####
197. CleanData <- data2 %>%
198.    dplyr::select(
199.        ResponseId,
200.        Age,
201.        Gender,
202.        Sexuality,
203.        Sex,
204.        Education,
205.        Country,
206.        SF_12,
207.        Victim_sum,
208.        SASI_mean,
209.        SASI_sum,
210.        SAGI_mean,
211.        SAGI_sum,
212.        SASISGM,
213.        PrideSGM,
214.        GPride_mean,
215.        GPride_sum,
216.        SPride_mean,
217.        SPride_sum,
218.        Vict_1,
219.        Vict_2,
220.        Vict_3,
221.        Vict_4,
222.        Vict_5,
223.        Vict_6
224.    )
225.
226. CleanData <- CleanData %>%
227.    filter(!is.na(SASISGM) &
228.              !is.na(SF_12) & !is.na(Victim_sum) & !is.na(PrideSGM))
229.
230. CleanData$Sex <- as.numeric(as.character(CleanData$Sex))
231.
232. #Assigning groups to people #1 are ONLY gender minorities, #2 are only sexual minority, #3 are
sexual AND gender minority.
233. CleanData <- CleanData %>%
234.    mutate(Group = ifelse(
235.        !is.na(SPride_mean) & !is.na(GPride_mean),
236.        3,
237.        ifelse(!is.na(SPride_mean), 2,
238.               ifelse(!is.na(GPride_mean), 1, NA))
239.    ))
240.
241. table(CleanData$Group)
242.
243. ####DEMOGRAPHICS####
244. ## Gender Columns ##
```

```
245. #1=Female, 2= Male, 3= Cis, 4 =Dyadic, 4 = Inter, 6 =Nonbindary, 7 = Questioning, 8 = trans, 9
= self-identify, 10 = not answer
246. Gender <- CleanData %>%
247.   separate_rows(Gender, sep = ",") %>%
248.   count(Gender) %>%
249.   mutate(Percentage = n / sum(n) * 100)
250.
251. ## Sexuality Columns ##
252. #1 hetero, 2 asexual, 3bisexual, 4 gay, 5 lesbian, 6 pansexual, 7 questionning, 8 self
identify, 9 not answer
253. Sexuality <- CleanData %>%
254.   separate_rows(Sexuality, sep = ",") %>%
255.   count(Sexuality) %>%
256.   mutate(Percentage = n / sum(n) * 100)
257.
258. ## Sex Columns ##
259. Sex <- CleanData %>% count(Sex) %>%
260.   mutate(percentage = n / sum(n) * 100)
261.
262. #COuntry , 122 = Netherlands, 137 =Poland, 187 = USA, 185 = UK, 31 = Canada, 61 = France
263. Country <- CleanData %>% count(Country) %>%
264.   mutate(percentage = n / sum(n) * 100)
265.
266. ## Age ##
267. CleanData$Age <- as.numeric(as.character(CleanData$Age))
268. sd(CleanData$Age, na.rm = TRUE)
269. #2.723668
270. mean(CleanData$Age, na.rm = TRUE)
271. # 21.38211
272. summary(CleanData$Age)
273.
274. ## Education ##
275. #1 Some primary school, 2 completed primary, 3 some secondary school, 4 completed secondary, 5
vocational or similar, 6 some university (no degree), 7 bachelors degree, 8 graduate or professional
degree ((MA, MS, MBA, PhD, JD, MD, DDS etc.), 9 prefer not to say
276. Education <- CleanData %>% count(Education) %>%
277.   mutate(percentage = n / sum(n) * 100)
278.
279. #Making Subgroups
280. OnlyVariablesSGMY <-
281.   CleanData[, c("SF_12", "Victim_sum", "SASISGM", "PrideSGM", "Age")]
282. OnlyVariablesSM <-
283.   CleanData[, c("SF_12", "Victim_sum", "SASI_mean", "SPride_mean", "Age")]
284. OnlyVariablesGM <-
285.   CleanData[, c("SF_12", "Victim_sum", "SAGI_mean", "GPride_mean", "Age")]
286. OnlyVariablesGM <- na.omit(OnlyVariablesGM)
287. OnlyVariablesSM <- na.omit(OnlyVariablesSM)
288. OnlyVariablesSGMY <- na.omit(OnlyVariablesSGMY)
289.
290. #### DESCRIPTIVE DATA FOR ALL SCALES ####
291. #SASI S
292.
293. CleanData %>% summarise(
294.   mean = mean(SASI_mean, na.rm = TRUE),
295.   sd = sd(SASI_mean, na.rm = TRUE),
296.   min = min(SASI_mean, na.rm = TRUE),
297.   max = max(SASI_mean, na.rm = TRUE)
298. ) %>%
299.   mutate(
300.     n = sum(!is.na(CleanData$SASI_mean)),
301.     # Calculate number of non-NA values
302.     se = sd / sqrt(n),
303.     lower_ci = mean - qt(0.975, df = n - 1) * se,
304.     # Calculate lower CI
305.     upper_ci = mean + qt(0.975, df = n - 1) * se    # Calculate upper CI
```

```
306.    )
307.
