

From the Department of Clinical Neuroscience  
Karolinska Institutet, Stockholm, Sweden

# **STRUCTURAL, INTERPERSONAL, AND INDIVIDUAL FACTORS INFLUENCING SEXUAL ORIENTATION-BASED DISPARITIES IN MENTAL HEALTH**

A SOCIO-ECOLOGICAL PERSPECTIVE ON  
SEXUAL MINORITY STIGMA

Arjan van der Star



**Karolinska  
Institutet**

Stockholm, 2020

All previously published papers were reproduced with permission from the publisher.

Published by Karolinska Institutet.

Printed by Universitetservice US-AB.

Cover illustration licensed from Wisaad (Shutterstock.com).

© Arjan van der Star, 2020

ISBN 978-91-7831-928-2

# STRUCTURAL, INTERPERSONAL, AND INDIVIDUAL FACTORS INFLUENCING SEXUAL ORIENTATION- BASED DISPARITIES IN MENTAL HEALTH

A SOCIO-ECOLOGICAL PERSPECTIVE ON SEXUAL MINORITY STIGMA

THESIS FOR DOCTORAL DEGREE (Ph.D.)

By

**Arjan van der Star**

*Principal Supervisor:*

Richard Bränström, Ph.D.  
Karolinska Institutet  
Department of Clinical Neuroscience  
Division of Psychology

*Opponent:*

Karl Gauffin, Ph.D.  
Stockholms Universitet  
Department of Public Health Sciences

*Co-supervisors:*

John Pachankis, Ph.D.  
Yale University  
Yale School of Public Health  
Department of Social and Behavioral Sciences

*Examination Board:*

Prof. Anna Mia Ekström  
Karolinska Institutet  
Department of Public Health

Prof. Mats Lekander  
Karolinska Institutet  
Department of Clinical Neuroscience  
Division of Psychology

Per Gustafsson, Ph.D.  
Umeå Universitet  
Department of Epidemiology and Global Health

Petter Tinghög, Ph.D.  
Röda Korsets Högskola  
Department of Health Sciences

Jesper Löve, Ph.D.  
Göteborg Universitet  
Institute of Medicine  
Department of Public Health and  
Community Medicine



**One “who allows oppression shares the crime”**

*Desiderius Erasmus Roterodamus (Rotterdam, 1466 – Basel, 1536)*



## ABSTRACT

**Background:** Compared to heterosexual individuals, sexual minorities (e.g., those identifying as gay, lesbian, or bisexual) are at higher risk of several mental health problems, including suicidality, substance abuse, depression, and anxiety. Research has attributed much of these elevated risks to unique and chronic stress experiences, so-called minority stress, relating to the stigma and prejudice that many sexual minorities face. Less is known about how sexual minority stigma may function as a multilevel socio-ecological system that includes stigma-related risk factors at various levels, such as the structural (e.g., negative population attitudes and discriminatory laws and policies), interpersonal (e.g., victimization and harassment), and individual level (e.g., internalization of negative societal attitudes and concealment of sexual identity), to drive poor mental health among sexual minorities. Such a socio-ecological system of sexual minority stigma may feature unique characteristics and components, including 1) a chronosystem in which stigma-related factors may vary and exert effects across time, space, and the life course, 2) cross-level effects in which stigma-related factors at one level may give rise to stigma at another level, and 3) mechanisms that explain how stigma-related factors may compromise sexual minorities' mental health.

**Purpose and aims:** The purpose of this Doctor of Philosophy (Ph.D.) thesis was to contribute to the advancement of sexual minorities' mental health equity by furthering the scientific knowledge on the mechanisms underlying sexual orientation-based disparities in mental health. The Ph.D. thesis aimed to do so by 1) advancing theoretical thinking through combining the existing frameworks of minority stress and psychological mediation with socio-ecological theory, 2) examining mental health disparities by sexual orientation, and 3) testing different elements of a proposed socio-ecology of sexual minority stigma framework.

**Methods:** Cross-sectional individual-level data were used from surveys sent out to sexual minorities living in Sweden, across Europe, and/or with migration backgrounds. The first two of the presented studies used probability-based sampling techniques to identify representative population-based samples, while the other two studies used convenience samples of sexual minorities who lived in, or have moved from, various countries, diverse in structural climates. Data for the latter two studies were combined with objective indicators of structural forms of stigma present in these countries. In all studies, mediation and/or moderation analyses were employed to examine the explanatory or buffering, respectively, mechanisms underlying the associations between stigma-related factors and sexual minority mental health or wellbeing.

**Results:** In the low-stigma context of Sweden, sexual minorities were at an 2.7-6.8 higher odds for suicidality, 1.3-2.3 higher odds for depression, and 1.4 higher odds for substance abuse, compared with heterosexual individuals. In Sweden, just about one third of sexual minorities reported being completely open about their sexual orientation. Regarding cross-level effects, exposure to structural forms of stigma throughout the life course were associated with reduced adulthood wellbeing among sexual minorities open about their sexual orientation at school, partially mediated through increased negative interpersonal experiences, such as school bullying and subsequent adulthood victimization. Further, exposure to high levels of structural stigma were associated with reduced mental health among sexual minority male migrants, mediated through higher risks of negative individual stigma-related coping patterns, such as rejection sensitivity and internalized homophobia, with the maladaptive patterns increasing with duration of exposure. Yet, upon exposure to lower structural stigma, these patterns were found to decrease with time. Sexual identity concealment was not found to mediate the association between structural stigma and mental health. Similarly, sexual orientation openness was only positively associated with depression when sexual minorities' social support was lacking.

**Conclusions and recommendations:** While several stigma-related factors have previously been identified as direct risk factors for poor mental health among sexual minorities, this Ph.D. thesis further explored, and found support for, sexual minority stigma as a socio-ecological system surrounding sexual minorities, which includes a chronosystem, cross-level effects, and mechanisms linking stigma-related factors to poor mental health. That is, sexual minorities' mental health and wellbeing might be shaped by the structural climates they live in and have been exposed to, such that those contexts may promote harmful interpersonal stigma-related experiences throughout the life course and may gradually give rise to detrimental individual-level stigma-based coping mechanisms. To improve health equity between sexual minorities and heterosexual individuals, policymakers should focus on eliminating sexual minority stigma in its various forms – whether explicit or subtle, whether intentional or inadvertent, whether structural or interpersonal – from today's societies. Meanwhile, clinicians may help empower sexual minorities finding purpose within and outside prominent social structures and help break sexual minorities' harmful coping patterns instilled by stigma through affirmative therapy. Further research is needed to confirm these initial efforts to frame and examine sexual minority stigma as a socio-ecological system.



## SAMENVATTING

**Achtergrond:** In vergelijking tot heteroseksuele personen hebben seksuele minderheden (zoals lesbische, homoseksuele of biseksuele individuen) een verhoogd risico op het ontwikkelen van verschillende psychologische problematiek, waaronder zelfmoord, alcohol- en drugsmisbruik, depressie en angststoornissen. Wetenschappelijk onderzoek heeft deze verhoogde risico's voornamelijk toegeschreven aan unieke en chronische stresservaringen, ofwel minderhedenstress, verbandhoudend met stigma en vooroordelen jegens seksuele minderheden. Er is minder bekend over hoe seksuele minderhedenstigma zou functioneren als een sociaalecologisch systeem waarin, op verschillende niveaus, structurele (zoals discriminerende maatschappelijke attitudes, wetten en beleid), interpersoonlijke (zoals geweld en intimidatie) en individuele (zoals het eigen maken van negatieve attitudes en geheimhouding van seksuele oriëntatie) stigmagerelateerde factoren de geestelijke gezondheid van seksuele minderheden aantasten. Een dergelijk sociaalecologisch systeem van seksuele minderhedenstigma wordt mogelijk gekenmerkt door 1) een chronosysteem waarin stigmagerelateerde factoren variëren op basis van tijd, plaats en gedurende de levensloop, 2) niveauoverschrijdende effecten waarin stigmagerelateerde factoren op een bepaald niveau stigmaervaringen op een ander niveau genereren en 3) mechanismen die verklaren hoe deze factoren de geestelijke gezondheid van seksuele minderheden aantasten.

**Doelstelling:** Het doel van dit proefschrift was om bij te dragen aan het verbeteren van gelijkheid op basis van een seksuele oriëntatie in geestelijke gezondheid door de desbetreffende wetenschap te bevorderen. Hiertoe poogt het proefschrift door 1), met het combineren van de veelgebruikte theorieën met sociaalecologische theorie, de theoretische basis voor onderzoek naar de geestelijke gezondheid van seksuele minderheden uit te breiden, 2) het in kaart brengen van verscheidende ongelijkheden in geestelijke gezondheid op basis van seksuele oriëntatie en 3) het toetsen van verschillende onderdelen uit het voorgestelde theoretische kader inzake de sociaalecologie van seksuele minderhedenstigma.

**Methodes:** Transversale gegevens op individueel niveau, verzameld in enquêtes onder seksuele minderheden in zowel Zweden, andere Europese landen, en/of hen met een migratieachtergrond zijn gebruikt in dit proefschrift. De eerste twee studies hadden representatieve Zweedse steekproeven, terwijl de andere twee studies niet-representatieve steekproeven bevatten van seksuele minderheden woonachtig in, of geïmmigreerd vanuit, landen divers in structureel klimaat. De gegevens in de twee laatstgenoemde studies zijn gecombineerd met objectieve indicatoren van structurele stigma in de betreffende landen. In

alle studies werden mediatie- en moderatieanalyses toegepast om mechanismes te toetsen die verklaren hoe stigmagerelateerde factoren verband houden met de geestelijke gezondheid en het welzijn van seksuele minderheden.

**Resultaten:** Seksuele minderheden in Zweden, als laagstigmaland, hadden een 2,7-6,8 hogere odds voor zelfmoordgedachtes en -pogingen, een 1,3-2,3 hogere odds voor depressie, en een 1,4 hogere odds voor alcohol- en drugsmisbruik, in vergelijking tot heteroseksuele personen. In Zweden, ongeveer een derde van alle seksuele minderheden gaf aan dat zij volledige open waren over hun seksuele oriëntatie. Blootstelling aan structurele vormen van stigma gedurende de levensloop hield verband met verlaagd geestelijk welzijn onder volwassen seksuele minderheden die open waren over hun seksuele oriëntatie op school, gedeeltelijk middels niveauoverschrijdende effecten door toegenomen negatieve interpersoonlijke ervaringen, zoals pesten op school en vervolgens, als volwassenen, intimidatie en discriminatie. Blootstelling aan structurele stigma van het land van oorsprong hield ook verband met verminderde geestelijke gezondheid onder mannelijke seksuele minderheden met een migratieachtergrond middels negatieve copingpatronen, zoals afwijzingssensitiviteit en geïnternaliseerde homofobie, geleidelijk toenemend met de duur van blootstelling. Desondanks namen deze patronen gaandeweg af na blootstelling aan een lager niveau van structurele stigma. Verzwijging van seksuele oriëntatie verklaarde niet het verband tussen structurele stigma en geestelijke gezondheid. Idem, openheid van seksuele oriëntatie hield enkel verband met depressie onder seksuele minderheden met gebrek aan sociale steun.

**Conclusies en aanbevelingen:** Naast dat verscheidene risicofactoren voor slechte geestelijke gezondheid eerder zijn gerelateerd aan seksuele minderhedenstigma, verkende dit proefschrift, en toonde het steun voor, stigma jegens seksuele minderheden als sociaalecologisch systeem, inclusief chronosysteem, niveauoverschrijdende effecten en mechanismes die stigmagerelateerde factoren aan slechte geestelijke gezondheid verbinden. De geestelijke gezondheid van seksuele minderheden wordt mogelijk aangetast door de structurele milieus waarin zij leven en/of eerder leefden doordat deze schadelijke interpersoonlijke stigmagerelateerde ervaringen tijdens de levensloop en negatieve copingpatronen bevorderen. Om gelijkheid in gezondheid te verbeteren, dienen beleidsmakers te focussen op het elimineren van seksuele minderhedenstigma, in welke vorm dan ook; expliciet of subtiel, opzettelijk of onbedoeld, structureel of interpersoonlijk. Ondertussen kunnen psychologen ondersteunen bij het verkennen van alternatieve vormen van zingeving en het doorbreken van schadelijke stigmagerelateerde copingpatronen middels therapie. Verder onderzoek dient uit te wijzen hoe deze eerste sociaalecologische kadering van seksuele minderhedenstigma zich verder bewijst.

## LIST OF SCIENTIFIC PAPERS

- I. Untethered lives: Barriers to societal integration as predictors of the sexual orientation disparity in suicidality
- II. Sexual orientation openness and depression symptoms: A population-based study
- III. Country-level structural stigma, school-based and adulthood victimization, and life satisfaction among sexual minority adults: A life course approach
- IV. Time-varying exposure to structural stigma, minority stress reactions, and poor mental health among sexual minority male migrants

## ABOUT THE AUTHOR

The author, Arjan van der Star (born February 23, 1990 in Rotterdam, the Netherlands), is a public health scientist and epidemiologist interested in the mental health of sexual and gender minorities. Arjan obtained a Master of Science degree in Health Economics, Policy and Law at the Erasmus University in Rotterdam, the Netherlands, with a specific focus on health sociology and public health. At the time of writing, he is holding a Ph.D. candidacy position at Karolinska Institutet in Stockholm, Sweden, as advisee of dr. Richard Bränström and is a Postgraduate Fellow at the Esteem lab at the Yale School of Public Health in the United States. Furthermore, Arjan acts as the vice president of the section on Sexual and Gender Minority Health of the European Public Health Association.

Arjan van der Star's research focuses on the question how stigma-related factors may explain sexual orientation-based or gender identity-based disparities in mental health and how such stigma may unfold itself at several (socio-ecological) levels surrounding sexual and gender minorities. More specifically, Arjan investigates how these stigma-related factors may interact across structural, interpersonal, and individual levels of stigma to shape the mental health of sexual and gender minorities. As an example, he examines how discriminatory policies and laws may further promote different enacted forms of stigma at the interpersonal level, such as victimization and harassment, to further drive individual-level forms of stigma, like the internalization of negative societal attitudes, and to hamper sexual and gender minority mental health. With his strong public health background and interest, Arjan seeks to further the understanding on how policies and laws can structurally harm or protect the mental health of sexual and gender minorities. Hence, through his research, Arjan's work primarily aims to inform policymakers on how adverse mental health outcomes resulting from stigma may be prevented among these groups. Furthermore, as Arjan's research focuses on further illuminating mechanisms underlying the processes linking stigma to poor mental health, his work may further inform psychotherapy that is centered around dealing with the mental health consequences of stigma among sexual and gender minorities.

The author has no conflict of interest to declare.



# CONTENTS

1	Preface.....	1
2	Background.....	3
2.1	Sexual minorities – definitions and population size.....	3
2.2	Sexual orientation-based mental health disparities.....	6
2.3	Theories to explain mental health disparities.....	9
2.3.1	Identifying risk factors for poor mental health.....	9
2.3.2	Resilience among sexual minorities.....	11
2.3.3	Minority Stress Theory.....	12
2.3.4	Psychological Mediation Framework.....	13
2.3.5	Health Equity Promotion Model.....	14
2.3.6	Stigma as a fundamental cause of poor mental health.....	16
2.3.7	Beyond stigma: general psycho-sociology.....	17
2.4	Navigating stigma: Sexual orientation openness.....	17
2.4.1	Potential competing and counteracting mechanisms.....	18
2.4.2	Conceptualizing openness and related constructs.....	19
2.5	Methodological limitations and knowledge gaps.....	22
2.5.1	Methodological limitations.....	22
2.5.2	Knowledge gaps.....	23
3	Socio-ecology of sexual minority stigma.....	27
3.1	The many faces of sexual minority stigma.....	29
3.1.1	Structural forms of stigma and mental health.....	29
3.1.2	Interpersonal forms of stigma and mental health.....	30
3.1.3	Individual forms of stigma and mental health.....	32
3.2	Sexual minority stigma as a nested system.....	33
3.2.1	Sexual minority stigma across history and the life course.....	34
3.2.2	Sexual minority stigma as multilevel construct.....	37
3.2.3	Mechanisms linking sexual minority stigma to poor physical and mental health.....	42
3.3	Summary.....	48
4	Aims.....	51
4.1	Study I.....	51
4.2	Study II.....	52
4.3	Study III.....	52
4.4	Study IV.....	52

5	Empirical studies.....	53
5.1	Study I: Untethered lives: Barriers to societal integration as predictors of the sexual orientation disparity in suicidality .....	53
5.1.1	Method.....	53
5.1.2	Results.....	54
5.1.3	Conclusions.....	55
5.2	Study II: Sexual orientation openness and depression symptoms: A population-based study .....	56
5.2.1	Method.....	56
5.2.2	Results.....	57
5.2.3	Conclusions.....	58
5.3	Study III: Country-level structural stigma, school-based and adulthood victimization, and life satisfaction among sexual minority adults: A life course approach .....	58
5.3.1	Method.....	58
5.3.2	Results.....	60
5.3.3	Conclusions.....	61
5.4	Study IV: Time-varying exposure to structural stigma, minority stress reactions, and poor mental health among sexual minority male migrants .....	61
5.4.1	Method.....	61
5.4.2	Results.....	66
5.4.3	Conclusions.....	67
5.5	Ethical considerations.....	67
5.5.1	Ethical permits .....	67
5.5.2	Research subjects.....	68
5.5.3	Population under study .....	68
5.5.4	Collected data .....	69
6	Discussion.....	71
6.1	General findings .....	71
6.2	Sexual minority stigma across history and the life course .....	74
6.3	Sexual minority stigma as multilevel construct.....	75
6.4	Mechanisms linking sexual minority stigma to poor mental health.....	76
6.5	Implications .....	77
6.5.1	Implications for theory.....	77
6.5.2	Implications for policy.....	79

6.5.3	Implications for clinical practice.....	80
6.6	Methodological limitations .....	80
6.7	Future directions for research .....	82
7	Conclusions .....	83
8	Acknowledgements.....	85
9	References .....	89
10	Appendices.....	113

## LIST OF ABBREVIATIONS

AOR	Adjusted Odds Ratio
CI	Confidence Interval
DSM	Diagnostic and Statistical Manual of Mental Disorders
EU	European Union
ILGA	International Lesbian, Gay, Bisexual, Trans and Intersex Association
MSM(W)	Men who have Sex with Men (and Women)
NYC	New York City
OECD	Organisation for Economic Co-operation and Development
Ph.D.	Doctor of Philosophy
SPSS	Statistical Package for Social Sciences
US	United States of America
WHO	World Health Organization
WSW(M)	Women who have Sex with Women (and Men)



# 1 PREFACE

Over the past decades, research has begun to identify significant sexual orientation-based mental health disparities (Bränström & Van der Star, 2016). That is, differences in mental health exist between individuals identifying with a lesbian, gay, bisexual, or queer identity and those having a heterosexual identity (see also section 2.1). As research regarding sexual orientation-based disparities in mental health has expanded, these identified inequalities in mental health, predominantly showing an increased risk of poor mental health among non-heterosexual individuals compared to heterosexual individuals, have received increased attention in the past years.

The mental health disparities based on sexual orientation are to a large degree inequitable, meaning that they are unjust in nature. Until the removal of the diagnostic status of homosexuality from the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) by the American Psychiatric Association in 1973 and from the *International Statistical Classification of Diseases and Related Health Problems* by the World Health Organization in 1990, the classification of homosexuality as a mental disorder or a mental deviation has shaped sexual minorities' (i.e., individuals with a non-heterosexual orientation) health and interactions with healthcare systems for many decades (Graham et al., 2011). Further progress toward increased equity has been made since the removal from the DSM, as some nations started to specifically list sexual orientation as an illegal ground for discrimination in their constitutions (Ramón Mendos, 2019). Moreover, the constitution of the World Health Organization ("Constitution of the World Health Organization," 1964) envisions "the highest attainable standard of health as a fundamental right of every human being". Such a rights-based approach necessitates measures toward achieving health equity by prioritizing those at highest risk for poor health and demands that this right to health must be enjoyed without discrimination on the grounds of any social condition. Much like the other social statuses the constitution specifies, sexual orientation would arguably also classify as such a social status. From a human rights perspective, sexual orientation-based health disparities are, hence, by definition health inequities and require action to ensure equal opportunities to health for all, regardless of sexual orientation. Social health inequities are to be prevented, as they are unfair, unnecessary, and avoidable (Whitehead, 1991).

