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Sexual preferences, shame, psychological and physical health: What's the relationship?

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Abstract

This study investigated the empirical generalizability of the relationship between sexual minorities Lesbian, Gay, Bisexual and Transsexual (LGBT), shame and mental and physical health. It was an extension of existing studies and inspired by the framework of Mereish and Poteat's study in 2015, "A Relational Model of Sexual Minority Mental and Physical Health". First hypothesis was that there would be a positive correlation between individuals with non-heterosexual sexual preference and shame. The second hypothesis was that there would be a positive correlation between psychological and physical poor health within the minority groups. Sexual preferences were examined as the third hypothesis, exploring the compatibility between self-identified sexual preferences and assigned sexuality using the Kinsey scale. 144 Participants aged from 18 to 70 years, participated in an online survey design where they were asked 87 questions. While this study could not confirm the two first hypotheses, a positive correlation between mental distress and physical symptoms, and a significant correlation between the self-identified and the sexual preferences identified by the Kinsey Scale were found. Implications of these findings were discussed with reference to the complexity of measuring sexual minorities groups, the influence of written instructions, choice of instruments and suggestions are made for future research.

Keywords: sexual minority groups, heterosexuals, sexual preferences, Kinsey scale, shame, mental health, physical health

Sammanfattning

I denna studie undersöktes de sexuella minoritetsgrupperna, Lesbiska, Homosexuella, Bisexuella, Transsexuella (LGBT), relation med mental och fysiska ohälsa. Studien var inspirerad av Mereish och Poteat's forskning i 2015, "A Relational Model of Sexual Minority Mental and Physical Health", och fokuserade på förhållandet mellan skam, psykologisk och fysisk ohälsa. Inom studien undersöktes även sexuella preferenser med användning av Kinsey-skalan för att titta närmare på beteende i samband med identifierad sexualitet. Den första hypotesen var att det skulle finnas en relation mellan icke-heterosexuella sexuella preferenser och skam, den andra hypotesen var att det skulle finnas en positiv relation mellan psykologisk och fysiologisk ohälsa inom de sexuella minoritetsgrupperna. Den tredje hypotesen antog en korrelation mellan Kinsey skalan och sexuella preferenser. Dessa hypoteser testades via en nät enkät. 144 deltagare mellan 18 och 70 års ålder deltog och svarade på 87 frågor. Denna undersökning kunde inte bekräfta de två hypoteserna. Dock fanns ett sammanband mellan psykologiska symptom och fysiska symptom och en positiv korrelation mellan själv-identifierad sexualitet och identifierad sexualitet av Kinsey-skalan. Slutsatser och svårigheter diskuteras med reflektion över mätinstrument, och komplexitet av att mäta sexuella minoritetsgrupper gällande olika faktorer. Även förslag till framtida studier och fokus över vikten av potentiella faktorer och effekter såsom instruktioner och val av instrument.

Nyckelord: sexuella minoritetsgrupper, heterosexuella, sexuella preferenser, Kinsey-skala, skam, psykologisk ohälsa, fysisk ohälsa

Introduction

Research findings have previously found a relationship between mental and physical health disparities due to emotions and factors such as depression, social-bonds and relationships although all people to a certain degree in their lives experience stressors, the social stress of belonging to a minority community has been shown to have additive effects on health. For instance, increased depression, anxiety and physical complaints have been reported within sexual minorities (Meyer, 2003; Longhofer, 2013; Mereish & Poteat, 2015; Szymanski, 2006). The acknowledgment of health disparities is important for the health of minorities, especially for further implementation into work fields such as therapy but also for the medical and legal outcomes of minority groups such as lesbian, gay, bisexual and transsexual adults (Mereish & Poteat, 2015; Frey, 2013; Daniel & Butkus, 2015).

Sexual preferences – a continuum

According to the *American Heritage Stedman's Medical Dictionary*, sexual preference is defined "The preference one shows by having a sexual interest in member of the same, opposite or other sex" ("sexual preferences" n.d. Dictionary.com, 2015). In *The Frontiers of Psychology*, Ryabko and Reznikova described the terminology of preference as "the likelihood of choice" (Ryabko & Reznikova, 2015). Preference implies choice this study adopts these definitions. Sexual orientation refers to the sex of those to whom one is sexually and romantically attracted (American Psychological Association, 2012). A "person's self concept of their gender (regardless of their biological sex) is called their gender identity" (Lev, 2004, referred to in Molerino & Pinto, 2015). Furthermore the term gender identity, coined in the 1960s, described one's inner sense of belonging to either of the bivariate category of male or female (Molerino, & Pinto, 2015). Nowadays however, there are several categories and terms used such as, "monosexual" "lesbian", "gay", "plurisexual", "bisexual", "pansexual", "queer", "fluid" and there are still terms coined within the complexity of sexual minorities. Sexual identity can include normative cisgender, (individuals who have a match between the gender they were assigned at birth, their bodies and their personality ("cisgender" n.d. Wikipedia, 2015), heterosexuals and non-normative transgender individuals, (individuals whom have a mismatch between their gender they were assigned at birth, their bodies and their personality) plurisexual and transgender (Galupo, Mitchell, & Davis, 2015).