308. hist(CleanData$SASI_mean, main = "SASI")
309. shapiro.test(CleanData$SASI_mean) #not normal
310.
311. #SAGI
312.
313. CleanData %>% summarise(
314.    mean = mean(SAGI_mean, na.rm = TRUE),
315.    sd = sd(SAGI_mean, na.rm = TRUE),
316.    min = min(SAGI_mean, na.rm = TRUE),
317.    max = max(SAGI_mean, na.rm = TRUE)
318. ) %>%
319.    mutate(
320.      n = sum(!is.na(CleanData$SAGI_mean)),
321.      # Calculate number of non-NA values
322.      se = sd / sqrt(n),
323.      lower_ci = mean - qt(0.975, df = n - 1) * se,
324.      # Calculate lower CI
325.      upper_ci = mean + qt(0.975, df = n - 1) * se   # Calculate upper CI
326.    )
327.
328. hist(CleanData$SAGI_mean, main = "SAGI")
329. shapiro.test(CleanData$SAGI_mean) #Not normally distributed
330.
331. #Self-Acceptance SGM
332. CleanData %>% summarise(
333.    mean = mean(SASISGM, na.rm = TRUE),
334.    sd = sd(SASISGM, na.rm = TRUE),
335.    min = min(SASISGM, na.rm = TRUE),
336.    max = max(SASISGM, na.rm = TRUE)
337. ) %>%
338.    mutate(
339.      n = sum(!is.na(CleanData$SASISGM)),
340.      # Calculate number of non-NA values
341.      se = sd / sqrt(n),
342.      lower_ci = mean - qt(0.975, df = n - 1) * se,
343.      # Calculate lower CI
344.      upper_ci = mean + qt(0.975, df = n - 1) * se   # Calculate upper CI
345.    )
346.
347. hist(CleanData$SASISGM, main = "SASI SGM")
348. shapiro.test(CleanData$SASISGM) #Not normally distributed
349.
350.
351. #VICTIM SGM
352. CleanData %>% summarise(
353.    mean = mean(Victim_sum, na.rm = TRUE),
354.    sd = sd(Victim_sum, na.rm = TRUE),
355.    min = min(Victim_sum, na.rm = TRUE),
356.    max = max(Victim_sum, na.rm = TRUE)
357. ) %>%
358.    mutate(
359.      n = sum(!is.na(CleanData$Victim_sum)),
360.      # Calculate number of non-NA values
361.      se = sd / sqrt(n),
362.      lower_ci = mean - qt(0.975, df = n - 1) * se,
363.      # Calculate lower CI
364.      upper_ci = mean + qt(0.975, df = n - 1) * se   # Calculate upper CI
365.    )
366.
367. result <- CleanData %>%
368.    count(Victim_sum) %>%
369.    mutate(Percentage = n / sum(n) * 100)
370.
```

```
371. hist(CleanData$Victim_sum, main = "Victimisation Score")
372. shapiro.test(CleanData$Victim_sum) #Not normally distributed
373.
374. hist(Victim$Vict_1, main = "Victim")
375.
376.
377. #Trial - APA7 Conform Graphs
378. library(tidyverse)
379.
380. CleanData %>%
381.   ggplot(aes(x = factor(Victim_sum), y = ..count..)) +
382.   geom_bar(width = 0.7, color = "black") +
383.   scale_y_continuous(expand = expansion(0), limits = c(0, 60)) +
384.   scale_x_discrete(breaks = c(0, 1, 2, 3, 4, 5, 6),
385.                    labels = c(0, 1, 2, 3, 4, 5, 6)) +  # Specify x-axis breaks and labels
386.   labs(x = "Victimisation Score",
387.        y = "Frequency",
388.        title = "Victimisation") +
389.   geom_text(
390.     stat = "count",
391.     aes(label = ..count..),
392.     vjust = 1.5,
393.     colour = "white"
394.   ) +
395.   theme(
396.     plot.margin = unit(c(1, 1, 1, 1), "cm"),
397.     panel.background = element_blank(),
398.     plot.title = element_text(
399.       size = 22,
400.       face = "bold",
401.       hjust = 0.5,
402.       margin = margin(b = 15)
403.     ),
404.     axis.line = element_line(color = "black"),
405.     axis.title = element_text(size = 22, color = "black",
406.                               face = "bold"),
407.     axis.text = element_text(size = 22, color = "black"),
408.     axis.text.x = element_text(margin = margin(t = 10)),
409.     axis.text.y = element_text(size = 17),
410.     axis.title.y = element_text(margin = margin(r = 10)),
411.     axis.ticks.x = element_blank(),
412.     legend.position = c(0.20, 0.8),
413.     legend.background = element_rect(color = "black"),
414.     legend.text = element_text(size = 15),
415.     legend.margin = margin(
416.       t = 5,
417.       l = 5,
418.       r = 5,
419.       b = 5
420.     ),
421.     legend.key = element_rect(color = NA, fill = NA)
422.   ) +
423.   guides(fill = guide_legend(
424.     keywidth = 1.2,
425.     keyheight = 1.2,
426.     default.unit = "cm"
427.   ))
428.
429.