While the current research literature has mainly focused on identifying, and reporting on, the sexual orientation disparity in mental health, as summarized in section 2.2, relatively less is known about the sources of these disparities, the related risk factors, and the underlying

mechanisms connecting these factors to poor mental health among sexual minority individuals. Increased knowledge about these mental health determinants and their underlying mechanisms is warranted. Such knowledge is of utmost importance in order to set targeted evidence-based policy agendas and to design effective preventive actions aiming to eliminate the mental health inequity of this disproportionately at-risk population. Therefore, the United States (US) Institute of Medicine, other institutes, and non-governmental organizations called for increased research regarding the risk factors driving sexual orientation-based mental health inequity to inform the development of strategies to reduce this inequity (Bränström & Van der Star, 2016; Graham et al., 2011).

In recent years, several theories have been developed and tested to further identify causes of the sexual orientation-based disparity in health and the associated risk factors and mechanisms, which are summarized in section 2.3. In order to inform preventive health policy and further advance health equity, this thesis aims to propose a new integrated theoretical framework, as outlined in chapter 3, by building on existing theories and to empirically test aspects of this framework in order to explain mental health disparities among sexual minorities, recapitulated in chapters 4 and 5. After discussing the methodology and results in chapter 6, the Ph.D. thesis' final conclusions are formulated in chapter 7.

In truth, none of the work as presented in this Ph.D. thesis would have been possible without the intellect and tireless efforts of the numerous scholars from which this Ph.D. thesis draws and the invaluable guidance of my co-authors and advisors. I hope that this Ph.D. thesis may contribute toward achieving health equity for all.

Arjan van der Star, M.Sc.

August 2020

## 2 BACKGROUND

### 2.1 SEXUAL MINORITIES – DEFINITIONS AND POPULATION SIZE

The population of sexual minorities comprises of individuals with a non-heterosexual orientation (i.e., persons who are not exclusively sexually oriented toward individuals of the opposite sex or gender) (Blondeel et al., 2018; Brennan et al., 2017), and membership is hence defined and delimited by individuals' sexual orientation. A sexual orientation refers to a person's capacity for a deep emotional, affectional, and sexual attraction, or intimate and sexual relations with individuals of any, none or a particular sex or gender (Blondeel et al., 2018; Brennan et al., 2017). Sexual orientation is often regarded to consist of three dimensions, namely identity, attraction, and behavior (Brennan et al., 2017). Hence, the sexual minority population includes individuals who identify themselves with a non-heterosexual identity label (e.g., gay, lesbian, bisexual, or queer), who are attracted to persons from the same or any sex or gender, or who engage in same-sex or gender-non-binary sexual behavior (Blondeel et al., 2018). In Western societies, commonly used non-heterosexual identity labels are gay and lesbian (for male-identified and female-identified individuals with same-sex sexual attraction or behavior, respectively [or the less-used synonym homosexual]), bisexual (for individuals who are attracted to or have sexual relations with both men and women), and queer (used as non-normative and gender-less umbrella label or used by individuals who do not associate themselves with aforementioned labels or question norms around gender and sexuality) (Blondeel et al., 2018). Less frequently used labels include questioning (for individuals who are unsure about their sexual orientation), asexual (for individuals who do not feel sexual attraction), or pansexual (for individuals who are attracted to persons regardless of their sex or gender) (Blondeel et al., 2018). Furthermore, other terminology is used to describe sexual minority individuals solely based on their sexual behavior. The public health literature refers to these populations as 'men who have sex with men (and women)' (MSM[W]) and 'women who have sex with women (and men)' (WSW[M]), who may not always necessarily self-identify as non-heterosexual (Blondeel et al., 2018). In this Ph.D. thesis, sexual minorities are broadly defined as individuals with a non-heterosexual orientation, based on sexual identity, attraction and/or behavior. Although not the focus of this Ph.D. thesis, gender minorities, when mentioned, are defined as individuals who are non-cisgender (i.e., individuals whose gender identity does not match their assigned sex at birth), including those who experience gender incongruence/dysphoria or are gender non-binary (i.e., individuals who do not identify or conform with prevailing

binary gender norms and expectations), or who are intersex (i.e., individuals born with an anatomy that does not fit the typical definitions of sex due to genetic, hormonal, or anatomical differences) (Blondeel et al., 2018; Connolly et al., 2016; Moleiro & Pinto, 2015).

Numerous attempts have been made to estimate the size of the sexual minority population (Flores et al., 2016; Gates, 2011). Estimates vary greatly depending on several factors, such as how sexual minority status is defined and measured, the studied age groups or, possibly, generation, but also on geography. Recent studies, predominantly conducted in the United States, found that approximately 7-8% of the population experienced a degree of same-sex attraction, 3-5% had same-sex sexual experiences, and 2.5-3.5% self-identified as lesbian, gay, bisexual, queer, or with another non-heterosexual sexual orientation label (Haas et al., 2011; Hall, 2018; Semlyen et al., 2016). Based on data by the ‘Organisation for Economic Co-operation and Development’ (OECD), as presented in Figure 1.1, population

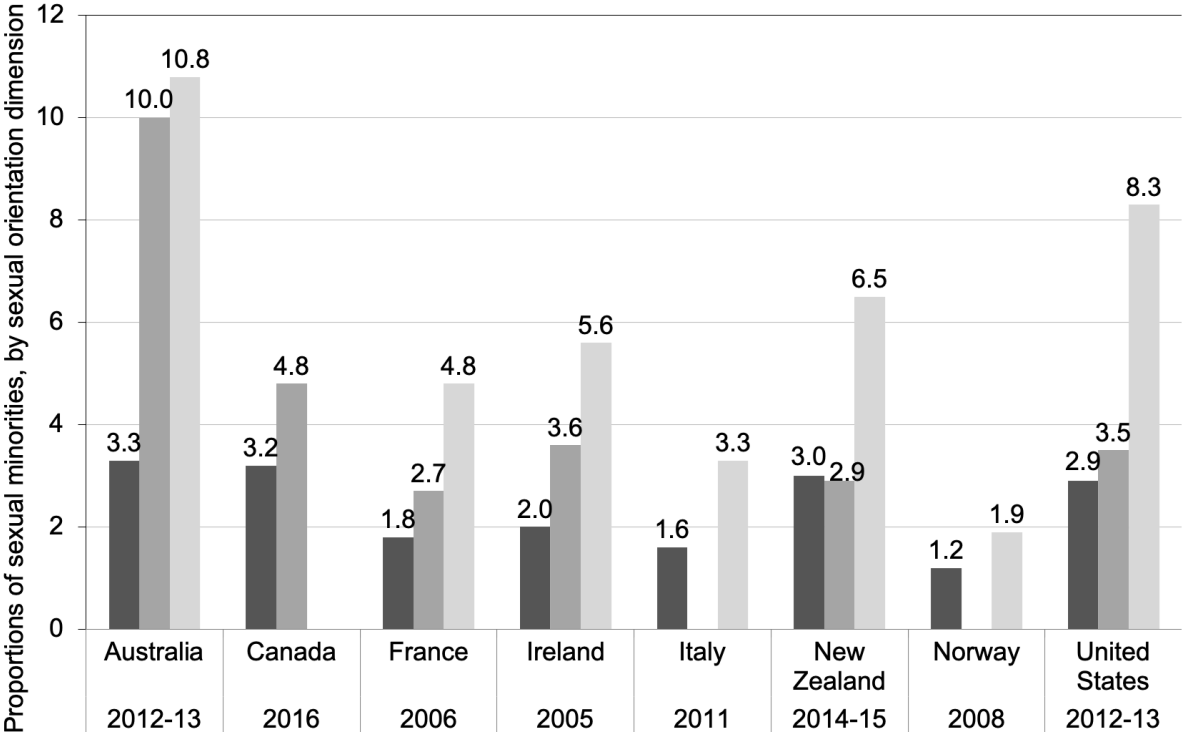


Figure 1.1. Proportions self-identifying as a sexual minority, reporting same-sex sexual behavior, and reporting same-sex attraction. Adapted from OECD (2019).

Note. Dark gray illustrating proportions of self-identified sexual minorities. Middle gray illustrating proportions of those reporting any same-sex sexual behavior. Light gray illustrating proportions of those reporting any same-sex sexual attraction.



-based estimates of various countries confirmed that the proportion of the population that reports same-sex attraction is generally higher than the proportion that engages in same-sex sexual behavior, while the proportion of those who self-identify as lesbian, gay, or bisexual is lowest (OECD, 2019).

Apart from the definition of sexual orientation used and the operationalization of its dimensions, the age of individuals may be an important factor relating to how one may describe one’s sexual identity. Some evidence indicated that the proportion of self-identification with sexual minority labels varied as a function of age (Fredriksen-Goldsen & Kim, 2015; Pöge et al., 2020). A report by the Williams Institute based on nationally representative data from the US showed that self-identification as gay, lesbian, and bisexual declined with increased age in all four of the included surveys, illustrated in Figure 1.2 (Gates, 2014). Young individuals may also tend to increasingly identify with non-heterosexual labels other than gay, lesbian, or bisexual in more recent years (Bränström, 2018; Eliason et al., 2016). This age effect may, at least in part, be attributed to higher levels

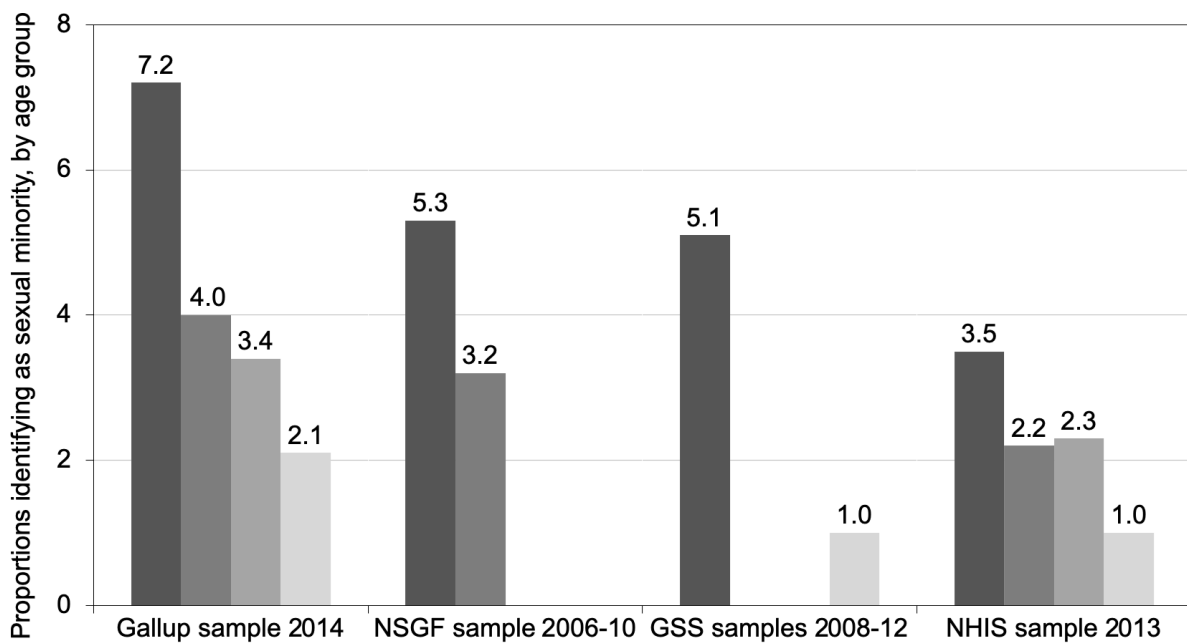


Figure 1.2. Proportions identifying as sexual minorities, by age group. Adapted from Gates (2014).

Note. Dark gray depicting proportions of those aged 18-29, medium dark gray depicting proportions of those aged 30-44, medium light gray depicting proportions of those aged 45-59, and light gray depicting proportions of those aged 60+ identifying as sexual minority.



of social acceptance that younger individuals experience than the lower levels that older generations endured while growing up (Gates, 2014). Hence, the differences found in self-identification with sexual minority labels across age groups may be generational but may also depend on different social climates that various generations are and have been immersed in.

As sexual identity labeling is complex and may be historically, culturally, and geographically situated (Russell & Fish, 2016), the proportion of self-identification with sexual minority identity labels may vary across countries depending on the national climates toward sexual minorities. That is, in countries with lower social acceptance toward sexual minorities, fewer individuals may identify with a sexual minority label because of the structural context they live in. Although national data are difficult to compare across countries due to differences in methodology, Figure 1.3 shows how the proportion of the population identifying as lesbian, gay, or bisexual may be negatively associated with a country-specific structural climate measure based on an index of negative population attitudes and discriminatory laws and policies toward sexual minorities. The available population-based studies estimating the size of the sexual minority population have mostly been conducted in North America and Western Europe, and it remains unknown how well these estimates can be transferred and generalized to other, often more structurally stigmatizing, parts of the world. Besides the proportion of the general population self-identifying as a sexual minority, the proportions of certain sexual identity labels used within the sexual minority population could more profoundly differ between countries as a function of their national structural climate. While not based on nationally representative data, one study found that not only the proportion among MSM who self-identify as gay (compared with a bisexual or heterosexual identity) but also the proportions of those exclusively reporting same-sex sexual experiences or same-sex sexual attraction were negatively associated with the degree of sexual minority stigmatization across countries (Pachankis, Hatzenbuehler, Mirandola, et al., 2017).

## **2.2 SEXUAL ORIENTATION-BASED MENTAL HEALTH DISPARITIES**

In 2011, the US Institute of Medicine released a landmark report with the title “The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding” highlighting that sexual minorities are at a higher risk for a wide array of health problems when compared with heterosexual individuals (Graham et al., 2011). Health is generally described as “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity”, in concordance with the definition by the World

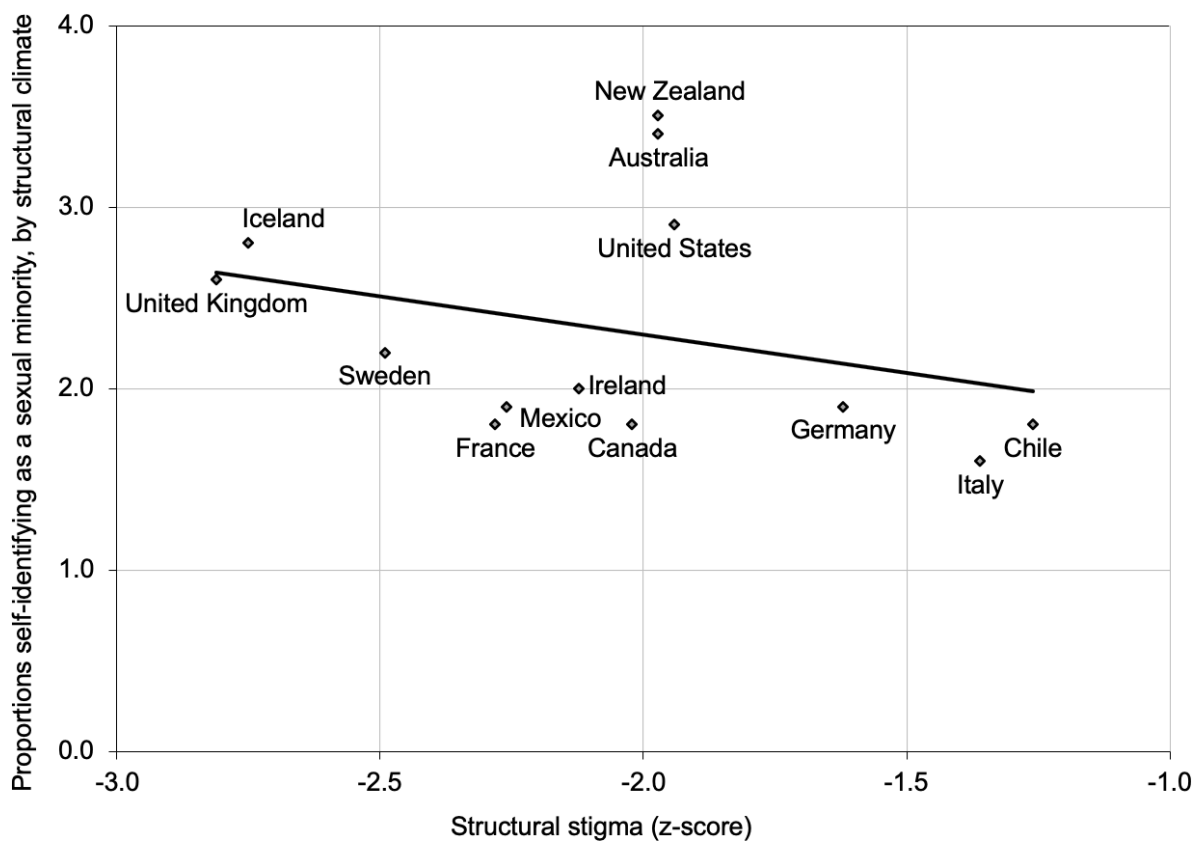


Figure 1.3. Proportions identifying as sexual minorities, by structural climate

Note. Data come from population-based samples as reported by Bränström et al. (2020) and OECD (2019). Australia: 2016 Household, Income and Labour Dynamics; Canada: 2016 General Social Survey; Chile: 2017 Encuesta de Caracterización Socioeconómica Nacional; France: 2006 Enquête Contexte de la sexualité; Germany: 2016 German Institute for Economic Research; Iceland: 2017 Health and Well-Being of Icelanders Survey; Ireland: 2005 Study of Sexual Health and Relationship; Italy: 2011 Survey on discriminations by gender, sexual orientation and ethnic origin; Mexico: 2017 Encuesta Nacional sobre Discriminación; New Zealand: 2014 Attitudes and Values Study; Sweden: 2010-15 National Public Health Survey; United Kingdom: 2012 Household Longitudinal Study; United States: 2012-13 National Epidemiologic Survey on Alcohol and Related Conditions.

Health Organization (WHO) ("Constitution of the World Health Organization," 1964). Thusly an integral part of one's health, mental health is the foundation for an individual's wellbeing and effective functioning and defined as "a state of wellbeing in which one realizes one's own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to one's community" (WHO, 2001). While this definition is a major step forward from the traditional understanding that mental health would simply be the absence of mental disorders, the definition has also been contested since it

reportedly implies that any experience of - sometimes desired or 'healthy' - negative emotional states or imperfect functioning would indicate reduced mental health (Galderisi et al., 2015). Therefore, mental health should be seen as *a dynamic state of internal equilibrium*; not purely a positive affect that is marked by feelings of happiness and a sense of mastery over the environment (Galderisi et al., 2015). Mental health-related constructs as individuals' satisfaction with life and subjective wellbeing should also be seen in the light of a broader state of being that would come with a certain degree of fluctuation.

An increasingly growing body of research has developed strong evidence concerning the substantially higher risks for reduced mental health among sexual minorities as compared to heterosexual individuals (Lucassen et al., 2017; Pandya, 2014; Plöderl & Tremblay, 2015; Russell & Fish, 2016). Systematic review papers have compiled the evidence on the elevated rates of many mental health problems among sexual minorities. The most commonly reported outcomes are suicidality, substance abuse, and a range of mood and anxiety disorders, such as depression and social anxiety.

Results of recent meta-analyses demonstrated an over two-fold increase in risk of past-year suicide attempts in both sexual minority men and women compared to heterosexual men and women, and a four-fold excess life-time risk of suicide attempts in gay and bisexual men compared to heterosexual men (Adelson et al., 2016; Haas et al., 2011; Hall, 2018; King et al., 2008; Lucassen et al., 2017; Russell & Fish, 2016). Anxiety, depression, and substance abuse are at least fifty percent more common among sexual minorities compared to heterosexual individuals (Haas et al., 2011; King et al., 2008; Russell & Fish, 2016). Limited evidence exists on how the different dimensions of sexual orientation (i.e., sexual identity, sexual attraction, and sexual behavior) are related to these mental health outcomes (Haas et al., 2011). However, a population-based study among US adults reported that, from the three dimensions of sexual orientation, sexual identity was most strongly related to mood and anxiety disorders and suicidality, highlighting the importance of sexual identity for understanding the increased risk for poor mental health (Haas et al., 2011). Regarding differences between various sub-groups of sexual minorities, studies indicated that self-identified bisexual individuals reported worse mental health outcomes than gay and lesbian individuals, showing a greater disparity than gay and lesbian individuals when compared to heterosexuals (Persson & Pfaus, 2015; Plöderl & Tremblay, 2015; Pompili et al., 2014; Ross et al., 2018; Russell & Fish, 2016; Semlyen et al., 2016; Taylor, 2018). Behaviorally bisexual men who identify as heterosexual (i.e., heterosexually identified MSM), however, may be more similar to behaviorally heterosexual men with regard to their mental health (Brennan et al., 2017). Furthermore, among sexual minorities, the disproportionate risk for poor mental



health seems to be particularly high in late adolescence or young adulthood (Boehmer et al., 2014; Fish et al., 2019; Perales, 2016; Rice et al., 2019); sexual minority youth reported up to seven times more suicide attempts than their heterosexual peers (Haas et al., 2011; Hall, 2018; Lucassen et al., 2017). Findings from these studies mark the disproportionately high risk of mental health problems among sexual minorities.