Sexuality on a Scale. Alfred Charles Kinsey was a biologist and pioneer in the study of human sexuality helping to found the field of sexology. The "Kinsey Scale" (KS) is a highly recognized Heterosexual-Homosexual Rating scale, developed by Kinsey and his two

colleagues, Wardell Pomeroy and Clyde Martin in 1948, after an effort to more accurately describe individuals' sexual behaviour and interests (Galupo, Mitchell, Gryniewicz, & Davis, 2014). The scale is based on interviews with individuals with the intention to illustrate that sexuality does not fall neatly into the dichotomous categories of exclusively heterosexual or exclusively homosexual. Rather, Kinsey theorized that an individual's sexual behaviour and interests fall along a continuum and are subject to change over time. Hence, the Kinsey Scale was one of the first attempts to support the diversity and fluidity of human sexual behaviour (Galupo, Mitchell, Gryniewicz, & Davis, 2014). Additionally, Kinsey and colleagues created a separate category for individuals, which they described as people without socio-sexual contacts and reactions. They called this "Category X". Moreover, Myra T. Johnson was the first to use the now familiar term "asexual" in 1977 in her categorization of asexual including men and women (Van Houdenhove, Gijs, T'Sjoen, & Enzlin, 2014).

In present day, there are a lot of different versions of the 0–6 scale that are potent and popular in the way the different scales incorporate a person's behaviour (e.g., whom they choose to kiss), desires (e.g., whom they fantasize about), and self-identification (the sexual identity the interviewing person state themselves) to mark a sexual identity easy and anonymous on the internet. In addition, researchers and non-researchers have created their own interpretations of the scale-with examples ranging from whole numbers to choosing from decimal points, all with the aim of exploring sexual possibilities and capturing the fluidity of sexual identification markers on their own terms (Drucker, 2011).

Possible effects of Shame

The concept of a relation between shame and health is not new as the relationship and consequences have been subject to a wide selection of research (Dickerson, Gruenewald, & Kemeny, 2004; Kim, Thibodeau, & Jorgensen, 2011; Balsam, 2008). Despite this however, fewer studies have been conducted that research shame's associations to health within individuals who belong to sexual minority groups. In their 2015 study, using the minority stress model (Meyer, 2003), Mereish and Poteat found that greater feelings of shame mediated the relationship between psychological and physical distress within lesbian, gay, bisexual, and transsexual individuals leading to feelings of loneliness and poorer quality relationships.

Psychological effects of shame. In her 1971 work, psychoanalyst Helen B. Lewis described shame as a "systematize emotion", and described it as both humiliation and mortification. Lewis theorized that it might even be a key emotion accountable for securing and upholding the social bonds essential for social life. Moreover it has been found that

shame, pride, guilt and embarrassment are all social emotions, more specifically referred to as “self-conscious emotions” brought together by “self-reflection and self-evolution” (Longhofer, 2013). Here shame acts as an emotional response that reveals a damaged self during social threats, and may even result in physiological effects (Dickerson, Gruenewald, & Kemeny, 2004).

Despite a growing acceptance of sexual minority groups, individuals continue to experience negative attitudes from others within their social life and the legal and cultural landscape. This heterosexual norm can become internalized into one’s sense of self, developing into a sense of ¹internalized heterosexism. As a consequence, negative reflections may become adopted, and the evaluation brings forward a sense of internal, global negative attributes to the self (such as “I am bad”), resulting in shame as a self-conscious emotion. These feelings of shame-proness are painful, often resulting in a desire for withdrawal, escape or hiding. They can even lead an individual’s rejection of their non-heterosexual identity whereby they perceive that they are inferior to heterosexuals (Chow & Cheng, 2010; Hequembourg & Dearing, 2013). In a situation when a sexual minority feel inferior and the current situation is evaluated as unchangeable, individuals are likely to resort to negative coping strategies such as, avoidance responses and escapism.

Physiological mechanism of shame. Researchers have also documented elevated levels of substance abuse associated with identity-related stigma; in turn resulting is shame-proness (Hequembourg & Dearing, 2013). As a bodily response shame is a somatic event, mediated through the autonomic nervous system to the subcortical emotional related brain regions in the limbic system, such as the amygdala, and is processed without the complex involvement of the cortical brain. Therefore the automatic response of fight, flight or freeze is commonly a reaction to the pain and lament of shame (Roth, Kaffenberger, & Herwig, 2014; Longhofer, 2013). Awareness of the mechanism of the somatic dynamics in shame is important when working with (LGBT) clients, especially since the shame responses are reactions that cannot easily be switched off. It may be hard to talk oneself out of these extremely shame-saturated states especially as some clients may present themselves with a sense of rejection or that they are somehow flawed or damaged and it is then important that the clients will regain a sense of self-worth and belonging (Longhofer, 2013).

¹ Internalized heterosexism; is *internalized* sexual stigma. This is a self-directed prejudice, when the individual accept and agree with societies negative judgement of homosexuality, and can be referred to as internalized

A social perspective. Thomas J. Scheff, also influenced by Lewis, suggested a Grand Theory of Shame from a sociological perspective. According to Scheff, shame is a negative evaluation, a result from viewing the self from the perspective of the other, building a dynamic of a judgement of the self by the self, even ²self-stigma (Longhofer, 2013). He also adopted Erving Goffman's concept of "impression management" which refers to the conscious or unconscious process in which a person tries to influence the perception of another person (Longhofer, 2013). LGBT clients may sometimes have a ridged wall built-up around themselves whereby impression management is used as a precaution from potential threats to their situation in a relationship and with social bonds, especially where shame and ³sexual stigma may results from societal rejection. The threat to this bond can produce mortification leading to the subject's decision to keep their stigmatized position hidden from others for fear of shame (Longhofer, 2013). It is argued that when sexual desire, sexual orientation or gender identity is a consideration, shame as an emotion may be one factor which when researched may highly contribute to the field of psychology because of its emotional importance (Longhofer, 2013).