430. ggsave(
431.   "VictimisationBarChart.png",
432.   width = 10,
433.   height = 7,
434.   dpi = 300
435. )
```

```
436.
437.
438. # Reshape the data into long format
439. victim_long <-
440.    CleanData[, c("Vict_1", "Vict_2", "Vict_3", "Vict_4", "Vict_5", "Vict_6")]
441. victim_long <-
442.    gather(victim_long, key = "Variable", value = "Value", Vict_1:Vict_6)
443. str(victim_long$Value)
444.
445.
446.
447. # Create histograms using ggplot2 with custom variable labels
448.
449. library(dplyr)
450.
451. victim_long <- victim_long %>%
452.    mutate(Variable = gsub("Vict_", "Item ", Variable))
453.
454. ggplot(victim_long, aes(x = Value, fill = Variable)) +
455.    geom_bar(position = position_dodge(width = 0.5), alpha = 0.6) +
456.    geom_text(
457.      stat = "count",
458.      aes(label = ..count..),
459.      vjust = 1.2,
460.      color = "black"
461.    ) +
462.    scale_x_discrete(labels = c("No", "Yes")) +  # Use scale_x_discrete for discrete x-axis
463.    facet_wrap( ~ Variable, scales = "free") +
464.    labs(title = "Histograms of Victimisation Items",
465.         x = "Presence of Victimisation") +
466.    theme(
467.      plot.margin = unit(c(0.5, 0.5, 0.5, 0.5), "cm"),
468.      panel.background = element_blank(),
469.      plot.title = element_text(
470.        size = 22,
471.        face = "bold",
472.        hjust = 0.5,
473.        margin = margin(b = 15)
474.      ),
475.      axis.line = element_line(color = "black"),
476.      axis.title = element_text(size = 22, color = "black", face = "bold"),
477.      axis.text = element_text(size = 22, color = "black"),
478.      axis.text.x = element_text(margin = margin(t = 10)),
479.      axis.text.y = element_text(size = 17),
480.      axis.title.y = element_text(margin = margin(r = 10)),
481.      axis.ticks.x = element_blank(),
482.      legend.background = element_rect(color = "black"),
483.      legend.text = element_text(size = 15),
484.      legend.margin = margin(
485.        t = 5,
486.        l = 5,
487.        r = 5,
488.        b = 5
489.      ),
490.      legend.key = element_rect(color = NA, fill = NA)
491.    ) +
492.    guides(fill = guide_legend(
493.      keywidth = 1.2,
494.      keyheight = 1.2,
495.      default.unit = "cm"
496.    ))
497.
498.
499. ggsave(
500.    "VictimisationItemsChart.png",
```

```
501.   width = 10,
502.   height = 7,
503.   dpi = 300
504. )
505.
506.
507. #SFH SGM
508.
509. CleanData %>% summarise(
510.   mean = mean(SF_12, na.rm = TRUE),
511.   sd = sd(SF_12, na.rm = TRUE),
512.   min = min(SF_12, na.rm = TRUE),
513.   max = max(SF_12, na.rm = TRUE)
514. ) %>%
515.   mutate(
516.     n = sum(!is.na(CleanData$SF_12)),
517.     # Calculate number of non-NA values
518.     se = sd / sqrt(n),
519.     lower_ci = mean - qt(0.975, df = n - 1) * se,
520.     # Calculate lower CI
521.     upper_ci = mean + qt(0.975, df = n - 1) * se    # Calculate upper CI
522.   )
523.
524. hist(CleanData$SF_12, main = "Histogram of Scale Variable")
525. shapiro.test(CleanData$SF_12) #Not normally distributed
526.
527.
528. #SF_12 GM
529. OnlyVariablesGM %>% summarise(
530.   mean = mean(SF_12, na.rm = TRUE),
531.   sd = sd(SF_12, na.rm = TRUE),
532.   min = min(SF_12, na.rm = TRUE),
533.   max = max(SF_12, na.rm = TRUE)
534. ) %>%
535.   mutate(
536.     n = sum(!is.na(OnlyVariablesGM$SF_12)),
537.     # Calculate number of non-NA values
538.     se = sd / sqrt(n),
539.     lower_ci = mean - qt(0.975, df = n - 1) * se,
540.     # Calculate lower CI
541.     upper_ci = mean + qt(0.975, df = n - 1) * se    # Calculate upper CI
542.   )
543.
544. hist(OnlyVariablesGM$SF_12, main = "Histogram of Scale Variable")
545.
546.
547. #SF_12 SM
548. OnlyVariablesSM %>% summarise(
549.   mean = mean(SF_12, na.rm = TRUE),
550.   sd = sd(SF_12, na.rm = TRUE),
551.   min = min(SF_12, na.rm = TRUE),
552.   max = max(SF_12, na.rm = TRUE)
553. ) %>%
554.   mutate(
555.     n = sum(!is.na(OnlyVariablesSM$SF_12)),
556.     # Calculate number of non-NA values
557.     se = sd / sqrt(n),
558.     lower_ci = mean - qt(0.975, df = n - 1) * se,
559.     # Calculate lower CI
560.     upper_ci = mean + qt(0.975, df = n - 1) * se    # Calculate upper CI
561.   )
562.