## **2.3 THEORIES TO EXPLAIN MENTAL HEALTH DISPARITIES**

Several theories have been proposed and tested in an attempt to explain the sexual orientation-based disparity in mental health that organize risk factors in various ways. These different theories present several mechanisms that may link these risk factors to poor mental health and may aid to explain the disproportionate risk for poor mental health among sexual minorities when compared to heterosexual individuals. These mechanisms may include mediator factors that explain how certain processes may underly the association between a risk factor and a mental health outcome. Other mechanisms may comprise of moderator factors, or effect modifiers, that may buffer or exacerbate the association between a risk factor and a mental health outcome. While the existing evidence for these models has remained fragmented, the number of empirical studies in support of the theories, particularly minority stress theory, has expanded rapidly over the past two decades.

Most of the proposed theories point to social stigma toward sexual minorities as the root cause of the mental health disparities. Stigma has often been defined as a phenomenon of social categorization that is characterized by co-occurring elements of labeling, stereotyping, separation, status loss, and discrimination, together with an imbalance of power (i.e., exercised as the dominant vs. the oppressed) that allows these processes to evolve (Goffman, 1963; Hatzenbuehler & Pachankis, 2016; Link & Phelan, 2001). Sexual minorities are considered to experience various forms and degrees of stigma on the basis of having a non-normative or devalued sexual orientation (i.e., having a non-heterosexual sexual orientation), but this stigma may generally be regarded as a concealable stigma leaving some sexual minorities with the possibility to hide their sexual orientation (Pachankis, 2007; Pachankis, Cochran, et al., 2015; Pescosolido & Martin, 2015). Sexual minority stigma also has been proposed as a fundamental social cause driving the sexual orientation disparity in mental health (Bränström et al., 2016; Hatzenbuehler, Phelan, et al., 2013).

### **2.3.1 Identifying risk factors for poor mental health**

A growing number of risk factors and determinants of poor mental health among sexual minorities have been identified in the scientific literature. The factors can be divided

in several categories, such as structural and contextual factors, interpersonal and social factors, individual and psychological factors, biological factors, and health behavioral factors that may interrelate and overlap. This categorization, therefore, follows a crude grouping of risk factors based on levels of observation.

*Structural and contextual factors.* There is strong evidence that the structural context surrounding sexual minorities can influence their mental health (Haas et al., 2011; Hall, 2018; Hatzenbuehler, 2017; Hatzenbuehler et al., 2018; Russell & Fish, 2016). Structural forms of stigma, such as discriminatory cultural norms, population attitudes, society-level conditions (e.g., unequal rights and discriminatory laws), and institutional policies (e.g., in schools) have been directly linked to poor mental health (Hatzenbuehler, 2014, 2016; Kealy-Bateman & Pryor, 2015; Kertzner, 2009; Pachankis & Bränström, 2018).

*Interpersonal and social factors.* A large number of studies has focused on establishing evidence for the links between stigma-driven interpersonal factors and reduced mental health (Meyer, 2013). These factors, often based on stigma and prejudice, include increased risks for victimization, bullying, either in-person or virtual, abuse and neglect, discrimination, harassment, and violence among sexual minorities compared with heterosexual individuals, subsequently leading to an elevated risk for poor mental health (Ahmed et al., 2013; Balsam et al., 2005; Blais et al., 2015; Blondeel et al., 2018; Collier et al., 2013; Haas et al., 2011; Hall, 2018; Lannert, 2015; Matarazzo et al., 2014; Meyer et al., 2008; Russell & Fish, 2016). Social factors include a lack of social support, rejection, and homelessness (Balsam et al., 2005; Blais et al., 2015; Hall, 2018; Matarazzo et al., 2014; McDonald, 2018; Russell & Fish, 2016). Heterogeneous results have been reported for religion-related experiences, as religion may further induce stigma-based stress or may serve as a source of support and network (Grey et al., 2013; Hall, 2018).

*Individual and psychological factors.* Several risk factors for poor mental health that are related to sexual minorities' internal processes have been identified, e.g., stress related to concealment and openness about a sexual minority identity, feeling like a burden to other people, feeling lonely and socially isolated, lacking adaptive coping skills, stress of expecting negative events, violence, or rejection to occur, and the internalization of negative societal attitudes (Blais et al., 2015; Grey et al., 2013; Hall, 2018; Lannert, 2015; Meyer, 2007; Meyer, 2013; Newcomb & Mustanski, 2010; Russell & Fish, 2016).

*Biological factors.* Various biological risk factors for poor mental health among sexual minorities have been identified in the research literature. Studies point toward mechanisms as the activation of the body's stress response system, diastolic blood pressure reactivity, and elevated cardiometabolic risk that are associated with exposure to stigma-

related stress and are influencing physical health, which in turn may be a risk for poor mental health (Fredriksen-Goldsen et al., 2014). However, research in this area that specifically focused on sexual minorities has still been limited.

*Health behavioral factors.* Manifest health behaviors related to both reduced physical and mental health among sexual minorities include sexual health risk behaviors, smoking, drinking, and substance abuse (Goldbach et al., 2015; Goldbach et al., 2014). Studies have shown that these health behavioral risks are, at least partially, driven by stigma-related stressors, such as victimization, lack of supportive environments, psychological distress, negative disclosure reactions, and housing status, and may be further amplified by a lack of social support (Goldbach et al., 2015; Haas et al., 2011; McDonald, 2018; Russell & Fish, 2016).

### **2.3.2 Resilience among sexual minorities**

Several protective factors linked to improved mental health among sexual minorities have been reported in the literature and may also be grouped at different observational levels such as a structural or contextual (e.g., at schools or in communities), interpersonal or social (e.g., in interaction with peers, friends, or family), or an individual or psychological level (e.g., regarding a sexual identity or self-schema). These factors include having a positive sexual identity, self-esteem, high degree of self-acceptance, adaptive coping skills, social support from friends, strong family connectedness, and parental support (Blais et al., 2015; Freitas et al., 2017; Haas et al., 2011; Hall, 2018; Katz-Wise et al., 2016; McDonald, 2018; Meyer, 2013; Russell & Fish, 2016). School connectedness, school safety, access to an affirming school curriculum, and sports involvement, are well-established protective factors within the school environment for young sexual minorities (Blais et al., 2015; Haas et al., 2011; Russell & Fish, 2016). Cohesive and affirmative communities of sexual minority peers and connectedness to these communities have been linked to improved mental health (Haas et al., 2011; Hall, 2018).

In an attempt to compile findings on health-promoting factors, resilience, often framed as a set of protective mechanisms, is currently being conceptualized in the literature and a debate is ongoing about its exact definition (Colpitts & Gahagan, 2016; Lyons, 2015). Results have been inconsistent and inconclusive when relating resilience to mental health outcomes among sexual minorities (Colpitts & Gahagan, 2016; Freitas et al., 2017). Some researchers suggest that higher resilience itself is not protective but that a lack of resilience leads to increased vulnerability for poor mental health; other researchers propose that resilience is only protective in the presence of risk (Freitas et al., 2017).

### 2.3.3 Minority Stress Theory

By providing the foundational framework for understanding the sexual orientation-based disparity in mental health, the minority stress theory has been the leading theory in the scientific literature on sexual minority health (Meyer, 2003; Meyer, 1995; Meyer, 2013). As first introduced by Brooks (1981; Rich et al., 2020) and later advanced and made popular by Meyer (2003), this theory posits that sexual minorities experience chronic stressors and stress processes that are uniquely tied to their stigmatized sexual minority identities. Besides exposure to universal everyday stressors, these distinct stressors and stress processes compound general life stress to put sexual minorities at disproportionate risk of disease and could be classified as either distal or proximal (Meyer, 2003), see Figure 2.1. Distal minority stressors include interpersonal prejudice events, such as victimization, violence, harassment, and discrimination (Meyer, 2003). Proximal stress processes are considered individual stigma-related reactions (Meyer, 2003). Examples of these proximal stress processes are increased anticipation of victimization and rejection, increased negative societal attitudes one's own (often referred to as internalized homophobia or homonegativity), and an increased likelihood to concealing one's sexual identity (Meyer, 2003). As most research to date has used the minority stress theory to examine the mental health disparities among sexual minorities, a sizeable and growing evidence base exists for most aspects of this framework.

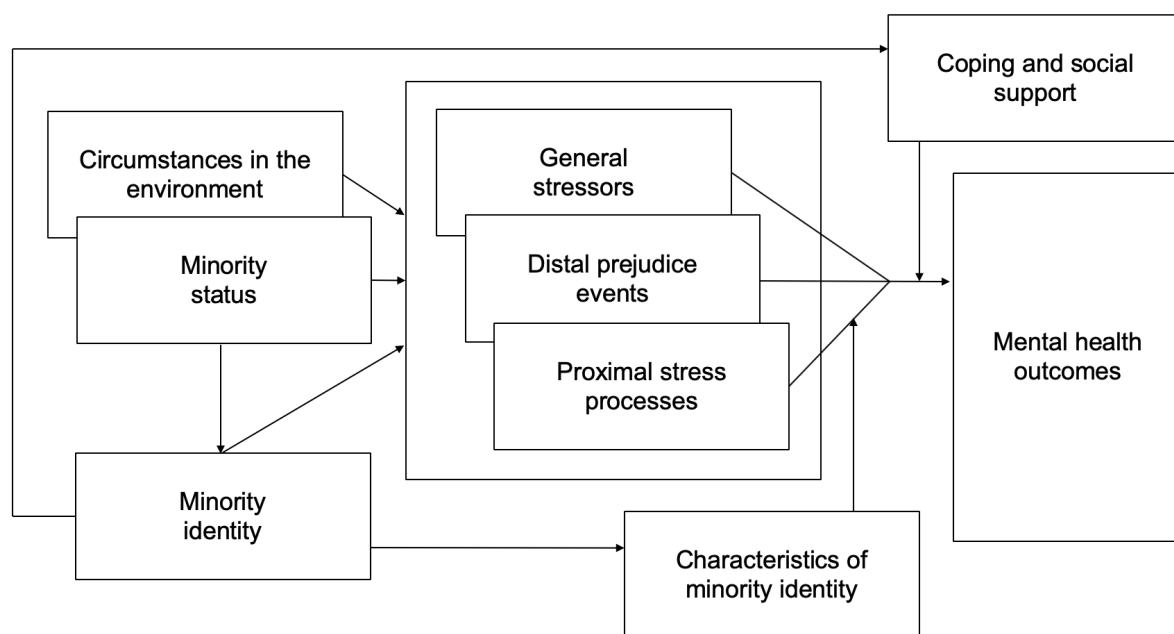


Figure 2.1. Minority stress theory. Adapted from Meyer (2003).

Since its inception, various researchers have used the minority stress model to examine mental health disparities among sexual minorities, while further expanding the

original framework and giving new interpretations to it. More recently, discussions in the literature have led to a reiteration and further clarification of the original theory. Over the past years, several researchers started to describe proximal constructs, such as rejection sensitivity, as a minority stressor (e.g., Feinstein, 2019). Meyer (2019) clarified that minority stress theory proposes stressors to be objective (or perceived) ‘events’; hence, rejection itself to be the stressor. The individual sensitivity to these events would then be determined by individual factors, e.g., a ‘lack’ of resilience. Others describe constructs as rejection sensitivity, but also sexual orientation concealment and internalized homophobia, as minority stress processes (Pachankis, Hatzenbuehler, Rendina, et al., 2015). In this Ph.D. thesis, these proximal factors are primarily framed as individual-level stigma-related risk factors but also as minority stress reactions (i.e., processes), in response to stigma-related events and prejudice (i.e., stressors).

The minority stress model further postulates that coping skills and other stress-ameliorating factors such as social support, groups solidarity, and cohesiveness may reduce the mental health impact of minority stressors and stress reactions (Meyer, 2003; Meyer, 2013). Research distinguishes between personal coping factors, either adaptive (e.g. problem solving) or maladaptive (e.g., avoidance or self-blame), and group-level social structural support factors (Meyer, 2003). The latter type of support would come from sexual minority-specific peer communities and group solidarity, which could provide a stigma-free environment and peer support for coping with stigma-related stressors and stress reactions (Meyer, 2003). However, other forms of social participation and emotional support could also come from outside of the sexual minority community, such as parental and school support (Russell et al., 2009; Ryan et al., 2010). On the individual level, minority identity characteristics may also alleviate or exacerbate the mental health impact of minority stressors and stress reactions, such as how prominent the minority identity is for one’s self-definition, how one would feel about one’s identity, or to what degree one has integrated one’s minority identity with other identities.

#### **2.3.4 Psychological Mediation Framework**

The psychological mediation model builds on the minority stress theory and the literature on general psychological processes and describes how stigma-related stressors may initiate adverse psychological processes that are not specifically unique to sexual minorities but are regarded universal (Hatzenbuehler, 2009). This framework further posits that, through general psychological processes, stigma-related stressors may give rise to mental health problems (Hatzenbuehler, 2009) (see Figure 2.2). In these processes, general psychological

factors act as mediators that explain how the stigma-related stressors compound sexual minorities' mental health. That is, this model propounds that stigma-related stressors increase levels of general emotion dysregulation, social or interpersonal problems, and adverse cognitive processes, which, in turn compromise mental health (Hatzenbuehler, 2009). Based on the available literature, Hatzenbuehler (2009) identified rumination and coping motives as examples of emotion regulation processes, social isolation and social expectations as examples of interpersonal processes, and negative self-schemas and feelings of hopelessness and pessimism as cognitive processes. For instance, victimization events may cause increased rumination, which may lead to depression and anxiety, showing that the mental health impact of victimization may be explained by increased rumination. Rather than considering stigma-related stressors and general psychological processes as distinct risk factors for poor mental health among sexual minorities, the psychological mediation framework fully combines these factors into an integrated model on the development of psychopathology in sexual minorities. Research regarding the general psychological processes linking stigma-related stressors to poor mental health among sexual minorities has rapidly increased in the past decade and a growing body of evidence exists (see chapter 3.2.3).

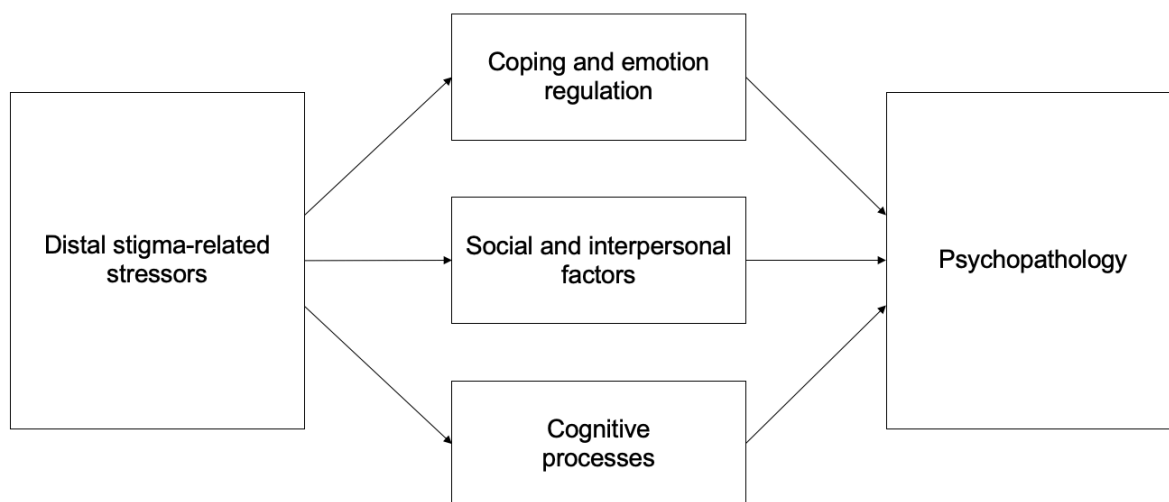


Figure 2.2. Psychological mediation framework. Adapted from Hatzenbuehler (2009).

### 2.3.5 Health Equity Promotion Model

With the minority stress model and the psychological mediation framework being primarily based in the psychological literature, the health equity promotion model takes a more holistic public health focus by further taking into account social climates, structures, and positions (e.g., on the basis of sexual identity, gender identity, sex, age, race/ethnicity, socio-economic status, immigration status, geographic location, and disability status)

(Fredriksen-Goldsen et al., 2014). As depicted in Figure 2.3, the health equity model further expands by highlighting the impact of the sexual minorities' structural and environmental contexts and it suggests that stigma-related stressors may influence mental health through behavioral, social, psychological, but also biological pathways throughout the entire life course (Fredriksen-Goldsen et al., 2014). Taking a broad approach to health, the model proposes that the different social positions, and their intersectionality within societies that are characterized by different levels of structural stigmatization, impact pathways and risk factors that could either reduce or improve mental health in the short and long term (Fredriksen-Goldsen et al., 2014). While the support regarding intersecting social positions and biological pathways remains limited, the evidence base for health behavioral, social, and psychological pathways is considerably larger (see chapter 3.2.3). Few studies have been able to examine how the mechanisms that link structural and interpersonal stigma-related factor to poor mental health among sexual minorities may develop or be different across the life course (see chapter 3.2.1).

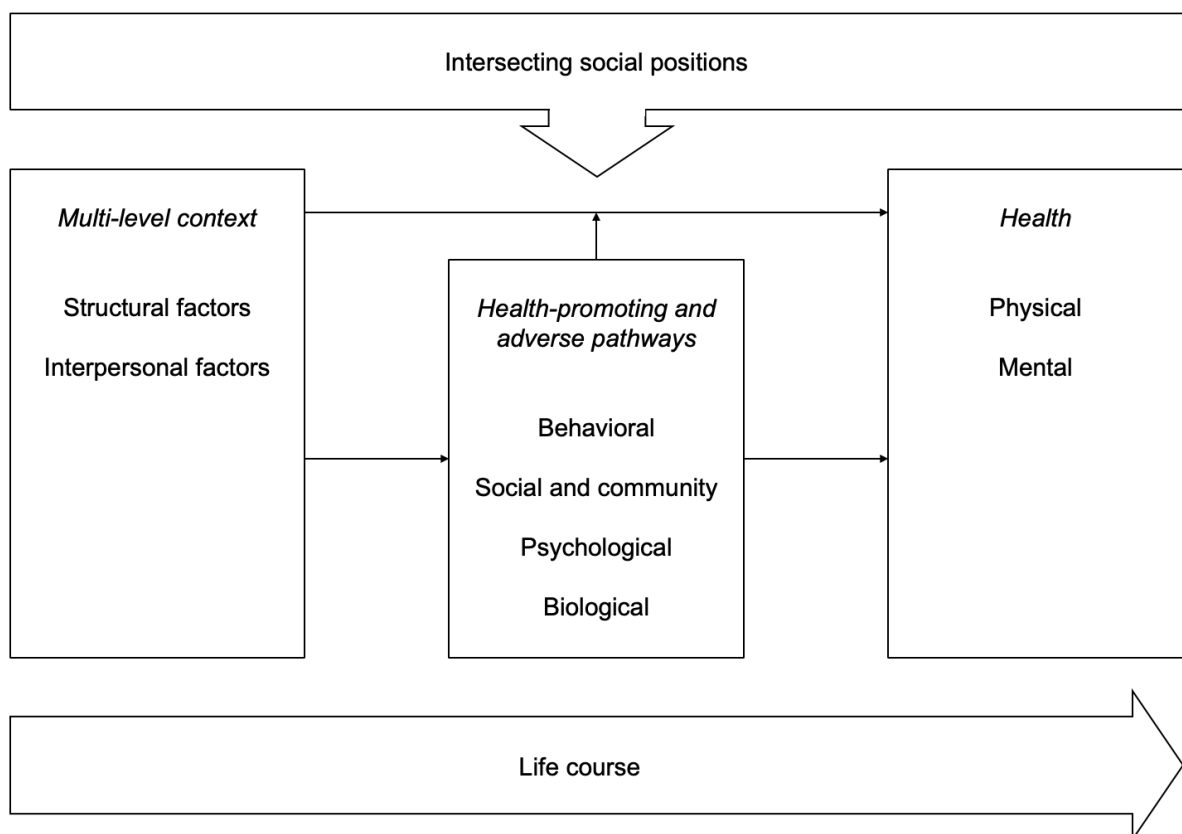


Figure 2.3. Health equity promotion model. Adapted from Fredriksen-Goldsen et al. (2014).