Possible psychological effects experienced as a minority member

Lesbian, gay, bisexual and transgender individuals often endure different forms of discrimination, stigma, bullying and prejudice in various areas such as employment, education and health care but also in relationships such as family and other meaningful interpersonal relationships (Molerino & Pinto, 2015; Meyer, 2003). In 2003, Ilan H. Meyer proposed the minority stress model, a prominent conceptual framework mounted to understand the excess in prevalence of disorder in terms of minority stressor, explaining the hostile and stressful environments experienced from a member from a stigmatized minority group, which may lead to mental health problems as mentioned above (Meyer, 2003).

Concept of stressors. Developed from both sociological and social psychological theories minority stress refers to alienation, lack of social control and a sense of normlessness, and from the social psychological theoretical perspective understanding the intergroup relations and the impact a minority position may impose on health. The concept of minority stressors, as additional distressors to minority groups, have a few underlying assumptions agreed by researchers. First, uniqueness – as it is additive to general stressors, experienced by all individuals, so as people already struggling with stigmatization will require a adaptation

² Self-stigma; when the negative attitude manifest against oneself and become internalized. (Herek, Gillis & Cogan, 2009)

³ Sexual-stigma; expressed behaviorally through actions such as ostracism, awareness of the hetero normative expectations and therefor the LGBT individual may constrict their behaviour and conceal or deny their identity.

effort on top of what is required in a situation compared to the other person whom is not stigmatized. Second assumption is chronic – as the minority stress is related to rather stable underlying social and cultural structures, and thirdly, socially based –it stems from structures beyond the individual such as institutions and social processes rather than non-social characteristics such as biological, genetic or conditions like general stressors and individual events (Meyer, 2003).

Additional sexual minority stressors. The Minority stress model suggests both distal and proximal stressors, where distal stressors refer to external stressor (such as antigay harassment, discrimination) related to the sexual minority identity that can affect the minority member. Proximal stressor relate to the internalization of sexual prejudice, concealment in the members life (such as internalized homophobia or concealment of one's sexual orientation), the personal processes (Meyer, 2003). In the study from 2003 Meyer stated that stigmatized minority individuals who experience prejudice or discrimination will continue to expect negative judgements from members of the dominant culture, and will therefore become chronically anxious for this reaction.

Mereish and Poteat found in their study 2015 that both distal and proximal stressors were associated with psychological distress through both intrapersonal and interpersonal relationships. Furthermore, LGBT minorities wrestling with their sexual desire and gender identity are more likely to have a sense of loss of connection with their social bond, as it has been shown that proximal stressors, (e.g., internalized homophobia) mediate the relationship between distal stressors (e.g., discrimination), health and also shame (Mereish & Poteat, 2015; Meyer, 2003).

Sexual communities. The term sexual stigma refers to the negative regard, inferior status and inherent is a common knowledge that anyone associated with non-heterosexual behaviours, identity or relationships are devalued relative to heterosexuality (Herek, Gillis, & Cogan, 2009). Structural sexual stigma, heterosexism is an embodied ideology in social institutional practices and in ideological systems and is relatively free from prejudice, as most people presume heterosexuality and when sexual minorities become visible they are assumed to be unnatural, requiring explanation and deserving of discriminatory treatment (Herek, Gillis, & Cogan, 2009). Moreover Bosson, Haymovitz, and Pinel (2004), discovered that when gay men were reminded of negative stereotypes conjoined with their identity, they showed higher anxiety behaviour (e.g., biting nails, nervous smiling, etc.) compared with other gay men who were not reminded of these negative stereotypes linking sexual stigma with mental distress (Figueroa & Zoccola, 2015), and studies suggests that bisexual

individuals may also experience a dual minority status by experiencing discrimination and stigma from both the heterosexual and homosexual communities, which have led to high levels of daily stress, psychological stress, depression and substance abuse (Figueroa & Zoccola, 2015; Szymanski, 2006).

Findings indicate that sexual minority groups (LGBT) experiencing internalized oppression may relate to shameful feelings, which may lead the individual to perceive themselves as unworthy of relationships. These feelings can become internalized and lead to feelings of loneliness and they can be deleterious as the sexual minorities might feel stigmatized and lonely in the heterosexist culture but they might also feel isolated from their peers in the LGBT community where they may otherwise feel as a place of belonging where research indicate to have negative health effects on sexual minority individuals (Mereish & Poteat, 2015)

Physical implications from possible negative emotions and self-evaluations

In a study by Dickerson, Gruenewald, & Kemeny, 2004, they proposed in their “social self preservation model” that emotions such as shame and other negative self-evaluations evoke psychobiological changes, such as an increase of proinflammatory cytokine activity and cortisol, when an individual sense threats on social-self. These onsets of cortisol production is the end product of the activation of the hypothalamic-pituitary-adrenocortical (HPA) axis, which plays an regulatory part in normal physiological functioning, such as regulation of cortisol that have an important role in metabolism, immune functioning and also permits the sympathetic nervous system to function effectively. These social-self threats are situations that provide potential situations for a loss of social esteem, social status or social acceptance and are characterized by potential or explicit rejection. Constant experience of shame-related cognitive and affective states predict immunological diseases and health outcomes (Dickerson, Gruenewald, & Kemeny, 2004).

In their study Hequembourg & Dearing, (2013) found strong associations between shame-proness and alcohol severity when they examined interrelations among gay, lesbian and bisexual men and women. As well as their study showed that shame-proness was positively associated with cocaine and opiate dependence and severe marijuana and cocaine dependence. Legal complications, has also been found to cause mental and physical distress when a same-sex parent is refused to see a minor while in hospital as a result from situations caused by prohibitive hospital visitation or refused to take medical decision depending on legal laws faced by same-sex marriage bans. Additionally, exclusion of transgender health care, both private and public can force someone to seek treatment options through illegal

channels (Daniel & Butkus, 2015). Policies and laws that reinforce marginalization, discrimination, social stigma or rejection of LGBT individuals by families, communities or health care have been associated with higher rate of anxiety, suicide and substance or alcohol abuse (Daniel & Butkus, 2015).