563. hist(OnlyVariablesSM$SF_12, main = "Histogram of Scale Variable")
564.
565. #Pride Sexuality
```

```
566. CleanData %>% summarise(
567.   mean = mean(SPride_mean, na.rm = TRUE),
568.   sd = sd(SPride_mean, na.rm = TRUE),
569.   min = min(SPride_mean, na.rm = TRUE),
570.   max = max(SPride_mean, na.rm = TRUE)
571. ) %>%
572.   mutate(
573.     n = sum(!is.na(CleanData$SPride_mean)),
574.     # Calculate number of non-NA values
575.     se = sd / sqrt(n),
576.     lower_ci = mean - qt(0.975, df = n - 1) * se,
577.     # Calculate lower CI
578.     upper_ci = mean + qt(0.975, df = n - 1) * se   # Calculate upper CI
579.   )
580.
581. hist(CleanData$SPride_mean, main = "Sexuality Pride")
582. shapiro.test(CleanData$SPride_mean) #Marginally Not normally distributed
583.
584.
585. #Pride Gender
586. CleanData %>% summarise(
587.   mean = mean(GPride_mean, na.rm = TRUE),
588.   sd = sd(GPride_mean, na.rm = TRUE),
589.   min = min(GPride_mean, na.rm = TRUE),
590.   max = max(GPride_mean, na.rm = TRUE)
591. ) %>%
592.   mutate(
593.     n = sum(!is.na(CleanData$GPride_mean)),
594.     # Calculate number of non-NA values
595.     se = sd / sqrt(n),
596.     lower_ci = mean - qt(0.975, df = n - 1) * se,
597.     # Calculate lower CI
598.     upper_ci = mean + qt(0.975, df = n - 1) * se   # Calculate upper CI
599.   )
600.
601. hist(CleanData$GPride_mean, main = "Gender Pride")
602. shapiro.test(CleanData$GPride_mean) #Normally distributed
603.
604. #Pride SGM
605.
606. CleanData %>% summarise(
607.   mean = mean(PrideSGM, na.rm = TRUE),
608.   sd = sd(PrideSGM, na.rm = TRUE),
609.   min = min(PrideSGM, na.rm = TRUE),
610.   max = max(PrideSGM, na.rm = TRUE)
611. ) %>%
612.   mutate(
613.     n = sum(!is.na(CleanData$PrideSGM)),
614.     # Calculate number of non-NA values
615.     se = sd / sqrt(n),
616.     lower_ci = mean - qt(0.975, df = n - 1) * se,
617.     # Calculate lower CI
618.     upper_ci = mean + qt(0.975, df = n - 1) * se   # Calculate upper CI
619.   )
620.
621. hist(CleanData$PrideSGM, main = "SGM Pride")
622. shapiro.test(CleanData$PrideSGM) #Not normally distributed
623.
624.
625. library(ggcorrplot)
626. library(corrplot)
627.
628. #SGMY
629.
630. SGMY.cor = rcorr(as.matrix(OnlyVariablesSGMY), type = "spearman")
```

```
631.
632. ggcorrplot(SGMY.cor$r)
633. corrplot(SGMY.cor$r)
634.
635. #SM
636.
637. SMY.cor = rcorr(as.matrix(OnlyVariablesSM), type = "spearman")
638. ggcorrplot(SMY.cor$r)
639. corrplot(SMY.cor$r)
640.
641. #GM
642.
643. GMY.cor = rcorr(as.matrix(OnlyVariablesGM), type = "spearman")
644. ggcorrplot(GMY.cor$r)
645. corrplot(GMY.cor$r)
646.
647. #### Hypothesis 1 Testing ####
648. VictHealth <- CleanData %>% lm(SF_12 ~ Victim_sum, data = .)
649. summary(VictHealth) #Not Significant, p=0,8
650.
651. ##Linear relationships #VIOLATED
652. #Model1 -> NOT LINEAR
653. plot(VictHealth, which = 1)
654.
655. ## 2nd No Multicollinearity = independence tested using Durbin Watson Test. p = 0,08, meaning
that they are independent.
656. durbinWatsonTest(VictHealth)
657.
658. ## 3rd Normality of residuals #VIOLATED
659. plot(VictHealth, which = 2)
660.
661. shapiro.test(resid(VictHealth)) #p-value = 4.075e-07, meaning that the residuals vary
significantly from a normal distribution
662. hist(resid(VictHealth))
663.
664. ##4th Homoscedasticity (Equal/Constant Variance) => NOT CONSTANT
665.
666. # Residuals vs. Fitted plot
667. plot(VictHealth, which = 1) #Residuals vs. Fitted Values => SUPER VIOLATED
668. plot(VictHealth, which = 3) #using Square Root of Standardized Residuals => SUPER VIOLATED
669.
670. ncvTest(VictHealth)
671. bptest(VictHealth)
672.
673. library(Hmisc)
674. rcorr(CleanData$SF_12, CleanData$Victim_sum, type = "spearman")
675. cor.test(CleanData$SF_12,
676.          CleanData$Victim_sum,
677.          method = "spearman",
678.          exact = FALSE) #Not Significant
679.