### **2.3.6 Stigma as a fundamental cause of poor mental health**

Most of the established theoretical models that aim to explain the increased risk for poor mental health among sexual minorities attribute the unique risk factors to the stigma that sexual minorities face. That is, the theories point to stigma as the root cause of the disproportionate risk for poor mental health among sexual minorities. Within this paradigm, some researchers recently took this conceptualization a step further and proposed stigma as fundamental social cause of health disparities based on sexual orientation (Bränström et al., 2016; Hatzenbuehler, Phelan, et al., 2013). Fundamental cause theory posits that particular social factors, such as stigma, may persistently contribute to disparities in health throughout history, regardless of considerable reductions in associated risk factors or interventions that target underlying mechanisms (Hatzenbuehler, Phelan, et al., 2013). With sexual minority stigma as a possible fundamental social cause, sexual minorities might remain a disadvantaged population despite preventive measures targeting known related risk factors. In order to classify as a fundamental social cause, a social factor that contributes to persisting health inequalities must meet three criteria. First, the social factor affects a variety of health outcomes, through various mechanisms and risk factors, in large populations (Hatzenbuehler, Phelan, et al., 2013). Furthermore, it must hamper access to resources, often available to more privileged individuals, that could generally be used to ameliorate the risks and direct consequences of poor health (Hatzenbuehler, Phelan, et al., 2013). Third, even when certain mechanisms that link the fundamental cause to poor health have been interrupted, the association of the social factor to poor health endures over time through replacing mechanisms (Hatzenbuehler, Phelan, et al., 2013). This means that, when a mechanism linking the fundamental cause to health has been successfully interrupted, the association between the fundamental cause and poor mental health is reproduced through the creation of new circumventing processes. Therefore, policies and interventions designed to improve associated health inequalities can only be truly effective when the fundamental social cause is targeted and reduced or eliminated, rather than the known mechanisms that otherwise then would be replaced (Hatzenbuehler, Phelan, et al., 2013). Stigma, and more specifically stigma toward sexual minorities, may fulfill these criteria and has been theorized as a fundamental social cause and not just a root cause of health inequalities among sexual minorities, examined in two recent empirical studies (Bränström et al., 2016; Hatzenbuehler, Phelan, et al., 2013).



### **2.3.7 Beyond stigma: general psycho-sociology**

All of the aforementioned theories have primarily been using perspectives from socio-psychology, as the field of study focusing on human mental processes, dispositions, experiences, and immediate social situations and contexts, with sexual minority stigma as the main cause driving negative, or disrupting positive, psychological processes to explain the disproportionate risk for poor mental health among sexual minorities compared with heterosexual individuals. Psycho-sociology, although partially overlapping with socio-psychology and both seen as branches of socio-epidemiology, is a research field that studies one's location in the social order, one's socialized roles, and one's historical social contexts. While some work has been done, particularly regarding structural forms of sexual minority stigma (Hatzenbuehler, 2016; Pachankis et al., 2014; Van der Star, Pachankis, et al., 2020), theories within the field of psycho-sociology could help to identify other structural risk factors for poor mental health among sexual minorities that may not necessarily find their origin in stigma or prejudice. One such theory that might be particularly useful is the structural theory of suicide by Durkheim (1897). Based on the relationship between the individual and society, this theory posits that, among other forms of suicide, *le suicide égoïste* is characterized by a lack of integration in society (Durkheim, 1897). Such detachment may generate feelings of depression, meaninglessness, and apathy (Durkheim, 1897). Acting as risk factors, examples of barriers to such societal integration may include living without a partner or being unmarried, not having children, having low trust in society, and being unemployed (Durkheim, 1897), which may be more profound among sexual minorities. This Durkheimian hypothesis on the lack of societal integration as a cause of poor mental health or suicide may further help to explain mental health disparities among sexual minorities beyond the stigma paradigm, but only has recently been assessed and shown useful (Bränström et al., 2020).

## **2.4 NAVIGATING STIGMA: SEXUAL ORIENTATION OPENNESS**

Most findings reported in the psychology and public health literature regarding the associations between stigma-related stressors or minority stress reactions and mental health have predominantly demonstrated consistently negative relationships (Fredriksen-Goldsen et al., 2014). Yet, the evidence on the mental health consequences of either the open expression of one's sexual orientation or, conversely, concealment of a sexual orientation among sexual minorities has been mixed and, by times, contradictory (Pachankis, Cochran, et al., 2015; Van der Star et al., 2019). As presented in an overview by Schrimshaw et al. (2013), several studies have shown a positive association between sexual orientation openness and mental

health (e.g., Beals et al., 2009; Rosario et al., 2011), but others report negative associations (e.g., D'Augelli et al., 1998; Rosario et al., 2001). Although some of these conflicting findings may be attributed to methodological issues (Pachankis, Cochran, et al., 2015; Van der Star et al., 2019), including differences in definitions and conceptualizations of constructs related to sexual orientation openness (e.g., outness, disclosure, and concealment), other explanations may underly these findings regarding the association between sexual orientation openness and mental health through competing, and often unmeasured, harmful and protective mechanisms.

#### **2.4.1 Potential competing and counteracting mechanisms**

Sexual identity concealment has typically been conceptualized as a single spectrum construct ranging from full concealment to full disclosure of a sexual orientation. Yet, either end of this spectrum may hold both positive and negative consequences for sexual minorities' mental health, suggesting potential competing and counteracting mechanisms. On the one hand, sexual minorities may use sexual identity concealment as a means to navigate stigmatizing climates and situations; a non-heterosexual sexual orientation is often stigmatized but has the potential to not be directly visible and, hence, can be hidden from others (Pachankis, 2007; Pachankis, Cochran, et al., 2015; Pescosolido & Martin, 2015). In this way, concealment of sexual orientation may serve to protect the mental health of sexual minorities by reducing exposure to discrimination, violence, and other forms of interpersonal rejection (Pachankis, 2007; Pachankis & Bränström, 2018). Several empirical studies show that sexual orientation openness was not only associated with increased rates of physical and verbal abuse, discrimination, and rejection among sexual minority individuals (Bry et al., 2017; Legate et al., 2012), but also with stress relating to navigating and exploring new social identities, networks, and communities outside heteronormative structures (Cochran, 2001). In sum, when concealment of sexual orientation is used as a strategy to navigate situations in which heteronormativity prevails and to avoid prejudice, victimization, and discrimination, it might be protective for sexual minorities' mental health (Pachankis, 2007; Pachankis & Bränström, 2018).

On the other hand, adverse psychological consequences have been associated with concealment of, or lack of openness about, one's sexual orientation, showing that concealment of a central or salient part of one's identity, such as a sexual orientation, can be mentally taxing and may elevate the risk of poor mental health (Morris et al., 2001; Ullrich et al., 2003). Concealment-related stress has been positively associated with feelings of shame and guilt and with disrupted relationships (Pachankis, 2007). Conversely, openness

about sexual orientation can alleviate the stress related to deliberately hiding and disguising a sexual orientation (Legate et al., 2012; Pachankis, 2007; Ragins, 2004), but it may also put sexual minorities in contact with group-based protection through connecting with similar others (Crocker & Major, 1989; Frable et al., 1998; Meyer, 2003), may generate the possibility to develop a unified and positive self-schema (Rosario et al., 2006), and has been associated with improved mental health outcomes (Bry et al., 2017; Plöderl et al., 2014; Tabaac et al., 2015).

#### **2.4.2 Conceptualizing openness and related constructs**

In studies examining the mental health consequences of sexual orientation openness, large variability exists in the conceptualization and, often as a consequence, operationalization of different constructs related to sexual orientation openness, which to some extent may explain the inconsistent results regarding the mental health consequences of sexual orientation openness. These key constructs may include sexual orientation openness, outness, disclosure, or concealment. The lack of a consistent conceptualization in the literature becomes apparent in two important ways: the interchangeable use of potentially conceptually differing constructs and the various aspects covered by their used definition or operationalization.

While the terminology regarding sexual orientation openness, outness, disclosure, or concealment often has been gathered under the larger umbrella concept of sexual orientation concealment, the constructs may represent separate phenomena when more precisely defined that do not necessarily lie along a single continuum with full concealment to full disclosure of sexual orientation on opposite sites (Schrimshaw et al., 2013; Van der Star et al., 2019). Concealment, often seen as an avoidance-related construct, and openness, outness, or disclosure, regarded as approach-related constructs, are conceptually different but have also been associated with different mental health consequences (McGarrity & Huebner, 2013; Meidlinger & Hope, 2014; Pachankis, Mahon, et al., 2020; Riggle et al., 2016; Schrimshaw et al., 2013; Van der Star et al., 2019). To further illustrate this distinction, one could imagine the hypothetical case of a bisexual woman in a monogamous opposite-sex relationship. When asked in a survey, she may reveal that she experiences same-sex sexual attraction and would identify as bisexual. However, given her reality and with the possibility of not seeing her bisexuality as a salient part of her overall identity, she may have never felt a need to reveal but also no active desire to conceal her bisexual orientation, while she may also not be necessarily bothered by her non-disclosure. Hence, the fact that this woman is not disclosing her bisexual orientation does not necessarily mean that she is actively concealing or, in other

words, hiding or disguising her sexual orientation. Although being related and partially overlapping constructs, concealment, therefore, does not inherently equal the absence of disclosure (Schrimshaw et al., 2013; Van der Star et al., 2019).

Secondly, the large variability also becomes visible in the definitions used in the literature for the constructs related to sexual orientation openness. These definitions vary widely based on the different aspects covered, leading to important conceptual differences in their operationalizations. Different authors have highlighted this variability as a possibly important contributor to the inconsistency of reported results regarding the mental health consequences of sexual orientation openness (Pachankis, Mahon, et al., 2020; Schrimshaw et al., 2013; Van der Star et al., 2019). Yet, there is a lack of theoretical work that further explores the different or shared aspects among the related constructs. For the purpose of their meta-analysis on the mental health consequences of sexual orientation concealment, Pachankis and colleagues (2020) made a first attempt and identified four main operationalization categories along a spectrum of how explicitly sexual orientation has been disclosed, namely ranging from public knowledge as the least explicit form of sexual orientation disclosure, to general openness, open behavior, and then active disclosure as the most explicit form. Even though acknowledging three main dimensions of sexual orientation concealment (e.g., behavioral, motivational, and cognitive; Pachankis, Mahon, et al., 2020), this one-dimensional categorization diffuses some key elements when plotted along a single spectrum on how explicitly information about one's sexual orientation is being shared before it became known to others. That is, theoretically, one can distinguish the differing definitions and operationalizations of sexual orientation openness-related constructs based on a set of seven components, namely 1) mode, 2) exertion, 3) dimension, 4) sphere, 5) incidence, 6) measurement, and 7) directionality. First, the different modes can be either verbal (e.g., an event in which lesbian or gay individuals *verbally communicate* their sexual orientation to others; Holtzen et al., 1995), behavioral (allowing for a degree of open and authentic self-expression and presentation, e.g., the degree to which one is *honest and open* about one's sexual orientation in various social spheres; Senreich, 2010), or through collective knowledge (e.g., the degree to which one's sexual orientation was *known by* or openly talked about with people in different spheres; Mohr & Fassinger, 2000). Second, the level of exertion could range from passive (e.g., *not having told* anyone one's sexual orientation; Pachankis, Cochran, et al., 2015) to active (e.g., the degree of concealment ranging "from explicitly claiming a heterosexual identity to more subtle forms of impression management in *an effort* to make one's sexual orientation undetectable"; Cohen et al., 2016), which could possibly depend on sexual minorities' motivations to conceal or disclose their sexual orientation

(Schrimshaw et al., 2013). Third, definitions and operationalizations could focus on various dimensions of sexual orientation, such as identity (e.g., the extent to which one conceals their homosexual *identity*; Ullrich et al., 2003), attraction (e.g., the degree to which certain social connections know about one's same-sex *sexual attraction*; Kuyper & Fokkema, 2011), behavior (e.g., the degree to which one is open with other people or 'out of the closet' about one's sexual orientation or about non-heterosexual *relationships*; McGarrity & Huebner, 2013), or any combination of the three. Fourth, the different social spheres covered could vary from general (e.g., the degree to which one is open *in general* about one's sexual orientation; Pachankis & Goldfried, 2006) to those involving more precise social situations and specific connections (e.g., "the extent to which individuals have disclosed their sexual identity/orientation to a *variety of people and groups*, including family, heterosexual friends, coworkers, supervisors, religious community members and leaders, and strangers"; Feinstein, Dyar, et al., 2017). Fifth, definitions differ with regard to incidence by focusing on a one-off event (e.g., "disclosure is the *point* on the continuum when an individual has self-identified as a sexual minority and discloses this to others"; Aranda et al., 2015; Smith, 1997) or by suggesting a recurring process (e.g., "disclosure can potentially occur with *every encounter* throughout one's lifespan"; Aranda et al., 2015). Sixth, the measurement level often varies between dichotomous (e.g., the "*act* of revealing personal information about oneself to another"; Collins & Miller, 1994; such as a sexual orientation; Griffith & Hebl, 2002), a count (e.g., "the *number* of important individuals" one's sexual orientation was disclosed to, who learned it from oneself "or from others, discovered on their own, or came to suspect"; Rosario et al., 2009), or a scale (e.g., "the *extent* to which individuals are out to various individuals"; Legate et al., 2012; Mohr & Fassinger, 2000). Seventh, the directionality used in definitions may differ, as aforementioned, between avoidance-related (e.g., "the decision to *not share* or to *hide* a part or all of an LGB identity"; Riggle et al., 2016) and approach-related orientations (e.g., "to *inform* other about one's lesbian or gay orientation"; Malterud & Bjorkman, 2016). These wide variations in definitions and operationalizations may lead to considerable differences in the measurement of sexual orientation openness and related constructs, which may contribute to the inconsistency of reported findings on the mental health consequences of sexual orientation openness (Pachankis, Mahon, et al., 2020; Schrimshaw et al., 2013; Van der Star et al., 2019).

Based on these seven key components and ongoing discussions in the literature regarding the distinctions between the constructs of sexual orientation openness, outness, disclosure, and concealment, more refined, distinctive, and comprehensive working definitions for these constructs can be propounded as presented in Box 2.1.

### **Working definitions**

*Concealment - A process or potentially reoccurring event in which one actively hides or disguises one's entire or certain parts of one's sexual orientation in life generally or more specifically in certain situations, to certain individuals, or to certain groups in one's social environment.*

*Openness - The degree to which one openly discloses or expresses, either verbally or through behaviors consistent with one's authentic self, one's sexual orientation in life generally or more specifically in certain situations, to certain individuals, or to certain groups in one's social environment.*

*Outness - The degree to which one verbally discloses or confirms one's sexual orientation in life generally or more specifically in certain situations, to certain individuals, or to certain groups in one's social environment.*

*Disclosure - A potentially reoccurring event in which one verbally discloses or confirms one's sexual orientation in life generally or more specifically in certain situations, to certain individuals, or to certain groups in one's social environment.*

*Box 2.1. Working definitions for constructs relating to sexual orientation openness.*

## **2.5 METHODOLOGICAL LIMITATIONS AND KNOWLEDGE GAPS**

Although research on the mental health determinants of sexual minorities has accelerated over the past years and strong evidence exists in a few areas, numerous studies suffer from methodological limitations and many knowledge gaps remain. While the methodological limitations stretch from a lack of standardization to the unavailability of representative data, prevailing knowledge gaps, beyond those identified afore, include areas such as the intersectionality of stigmas (i.e., consequences of having multiple stigmas), and minority stress among bisexual individuals, older age groups, and across the life course. Furthermore, limited evidence is available regarding resiliency mechanisms, targeted affirmative psychotherapeutic interventions, and from countries outside Northern America.

### **2.5.1 Methodological limitations**

*Non-standardized measures.* Currently, a wide diversity in measures of sexual orientation, definitions of sexual minority status, and mental health outcomes are being used in the sexual minority health research literature (Blondeel et al., 2018; Brennan et al., 2017;

Haas et al., 2011; Russell & Fish, 2016). Most studies among sexual minorities have defined sexual minority status based on sexual behavior or self-reported sexual identity, but other studies lack a clear description of how the population under study was defined (Brennan et al., 2017). A lack in consistency and transparency of the measures used in studies complicates comparisons between studies and standardization of measures would further facilitate compiling of evidence (Blondeel et al., 2018; Brennan et al., 2017).

*Non-systematic and non-representative data collection.* There is a need for the systematic inclusion of measures on sexual minority status in population-based surveys and other forms of large-scale data collections in order to generate representative datasets with information on sexual orientation (Blais et al., 2015; Blondeel et al., 2018; Brennan et al., 2017; Goldbach et al., 2014; Haas et al., 2011; Lannert, 2015; Russell & Fish, 2016; Semlyen et al., 2016; Skerrett et al., 2015). Representative datasets of sexual minority populations could further facilitate the generalizability of findings, as convenience sampling may often lead to the underrepresentation of certain subgroups, like those concealing their sexual identity (Meyer & Wilson, 2009). Such datasets would enable the assessment of mental health disparities over time and systematically collected data would facilitate the possibility to pool data to create large enough datasets for the examination of the intersectionality of sexual minority status with various other stigmatized identities (Blais et al., 2015; Blondeel et al., 2018; Bränström et al., 2019; Brennan et al., 2017; Goldbach et al., 2014; Haas et al., 2011; Lannert, 2015; Russell & Fish, 2016; Semlyen et al., 2016; Skerrett et al., 2015).

*Non-longitudinal study designs.* Most of the literature in the field of sexual minority mental health is based on cross-sectional study designs. Longitudinal cohort studies and randomized controlled trials are needed to assess the time-order of risk factors in hypothesized mechanisms explaining poor mental health among sexual minorities, in order to further strengthen putative causal inference for associations between risk factors and mental health outcomes (Blais et al., 2015; Collier et al., 2013; Fredriksen-Goldsen et al., 2014; Goldbach et al., 2015; Goldbach et al., 2014; Haas et al., 2011; King et al., 2008; Lyons, 2015; Pompili et al., 2014; Schneeberger et al., 2014; Semlyen et al., 2016; Wolford-Clevenger et al., 2017).

## **2.5.2 Knowledge gaps**

*Intersectionality with other stigmas.* The availability of evidence on social positions, and associated stigmas, as intersecting social determinants of health among sexual minorities is limited. Research has begun examining intersectionality of stigmas around race, ethnicity, sexual orientation, and gender identity, and findings have been inconsistent when studying

sexual minorities (Brennan et al., 2017; Haas et al., 2011; Rodriguez-Seijas et al., 2019; Russell & Fish, 2016). More research is needed to examine how multiple cooccurring stigmas interplay and impact the mental health of sexual minorities (Blais et al., 2015; Brennan et al., 2017; Collier et al., 2013; Colpitts & Gahagan, 2016; Fredriksen-Goldsen et al., 2014; Haas et al., 2011; Hatzenbuehler, 2017; Russell & Fish, 2016; Smit et al., 2012).

*Stigma-related stressors among bisexual individuals.* While there is convincing evidence that bisexual individuals experience higher rates of reduced mental health, compared to gay, lesbian, and heterosexual individuals, only some first studies have further assessed these greater disparities and point toward specific stigma, stressors unique to bisexual individuals, and different health needs among bisexual individuals. More research is needed to explain these higher risks for poor mental health (Collier et al., 2013; Persson & Pfaus, 2015; Pompili et al., 2014; Ross et al., 2018; Russell & Fish, 2016; Taylor, 2018).

*Life-course approach.* The majority of the current research literature focuses on sexual minority youth, and less evidence is available on the mental health situation of sexual minorities at later stages of life, such as among adults or elderly, and whether the mental health impact of stressors persists across the lifespan (Blondeel et al., 2018; Collier et al., 2013; Haas et al., 2011; Hatzenbuehler, 2017; Hayman & Wilkes, 2016).

*Geographical and cultural generalizability.* The available research on sexual minority mental health has been geographically and culturally restricted. Most of the research has been conducted in North America, and to some degree, Europe, and Australasia (Blondeel et al., 2018; Brennan et al., 2017; Collier et al., 2013; Grey et al., 2013; Lyons, 2015; Ross et al., 2018; Skerrett et al., 2015). Most research, hence, is not generalizable to other parts of the world (Blondeel et al., 2018; Brennan et al., 2017; Collier et al., 2013; Grey et al., 2013; Lyons, 2015; Selemogwe & White, 2013). Studies from other countries would expand the research literature in critical ways (Collier et al., 2013).

*Resiliency mechanisms.* A deeper and broader understanding is needed about protective and resiliency factors among sexual minorities and their potential buffering effects on the association between stigma-related factors and sexual minorities' mental health (Blais et al., 2015; Collier et al., 2013; Colpitts & Gahagan, 2016; Fredriksen-Goldsen et al., 2014; Freitas et al., 2017; Johnson & Amella, 2014; Lyons, 2015). Findings, including earlier work that has been done on stress-ameliorating factors, have been inconsistent and inconclusive (Blais et al., 2015; Collier et al., 2013; Fredriksen-Goldsen et al., 2014; Freitas et al., 2017; Hall, 2018; Lyons, 2015; Marshall et al., 2016). Research in this area has been underdeveloped and more knowledge is needed as it may provide important leads for



psychotherapeutic interventions (Blais et al., 2015; Collier et al., 2013; Colpitts & Gahagan, 2016; Fredriksen-Goldsen et al., 2014; Lyons, 2015).