Aim and Hypothesis

This current study, aims to further confirm and build on the relationship between sexual minority groups of lesbian, gay, bisexual and transsexual (LGBT), and mental and physical health and also to extend the generalizability by targeting individuals globally through social media. The study will examine shame, depression, anxiety and stress and possible physiological symptoms as they have been presented to have a relation to sexual minority groups. Additionally sexual preferences will be analysed with the Kinsey Scale in order to investigate sexual preferences on a continuum scale, to examine the terms heterosexuals and non-heterosexuals. First hypothesis: A relationship will be found between sexual minority groups and shame. Second hypothesis: A relationship between psychological and physical distress within the sexual minority groups will be found. Third hypothesis: A positive correlation between sexual preferences and the Kinsey scale will be found.

Method

Participants

Participants in the study consisted of 144 individuals whom identified themselves as 76 = Female, 34 = Male and three individuals as Non-Binary. ($M_{age} = 35.28$, age span: 18-70 year, $SD = 9.59$). The continents spread was 42 % Scandinavian, 13 % European, and 6 % North/South American, 15 % Australasia and 3 % Asians. The participants identification of their sexual preferences were; 54% heterosexuals, 6% trysexual, 14% bi/pan-sexual, 22 % gay, 2% other and 1 % asexual. 144 participants started the questionnaire, whereby 113 participants completed the full survey, giving a completion rate of 75%.

Procedure

Participants represented a convenience sample, and data was collected using two methods. Firstly the survey was posted on several different social pages on Facebook targeting mainly LGBT groups and communities, with a short introduction stating the purpose of the study with the link into Survey Monkey. Secondly, the same link was also presented for the availability for further sharing by and with friends on Facebook thus employing the snowball method, targeting minority groups. The study consisted of a six-page web survey,

with four different established measurement scales equal a total of 87 items. The survey started with a presentation letter, entailing an introduction from of the examiner and a declaration of purpose of the study, participants were also explained their rights, ethics, age restriction.

After reading the presentation letter the participants clicked on the continue button whereby the survey included measurements, with the first scale aim to measure sexual preferences, such as the selected Kinsey scale (Helloquizzly n.d., 2014) whereby all of the items were created with the intention of examining the sexual preferences of Gay, Lesbian, Bisexual and Asexual individuals. This study will call those scores, the Kinsey continuum score. Second measurement tool aimed to measure the level of shame of the participants with the established PFQ2 scale (Harder & Zalma, 1990). The third measurement aimed to measure the mental state of the participants, is the 21-item Depression, Anxiety and Stress Scale, (DASS) (Lovibond & Lovibond, 1995), aimed to measured health factors in psychological distress, and assess symptoms of depression and anxiety over the past three months. Last measurement was the 33-item Cohen-Hoberman Inventory of Physical Symptoms scale (CHIPS; Cohen & Hoberman, 1983). On the second last page, of the survey, item number 84 asked participant to identify their gender identity as woman, man and other as options, item 85 asked for country and item 86 their ethnicity and last item, 87, for their age where the last page thanked the individual for their participation. All the questions were obligatory (if not all items were filled in participation could not proceed) and all up, the survey took about ten minutes to complete.

Instruments

Online Survey. The survey was constructed online via a company called Survey Monkey, which provided customized questionnaire options, for a fee the service provide the sample collection tools, and directions regarding anonymity and distribution options.

Kinsey Scale. This particular version of the scale was designed by *kinseyscaletest*, (Helloquizzly n.d., 2014). All of the items were created with the intention of examining the sexual preferences of gay, lesbian, bisexual and asexual individuals. An item could read as follows “I have had sexual intercourse or oral sex with someone of my same sex”, and the answer options were presented on a likert scale ranging from “Never (not a virgin)”, “once or twice”, “sometimes”, “often”, “exclusively”, “I will never have sex” and “I am a virgin”.

To examine the Kinsey scale, individual score were put together to follow scoring to proceed from Kinsey heterosexual and homosexual scale. When a question as “I have had sex with ANOTHER sex” the scale answer was a 0, to indicate *never* towards the direction of

heterosexuality on the continuum scale. “I have had sex with the same sex”, *exclusively* was scored with 4 points towards the direction of homosexuality. If a person indicated, “I am a virgin” or “I have never had sex” the answer was scored as 0, not to effect the total score of the individual on the continuum scale. The total sum were added up and divided by seven, including reverse scoring and the participant would then fall on a scale between 0 to 6 whereby 0 = “exclusively heterosexual”; 1 = “predominantly heterosexual, incidentally homosexual”; 2 = “predominantly heterosexual, but more than incidentally homosexual”; 4 = “predominantly homosexual, but more than incidentally heterosexual”; and 5 = “predominantly homosexual, incidentally heterosexual” and 6 = “exclusively homosexual”. As to follow Kinsey’s approach asexual category was separate, with the total score of 0 to indicate absolute no sexual interest.

All of the questions were obligatory and final score will be called the Kinsey continuum score. The first question of the Kinsey scale asks the participant to select from “Straight”, “Gay”, “Bisexual/Pansexual”, “Trysexual”, “Asexual” or “Other” whereby this study will refer their selection as the participants sexual preference for the purpose of the current study. No previous information or records were to be found regarding the reliability, in this current study the Cronbach’s alpha coefficient was .79.