680. #### H2a - Evaluating Hypothesis of SF_12 and SASI + Victim for SGMY ####
681. VictSASI <- CleanData %>% lm(SF_12 ~ Victim_sum * SASISGM, data = .)
682. summary(VictSASI)
683. tidy(VictSASI)
684.
685.
686. #Assumptions
687.
688. CleanData <- CleanData %>%
689.    add_residuals(VictSASI)
690. CleanData <- CleanData %>%
691.    add_predictions(VictSASI)
692.
693. ##Linear relationships #VIOLATED
```

```
694. plot(VictSASI, which = 1)
695.
696. CleanData %>%
697.   add_residuals(VictSASI) %>%
698.   ggplot(aes(x = SASISGM, y = resid)) +
699.   geom_point()
700.
701.
702. ## 2nd No Multicollinearity = independence tested using Durbin Watson Test. p = 0,01, meaning
that they are not.
703. durbinWatsonTest(VictSASI)
704. vif(VictSASI)
705. #VIF values greater than 5 or 10 could indicate multicollinearity issues among predictors.
706. #Victimisation has VIF higher than 5 & 10
707.
708.
709. ## 3rd Normality of residuals #Skewed slightly to the right
710. plot(VictSASI, which = 2)
711.
712. hist(resid(VictSASI)) #SKEWED SLIGHTLY to the right
713.
714. CleanData %>%
715.   add_residuals(VictSASI) %>%
716.   ggplot(aes(x = resid)) +
717.   geom_histogram()
718.
719. shapiro.test(resid(VictSASI)) #p = 0,008, meaning that the residuals vary significantly from a
normal distribution
720.
721.
722. ##4th Homoscedasticity (Equal/Constant Variance) => NOT CONSTANT
723.
724. # Residuals vs. Fitted plot
725. plot(VictSASI, which = 1) #Residuals vs. Fitted Values
726. plot(VictSASI, which = 3) #using Square Root of Standardized Residuals => SUPER VIOLATED
727.
728. ncvTest(VictSASI)
729. bptest(VictSASI)
730.
731.
732. #### H2b - Evaluating Hypothesis for SGMY ####
733. VictPride <-
734.   CleanData %>% lm(SF_12 ~ Victim_sum + PrideSGM + Victim_sum:PrideSGM, data = .)
735. summary(VictPride)
736.
737. VictPride %>%  tidy()
738.
739.
740. #Assumptions
741.
742. CleanData <- CleanData %>%
743.   add_residuals(VictPride)
744. CleanData <- CleanData %>%
745.   add_predictions(VictPride)
746.
747. ##Linear relationships #VIOLATED
748. plot(VictPride, which = 1)
749.
750. CleanData %>%
751.   add_residuals(VictPride) %>%
752.   ggplot(aes(x = SASISGM, y = resid)) +
753.   geom_point()
754.
755.
```

```
756. ## 2nd No Multicollinearity = independence tested using Durbin Watson Test. p = 0,09, meaning
that they are.-> victsum is >20
757. durbinWatsonTest(VictPride)
758. vif(VictPride)
759. #VIF values greater than 5 or 10 could indicate multicollinearity issues among predictors.
760. #Victimisation has VIF higher than 5 & 10
761.
762.
763. ## 3rd Normality of residuals #Skewed slightly to the right
764. plot(VictPride, which = 2)
765.
766. hist(resid(VictPride)) #SKEWED SLIGHTLY to the right
767.
768. CleanData %>%
769.   add_residuals(VictPride) %>%
770.   ggplot(aes(x = resid)) +
771.   geom_histogram()
772.
773. shapiro.test(resid(VictPride)) #p = 0,001, meaning that the residuals vary significantly from
a normal distribution
774.
775.
776. ##4th Homoscedasticity (Equal/Constant Variance) => NOT CONSTANT
777.
778. # Residuals vs. Fitted plot
779. plot(VictPride, which = 1) #Residuals vs. Fitted Values
780. plot(VictPride, which = 3) #using Square Root of Standardized Residuals => SUPER VIOLATED
781.
782. ncvTest(VictPride)#p=0,4
783. bptest(VictPride) #p=0,07
784.
785.
786. #### H2a - Evaluating SEXUALI MINTORIY Hypothesis of SF_12 and SASI + Victim for SGMY ####
787. VictSASIS <-
788.   CleanData %>% lm(SF_12 ~ Victim_sum * SASI_mean, data = .)
789. summary(VictSASIS)
790. tidy(VictSASIS)
791.
792. #Assumptions
793.
794. CleanData <- CleanData %>%
795.   add_residuals(VictSASIS)
796. CleanData <- CleanData %>%
797.   add_predictions(VictSASIS)
798.
799. ##Linear relationships #VIOLATED
800. plot(VictSASIS, which = 1)
801.
802. CleanData %>%
803.   add_residuals(VictSASIS) %>%
804.   ggplot(aes(x = SASI_mean, y = resid)) +
805.   geom_point()
806.
807.