*Mental health interventions for sexual minorities.* Despite new developments currently under evaluation (e.g., Pachankis et al., 2019), there are considerable gaps in the public health and psychology literature on clinically proven treatment approaches for addressing minority stress processes and their psychological pathways to improve mental health outcomes among sexual minorities. More knowledge also is needed on barriers to accessing such services (Haas et al., 2011; Hatzenbuehler & Pachankis, 2016; Lamoureux & Joseph, 2014; Lyons, 2015; Ross et al., 2018; Rozbroj et al., 2014; Russell & Fish, 2016; Skerrett et al., 2015).



### 3 SOCIO-ECOLOGY OF SEXUAL MINORITY STIGMA

For centuries, the lives and health of most sexual minorities around the world have been shaped by the societies they live in, which perpetuated systems that treat individuals differently based on their sexual orientation (Bränström & Van der Star, 2013; Herek & McLemore, 2013). While most Western countries do share similar health inequalities based on sexual orientation (Lewis, 2009), large differences exist between countries in the treatment of sexual minorities today (Bränström & Van der Star, 2013). Omnipresent norms favoring heterosexuality and condemning homosexuality in these countries often are believed to derive from dominant religious doctrines (i.e., Judeo-Christian traditions), whereas other scholars argue that these norms may also find their origin in misogyny (Sullivan, 2004). In the latter case, homosexuality would be regarded as an attack on society's masculine privilege such that 'effeminate' gay men would be abandoning this privilege, whereas lesbian women would be trying to misappropriate it (Sullivan, 2004). This alternative source of negativity toward sexual minorities may further help explain nuanced but important variations in global views on homosexuality; in the Middle East, negative attitudes have traditionally been mostly focused toward sexually receptive male adults taking on a sexual role typically not associated with masculinity in Arabic cultures (Massad, 2002). In many countries around the world, particularly in Northwestern Europe and the Americas, attitudes toward sexual minorities have become more accepting over the past few decades (Flores, 2019; Poushter & Kent, 2020). Yet, the situation has worsened or remained fairly similar in other countries, including nations in Eastern Europe, the Middle East, and sub-Saharan Africa (Flores, 2019; Poushter & Kent, 2020). For a few of these countries, current-century developments in societal attitudes toward sexual minorities are shown in Figure 3.1.

Negative societal attitudes toward sexual minorities have historically been framed around 'phobias', such as homophobia and biphobia, but are typically better understood as prejudice, i.e., anti-sexual minority attitudes and practices (Herek, 2004). These attitudes may also evolve toward or regress from tolerance, as an ability to allow other beliefs or practices that differ from or are conflicting with one's own, and acceptance, as the approval of these beliefs and practices (Herek, 2004; Herek & McLemore, 2013; Van der Star & Bränström, 2015). While the notion of phobia would imply intense and irrational fears for, or mistaken ideas about, sexual minorities, often accompanied with a wish to be cured of such phobia, sexual minority prejudice is typically not characterized by these aspects

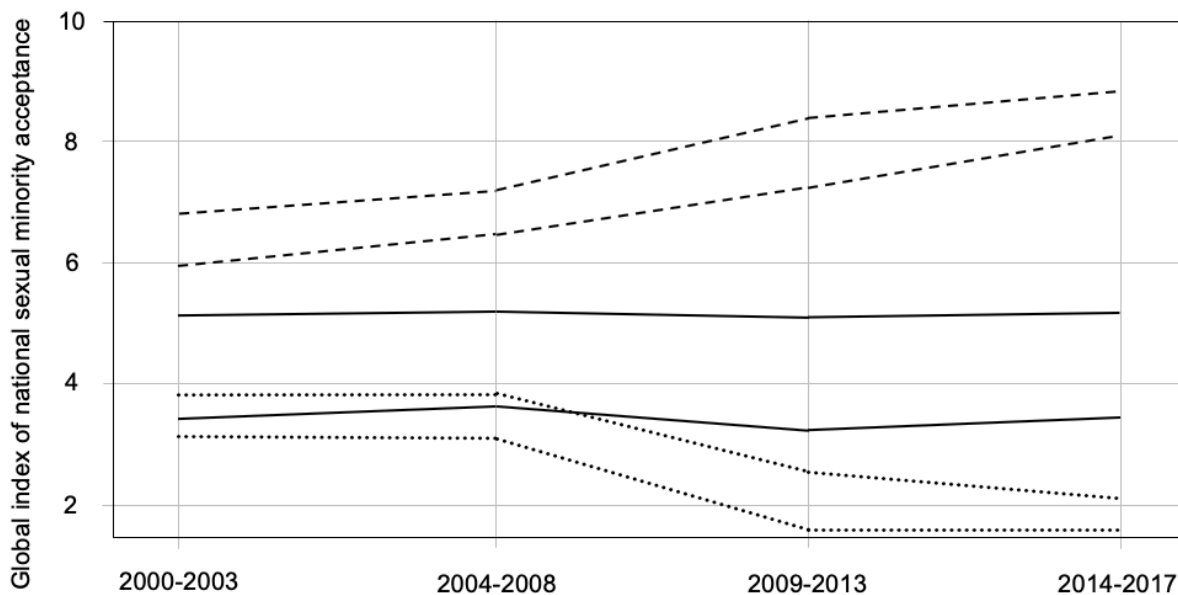


Figure 3.1. Current-century developments in acceptance. Adapted from Flores (2019).

*Note.* Dashed lines depicting the range for highest-scoring countries in 2014-2017 (i.e., Iceland, Netherlands, Norway, Canada, and Spain). Solid lines depicting the range for average-scoring countries in 2014-2017 (i.e., Thailand, Singapore, Guyana, Bhutan, and Kenya). Dotted lines depicting the range for lowest-scoring countries in 2014-2017 (i.e., Ethiopia, Azerbaijan, Senegal, Tajikistan, and Somaliland).

(Adam, 2015; Herek, 2004; Herek & McLemore, 2013; Semp, 2011; Wickberg, 2000). Contemporary conceptualizations have moved away from the phobia framework toward broader sociological postulations such as heterosexism and heteronormativity, often present in queer theory (Adam, 2015; Herek, 2004; Herek & McLemore, 2013; Semp, 2011; Wickberg, 2000). Heterosexism, defined as a set of social institutions organized to exclude or disadvantage sexual minorities, and heteronormativity can be distinguished as the latter extends by focusing on how binary distinctions between sexual minorities and heterosexual individuals are reproduced and sustained in society (Adam, 2015; Semp, 2011).

As a more all-encompassing concept, sexual minority stigma has been proposed as a sociological framework that focuses on the broader societal devaluing of a sexual minority status and a negative regard for sexual minority individuals (Herek, 2004; Herek & McLemore, 2013). Besides enacted forms of stigma and forms of self-stigma, it has been interpreted as to also include institutionalized forms of stigma that reflect society's hostility toward sexual minorities (Herek, 2004; Herek & McLemore, 2013). Rather, the phenomenon of stigma can be defined as social categorization that occurs through a combination of negative processes of labeling, stereotyping, separation, discrimination, and status loss,

activated by exercised power, on the basis of a discredited status (Hatzenbuehler & Pachankis, 2016; Link & Phelan, 2001).

Stigma, hence, may be used as a sociological concept focused around prejudice toward sexual minorities. This chapter describes the various forms in which sexual minority stigma may unfold itself, all of which may pose risks on sexual minorities' mental health, and how these forms of stigma may interrelate. Given that these stigma-related factors can be ecologically ranked across several levels, the factors may be conceptualized as a socio-ecological system surrounding sexual minorities, to explain how stigma may compromise sexual minority mental health within historical contexts and across the life course.

### **3.1 THE MANY FACES OF SEXUAL MINORITY STIGMA**

Sexual minority stigma may involve complex and multifaceted means of being executed and may appear in various forms, which can be grouped as structural, interpersonal, and individual factors, that devalue, restrict, and potentially hamper and harm the lives and wellbeing of sexual minorities (Hall, 2018; Hatzenbuehler & Pachankis, 2016).

#### **3.1.1 Structural forms of stigma and mental health**

Stigma may manifest itself in the form of society-level conditions and social institutions that shape the structural environments that stigmatized individuals live in. (Hatzenbuehler, 2014, 2016; Pachankis & Bränström, 2018). These forms of stigma are generally referred to as structural stigma and may hamper the wellbeing and restrict the opportunities of the stigmatized (Hatzenbuehler, 2014, 2016; Pachankis & Bränström, 2018). There is convincing evidence that discriminatory structural contexts surrounding sexual minorities may negatively influence their mental health (Haas et al., 2011; Hall, 2018; Hatzenbuehler, 2017; Hatzenbuehler et al., 2018; Russell & Fish, 2016); structural forms of stigma, such as oppressive cultural norms, negative population attitudes, discriminatory society-level conditions (e.g., unequal rights and discriminatory laws), and unequal institutional policies (e.g., in schools) have been directly linked to poor mental health (Hatzenbuehler, 2014, 2016; Kealy-Bateman & Pryor, 2015; Kertzner, 2009; Pachankis & Bränström, 2018).

Examples of studies that report direct bivariate associations between structural forms of stigma, at an aggregated state or national level (not at school or school district level), and mental health among sexual minorities include a study by Perales and Todd (2018). This study found that those Australian gay, lesbian, and bisexual individuals residing in regions with less supportive social attitudes toward equal legal rights for sexual minorities, measured

as referendum results on a 2017 proposal for same-sex marriage legislation, reported worse life satisfaction and mental health, compared with those living in regions with more supportive attitudes. Raifman et al. (2017) found that the introduction of same-sex marriage policies in certain US states was associated with a 7% reduction in suicide attempts among sexual minority high school students. Hatzenbuehler et al. (2010) found that, among gay, lesbian, and bisexual individuals, living in US states with policies banning same-sex marriage was associated with higher risks for various psychiatric disorders, including mood disorder, generalized anxiety disorder, and any alcohol use disorder, compared to living in states with no such policies. In another study, Frost and Fingerhut (2016) reported that increased negative public discourse (measured as messages campaigning against same-sex marriage) in four US states were associated with decreased psychological wellbeing among same-sex couples. Van der Star and Bränström (2015) found that, among members of same-sex couples across 26 European countries, a higher country-level proportion of individuals agreeing that gays and lesbians should be able to live their lives as they wish was associated with increased individual wellbeing. Another study, authored by Pachankis and Bränström (2018), found support for a direct association between a composite index of negative laws, policies, and population attitudes toward sexual minorities across 28 European countries and their sexual minorities' life satisfaction, indicating how structural stigma was associated with reduced wellbeing among sexual minorities. While a larger number of studies has focused on structural stigma at other levels, such as school or school district level, fewer studies, as presented in this section, assessed the association between structural forms of sexual minority stigma at the national or state level and sexual minority mental health. These studies have been diverse in applied methodologies and have not yet been subjected to meta-analysis but do report similar results. Together, these studies find consistent evidence suggesting that structural forms of stigma at the state or national level, such as attitudes, public campaigns, laws, and policies, may drive poor mental health and reduced wellbeing among sexual minorities.

### **3.1.2 Interpersonal forms of stigma and mental health**

Stigma within the interpersonal domain can lead to various prejudice-inspired situations and events that occur during interactions with other people, such as assaults, harassment, threats, victimization, and discrimination. A large body of research has reported evidence regarding the association between stigma-related interpersonal factors and mental health among sexual minorities (Meyer, 2013). These factors include lack of family structures and support networks, family or parental rejection, and potential subsequent homelessness

(Balsam et al., 2005; Blais et al., 2015; Hall, 2018; Matarazzo et al., 2014; McDonald, 2018; Russell & Fish, 2016). Furthermore, stressful or traumatic childhood experiences, including childhood sexual abuse, childhood physical abuse, childhood emotional abuse, childhood physical neglect, and childhood emotional neglect, are important risk factors for poor mental health throughout the life course (Hall, 2018; Schneeberger et al., 2014). Other negative interpersonal interactions, such as victimization, bullying, either in-person or virtual, employment discrimination, harassment, and violence in community settings occur more frequently among sexual minorities across the lifespan and harm their mental health (Ahmed et al., 2013; Balsam et al., 2005; Blais et al., 2015; Blondeel et al., 2018; Collier et al., 2013; Haas et al., 2011; Hall, 2018; Lannert, 2015; Matarazzo et al., 2014; Meyer et al., 2008; Russell & Fish, 2016). Such negative interpersonal events, when primarily based on stigma and prejudice, may further exacerbate the risk for poor mental health and hence be more deteriorating than generic (i.e., not based on a sexual orientation) negative interpersonal events (Russell & Fish, 2016). Negative religious experiences, such as negative feelings about one's faith or being affiliated with a religious organization that opposes sexual minority rights, have also been identified risk factors for poor mental health stigma among sexual minorities (Hall, 2018). However, for other measures related to religion and religiousness, such as strength of one's faith or importance of religion in one's life, research findings have been mixed as religion may either serve as a source of social support and community or further induce stigma-related stress (Grey et al., 2013; Hall, 2018).

The association between interpersonal forms of sexual minority stigma and mental health among sexual minorities has been extensively studied, but it has only been subject to a few recent meta-analyses and systematic reviews to further consolidate evidence. These systematic reviews all focused on sexual minority youth. In a systematic review, Hall (2018) reported significant associations between a set of interpersonal stigma-related factors, ranging from parental rejection, abuse and other traumatic events, negative interpersonal interactions, negative religious experiences, school bullying victimization, to violence victimization in community settings, and the risk for depression among sexual minority youth. Schneeberger et al. (2014) found similar results in their meta-analysis showing the association of different types of stressful childhood events, such as physical, sexual, and emotional abuse, with a range of mental health outcomes that included depression and post-traumatic stress disorder symptoms among sexual minority youth. Collier et al. (2013) confirmed the significant positive association between peer victimization and depression among sexual minority adolescents. Goldbach et al. (2014) reported a significant association of both victimization and unsupportive environments with an increased risk for substance

abuse in a meta-analysis focusing on sexual minority youth. McGeough and Sterzing (2018) showed that family victimization, in the form of physical, sexual, emotional, or childhood abuse, was associated with increased mental health problems, including general mental health symptoms, depression, and post-traumatic stress disorder symptoms among sexual minority youth. These systematic reviews are hampered by the combination of a large number of included interpersonal stigma-related factors and a wide range of mental health outcomes, relying on only a small number of, typically cross-sectional, studies to describe each association between a risk factor and a mental health outcome. Nevertheless, these studies together do provide considerable support showing how sexual minorities' mental health may be adversely impacted by interpersonal stigma-related factors, particularly among sexual minority youth.

### **3.1.3 Individual forms of stigma and mental health**

Individual stigma-related factors are defined as factors closely associated with identity and internal sources of stress (Meyer, 2003; Meyer, 2013). Examples of individual-level stigma-related factors among sexual minorities are typically referred to as proximal minority stressors or stress reactions and include the stress of expecting negative events to occur, stress related to concealment of a sexual orientation, and the internalization of negative societal attitudes (Hall, 2018; Meyer, 2007; Newcomb & Mustanski, 2010).

Whereas various studies have examined the association between individual forms of stigma and mental health, only a few systematic reviews have condensed the available evidence on the potential mental health consequences of individual-level stigma-related factors. In a systematic review, Hall (2018) listed significant associations of internalized homophobia, sexual orientation concealment, and maladaptive coping with depression among sexual minority youth. In a meta-analysis, Pachankis et al. (2020), only found a weak and small, yet significant and positive, association between sexual orientation concealment and poor mental health among sexual minorities. A meta-analysis by Newcomb and Mustanski (2010) showed a small effect for the negative association between internalized homophobia and anxiety symptoms, but a relatively larger effect for the negative association between internalized homophobia and depression. These systematic reviews included a varying number of, often cross-sectional, studies (i.e., 31 to 193) and revealed that the effect sizes of the associations may depend on effect-modifying factors such as age, identity positivity, self-esteem, and social support. Together, these provide convincing evidence for the mental health toll of individual-level stigma among sexual minorities, specifically under circumstances in which the level of certain socio-emotional resources may be low.



### **3.2 SEXUAL MINORITY STIGMA AS A NESTED SYSTEM**

As described in chapter 3.1, the various forms of sexual minority stigma can be organized at several hierarchical levels surrounding sexual minorities, e.g., a structural level, an interpersonal level, and an individual level, each with their possible negative effect on mental health (Hall, 2018; Hatzenbuehler & Pachankis, 2016). Even though sexual minority stigma has been widely recognized as a potential multilevel construct, few empirical studies have been able to examine the association between factors across these several levels of stigma and poor mental health (Hatzenbuehler, 2016; Hatzenbuehler & Pachankis, 2016; Russell & Fish, 2016). That is, a stigma-related factor at one level may give rise to a stigma-related factor at another level to compromise sexual minorities' mental health. By acknowledging stigma as a multilevel construct, the construct of stigma fits the ecological evolutionary developmental paradigm that was used by Krieger (1994) to study health inequities based on social structures of privilege, which expanded on the ecological theory as introduced by Bronfenbrenner (1979) to examine individuals' positions within wider societies. Despite public health scholarship calling for researchers to transition from risk factor epidemiology to eco-epidemiology over the past two decades (Susser, 1998), a lack of theoretical work exploring sexual minority stigma as a multilevel ecological system remains.

As founded within the developmental psychology literature, Bronfenbrenner developed his ecological theory in order to understand human development (Bronfenbrenner, 1979; Bronfenbrenner & Evans, 2000). Bronfenbrenner further evolved the developmental ecological theory in a period spanning over four decades, but earlier versions of the theory have shown to be particularly useful in fields outside of developmental psychology (Bronfenbrenner, 1979; Bronfenbrenner & Evans, 2000). In his original work, Bronfenbrenner identified several hierarchical levels surrounding the individual, ranging from microsystems to macrosystems, that, when linked to individual factors, would shape personal development (Bronfenbrenner, 1979; Bronfenbrenner & Evans, 2000). Importantly, individuals may go through several ecological transitions in life, meaning that individuals are situated in time and history; all defined by a chronosystem that includes socio-historical conditions across the life course (Bronfenbrenner, 1979; Bronfenbrenner & Evans, 2000).

In the eco-social theory, Krieger (1994) posits that health inequities can be further explained by historicizing, politicizing, and contextualizing the embodiment of poor health across multiple levels in society and by looking beyond risk factors typically covered within bio-medical paradigms. The central constructs defined in eco-social theory include 1) embodiment; 2) pathways to embodiment; 3) the cumulative interplay between exposure, resistance, and susceptibility; and 4) accountability and agency (Krieger, 2001, 2014).

Embodiment relates to the active, cyclical, and synergistic process in which the physical and social worlds impact a person's health (Krieger, 2001, 2014). The pathways of embodiment refer to various ways in which social and environmental factors may affect the process of embodiment in a specific context and, hence, may depend on time and space (e.g., throughout history, between generations, and across the life course) (Krieger, 2001, 2014). The cumulative interplay of exposure, resistance, and susceptibility adds another layer by incorporating factors that determine whether pathways may be activated as they vary across multiple levels, across domains, and across time (Krieger, 2001, 2014). The application of eco-social theory provides the opportunity of the identification of relevant levels for accountability and agency beyond the individual and provides leads for interventions by responsible institutions (Krieger, 2001, 2014).

The translation of these theories to the context of sexual minority stigma and sexual minority mental health allows for the further exploration of the processes through which various forms of sexual minority stigma, captured in a multilevel system, may get under one's skin, as a form of embodiment, understood from both a physical and mental health perspective. By building on theories posited by Bronfenbrenner and Krieger and those as discussed in chapter 2.3, three theses regarding the socio-ecology of sexual minority stigma can be identified:

- 1. Sexual minority stigma across history and the life course.** A chronosystem of sexual minority stigma determines the embodiment of stigma based on the time and space in which it occurs.
- 2. Sexual minority stigma as multilevel construct.** Sexual minority stigma may operate in a multilayered nested system in which factors at a higher level encourage, promote, or sustain sexual minority stigma at a lower level.
- 3. Mechanisms linking sexual minority stigma to poor physical and mental health.** Pathways of the embodiment of sexual minority stigma may include biological, social, and psychological mechanisms but are influenced by an interplay of factors that include resilience, coping, and structurally determined premises.