Shame scale. Second scale used to measure feelings of shame and guilt were the Personal Feelings Questionnaire (PFQ2) by Harder and Zalma, 1990. Participants were presented with 16 items with the following instructions “Please choose the statement that best describes you in regards to your sexual preferences” (e.g., humiliated or a guilt feelings; remorse) response options were on a 4-point likert scale, ranging from “never experienced the feeling” to “experience the feeling continuously or almost continuously” where the participant had to select on option with the total score of 64. The PFQ2 Shame scale has shown relationships with public social anxiety, self-derogation and social desirability (Harder & Zalma, 1990 & Mereish & Poteat, 2015). Previous research have demonstrated significant relationships with depression and private self-consciousness. Furthermore, in Mereish and Poteat (2015), the PFQ2 Shame the Cronbach’s alpha reliability was .91. In current study, the Cronbach’s alpha coefficient was .86. All of the questions were obligatory.

Depression, Anxiety and Stress Scale. The Depression and Anxiety and Stress Scale-21 (DASS) created from extensive research by Lovibond and Lovibond in 1995 was the third scale in the survey. DASS consists of 7 depression, 7 anxiety and 7 stress -items, aimed to measured health factors in psychological distress, and assess symptoms of depression and anxiety over the past three months. Participant responses were on a 4 point scale from 0 =

“Did not apply to me at all to” 4 = “Applied to me very much, or most of the time” total score of the scale was 84. Previous studies have psychometrically validated the scale (Crawford & Henry, 2003; Lovibond & Lovibond, 1995; Mereish & Poet at, 2015) With Cronbach’s alpha reliability coefficients .86 for depression and .94 in the anxiety in Mereish and Poteat, 2015. In current study, the Cronbach’s alpha coefficient was .89 for depression, .79 in the anxiety and .86 in stress scale. Also .92 in the total DASS scale. All of the questions were obligatory.

Physical distress. To assess physical distress symptoms the fourth instrument used was the 33-item Cohen-Hoberman Inventory of Physical Symptoms scale (CHIPS; Cohen & Hoberman, 1983). The item were introduced with the text to the participants ‘Please choose a statement that best describes the amount you have experienced the following situation/s during the past two weeks including today’ Example items could be ‘Sleep problems’ or ‘Headache’ where their answers were on a 5-point likert scale from 0 (not at all) to 4 (extremely) with a total score of 132. Previous studies using this scale with minority samples have reported high reliability coefficients with Cronbach’s alpha reliability .95 in Mereish & Poteat, 2015 study. In current study, the Cronbach’s alpha coefficient was .93. All of the questions were obligatory.

Examining data. The analyses started with inspecting data through descriptives for verification of assumptions, cleaning and model diagnostics. By checking trimmed mean, outliers were found and the highest outliers were recoded by choosing to rate the extreme values one step down, still indicating highest score. To determine if the data was normally distributed, scores were examined with the normality test with plots, using Shapiro-Wilk result for normality. The Kinsey Scale tested $p = .000$ Sig. demonstrating positive skewness .459 and -.568 kurtosis, a non-normal distribution curve, indicating the use of non-parametric tests as well as the Shame scale (PFQ2) with $p = .000$ Sig, 1.246 skewness and 4.041 kurtosis. The psychological scale (DASS) was tested with Shapiro-Wilk for normality showing $p = .005$ Sig. .641 skewness and .221 kurtosis, furthermore, the physical scale (CHIPS) also indicate on the use of non-parametric tests after testing and Shapiro-Wilk $p = .000$ Sig. .954 skewness and .658 kurtosis.

Therefore, the conclusion was made that relevant data was non-parametric. Chi-Square of independence cannot be performed since data was on a likert scale, ordinal data and therefore the assumptions are violated. Standard regression model is not possible because the response data is non-parametric, and not a bivariate logit model since there are more than two possible outcomes, to examine for interactions.

Missing data and possible transformation. The amount of missing data was 22 %, since all the questions were obligatory when a participant did not fill in a subsequent question the participant could not proceed in the survey leading to statistical shortfall, therefore the missing values. Out of the respondents 54.2% of the participants identified themselves as heterosexuals and 45.8% identified themselves within the different minority groups, LGBT. Collection of data at the Kinsey scale started with $N=144$, after the PFQ2 scale there was 14.6% missing values with a completion of $N=123$. After DASS, Depression, Anxiety and Stress scale, 16.7% ($N=120$) of values were missing with 21.5%, of missing data CHIPS, Cohen-Hoberman Inventory of Physical Symptoms scale, the final of $N=113$ of completed surveys. Exclude cases pairwise was chosen to store data collected and include the cases when cases have the necessary information and only exclude when the data was missing for required specific analysis.

Further robustness test such as data transformation using squared or log transformation were considered. However, since data transformation is controversial the examiner decided not to include it.

Data Analysis. Data was analysed using IBM SPSS Statistics, version 22 (2013). The studies significance level was 5%, a p-value under .05, $p < .05$ and analysed with Non-parametric Spearman's rho to analyse for correlations, and Mann-Whitney U the non-parametric alternative to the t-test of independence samples, which compares medians to test for differences between two independent groups on a continuous measure.

Ethics. At the very start of the survey a presentation letter entailing an introduction about the examiner and a declaration of purpose of the study were presented. Here, the participants were explained their right of withdrawal at any time, ethics regarding anonymity and that importance regarding that there were no right or wrong answers, age restriction and also clear contact details in case there were any future questions. In regards to anonymity the participants answers went straight into the pool with the other surveys leaving no trace of whom had answered what and from where.