808. ## 2nd No Multicollinearity = independence tested using Durbin Watson Test. p = 0,01, meaning
that they are not.
809. durbinWatsonTest(VictSASIS)
810. vif(VictSASIS)
811. #VIF values greater than 5 or 10 could indicate multicollinearity issues among predictors.
812. #Victimisation has VIF higher than 5 & 10
813.
814.
815. ## 3rd Normality of residuals #Skewed slightly to the right, but okay
816. plot(VictSASIS, which = 2)
817.
```

```
818. hist(resid(VictSASIS)) #SKEWED SLIGHTLY to the right
819.
820. CleanData %>%
821.   add_residuals(VictSASIS) %>%
822.   ggplot(aes(x = resid)) +
823.   geom_histogram()
824.
825. shapiro.test(resid(VictSASIS)) #p = 0,152, meaning that the residuals DO NOT significantly
from a normal distribution
826.
827.
828. ##4th Homoscedasticity (Equal/Constant Variance) => NOT CONSTANT
829.
830. # Residuals vs. Fitted plot
831. plot(VictSASIS, which = 1) #Residuals vs. Fitted Values
832. plot(VictSASIS, which = 3) #using Square Root of Standardized Residuals => SUPER VIOLATED
833.
834. ncvTest(VictSASIS)
835. bptest(VictSASIS)
836.
837.
838. #### H2b - Evaluating Hypothesis Pride for SEXUALITY ####
839. VictPrideS <-
840.   CleanData %>% lm(SF_12 ~ Victim_sum + SPride_mean + Victim_sum:SPride_mean, data = .)
841. summary(VictPrideS)
842.
843. VictPrideS %>%  tidy()
844.
845.
846. #Assumptions
847.
848. CleanData <- CleanData %>%
849.   add_residuals(VictPrideS)
850. CleanData <- CleanData %>%
851.   add_predictions(VictPrideS)
852.
853. ##Linear relationships #VIOLATED
854. plot(VictPrideS, which = 1)
855.
856. CleanData %>%
857.   add_residuals(VictPrideS) %>%
858.   ggplot(aes(x = SASI_mean, y = resid)) +
859.   geom_point()
860.
861.
862. ## 2nd No Multicollinearity = independence tested using Durbin Watson Test. p = 0,09, meaning
that they are.-> victsum is >20
863. durbinWatsonTest(VictPrideS)
864. vif(VictPrideS)
865. #VIF values greater than 5 or 10 could indicate multicollinearity issues among predictors.
866. #Victimisation has VIF higher than 5 & 10
867.
868.
869. ## 3rd Normality of residuals #Skewed slightly to the left
870. plot(VictPrideS, which = 2)
871.
872. hist(resid(VictPrideS)) #SKEWED SLIGHTLY to the right
873.
874. CleanData %>%
875.   add_residuals(VictPrideS) %>%
876.   ggplot(aes(x = resid)) +
877.   geom_histogram()
878.
879. shapiro.test(resid(VictPrideS)) #p = 0,002, meaning that the residuals vary significantly from
a normal distribution
```

```r
880.
881.
882. ##4th Homoscedasticity (Equal/Constant Variance) => NOT CONSTANT
883.
884. # Residuals vs. Fitted plot
885. plot(VictPrideS, which = 1) #Residuals vs. Fitted Values
886. plot(VictPrideS, which = 3) #using Square Root of Standardized Residuals => SUPER VIOLATED
887.
888. ncvTest(VictPrideS)#p=0,66
889. bptest(VictPrideS) #p=0,07
890.
891.
892.
893. #### H2a - Evaluating Gender MINTORIY Hypothesis of SF_12 and SASI + Victim for SGMY ####
894. VictSASIG <-
895.    CleanData %>% lm(SF_12 ~ Victim_sum * SAGI_mean, data = .)
896. summary(VictSASIG)
897. tidy(VictSASIG)
898.
899. #Assumptions
900.
901. CleanData <- CleanData %>%
902.    add_residuals(VictSASIG)
903. CleanData <- CleanData %>%
904.    add_predictions(VictSASIG)
905.
906. ##Linear relationships #VIOLATED
907. plot(VictSASIG, which = 1)
908.
909. CleanData %>%
910.    add_residuals(VictSASIG) %>%
911.    ggplot(aes(x = SAGI_mean, y = resid)) +
912.    geom_point()
913.
914.
915. ## 2nd No Multicollinearity = independence tested using Durbin Watson Test. p = 0,01, meaning
that they are not.
916. durbinWatsonTest(VictSASIG)
917. vif(VictSASIG)
918. #VIF values greater than 5 or 10 could indicate multicollinearity issues among predictors.
919. #Victimisation has VIF higher than 5 & 10
920.
921.
922. ## 3rd Normality of residuals #Skewed slightly to the right, but okay
923. plot(VictSASIG, which = 2)
924.
925. hist(resid(VictSASIG)) #SKEWED SLIGHTLY to the right
926.
927. CleanData %>%
928.    add_residuals(VictSASIG) %>%
929.    ggplot(aes(x = resid)) +
930.    geom_histogram()
931.
932. shapiro.test(resid(VictSASIG)) #p = 0,152, meaning that the residuals DO NOT significantly
from a normal distribution
933.