### **3.2.1 Sexual minority stigma across history and the life course**

Exposure to stigma-related factors and its mental health effects among sexual minorities is formed by the historical context in which it occurs, depending on spatio-temporal factors (see Figure 3.2) and resulting in sexual minorities' unique histories and experiences over the lifespan. Throughout the life course, within different generations, and across history and space, sexual minorities may experience different exposures to sexual

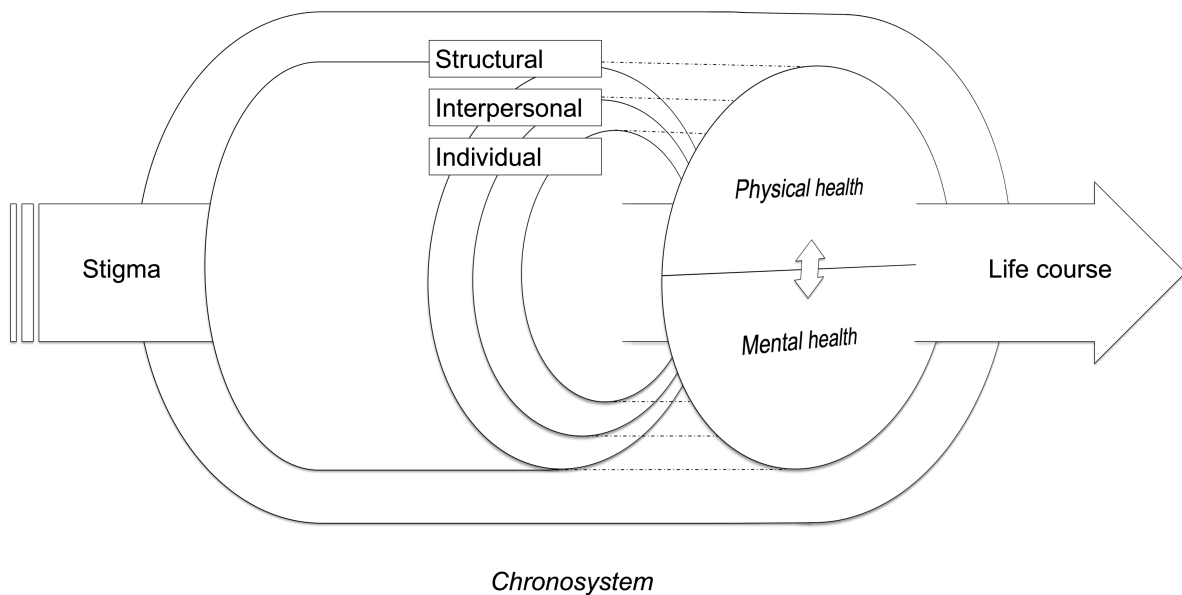


Figure 3.2. Sexual minority stigma as a chronosystem across the life course.

minority stigma, varying in intensity, form, frequency, and impact (Goffman, 1963; Pescosolido & Martin, 2015). While some forms of sexual minority stigma in a specific context and at a certain time during the life course may have an immediate effect on health, other exposure may have a gradual, lasting, or accumulating impact on sexual minorities' lives and health. The chronosystem of sexual minority stigma, therefore, determines the embodiment and sequelae of stigma based on the time and space during which the exposure takes place. Specifically, regarding the timing of exposure to various stigma-related factors, the consequences of such exposure could vary throughout the life course depending on the historical time but also may vary based on the sensitive developmental period of life in which it occurs (Bronfenbrenner & Evans, 2000). That is, stigma exposure and its effects on mental health may change across history and between generations due to historical events and progress toward acceptance in some contexts. The intensity and the duration of the impact of exposure to stigma on sexual minorities' mental health may also depend on whether it occurred during childhood, adolescence, and/or adulthood. Childhood and adolescence, during which a sexual identity is typically formed (D'Augelli et al. 2006), may represent a sensitive period in which sexual minority stigma may have an elevated negative impact on mental health, compared with other developmental stages in sexual minorities' lives (Mayer, 2009).

Several studies have examined how exposure to sexual minority stigma may vary over time in relation to mental health outcomes, but few assessed how sexual minority stigma may exhibit differing effects on mental health across time and place. Yet, these studies provide initial insight in how sexual minority stigma exposure may fluctuate across history and space.

The studies vary widely in terms of the applied methodologies to measure stigma over time and whether they examine stigma exposure across history or over the life course. On the one hand, studies have assessed historical changes in sexual minority stigma exposure, focusing on either shorter-term fluctuations or long-term changes in structural climates, and their associated mental health effects. First, three studies measured how shorter historical fluctuations in structural forms of sexual minority stigma exposure were associated with mental health outcomes and interpersonal forms of stigma, using natural experiments. Across US states, Raifman et al. (2017) found that the introduction of same-sex marriage policies was associated with a 7% reduction in suicide attempts among sexual minority high school students. Another study, by Frost and Fingerhut (2016), reported that increased negative same-sex marriage campaign messages in four US states were associated with decreased psychological wellbeing among same-sex couples. Similarly, Hatzenbuehler et al. (2019) showed that increasing discriminatory political narratives in public campaigns were associated with accelerated rates of homophobic bullying, but decreasing narratives after the referendum with reduced rates among secondary school students in California. Second, other studies measured how longer historical changes in sexual minority stigma over time have been linked to changes in mental health among sexual minority populations. Hatzenbuehler et al. (2018) linked changes toward more equitable legislation and accepting social attitudes in Sweden over a period of ten years to a lower risk of victimization and psychological distress among the gay, lesbian, and bisexual population. While such longer-term results may not rule out the possibility of intergenerational differences in mental health based on historical changes in stigma exposure, as suggested by Hammack et al. (2018), the study by Hatzenbuehler et al. (2018) primarily used temporal variation in sexual minority stigma and mental health to provide evidence for the direct bivariate association between structural stigma and sexual minorities' mental health regardless of historical time. Together, these studies show how sexual minority stigma exposure, depending on historical time and space, is associated with differences in sexual minorities' outcomes. Nonetheless, these studies were unable to assess whether the association between sexual minority stigma and mental health itself may vary across history and space.

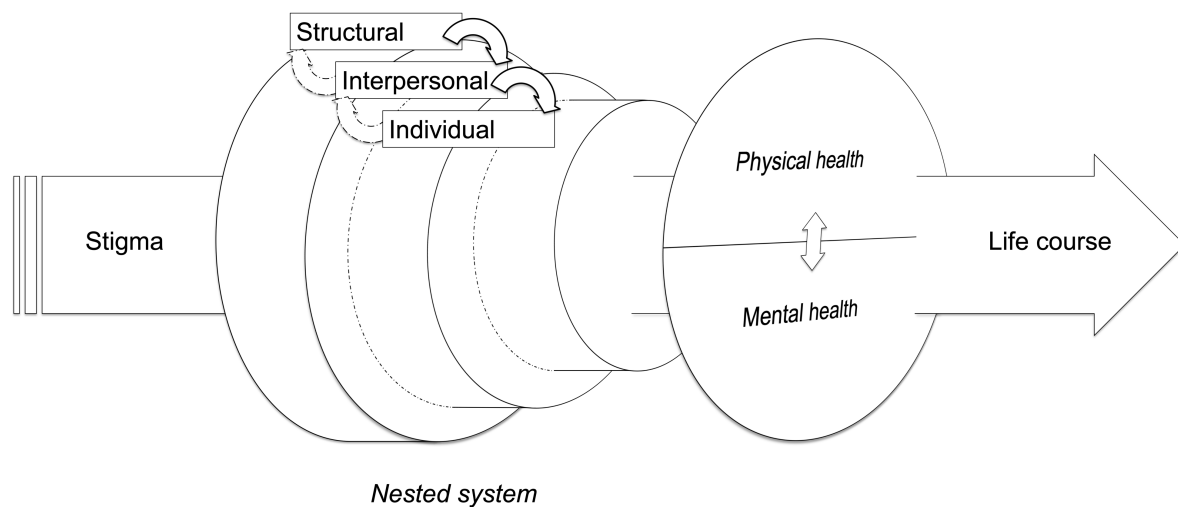
On the other hand, several studies have taken on life-course perspectives to assess how sexual minority stigma may have lasting or differing effects across sexual minorities' life courses. Much of this research has focused on recalled life-time experiences of interpersonal stigma and their potential lasting effects on sexual minority mental health. Several studies found how victimization in childhood has been linked to increased mental health problems in later life. Plöderl et al. (2010) found that school-based victimization was

linked to increased suicidality in adulthood among gay and bisexual Austrians. Livingston et al. (2020) found that higher life-time exposure to stigma-based victimization was associated with increased depression and anxiety in a sample of sexual and gender minority adults. Similarly, Robinson et al. (2013) reported that earlier victimization was associated with later increased emotional distress among sexual minority youth in England. More convincingly, Van der Star et al. (2020) found that childhood victimization was associated with reduced adulthood wellbeing regardless of adulthood exposure to victimization among sexual minorities living across 28 European countries. In this study, the authors also found that sexual orientation-based victimization experiences in childhood were linked to increased adulthood victimization, suggesting that past victimization may predispose sexual minorities to future harassment and victimization. Two other studies found that mental health among sexual minorities may improve with increased age, particularly in the absence of victimization. Birkett et al. (2015) showed that sexual and gender adolescents and young adults in the US experienced improvements in psychological distress with increase age, as they experienced less victimization at older ages. Pachankis et al. (2018) reported that among sexual minority men the stigma-related factors, such as concealment and enacted, anticipated, and internalized stigma, improved over an eight-year period while their mental health correlates remained among sexual minority male university students in the US, suggesting that mental health may need more time to improve once experiences of stigma decrease. A few other studies have focused on how prolonged exposure to structural forms of sexual minority stigma may gradually give rise to harmful health behaviors and instill individual-level stigma-related patterns. Pachankis et al. (2017) showed that the longer sexual minority male migrants across Europe were exposed to more structurally stigmatizing climates, the higher their risk for lack of recent human immunodeficiency virus testing. Van der Star et al. (2020) found that prolonged exposure to structural stigma throughout the life course may give rise to mentally taxing patterns of internalized homophobia and rejection sensitivity among sexual minority male migrants, but that these patterns may wane with time upon exposure to more supportive environments. Although not conclusive, these studies provide initial evidence showing that experiences of sexual minority stigma, in different forms, may exhibit period-specific and long-lasting effects on sexual minorities' mental health throughout the life course.

### **3.2.2 Sexual minority stigma as multilevel construct**

In 1981 and later in 1995, with the respective introduction and advancement of the minority stress theory, Brooks and Meyer already suggested that enacted prejudice and

discrimination, as interpersonal/distal factors, would affect individual/proximal factors, such as internalized homophobia, and are shaped by the social environment (Brooks, 1981; Meyer, 2003; Meyer, 1995; Meyer, 2013; Rich et al., 2020). While Bronfenbrenner’s theory is commonly misused in public health research by solely identifying contextual and individual risk factors (Eriksson et al., 2018; Tudge et al., 2009), socio-ecological theory was established on the thesis of cross-level effects. It, therefore, suggests that different forms of stigma across its various levels may coproduce poor mental health among sexual minorities (Bronfenbrenner, 1979; Bronfenbrenner & Evans, 2000; Hatzenbuehler, 2016; Hatzenbuehler & Pachankis, 2016). That is, at the structural level, a stigmatizing social climate may promote victimization and discrimination at the interpersonal level, which, in turn, may foster the internalization of negative societal attitudes at the individual level; all with negative consequences for sexual minorities’ mental health (see Figure 3.3). In this way, the negative effect of structural stigma on sexual minorities’ mental health may be explained by structural stigma inducing stigma-related factors at the interpersonal and individual levels (Hatzenbuehler, 2016; Pachankis et al., 2014; Van der Star, Pachankis, et al., 2020).



*Figure 3.3.* Sexual minority stigma as a nested system.

To date, several studies have been able to study stigma across multiple levels, such as the structural, the interpersonal, and the individual level, and the mental health consequences of their cross-level effects among sexual minorities. When identifying cross-level effects between stigma-related factors in an inward direction, three broad categories can be defined: structural-level to interpersonal-level effects, structural-level to individual-level effects, and interpersonal-level to individual-level effects. Apart from a growing number of studies reporting direct bivariate associations between stigma-related factors across these levels, fewer studies have also examined the mediation pathways through which these cross-level

effects may compromise sexual minorities' mental health. That is, stigma-related factors at one level giving rise to stigma-related factors at another level to compound mental health.

*Structural stigma to interpersonal stigma to mental health pathways.* Regarding mediation analyses of structural stigma promoting interpersonal stigma to harm mental health, Van der Star et al. (2020) found that childhood increased victimization and adulthood victimization both mediated the negative association between structural stigma and adulthood life satisfaction among sexual minorities who lived across 28 European countries and were open about their sexual orientation at school. Hatzenbuehler et al. (2018) showed how victimization and the threat of violence partially explained the association between structural stigma and the sexual orientation disparity in psychological distress. Besides these studies showing how interpersonal stigma-related factors may mediate the association between structural stigma and mental health among sexual minorities, several studies reported a direct bivariate association between structural and interpersonal forms of sexual minority stigma. These studies typically operationalized structural stigma at lower levels than the country or state level, such as based on the direct school environment (Day et al., 2019; Saewyc et al., 2014) or college context (Woodford et al., 2018). Woodford et al. (2018) found that various supportive campus policies and resources, indicative of a positive climate toward sexual and gender minorities, were associated with lower levels of sexual orientation-based victimization and both interpersonal and environmental microaggressions among sexual minority college students in the US. These policies and resources included inclusive anti-discrimination policies and the availability of a sexual and gender minority student organization. Day et al. (2019) reported negative associations between the presence of school policies, designed to create a safe and supportive environment for sexual and gender minorities, and both general victimization at school and bullying based on sexual orientation and/or gender among sexual and gender minorities in California. Saewyc et al. (2014) found that the presence of a Gay-Straight Alliance at school, as a student-led support group, was associated with decreased experienced discrimination based on sexual orientation among sexual minority students in Canada. Although based on a small number of studies, findings from these studies, particularly those testing mediation, suggest that structural forms of sexual minority stigma have the potential to give rise to interpersonal forms, specifically sexual orientation-based victimization and discrimination, to jeopardize sexual minorities' mental health.

*Structural stigma to individual stigma to mental health pathways.* As for structural forms of stigma to compound mental health through inducing individual-level forms, Pachankis and Bränström (2018) found that sexual minorities' satisfaction with life varied

across different European countries with how structurally stigmatizing the social climates in the countries were, which was explained by an inability to openly express one's sexual orientation. Van der Star et al. (2020) found that increased levels of internalized homophobia and rejection sensitivity mediated the association between structural stigma and poor mental health among sexual minority male migrants. While not testing full mediation, two other studies have assessed the bivariate association between structural and individual level stigma-related factors. Pachankis et al. (2014) examined the association between structural stigma and sexual orientation-based rejection sensitivity but did not find a significant association among sexual minority men living across 24 states. In another study, Pachankis et al. (2015) found that structural stigma was associated with increased sexual orientation concealment among sexual minority men across 38 European countries. Together, these studies were able to identify sexual minorities from high numbers of locales (i.e., 24 states to 71 countries) through large datasets and novel methodologies, such as by using the life-course mobility of sexual minorities, to assess whether stigma-related factors at the individual level may explain how structural stigma harms mental health among sexual minorities. The studies by Pachankis and Bränström (2018) and Van der Star et al. (2020) are first to provide initial support for structural stigma to individual stigma to mental health cross-level pathways.

*Interpersonal stigma to individual stigma to mental health pathways.* Regarding interpersonal forms of stigma affecting mental health by fueling individual forms, Gold et al. (2011) reported that higher levels of internalized homophobia mediated the positive association between childhood physical abuse and depression symptoms and partially mediated the positive association between childhood physical abuse and post-traumatic stress disorder symptoms among sexual minorities in the US. Walch et al. (2016) showed that the positive associations between life-time reports of perceived discrimination and both anxiety and depression were explained by increased internalized homophobia among sexual minorities in Florida who were concealing their sexual orientation. Blais et al. (2014) found that the association between sexual orientation-based bullying and lower self-esteem was explained by increased levels of internalized homophobia among sexual minority youth in Québec. James et al. (2012) showed that increased internalized homophobia mediated the positive association between childhood emotional abuse and adult psychological distress among sexual minority men in the US. Feinstein et al. (2012) reported that increased internalized homophobia and rejection sensitivity mediated the associations between experiences of discrimination and increased symptoms of depression and social anxiety among a US sample of sexual minorities. Similarly, Pachankis et al. (2015) showed that higher levels of internalized homophobia and rejection sensitivity may mediate the



association of both peer rejection and overt discrimination with both increased depression and anxiety among highly sexually active gay and bisexual men in New York City (NYC). Dyar et al. (2018) found that the positive associations between discrimination and both depression and anxiety were mediated through higher levels of rejection sensitivity and, subsequently, through preoccupation with stigma, concealment motivation, and difficulty developing a positive sexual identity, among sexual minority women in the US. Brewster et al. (2013) showed that increased expectations and awareness of public stigmatization mediated the positive association between anti-bisexual prejudices and psychological distress among bisexual adults living in North America. Szymanski & Carretta (2020) found that the positive association between religion-based discriminatory experiences and psychological distress was mediated by increased internalized homophobia among sexual minorities with higher levels of religiosity in the US. Furthermore, several other studies have focused on examining the bivariate associations between interpersonal and individual level stigma-related factors, specifically showing how victimization was positively associated with internalized homophobia. D'Augelli et al. (2002) reported a positive association between physical victimization and internalized homophobia among a sample of high school students in the US, Canada, and New Zealand. Rivers (2004) showed that the severity of school bullying, measured as years exposed, was associated with increased internalized homophobia among sexual minorities in the United Kingdom. Balsam and Szymanski (2016) found that life-time and past-year domestic physical or sexual violence were positively associated with internalized homophobia among sexual minority women living in the US and Canada. Schneeberger et al. (2014) reported on another study in their meta-analysis that showed a significant association between higher levels of physical abuse and higher internalized homophobia among sexual minority youth. With findings from nine recent studies suggesting how individual-level stigma-related factors may explain the association between interpersonal factors and poor mental health, the evidence in support of a cross-level mental health effect between interpersonal and individual forms of sexual minority stigma has grown rapidly over the past decade and is increasingly convincing. Specifically, the internalization of negative societal attitudes and an increased fear of being rejected based on one's sexual orientation may represent important pathways through which sexual orientation-based victimization jeopardizes mental health among sexual minorities.

With the evidence starting to expand over the recent years, the overall findings from the listed studies provide initial support for the thesis that cross-level effects of different forms of sexual minority stigma may produce poor mental health and reduced wellbeing among sexual minorities. That is, the cross-level effects explain how stigma at one level may

give rise to stigma at another level to compromise sexual minorities' mental health. While the number of studies regarding structural-level to interpersonal-level and structural-level to individual-level cross-level pathways is still limited, evidence on interpersonal-level stigma promoting individual-level stigma to harm mental health among sexual minorities has been more substantial.

### 3.2.3 Mechanisms linking sexual minority stigma to poor physical and mental health

As presented in chapter 2, various mechanisms may underly and explain the processes through which sexual minority stigma would lead to poor mental health among sexual minorities. Such mechanisms may be understood as mediation pathways with a third factor explaining the association between sexual minority stigma and mental health or as effect modifiers, in which a third factor (i.e., moderator) may buffer or exacerbate the association. The mechanisms may be investigated at social, biological but also psychological - such as behavioral, cognitive and emotional - levels (see Figure 3.4). These psychological pathways through which various forms of stigma get under one's skin may follow general psychological processes (e.g., vigilance, rumination, loneliness, and physiological stress response; Hatzenbuehler, 2009; Hatzenbuehler & Pachankis, 2016). Eco-social theory further posits that the pathways connecting stigma-related factors to poor mental health may be further exacerbated by the cumulative interplay of exposure, susceptibility, and resistance. The latter two, discussed as identity characteristics in chapter 2.3.3 (e.g., identity salience) and resiliency resources in chapter 2.3.2 (e.g., social support or coping skills), may alleviate or aggravate the impact of sexual minority stigma by moderating these mechanisms. Coping skills, acquired by experience or through therapy, or the ability to navigate stigmatizing

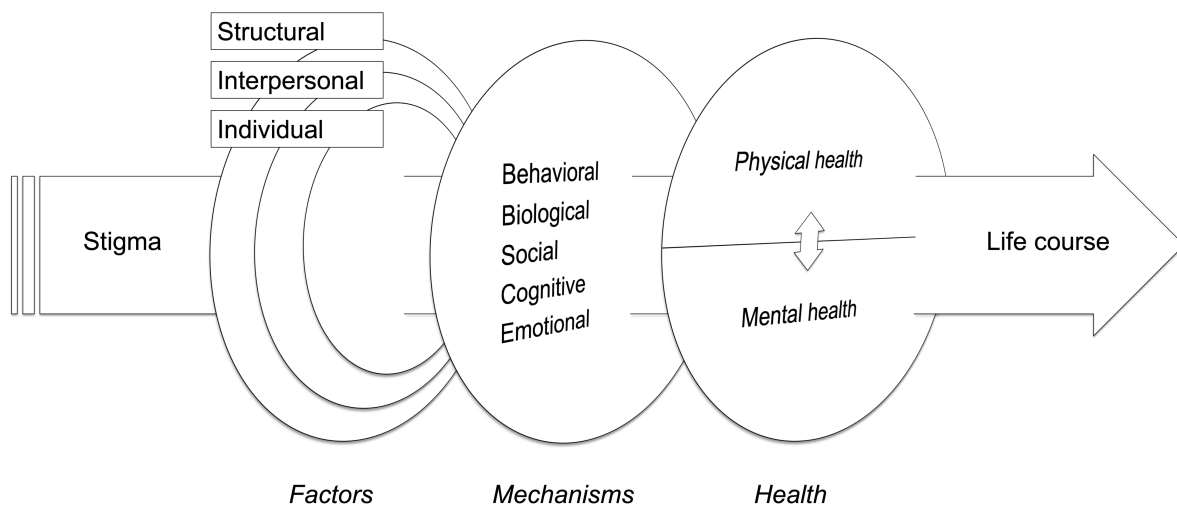


Figure 3.4. Mechanisms through which sexual minority stigma affects mental health

situations, for instance through the process of sexual orientation concealment and openness (see chapter 2.4), may determine the sexual minorities' degree of exposure to sexual minority stigma or sexual minorities' resilience when faced with sexual minority stigma. However, the availability of resiliency resources or the possibility to acquire the required skills may also be shaped by the structural environments that sexual minorities live in. For instance, the efficacy of, or access to, psychotherapeutic interventions may be further undermined by structural stigma-related factors (Hatzenbuehler, 2016). Therefore, mediation pathways linking sexual minority stigma to poor health and the moderating capacity of resiliency factors are all shaped by the larger system of sexual minority stigma in which they operate; providing a wide array of opportunities and responsibilities for accountability and agency, particularly for governments and policymakers.