RESULTS

To examine the first hypothesis, a relationship between the mediated factor of shame and individuals with non-heterosexual preference, the relationship was investigated using Spearman's rho. There were no significant relationship to report between the two variables individuals with non-heterosexual sexual preferences (as measured and stated by the participant) and the total shame score (as measured by the PFQ2 scale), $r = .177$, $n. = 144$, $p >$

.199. Then the relationship was examined with the Kinsey's continuum score (as measured and identified by the whole Kinsey scale) and the total shame score (as measured by the PFQ2 scale) also investigated using Spearman's rho, $r = .049$, $n = 144$, $p > .593$. No correlation was detected there either.

Further exploring the first hypothesis, regarding the relationship between the mediated factor of shame and individuals with non-heterosexual preference, an investigation to see if there would be any differences between the heterosexual group and the sexual minority groups on the mediating factor of shame was examined by conducting a Mann-Whitney U. However, the Mann-Whitney U test revealed no significant difference in shame levels (PFQ2) between heterosexual ($Md = 58.43$, $n = 64$) and minority group ($Md = 65.87$, $n = 59$) $U = 1660$, $z = -1.16$, $p = .25$, $r = .07$. By further checking the difference, split files were performed on the two groups to compare the medians, but no differences were shown between groups as both had a Median of 6.

The second hypothesis, stated that there would be positive a correlation between the minority groups (lesbian, gay, bi/pan –sexual, asexual or other) and the psychological (as measured as DASS) and physical health (as measured as CHIPS), a correlation using Spearman's rho indicated no relationships between the minority group and DASS, $r = .158$, $n = 120$, $p < .085$ or between the minority group and CHIPS, $r = .130$, $n = 113$, $p < .172$. To further expand on the second hypothesis, a difference between the psychological state with minority compared to the heterosexual group was also examined by Mann-Whitney U test, however the test revealed no significant difference between Depression, Anxiety or Stress between the grouping variables heterosexuals ($Md = 55.39$, $n = 64$) and minority ($MD = 66.34$, $n = 56$) $U = 1465$, $z = -1.721$, $p > .085$, $r = .11$. Mean rank was 55.39 within heterosexuals and 66.35 within minority groups, and when tested with split file showing a difference in median between DASS total score as heterosexual had 18.50 and the non-heterosexual groups 23.50.

The CHIPS scale was also investigated with the Mann-Whitney U, the test revealed no significant difference in the physiological levels between the heterosexual group ($MD = 52.89$, $n = 58$) and the minority groups ($MD = 61.34$, $n = 55$) $U = 1357$, $z = -1.371$, $p > .170$, $r = .11$. Mean ranks was 52.89 within heterosexuals and 61.34 within the minority groups, by further explore the relationship split file was performed to compare the two groups median, where heterosexuals had a median of 18 whereas the non-heterosexual groups had 25 in median.

A correlation was investigated with Spearman's rho between total score of the Depression, Anxiety and Stress Scale (measured as DASS) and the total score from the Cohen-Hoberman Internalized Physiological Scale (measured as CHIPS). Results indicated a significant large positive correlation between psychological health and physiological health, $r = .657$, $n = 113$, $p < .000$ at 0.01 level (2 – tailed).

The DASS scale further by examining each of the three subscales, the Depression subscale, Anxiety subscale and the Stress subscale. They were correlated with the Cohen-Hoberman Internalized Physiological Scale (measured as CHIPS). Firstly, the Depression subscale and the physiological scale (CHIPS) were measured, showing a positive relationship, indicating a large strength of the relationship, $r = .523$, $n = 113$, $p < .000$ and the amount of variance shared is 27 per cent. Secondly the Anxiety subscale and the physiological scale (CHIPS), there was a large strength of the relationship, $r = .639$, $n = 113$, $p < .000$ here the amount of variance shared of 41 per cent. The Stress subscale and the CHIPS scale as well indicating on a large strength of the relationship, $r = .534$, $n = 113$, $p < .000$, with the amount of variance shared by the two variables of 29 per cent. All of the results show a positive correlation between the mental state scales and physiological health, indicating that the generalization regarding the relationship between mental and physical health to be confirmed. Total results shown in Table 1.

Table 1. Correlation between the Depression, Anxiety and Stress Subscales (DASS) and the Cohen- Haberman Physiological Scale (CHIPS)

Scales	Total CHIPS	Total Depression	Total Anxiety	Total Stress
Total CHIPS	-	.523**	.639**	.534**
Total Depression	.523**	-	.600**	.607**
Total Anxiety	.639**	.600**	-	.598**
Total Stress	.534**	.607**	.598**	-

** . Correlation is significant at the 0.01 level (2-tailed)

Further examinations between the sexual preferences and three subscales (Depression, Anxiety and Stress) were investigated, however no significant differences were shown. As shown with Depression and all sexual preferences, $r = .139$, $n = 120$, $p > .129$ all at (0.01 level 2-tailed) and Anxiety and all sexual preferences, $r = .064$, $n = 120$, $p > .485$, and last the Stress subscale and all sexual preferences, $r = .162$, $n = 120$, $p > .078$.

To look further into sexual preferences between sexual preferences and the Kinsey Scale continuum scale Spearman's rho correlation showing, $r = .712$, $n = 144$, $p > .000$, indicating a large positive correlation. Correlations are shown in Table 2. where frequencies of the total amount of participants in each cell represent the correlation between sexual preference definition by the participant and the Kinsey continuum scale where the definitions are more nuanced. Furthermore, in Table 3. Presented after the references, the same correlation between sexual preferences and the Kinsey continuum scale are demonstrated. Where the self-identified sexual preferences are shown in colour and placed where they fall on the Kinsey's continuum scale. Further elucidating the continuum of sexual preferences by demonstrating the nuance of a "category".