934.
935. ##4th Homoscedasticity (Equal/Constant Variance) => NOT CONSTANT
936.
937. # Residuals vs. Fitted plot
938. plot(VictSASIG, which = 1) #Residuals vs. Fitted Values
939. plot(VictSASIG, which = 3) #using Square Root of Standardized Residuals => SUPER VIOLATED
940.
941. ncvTest(VictSASIG)
942. bptest(VictSASIG)
```

```r
943.
944.
945. #### H2b - Evaluating Pride Hypothesis for Gender ####
946. VictPrideG <-
947.    CleanData %>% lm(SF_12 ~ Victim_sum + GPride_mean + Victim_sum:GPride_mean, data = .)
948. summary(VictPrideG)
949.
950. VictPrideG %>%  tidy()
951.
952.
953. #Assumptions
954.
955. CleanData <- CleanData %>%
956.    add_residuals(VictPrideG)
957. CleanData <- CleanData %>%
958.    add_predictions(VictPrideG)
959.
960. ##Linear relationships #VIOLATED
961. plot(VictPrideG, which = 1)
962.
963. CleanData %>%
964.    add_residuals(VictPrideG) %>%
965.    ggplot(aes(x = GPride_mean, y = resid)) +
966.    geom_point()
967.
968.
969. ## 2nd No Multicollinearity = independence tested using Durbin Watson Test. p = 0,09, meaning
that they are.-> victsum is >20
970. durbinWatsonTest(VictPrideG)
971. vif(VictPrideG)
972. #VIF values greater than 5 or 10 could indicate multicollinearity issues among predictors.
973. #Victimisation has VIF higher than 5 & 10
974.
975.
976. ## 3rd Normality of residuals #Skewed slightly to the left
977. plot(VictPrideG, which = 2)
978.
979. hist(resid(VictPrideG)) #SKEWED SLIGHTLY to the right
980.
981. CleanData %>%
982.    add_residuals(VictPrideG) %>%
983.    ggplot(aes(x = resid)) +
984.    geom_histogram()
985.
986. shapiro.test(resid(VictPrideG)) #p = 0,002, meaning that the residuals vary significantly from
a normal distribution
987.
988.
989. ##4th Homoscedasticity (Equal/Constant Variance) => NOT CONSTANT
990.
991. # Residuals vs. Fitted plot
992. plot(VictPrideG, which = 1) #Residuals vs. Fitted Values
993. plot(VictPrideG, which = 3) #using Square Root of Standardized Residuals => SUPER VIOLATED
994.
995. ncvTest(VictPrideG)#p=0,7
996. bptest(VictPrideG) #p=0,06
997.
998. #### Hypothesis 1 Testing = WITH Vitc1####
999. VictVerb <- CleanData %>% lm(SF_12 ~ factor(Vict_1), data = .)
1000. summary(VictVerb) #Not Significant, p=0,8
1001.
1002. ##Linear relationships #VIOLATED
1003. #Model1 -> NOT LINEAR
1004. plot(VictVerb, which = 1)
1005.
```

```
1006. ## 2nd No Multicollinearity = independence tested using Durbin Watson Test. p = 0,08, meaning
that they are independent.
1007. durbinWatsonTest(VictVerb)
1008.
1009. ## 3rd Normality of residuals #VIOLATED
1010. plot(VictVerb, which = 2)
1011.
1012. shapiro.test(resid(VictVerb)) #p-value = 4.075e-07, meaning that the residuals vary
significantly from a normal distribution
1013. hist(resid(VictVerb))
1014.
1015. ##4th Homoscedasticity (Equal/Constant Variance) => NOT CONSTANT
1016.
1017. # Residuals vs. Fitted plot
1018. plot(VictVerb, which = 1) #Residuals vs. Fitted Values => SUPER VIOLATED
1019. plot(VictVerb, which = 3) #using Square Root of Standardized Residuals => SUPER VIOLATED
1020.
1021. ncvTest(VictVerb)
1022. bptest(VictVerb)
1023.
1024. library(Hmisc)
1025. rcorr(CleanData$SF_12, CleanData$Vict_1, type = "spearman")
1026.
1027.
```

Appendix D

Qualtrics Questionnaire

Age
How old are you currently?
Gender
Regarding gender identity, which of the following options best describes how you think of yourself? (check as many as apply)

Female (1), Male (2), Cis (3), Dyadic (4), Inter (5), Non-Binary (6), Questioning (7) Trans (8), Prefer to Self-identify: (9), Prefer not to answer (10)

Sex
What sex were you assigned at birth? (For example, on your birth certificate)
This question is asked to help identify people who identify with a gender different from their sex assigned at birth.

Male (1), Female (2), Intersex (3), Don't Know (4), Prefer not to answer (5)

Sexuality
Regarding sexual orientation, which of the following options best describes how you think of yourself? (check as many as apply)

Heterosexual (1), Asexual (2), Bisexual (3), Gay (4), Lesbian (5), Pansexual (6), Questioning (7), Another sexual orientation, please specify: (8), Prefer not to answer (9)

Education What is the highest level of education you have completed?