A growing number of empirical studies have associated stigma-related factors to poor mental health through behavioral, biological, social, cognitive, and emotional mechanisms. These categories for the different mechanisms may not be exclusive. Some pathways may be understood as, for instance, both behavioral and emotional processes and the applied grouping in this section should, therefore, be interpreted as indicative and non-exclusive. Examples of studies that specifically tested how such mechanistic pathways might mediate the sexual minority stigma to poor mental health association are listed here. In order not to further complicate the overview of studies showing evidence for the pathways through which sexual minority stigma hampers mental health, moderator mechanisms have been largely omitted from this non-systematic, broader overview of examined pathways.

Research regarding *health-behavioral* mechanisms that link sexual minority stigma to poor mental health has mainly been characterized by studies that focused on the bivariate associations between stigma-related factors and health behaviors or have tested mediation models with manifest behaviors as health-related outcomes, often with psychological health and coping as mediators. The manifest health behaviors that have been frequently studied in sexual minority research include increased risks of alcohol, tobacco, and drug use and high-risk sexual behaviors that would result from exposure to sexual minority stigma. Two examples of studies that have been able to examine manifest health behaviors as behavioral pathways to mediate the association between sexual minority stigma and mental health assessed drug and alcohol use as such coping behaviors. Bandermann and Szymanski (2014) reported that the positive association between sexual orientation-based discrimination and post-traumatic stress disorder symptoms was mediated by increased drug and alcohol use, next to internalization and detachment, among sexual minorities in the US. Kuerbis et al. (2017) found that the positive associations between internalized homophobia and heavy

drinking, alcohol problems, and psychological distress were mediated by increased alcohol use, besides increased feelings of loneliness and gay community participation among sexual minority men living in or around NYC. Other studies examined how mental health problems may mediate the association between sexual minority stigma and health behaviors. Livingston et al. (2016) found that increased psychological distress partially mediated the positive association of internalized homophobia, identity concealment, and anticipation of rejection with alcohol misuse among sexual minority young adults in the US. Moody et al. (2018) showed that increased depression mediated the positive association between internalized homophobia and recent drug use among sexual minority men in the US. Two meta-analyses compiled evidence and found support for the positive bivariate associations of victimization and childhood abuse, lack of supportive environments, and negative disclosure reactions with alcohol, tobacco, and drug use and sexual risk behavior among sexual minority youth (Goldbach et al., 2014; Schneeberger et al., 2014), whereas another meta-analysis found inconclusive results (Goldbach et al., 2015). Other studies also have positively associated internalized homophobia, expectations of rejection, discrimination, victimization, and structural stigma with health risk behaviors, such as increased use of alcohol, drugs, and tobacco and sexual risk behavior among sexual minority men (Balaji et al., 2017; Hamilton & Mahalik, 2009; Hatzenbuehler et al., 2008; Leluțiu-Weinberger et al., 2019; Nakamura & Zea, 2010; Pachankis, Hatzenbuehler, Hickson, et al., 2015; Preston et al., 2004; Puckett et al., 2017; Rendina et al., 2017; Rosario et al., 2014; Tulloch et al., 2015). Among sexual minority women, discrimination and victimization were positively associated with alcohol use, tobacco use, and sexual risk behavior (Gamarel et al., 2015; Logie et al., 2016; Rosario et al., 2014). These results provide growing support for bivariate associations between stigma-related factors and health behaviors, particularly for substance use and sexual risk behavior among sexual minority men and, to some degree alcohol use among sexual minority women. However, limited research has assessed health-behavioral pathways mediating the association between stigma-related factors and mental health and the directionality of the associations remains disputed. It is possible that, in response to sexual minority stigma, either health risk behaviors precede mental health problems or vice versa but also that these risk behaviors and mental health problems may co-occur.

There is a lack of studies showing evidence for *biological* mechanisms that link sexual minority stigma to poor mental health. A few studies, however, indicate sexual orientation-based differences in various biomarkers relating to stress response and cardiovascular risk. These studies show that, compared with heterosexual women, sexual minority women had a higher risk for salivary alpha-amylase dysregulation (Austin et al., 2018), overall

cardiovascular risk (Caceres et al., 2019), but had lower levels of C-reactive protein (Everett et al., 2014; Hatzenbuehler, McLaughlin, et al., 2013). Sexual minority men had higher C-reactive protein and Epstein Barr Virus levels, diastolic blood pressure, and pulse rate than heterosexual men (Everett et al., 2014; Hatzenbuehler, McLaughlin, et al., 2013). Bisexual men were found to have higher glycosylated hemoglobin levels (Caceres et al., 2018) and a higher allostatic load but gay men a lower allostatic load (Mays et al., 2018), compared with heterosexual men. Overall, sexual minorities had a higher risk for metabolic syndrome (Goldberg et al., 2019) than heterosexual individuals. Findings from these studies may lead to the question whether sexual orientation-based differences in biological reactions could, in part, be due to the unique chronic stress that sexual minorities face. Although not tested in full mediation models linking stressors to disease outcomes through biological pathways, some studies have associated elevated biomarker levels to generic stressors and sexual minority stigma-based stressors. Juster et al. (2013) found that sexual minorities with a disclosed sexual orientation had lower cortisol levels for the first half hour after awakening, compared to those with non-disclosed sexual orientations. Also, Juster et al. (2019) showed that sexual minority women had a higher blood pressure after exposure to a general stressor, while sexual minority men had a higher heart rate, regardless of disclosure status, compared with heterosexual women and men, respectively. Burton et al. (2014) reported that higher levels of family support may reduce the cortisol reactivity after exposure to a general stressor among sexual minority young adults. Hatzenbuehler et al. (2014) found that sexual individuals who have been exposed to stressful life events had a higher cardiometabolic risk, compared to no elevated risk among heterosexual individuals. These findings do not provide conclusive evidence but may provide initial indications of biological mechanisms through which sexual minority stigma may lead to poor health.

A few studies reported evidence for the role that *social* mechanisms may play in linking sexual minority stigma to poor mental health. Lewis et al. (2014) found that increased social constraints in the ability to talk about sexual orientation to family and friends, and in turn increased rumination, were mediating the positive associations of both concealment and stigma consciousness with psychological distress among US lesbian women. Straub et al. (2018) showed that internalized heterosexism had an indirect positive effect on post-traumatic stress disorder symptoms through increased shame-related social withdrawal tendencies among trauma-exposed sexual minority women in the US. While these studies, among others, suggest that stigma-related factors may reduce access to social resources to compound mental health, social factors and resources are typically conceptualized as moderating resiliency factors of the association between stigma-related factors and mental

health and, potentially, better understood as such (see chapter 2.3.2; e.g., Freitas et al., 2017; Hall, 2018; Katz-Wise et al., 2016; McDonald, 2018; Meyer, 2013; Russell & Fish, 2016).

Some studies found support for *cognitive* mechanisms that could link sexual minority stigma to poor mental health. Woodford et al. (2014) reported that decreased self-acceptance, i.e., lower self-esteem and lower internalized sexual minority pride, mediated the positive associations of both victimization and microaggressions with psychological distress among sexual minority US college students. Baams et al. (2015) showed that the positive associations of both sexual orientation-based victimization and identity disclosure-related stress with depression and suicidal ideation were mediated by increased perceived burdensomeness among sexual minority youth living in the US. William et al. (2017) reported that concealment, internalized stigma, anticipated discrimination, were indirectly and positively associated with psychological distress through reduced self-compassion and self-esteem among sexual minorities across the US. While the number of studies that specifically assess cognitive processes as mediation pathways underlying the effect of stigma-related factors on poor mental health remains limited, these studies indicate that self-acceptance and self-esteem may be two such processes.

Several studies found evidence for *emotional* mechanisms that may link sexual minority stigma to poor mental health. Studies on these psychological pathways predominantly have focused on emotion-regulation mechanisms. Hatzenbuehler et al. (2009) showed that the associations between higher psychological distress and stigma stressors, such as experiences of felt-stigma and discrimination over a ten-day period and recalled memory of discrimination, were mediated through increased rumination, as an emotion-regulation process, among US sexual minority individuals. Rendina et al. (2017) found that higher levels of emotion dysregulation mediated the positive association between internalized homophobia and symptoms of both depression and anxiety. Pachankis et al. (2015) showed that increased emotional dysregulation mediated the positive pathways between peer rejection, overt discrimination, internalized homophobia, and rejection sensitivity and both depression and anxiety among highly sexually active gay and bisexual men in NYC. Wang and Borders (2017) reported that the positive associations of discrimination and identity concealment with disordered eating were mediated by increased rumination among sexual minority men in the US. Kaufman et al (2017) found that increased rumination mediated the positive association between microaggression experiences and depressive symptoms among sexual minority youth in the Netherlands. Hatzenbuehler et al. (2009) showed that, over a ten-day period, increased rumination and emotion suppression mediated the positive association between implicit internalized homophobia and psychological distress in a sample of sexual minorities

in the US. Feinstein et al. (2017) showed that higher internalized homophobia and rejection sensitivity were associated with higher internalizing morbidity through emotionally disengaged coping among gay men in the US. Szymanski and Henrichs-Beck (2014) found that increased suppressive and reactive coping mediated the positive associations of harassment, rejection, discrimination, and internalized homophobia with psychological distress among sexual minority women living in the US. Reitzel et al. (2017) found that sexual orientation-based discrimination was positively associated with anxiety through lower distress tolerance among sexual minority adults in Texas. Mereish et al. (2017) reported that increased feelings of loneliness mediated the positive associations of sexual orientation concealment and both discrimination and internalized negativity toward bisexual individuals with both psychological distress and suicidality among bisexuals living in the US. These studies show that emotion dysregulation, including rumination and emotion suppression, may represent an important emotional pathway that could explain how different forms of sexual minority stigma may harm sexual minorities' mental health.

Other studies found support for *various sorts* of mechanisms, such as a combination of affective, cognitive, behavioral, and social pathways, that might link sexual minority stigma to poor mental health. Kaysen et al. (2014) found that increased maladaptive coping, including behavioral disengagement, denial, self-blame, self-distraction, and substance use, mediated the positive relationship between internalized homophobia and psychological distress among sexual minority women in the US. Szymanski et al. (2014) showed that increased rumination, detachment, and internalization mediated the positive association between internalized homophobia and psychological distress among sexual minority women in the US. Mason and Lewis (2015) reported that higher levels of social isolation and emotion-focused coping, such as self-blame, rumination, and catastrophizing, were mediating the positive associations of internalized homophobia, stigma consciousness, and sexual orientation concealment with negative affect and, subsequently, binge eating among sexual minority women in the US. Craney et al. (2018) reported that education, advocacy, internalization, resistance, and detachment partially mediated the positive association between sexual orientation-based discrimination and psychological distress among bisexual women in the US. Liao et al. (2015) found that the positive associations of perceived discrimination and expectations of rejection with psychological distress were mediated by increased anger rumination and less self-compassion among a sample of sexual minority adults in the US. Puckett et al. (2015) showed that greater self-criticism and lack of community connectedness explained the positive association between internalized homophobia and psychological distress among sexual minorities living in the US. Mason and

Lewis (2016) found that increased social anxiety and subsequent body shame explained how discrimination, identity concealment, and internalized homonegativity were associated with increased binge eating among lesbian women in the US. Hatzenbuehler et al. (2011) showed that the positive association between discrimination and alcohol-related problems was explained by increased positive alcohol expectancies, negative affect, and coping motives among sexual minority college students in the US. Mereish and Poteat (2015) found that the positive associations of discrimination, rejection, victimization, internalized homophobia, and sexual orientation concealment with psychological distress were mediated by increased shame, loneliness, and poorer relationships with a close peer and with the sexual and gender minority community among sexual minorities across the US. Schwartz et al. (2016) reported that increased levels of avoidant coping, rumination, and social support mediated the positive associations between minority stressors, in the form of recent and past harassment, rejection, and discrimination, and both depression and anxiety among sexual minority men living in Toronto.

In contrast to the sexual minority stigma construct as outlined in this chapter, some scholars have previously framed individual-level stigma-related factors, such as sexual orientation-based rejection sensitivity, internalized homophobia, and sexual identity concealment, as cognitive, affective, and behavioral pathways reflecting hyper-vigilance and shame that would link other stigma-related factors, such as victimization and discrimination, to mental health (Burton et al., 2019; Pachankis, Hatzenbuehler, Rendina, et al., 2015; Pachankis et al., 2019). This alternative perspective does not directly contradict the here presented interpretation of sexual orientation-based rejection sensitivity, internalized homophobia, and sexual identity concealment as individual level stigma-related factors. The alternative approach aligns with minority stress theory as well, in which stressors are framed as objective events and these individual-level stigma-related factors as minority stress reactions, as re-emphasized by Meyer (2019) (see chapter 2.3.3). Evidence for these mechanistic minority stress pathways or reactions is summarized in in chapter 3.2.2. With a sexual minority status being a potentially concealable stigma, sexual orientation openness has also been described as a potential behavioral mechanism that sexual minorities may use to navigate stigmatizing contexts, which has been summarized in chapter 2.4.

### **3.3 SUMMARY**

Sexual minority stigma has repeatedly been suggested to operate within a socio-ecological system to jeopardize the mental and physical health of sexual minorities. To date, scientific scholarship has, however, not yet theoretically explored how such a socio-



ecological system may be described and may function to compound sexual minorities' mental health. Based on developmental ecological and eco-social theory, sexual minority stigma may be characterized 1) by its varying mental health effects based on the time and space in which it occur (i.e., a chronosystem), 2) by its different forms across socio-ecological levels coproducing poor mental health through cross-level effects (i.e., a multilevel system), and 3) by pathways through which it affects sexual minorities' mental health (i.e., mechanisms). That is, stigma-related factors, which occur across various levels and across time and space, may impact the lives of sexual minorities at different points during their life course or during longer episodes, leading to immediate, gradual, accumulating and/or sustained effects on physical and mental health (see Figure 3.5). The multilevel nature of sexual minority stigma may preserve a complex system in which different forms of stigma at higher levels encourage, promote, or sustain the manifestation of stigma at a lower level through cross-level effects. In an interplay of cumulating effects, these forms of stigma may activate several mechanisms, including behavioral, biological, social, cognitive, and emotional, to compound sexual minorities' health, but are moderated by sexual minorities' resilience, their identity characteristics and capacity to coop, which are formed by the larger system of sexual minority stigma.

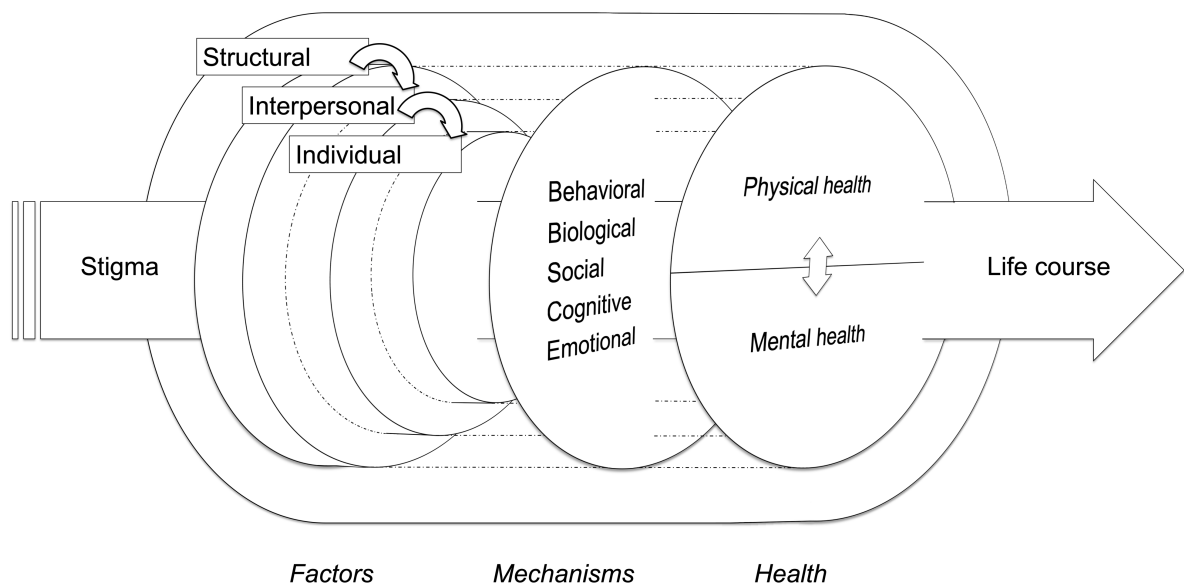


Figure 3.5. The socio-ecological system of sexual minority stigma compounding health

Varying levels of evidence exist for the three central theses on the socio-ecology of sexual minority stigma, i.e., sexual minority stigma as chronosystem, sexual minority stigma as multilevel system with cross-level effects, and mechanisms that link sexual minority stigma to poor mental health among sexual minorities. Regarding sexual minority stigma as

chronosystem, studies have shown that sexual minority stigma may vary across time and context, but few studies have been able to assess whether the association between exposure to sexual minorities stigma and sexual minorities' mental health itself varies as a function of time and place and across the life course. For cross-level effects of different forms of sexual minority stigma within a multilevel system, considerable evidence is available for interpersonal-level to individual-level cross-level effects on mental health, while studies regarding structural-level to interpersonal-level and structural-level to individual-level cross-level effects remain limited. Research on the mediating mechanisms that may explain how sexual minority stigma may negatively affect mental health has rapidly expanded over the past decade and a substantial body of research exists on the psychological mechanistic pathways. A category of mechanisms that has received relatively less attention in the public health literature and for which evidence remains limited is the biological pathways to explain poor health among sexual minorities. The evidence in support of sexual minority stigma as a socio-ecological system, as listed in this chapter, has predominantly come from the US. Less is known about how these results may translate to sexual minorities living in other parts of the world.

In sum, with the framework presented in this chapter being the first attempt to explore sexual minority stigma as a socio-ecological system in full, the available evidence in support of the model remains fragmented. That is, limited evidence is available for connecting pathways, such as cross-level effects - particularly structural-level to interpersonal-level and structural-level to individual-level - and for time-varying effects of sexual minority stigma across the life course. Research focusing on the cross-level effects and life-course-varying effects of sexual minority stigma and studies from outside the US would expand the evidence base for sexual minority stigma as a socio-ecological system in critical ways.

## 4 AIMS

Attempting to contribute to the advancement of mental health equity of sexual minorities, this Ph.D. thesis aims to further the understanding on how sexual minority stigma as socio-ecology system may compound the sexual minorities' mental health, which would provide opportunities for interventions - both from a public health (e.g., policies to reduce stigma) and a health services perspective (e.g., affirmative psychotherapy). This Ph.D. thesis aims to do so through a set of three sub-aims. First, this Ph.D. thesis aims to further advance theoretical thinking on the putative causal pathways underlying sexual orientation-based health inequities by drawing from leading theories regarding sexual minority health, including the minority stress and psychological mediation frameworks, and combining these with ecological theory (see chapter 3). Second, this Ph.D. thesis aims to investigate sexual orientation-based differences in mental health in countries outside Northern America (i.e., Sweden) from both within and outside the paradigm of sexual minority stigma. Third, this Ph.D. thesis aims to explain these mental health disparities by testing various elements of the proposed socio-ecology of sexual minority stigma model.