Table 2. Total number of participants in the correlation between sexual preferences and the Kinsey continuum Scale

Self-Sexual Rating Scale	Kinsey Heterosexual - Homosexual Rating Scale						EXH	TOT
	EXH	PHEIHO	PHMIHO	EQHH	PHMIHE	PHOIHE		
Heterosexual	6	33	30	8	1	0	0	78
Trysexual	0	1	6	1	0	1	0	9
Bisexual- /Pansexual	0	0	7	13	0	0	0	20
Homosexual	0	0	2	2	13	15	0	32
Other	1	0	0	2	0	0	0	3
Asexual	0	0	1	1	0	0	0	2
Total	7	34	46	27	14	17	0	144

Note. EXH = Exclusively heterosexual, PHEIHO = Predominantly heterosexual, only incidentally homosexual, PHMIHO = Predominantly heterosexual, but more than incidentally homosexual, EQHH = Equally heterosexual and homosexual, PHMIHE = Predominantly homosexual, but more than incidentally heterosexual, PHOIHE = Predominantly homosexual, only incidentally heterosexual, EXH = Exclusively homosexual, TOT = Total.

Discussion

Although health disparities have been found in studies exploring sexual minority groups such as, lesbian, gay, bisexual and transsexuals, this present findings could not support the generalization with non-heterosexual groups. There was no relationship found between shame and minority groups, and no correlation between psychological and physical health within the non-heterosexual groups either. However, comparing the heterosexual group and the non-heterosexual groups, a difference between their psychological and their physiological health were shown, indicating a higher prevalence to both mental and physical symptoms within the non-heterosexual groups yet not significantly strong enough to reject the null hypothesis.

Perceived mental health (measured with the Depression, Anxiety and Stress Scale; DASS) and the physiological health (measured with Cohen-Hoberman Internalized Physiological Scale; CHIPS) did show a significant strong correlation between depression, anxiety and stress with poor physical health, strengthening the hypothesis that mental and physical health does interact and can affect each other in poor health. Examining the sexual preferences did also show that sexual preferences fit into the Kinsey continuum scale but is more nuanced when examining the behaviour a participant categorizing themselves as heterosexuals. Interesting findings were made in terms of sexual preferences, as the correlation did indicate that sexual preferences did show a relationship with the Kinsey continuum scale. Almost consistently in every same-sex Kinsey item when a question asked the participant if they have or have had any type of sexual desire towards the same sex more than 50% of heterosexuals indicated that they had, furthermore, 14% have had sex with the same sex and 1% answered that they had never thought about what it would be like to have sexual intercourse or oral sex with someone of the same sex.

Result discussion

An interesting study has been made regarding a personality trait called psychological hardiness. This trait is characterized by control, commitment, and challenge and has been considered, when examining LGBT health, as an individual difference. This difference bestows risk and resiliency for stigma consciousness and possible effects (Figueroa & Zoccola, 2015). In their study Figueroa and Zoccola (2015) examined factors that showed that a relationship between greater stigma consciousness and more physical symptoms depended on the level of hardiness. Results showed that LGBT individuals with low hardiness and high stigma consciousness reported being bothered the most by physical symptoms. The Psychological hardiness have been found to have an impact on individuals independent from

stress, as individuals with a higher sense on the hardiness have better mental and physical health as they are more inclined to engage in health promoted behaviour such as maintain a healthy diet and exercise (Figueroa & Zoccola, 2015).

Another web based study conducted in 2014 by Shilo and Mor, assessing mental health, physical and sexual risk behaviour in 952 Israeli participants aged 12 – 30, found that adolescents (under age 18) reported higher levels of mental distress and that 60 per cent of participants that engaged in high levels of physical risk behaviours were young adults (Shilo & Mor, 2014). They concluded that age might contribute to outness and belonging to a LGB community. They also concluded that the support of family and friends has a positive effect on their mental health. Additionally, as the study took place entirely online – and as a result all health measures were self-reported – these responses may not accurately reflect current diagnoses.

As sexual stigma may is linked to shame, there may be a possibility that both psychological hardiness (as the LGBT participants were recruited from a sexual minority community Facebook site) as well as the median age of the participants (which were 34 years old) may be possibly mediate factors in the present findings of this study. As age and community support play a positive roll in mental and physical health (Longhofer, 2013; Shilo & Mor, 2014). Furthermore, the participants of this study may be LGBT respondents from Facebook that may already be “out” and accepting their identity, as members from an established minority group. These participants may be very different than the general LGBT population leading to a possible respondent biased. As studies have shown, when a sexual minority individual has peer and family support their mental and physical state is much better. This may have attenuated the relationships between variables assessed in this study (Mereish & Poteat, 2015, Szymanski 2006).

Since the majority of responses are from participants living in Scandinavia where the acceptance for homosexuality is higher then for sexual minorities in for example Asia, chances for broad-mindedness towards sexual minorities may be greater and therefore the reported wellbeing within the sexual minority group is more likely to have less distress as the institutional laws have accepted same-sex marriage, a sign on a progressive society.

Another option to better understand the dynamics and relationship regarding shame, mental and physical health could be to interview participants, especially as the complexity of an individual would be able to be examined with subsequent questions.

The correlation between sexual preferences and the Kinsey scale showed and interesting outcome, as the assumption of heterosexual desires and behaviour are rather set in

stone the results showed a spread of both thoughts and actions, as only 1% declare to never think about same-sex. Although the same-sex attraction might be just a thought, it points towards the direction of what modern society deems as not so usual whereas participants tell us that these same-sex thoughts are more than usual, it can even be assumed. As mentioned earlier there are also non-heterosexual discrimination within the non-heterosexual communities, indicating a need for greater acceptance of diversity across all groups (Figueroa & Zoccola, 2015; Szymanski, 2006). In her 2011 study of the Kinsey Scale and other types of scales, Donna Ducker confirm fluidity as how sexuality is characterized however not a lot of articles can be found to highlight not a comparison of behaviour or reasons but more a empirical description of today's behaviour in the heterosexual and the non-heterosexual society.