Some primary school (1), Completed primary (2), Some secondary school (3), Completed secondary school (4), Vocational or Similar (5), Some university but no degree (6), University Bachelors Degree (7), Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS etc.) (8), Prefer not to say (9)

Country In which country were you born?

▼ Afghanistan (1) ... Zimbabwe (195)

End of Block: DiMIS

Start of Block: Health

SF-12 In general would you say your physical health is:

Poor (1), Fair (2), Good (3), Very Good (4), Excellent (5)

SGM Vict The following text refers to your **"queer identity or expression"**. This refers to your identity and expression as a sexual and/or gender minority.
 Please check all that apply (for example, you may check both after age 18 and in the past year if both are true).

	Never (0)	Yes, before age 18 (1)	Yes, after age 18 (1)	Yes, in the past year (1)
I have been verbally harassed or teased because of my queer identity or expression. (1)	☐	☐	☐	☐
I have been threatened with being outed or blackmailed because of my queer identity or expression. (2)	☐	☐	☐	☐
I have had my personal property damaged because of my queer identity or expression. (3)	☐	☐	☐	☐
I have been threatened with physical harm because of my queer identity or expression. (4)	☐	☐	☐	☐
I have been pushed, shoved, hit, or had something thrown at me because of my queer identity or expression. (5)	☐	☐	☐	☐
I have had sexual contact with someone against my will because of my queer identity or expression. (6)	☐	☐	☐	☐

End of Block: SGMVictimisation

Start of Block: SexualityIntro

SText The following questionnaires will ask questions regarding your sexuality and experiences linked to your sexuality. Make sure to read the questions carefully and answer them as truthfully as possible. If two options are correct, chose the one that most represents your current experience.

"Sexuality" refers to your sexual attractions to people of any sex. "Being a sexual minority" refers to your identity as

a non-straight inidivudal, your identity linked to your sexuality.

SASI Please read the following statements carefully and indicate how true each statement is for you.

	Totally untrue for me (1)	Somewhat untrue for me (2)	Neither true, nor untrue (3)	Somewhat true for me (4)	Totally true for me (5)
I accept my sexuality (1)	○	○	○	○	○
I am comfortable with my sexuality (2)	○	○	○	○	○
I accept all parts of my sexuality (3)	○	○	○	○	○
I feel at peace with my sexuality (4)	○	○	○	○	○
I have come to terms with my sexuality (5)	○	○	○	○	○

SPride Please inidicate how much you agree with the following statements.

	Strongly Disagree (1)	Disagree (2)	Neither Agree, or Disagree (3)	Agree (4)	Strongly Agree (5)
My sexuality makes me feel special and unique. (1)	○	○	○	○	○
It is okay for me to have people know that I am a sexual minority. (2)	○	○	○	○	○
I have no problem talking about my sexuality to almost anyone. (3)	○	○	○	○	○
It is a gift that I am a sexual minority. (4)	○	○	○	○	○
I am like other people but I am also special because of my sexuality. (5)	○	○	○	○	○
I am proud to be a person who is a sexual minority. (6)	○	○	○	○	○
I am comfortable revealing to others that I am a sexual minority. (7)	○	○	○	○	○
I'd rather have people know everything and accept me with my sexuality (8)	○	○	○	○	○

End of Block: SPride

Start of Block: Gender Intro

IntroTxtG The following questionnaires will ask questions regarding your gender identity and expression and experiences linked to your gender identity and expression. Make sure to read the questions carefully and answer them as truthfully as possible. If two options are correct, chose the one that most represents your current experience.

In this survey "gender expression" means how masculine/feminine/androgynous one appears to the world based on many factors such as mannerisms, dress, personality, etc. "Being a gender minority" refers to your identity linked to your gender.

Gender Pride Please inidicate how much you agree with the following statement

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
My gender identity or expression makes me feel special and unique (1)	○	○	○	○	○
It is okay for me to have people know that I am a gender minority. (2)	○	○	○	○	○
I have no problem talking about my gender identity and gender history to almost anyone (3)	○	○	○	○	○
It is a gift that I am a gender minority. (4)	○	○	○	○	○
I am like other people but I am also special because I am a gender minority. (5)	○	○	○	○	○
I am proud to be a person who is a gender minority. (6)	○	○	○	○	○
I am comfortable revealing to others that I am a gender minority. (7)	○	○	○	○	○
I'd rather have people know everything and accept me with my gender identity and gender history. (8)	○	○	○	○	○

SAGI Please read the following statements carefully and indicate how true each statement is for you.

	Totally untrue for me (1)	Somewhat untrue for me (2)	Neither true, nor untrue (3)	Somewhat true for me (4)	Totally true for me (5)
I accept my gender identity or expression (1)	○	○	○	○	○
I am comfortable with my gender identity or expression (2)	○	○	○	○	○
I accept all parts of my gender identity or expression (3)	○	○	○	○	○
I feel at peace with my gender identity or expression (4)	○	○	○	○	○
I have come to terms with my gender identity or expression (5)	○	○	○	○	○