As Kinsey discovered a lot about human sexual behaviour such as it was not always consistent across time and the findings were revolutionary in the mid 1960th, the contribution of a new global and sexual behavioural study may be an awakening to the present day sexual norms and also advocate for acceptance to one's internal thoughts whether you classify yourself as heterosexual or non-heterosexual. As reported in this study, possible greater acceptance of sexual behaviour in society reduces mental and physical health disparities.

Method discussion.

The choice of the Kinsey scale was based on a study in 2011 in which Donna Drucker compared different versions of the Kinsey scales. "HelloQuizzy" was by far the most popular quiz in numbers by participants, and all the places on the scale have an equal socio-cultural weight and no where on the scale were more "normal" than another in theory. Although not all users feel that the present day scale represent the evolving sexual identification, participants did find that the scale did indeed conceptualize their sexuality, as well as participants whom felt that their sexuality was fluid across time. In this study modifications were made with the intention to include participants as much as possible, by modifying the scale by changing all words from "gender" to "another" as well as an addition to the scale was put in place on the 23 of November 2015 in question 1, "I think of myself as" the examiner added the alternative of responding OTHER, with a blank for the participant to fill in.

Restrictions, Limitations and Strengths:

Several limitations were met in this study. In regards to the design of the survey these limitations were encountered. Firstly, the study is limited by its online design. Online participation has shown to disproportionately represent educated, middle class and white

participation (Galupo, Mitchell, Gryniewicz, & Davis, 2014). This however counteracted by posting and approaching different sexual minority sites all around the world, ranging from RFSL students (community sites above the age of 18) in Sweden to the Centre for Black Equity an institution for LGBT people of African descent, as well as LGBT sites in Asia. Despite these attempts questionnaire was limited as it was in English.

Secondly, the purpose of study may have been interpreted non satisfactory to the respondent leading to an early exit, here in the introductory letter to the online questionnaire contact details to the examiner was explicitly listed for further questions with the intention to minimalize confusion. Thirdly, as participants may have entered their answers on an iPad or iPhone, the sensitivity of the screen may have lead to erroneous answers. However, before entering the web link, stated directions to be careful when entering the answers counteracted the possibility. Although all the measurement design used in the study were established scales with high validity and reliability, the instructions may have been restrictive in its formulations and open for internal interpretation, leading to erroneous answers as the topic is highly sensitive and private and delicacy is of high priority. Unfortunately as a result of confusion to the term ethnicity, many respondents wrote their country of residence instead of ethnicity, which prevented a representative picture.

In regards to the limitation of the Kinsey scale, even though the Kinsey scale is extensive and ground breaking to acknowledge the different shades of sexual preferences the scale has its basis from heterosexuality to homosexuality. As such, it more or less excludes pansexuality and transsexuality, modifications were made of the scale before published, however a suggestion for further study would be a renewal of the questions and additional constructions of the scale to incorporate pluri-sexuality and transsexuality with a reformation of questions not to be based on bivariate scale.

In regards to the sampling procedure it was also challenging to establish contact with minority participants. Firstly as the Facebook community groups were often closed it could take quite some time to receive a response when asked to publish the survey link on the proposed site. Further searching for open sexual minority groups and community sites where the link could be posted was often difficult and time consuming. As this study aimed to globalize the health of sexual minority groups the sampling procedure affected the possibility to reach global contact, as pages such as Russia, Africa and East Asia hardly or never opened the access for the link to be posted. As a consequence the analysis of countries around the world were not equally distributed and over-representative in Scandinavia, a suggestion for further research to work with this limitation would be to contact LGBT communities in

advance, within a longer timing margin, with a private letter or phone call to ask for access to communicate directly with the minority groups, which may lead to a more plausible control of both number of participants and actual distribution of countries.

Secondly, gatekeepers were also encountered and sometimes did not agree for the link to be published. This was because these gatekeepers perceived the survey to exclude certain members, as they found questions to be directed mainly at bivariate sexual groups and exclude transgender members. However, the opposite reception was encountered more often and the research experienced further sharing of the link by community members and explicit praise.

The possibility to research a targeted group through community and minority group is very useful for LGBT research as participants may have a concern regarding privacy and where participants otherwise may not have been able to participate. Furthermore, given the sensitive nature of the questions, regarding sexual preferences, the anonymity may have allowed for a greater reporting (Figueroa & Zoccola, 2015).

Conclusion

The intention with this study was to further explore the global generalizability of prior findings regarding poor health and sexual minority groups through the popular social media site Facebook, and also to examine and reflect on sexual preferences instead of sexual identity. No relationship between shame and minority groups could be found. Furthermore the link between poor psychological and poor physical within sexual minority groups was not significant. This study did however show sexuality as a continuum on the sexual preference scale among these groups instead of boxed categories.

Heterosexuality is a term that needs to be re-examined, plus sexual thoughts, desires and actions needs to be brought further into the light as a pathway to understand norms – particularly as we are still in an evolving society. Since over 50% of heterosexuals show to have or have had sexual desire towards the same sex, is heterosexuality really as static a term as society has taken it for? A suggestion for further research would be to further examine the term heterosexuality, by investigating the thoughts, behaviour and desires of individuals. This will help to elucidate “modern” sexuality, as well as to prevent cognitive dissonance in youth with regards to sexual labels.

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Table 3. The correlation between sexual preferences and the Kinsey continuum Scale. Demonstrating self-identified in colour and where they fall on the sexual preference on Kinsey's continuum scale.