To attain these aims, this Ph.D. thesis addresses specific research questions in four distinct empirical studies. These studies focused on estimating sexual orientation-based mental health disparities in Sweden (Study I), examining mechanisms that explain the elevated risk of poor mental health among sexual minorities within (Study II & IV) and outside the traditional stigma-related minority stress paradigm (Study I), testing cross-level effects based on the multilevel construct of sexual minority stigma (Study III & IV), and studying how sexual minority stigma may impact sexual minorities' mental health across geographical contexts and the life course (Study III & IV).

### 4.1 STUDY I

Study I aimed to explore whether the sexual orientation-based disparity in suicidality in the low-stigma context of Sweden may be explained by stigma-related risk factors or barriers to societal integration by using both a Durkheimian and a minority stress approach. This was done through two research questions:

1. What is the sexual orientation-based disparity in suicidality in Sweden?
2. Do barriers to societal integration (i.e., being unmarried/not living with a partner, not having children, unemployment, and low societal trust) explain, or partially explain, sexual orientation disparities in suicidality independent of other established suicide

risk factors, including psychological (i.e., depression and substance abuse) and interpersonal (i.e., discrimination, victimization, and lack of social support) factors?

## **4.2 STUDY II**

Study II aimed to examine whether earlier reported conflicting results regarding the association between sexual orientation openness and mental health among sexual minorities may be positively explained by increased availability of social support or negatively by an increased risk of victimization. This study used two research questions:

1. How many sexual minorities are open about their sexual orientation in Sweden?
2. Do social support or sexual orientation-based victimization explain the association between sexual orientation openness and depression symptoms among sexual minorities?

## **4.3 STUDY III**

Study III aimed to study whether structural forms of sexual minority stigma may drive interpersonal forms throughout the life course to hamper sexual minority adults' wellbeing across 28 European countries. This study employed the following research question:

1. Does country-level structural stigma exposure during childhood shape sexual minorities' life satisfaction in adult life through school-based experiences, namely school bullying and identity openness at school, directly but also indirectly through a subsequent higher risk for adulthood victimization?

## **4.4 STUDY IV**

Study IV aimed to explore how structural forms of stigma may give rise to individual-level forms of stigma to compound sexual minorities' mental health across contexts and time. It assesses how varying lengths of exposure to structural stigma affect the associations between structural stigma, minority stress reactions (i.e., rejection sensitivity, internalized homophobia, and identity concealment), and mental health among sexual minority men, who migrated from diverse structural contexts. To examine this, the following research questions were used in this study:

1. Do minority stress reactions explain the association between structural stigma and poor mental health among male sexual minority migrants?
2. Does prolonged exposure to higher levels of structural stigma exacerbate the reactions and do these wane over time with longer exposure to lower levels of structural stigma?

## 5 EMPIRICAL STUDIES

In the framework of this Ph.D. thesis, four empirical studies were performed. This chapter summarizes their methodologies, results, and conclusions. More details and additional tables and figures are available in the full copies of their respective manuscripts, enclosed as Annex I-IV.

### 5.1 STUDY I: UNTETHERED LIVES: BARRIERS TO SOCIETAL INTEGRATION AS PREDICTORS OF THE SEXUAL ORIENTATION DISPARITY IN SUICIDALITY

#### 5.1.1 Method

##### 5.1.1.1 Participants

In the years 2010 through 2015, annual nationwide probability-based cross-sectional health surveys were carried out by the Swedish National Institute of Public Health administered to 20,000 individuals, age 16-84 years, in Sweden each year, with response rates varying between 48.1% and 51.3% each year. A total of 57,840 individuals, returning the web-based or paper-and-pencil questionnaires across the six surveys with complete responses on all key variables, were included in the study. To adjust the results for varying response rates, post-stratification weights were used to make the sample representative of the national population.

##### 5.1.1.2 Measures

*Sexual orientation.* Individuals were asked to self-identify their sexual orientation to be “heterosexual” (95.7%), “bisexual” (1.4%), “homosexual” (0.8%), or “not sure” (2.1%). Individuals uncertain about their sexual orientation were excluded from the study.

*Suicidality.* Suicidality was measured as past 12-month suicidal ideation and past 12-month suicide attempt. Individuals were cross-categorized into two groups regarding their reported suicide ideation (i.e., ‘no past 12-month suicidal ideation’ or ‘any past 12-month suicidal ideation’) and two groups regarding their reported suicide attempts (i.e., ‘no past 12-month suicide attempt’ or ‘any past 12-month suicide attempt’).

*Psychological risk factors.* Depression symptoms and substance abuse were assessed as two psychological risk factors for suicidality. The 12-item General Health Questionnaire was used to measure depression symptoms, of which the sum score was then dichotomized (i.e.,  $\leq 3$  as ‘no current mental disorder’ and  $\geq 4$  as ‘current mental disorder’)

(Holi et al., 2003). Substance abuse was assessed as past-12-month high-risk alcohol consumption or any cannabis use and was coded dichotomously (i.e., any use or no use).

*Interpersonal risk factors.* Data on three possible interpersonal risk factors for suicide were collected: exposure to discrimination, victimization or threat of assault, and a lack of social support. Self-reported exposure to discrimination was assessed over the past 3 months. Victimization or threats of assault were based on self-report from the past 12 months. A current lack of social support was assessed based on the self-reported availability of a person to share innermost feelings with or a person to get help from when having practical problems or when falling ill. Participants were regarded to lack social support when having neither of such persons available.

*Barriers to societal integration.* Four barriers to societal integration were measured: being unmarried or not living with a partner, not living with children, a lack of societal trust (i.e., thinking one can generally not rely on other people), and being unemployed, collected through a combination of self-report and national registries.

### 5.1.1.3 Statistical analyses

Logistic regressions were used to estimate sexual orientation differences in suicidality, psychological and interpersonal risk factors, and barriers to societal integration. Then, separate parallel mediation models were run for both outcome variables: suicide ideation and suicide attempts. The models were used to examine whether indirect effects through psychological factors, interpersonal factors, and barriers to societal integration, as mediators, explained sexual orientation disparities in suicidality, comparing gay/lesbians to heterosexual individuals and bisexual to heterosexual individuals separately. These analyses were adjusted for the covariates age, gender, ethnicity, level of education, individual income, and urbanicity and performed in the Statistical Package for Social Sciences (SPSS) (v24) and Mplus (v8). In all analyses, a significance level of  $\alpha = 0.05$  and post-stratification weights were used.

In order to examine what relative proportion of the sexual orientation disparity in suicidality the categories of mediators explained, the contribution of each block of mediators (i.e., psychological risks, interpersonal risks, and barriers to societal integration) was assessed, first for each block separately, followed by all blocks at once.

## 5.1.2 Results

Past 12-month suicide ideation, past 12-month suicide attempts, depression symptoms, and substance abuse were all more common among gay/lesbians (adjusted odds

ratios [AOR] with 95% confidence intervals [CI]: 2.69 [2.09, 3.47], 5.50 [3.42, 8.83], 1.33 [1.06, 1.68], 1.43 [1.17, 1.74], respectively) as well as among bisexual individuals (AOR, 95% CI: 3.83 [3.26, 4.51], 6.78 [4.97, 9.24], 2.23 [1.93, 2.59], 1.36 [1.17, 1.59], respectively) as compared to heterosexuals.

Psychological risk factors (i.e., depression symptoms and substance abuse) and interpersonal factors (such as discrimination, victimization or treats, and lack of social support) explained 23.1% and 52.0% of the elevated risk of suicide ideation and 16.5% and 42.3% of the elevated risk of suicide attempts, respectively, among gay and lesbian individuals when compared to heterosexual individuals. When comparing bisexual with heterosexual individuals, the psychological and interpersonal risk factors explained 38.7% and 52.6% of the elevated risk of suicide ideation and 31.8% and 47.5% of the elevated risk of suicide attempts, respectively. Barriers to societal integration further explained the elevated risk for suicide ideation and attempts for 32.4% and 29.2%, respectively, including not being married or having a partner and not living with children among gay and lesbian individuals, plus a lack of societal trust or being unemployed up to 30.4% and 27.2% for suicide ideation and attempts, respectively, among bisexual individuals only.

### **5.1.3 Conclusions**

The study results show that sexual minorities living in the relatively low-stigma context of Sweden are at a higher risk for suicidality, depression, and substance abuse than heterosexual individuals. Several psychological, interpersonal, and sociological predictors of suicidality may help to explain the sexual orientation disparity in suicidality, showing that sexual minorities are at a substantially increased risk for explanatory factors across all three categories. Besides comprehensively assessing well-studied risks for sexual minority suicidality, such as psychological and interpersonal factors, that may fall within the stigma and minority stress paradigm, this study extends the sexual minority health literature by highlighting the importance of facilitators to societal integration, such as marriage, partnership, children, employment, and societal trust. These factors, which are established determinants of suicidality in the general population, further help to explain the sexual orientation disparity in suicide. Preventive measures should focus on empowering sexual minorities to find purpose within and outside existing, mostly heteronormative, social structures, creating space for alternative forms of societal integration, and encouraging sexual minorities to find novel ways for societal integration beyond those institutions (e.g., community support or alternative life goals).

## 5.2 STUDY II: SEXUAL ORIENTATION OPENNESS AND DEPRESSION SYMPTOMS: A POPULATION-BASED STUDY

### 5.2.1 Method

#### 5.2.1.1 Participants

From the 2014 Swedish wave of the European Health Interview Survey ( $n = 6,292$ ; response rate: 57.2%), a representative population-based sample of self-reported non-heterosexual individuals and an age and gender-matched heterosexual sample were identified ( $n = 320$ ). These cross-sectional samples were invited to a paper-and-pencil follow-back survey in August 2016, which focused on health and health determinants relating to sexual orientation. From the 191 individuals who returned the survey (response rate: 59.7%), 111 participants (58.1%) were excluded from the final sample of 80 sexual minority individuals based on a heterosexual or missing self-report of their sexual orientation, as this study specifically examined sexual minority stigma-based processes.

#### 5.2.1.2 Measures

*Sexual orientation.* Participants' sexual orientation was reassessed in 2016 with the question "Do you consider yourself to be: . . ." providing four alternatives: "Gay or lesbian," "Bisexual," "Heterosexual," and "Other, please specify."

*Degree of sexual orientation openness.* Sexual orientation openness was measured with a question on how open the participants were about their sexual orientation with five-point scale ranging from "I am not open at all about my sexual orientation" (= 1) to "I am completely open about my sexual orientation" (= 5).

*Sexual orientation openness across interpersonal contexts.* Openness about sexual orientation across different *interpersonal* contexts was assessed by asking the question in what situations participants could be open about their sexual orientation for three different contexts, namely at work/school, with friends, and with a parent/custodian (*yes/no*).

*Depression symptoms.* Depression symptoms, as the primary outcome variable, were measured with the nine-item Patient Health Questionnaire (Kroenke et al., 2001), asking about the frequency of experiencing nine symptoms during the past two weeks on a four-point scale from "not at all" (= 1) to "nearly every day" (= 3), combined into a sum score.

*Social support.* The degree of available social support was assessed with the Multidimensional Scale of Perceived Social Support (Zimet et al., 1988), which is based on 12 statements regarding perceived social support by family, friend, and a significant other.



Sum scores for each of these three domains and a total score were calculated that ranged from minimum (= 1) to maximum (= 4).

*Sexual orientation-based victimization.* A scale was used to measure the past 12-month frequency of seven experienced forms of victimization based on the participants' sexual orientation; each for which a four-point scale was used to measure frequency from never (= 0) to three or more times (= 3) that were then summed into a total victimization score (D'Augelli et al., 2002).

### 5.2.1.3 Statistical analyses

Differences between subgroups of sexual identities (i.e., gay/lesbian, bisexual, and other) were examined to calculate population prevalence estimates by sexual identity category for all study variables. Bivariate correlations were used to prepare for mediation testing of the association between sexual orientation openness and depression symptoms through either social support or sexual orientation-based victimization. Then, these mediation analyses were performed from which indirect effects were calculated. Next, moderation by social support or sexual orientation-based victimization on the association between sexual orientation openness and depression symptoms was tested in a stepwise manner. In a similar way, moderation by each the three social support domains were tested. Moderation effects were then plotted using simple slopes. All analyses were performed in SPSS (v24), using the 'MEDMOD' (v3.1) and 'PROCESS' (v3.1) regression-based macros by Andrew F. Hayes (2013) and a significance level of  $\alpha = 0.05$ , while adjusting for age.

## 5.2.2 Results

About one third (35.0%) of the sample reported being completely open about their sexual orientation and 12.5% of the sample was not open with anyone about their sexual orientation, with bisexual individuals being less open than gay/lesbians ( $p < .001$ ). On average, sexual minorities in the sample reported mild depression symptoms ( $M = 6.5$ ,  $SD = 6.0$ ; range for mild severity cut-offs: [5, 9]), with no significant differences across the different sexual minority groups ( $p = .317$ ). Sexual orientation openness was not directly associated with depression symptoms ( $p = .454$ ) and, as a consequence, neither social support ( $p = .448$ ) nor sexual orientation-based victimization ( $p = .448$ ) were significant mediators of this association. Yet, social support did moderate the association between sexual orientation openness and depression symptoms ( $p = .034$ ), whereas sexual orientation-based victimization did not ( $p = .578$ ). Further exploration of the significant moderation effect showed that among those with low levels of perceived support, being more open about one's

sexual orientation was associated with higher level of depression symptoms than when less open, but not among those with higher level of social support. These findings were repeated for the different social support domains, but not for social support by family (moderation effect:  $p = .334$ ).

### **5.2.3 Conclusions**

Sexual minorities in Sweden experience, on average, a mild level of depression symptoms, with about a third of them completely open about their sexual orientation. Whereas other studies have reported conflicting results regarding the association between sexual orientation openness and depression symptoms and suggested competing mechanisms through increased social support or victimization, this study did not find support for either a direct association or these mechanisms. Instead, this study found that the association between greater sexual orientation openness and depression symptoms was depending on the level of perceived social support, such that openness about sexual orientation was only associated with more depression symptoms when social support was low. These findings suggest that sexual minorities may need social support to navigate the stress related to being open about their sexual orientation. This study is among the first to examine the association between sexual orientation openness and depression symptoms in a population-based study, overcoming various methodological issues that include common undersampling of those concealing their sexual orientation.

## **5.3 STUDY III: COUNTRY-LEVEL STRUCTURAL STIGMA, SCHOOL-BASED AND ADULTHOOD VICTIMIZATION, AND LIFE SATISFACTION AMONG SEXUAL MINORITY ADULTS: A LIFE COURSE APPROACH**

### **5.3.1 Method**

#### *5.3.1.1 Participants*

Data from a total of 93,079 respondents, who were 18 years or older, living in one of the 28 European Union (EU) member states, self-identifying as lesbian, gay, bisexual, or transgender (LGBT), and participating in the 2012 EU-LGBT survey, were used for this study. These data were collected by the European Union Agency for Fundamental Rights and recruitment was primarily done through sexual and gender minority organizations and social networking websites and apps. As no data was available regarding intersectional experiences related to both sexual orientation and gender identity among gender minorities, those reporting trans experiences were excluded from the sample. The sample was further restricted

to those who had full records available on key variables and who spent their schooling years in their current country of residence. The final sample consisted of a total of 55,263 sexual minority individuals.

#### 5.3.1.2 Measures

*Sexual identity.* Participants' sexual identity was assessed with a question on what would best describe their sexual identity: "Gay," "Lesbian," "Bisexual," or "Other."

*School bullying.* Experiences of school bullying were measured by asking participants how often they experienced any negative comments or conduct during their schooling years because of being a sexual minority. Due to the skewed nature of the data, responses were dichotomized to contain "never" or "rarely" (= *not bullied*) and "often" or "always" (= *bullied*).

*Identity openness at school.* The level of identity openness of participants at school was assessed with the question how often they openly talked at school about being a sexual minority during their schooling years. Responses were then dichotomized to contain "never" or "rarely" (= *low openness*) and "often" or "always" (= *high openness*).

*Adulthood victimization.* The frequency of past 12-month victimization was measured by asking how many times participants experienced physical or sexual attacks or threats of violence over the past twelve months within the European Union or their country of residence. Responses option were dichotomized to no such experiences (= *not victimized*) and any experience of past-year victimization (= *victimized*).

*Adulthood life satisfaction.* Adulthood satisfaction with life was assessed with the question "All things considered, how satisfied would you say you are with your life these days?" on a scale that ranged from "very dissatisfied" (= 1) to "very satisfied" (= 10).

*Structural stigma.* The level of structural stigma toward sexual minorities for each of the 28 European countries was based on a composite index consisting of two measures: one regarding the country's discriminatory legislation and policies, the other on population attitudes, toward sexual minorities. Legal data were derived from the 2012 Europe Rainbow Index created by the International Lesbian, Gay, Bisexual, Trans and Intersex Association (ILGA) (ILGA-Europe, 2012). Attitudinal data came from 2012 European Social Survey, as a percentage of those agreeing to the question whether gays and lesbians should be able to live their lives as they wish (ESS, 2012). These data from 2012 were also likely to represent the relative rank ordering of European countries with regards to their level of structural stigma during the varying years participants attended schooling, based on multiple other reports (e.g., Flores, 2019).

### 5.3.1.3 Statistical analyses

Socio-demographic and study variables were compared by gender, using generalized linear mixed modeling in SPSS (v24) to control for nesting by country, and further analyses were stratified by gender, as identity openness at school as a risk factor for school bullying and the risk for school bullying itself may vary across genders. Next, to test and prepare for moderated serial mediation, Mplus (v8) was used to estimate bivariate, mediation, and moderation pathways in a stepwise manner, by using two-level random-slope modeling procedures based on maximum likelihood with robust standard error estimates; all to examine whether the association between structural stigma and adulthood life satisfaction was mediated through school bullying, directly but also indirectly through adulthood victimization, with identity openness at school moderating the structural stigma to school bullying pathway. First, the association between structural stigma and school bullying was tested. Then, it was tested whether this association was depending on identity openness at school. Third, this study tested if adulthood victimization mediated the association between school bullying and adulthood life satisfaction. Finally, the full models were tested, which were adjusted for country nesting, participants' age, household income, and country-level prosperity. A significance level of  $\alpha = 0.05$  was used in all analyses.

### 5.3.2 Results

School bullying was found to be frequently experienced by large groups of sexual minorities across all EU countries, but the risk for school bullying was lower among sexual minority women than sexual minority men ( $p < .001$ ; see Figure 5.1 and 5.2). Structural stigma was directly associated with school bullying among sexual minority women ( $p = .037$ ) but not men ( $p = .925$ ), yet, this association was significantly moderated by identity openness at school among both sexual minority women ( $p = .003$ ) and men ( $p = .003$ ). The moderation effects showed that greater structural stigma was associated with a lower risk for school bullying among sexual minority women only when not open about their identity at school ( $p = .016$ ; open:  $p = .859$ ), but with a higher risk among sexual minority men only if they were open at school ( $p = .012$ ; not open:  $p = .785$ ). Greater adulthood victimization partially mediated the negative association between school bullying and adulthood life satisfaction among sexual minority women ( $p < .001$ ) and men ( $p < .001$ ). In the final models, among sexual minority women who were not open about their identity at school, a lower risk for school bullying did weakly but significantly and positively explain the negative association between greater structural stigma and lower adulthood life satisfaction (indirect effect:  $p = .012$ ) and, in parallel, through a higher risk of adulthood victimization (serial indirect effect:

$p = .029$ ). Among sexual minority men who were open about their identity at school, a higher risk for school bullying did weakly but significantly and negatively explain the negative association between greater structural stigma and lower adulthood life satisfaction (indirect effect:  $p = .014$ ) and, in parallel, through a higher risk of adulthood victimization (serial indirect effect:  $p = .016$ ). These indirect effects were not found significant among sexual minority women who were open and sexual minority men who were not open about their identity at school.

### **5.3.3 Conclusions**

In this study, data from sexual minorities across 28 European countries provided a unique opportunity for multilevel models with large clusters to investigate life-course sequelae of structural stigma in both childhood and adulthood. Sexual minorities commonly experience school bullying across both higher and lower-stigma EU countries, while structural climates for sexual minorities vary widely. In higher-stigma settings specifically, sexual minorities who are open about their sexual identity at school were at higher risk to experience school bullying compared to those not open. Findings from this study suggest that some sexual minorities living in higher-stigma countries would benefit from not being open about their sexual orientation at school, by reducing their risk for school bullying and subsequent adverse adulthood experiences, that may prevent long-term negative consequences for adulthood wellbeing. This study provides one of the first indications that structural stigma may not only jeopardize sexual minority adults' wellbeing through contemporaneous, but also historical, experiences of victimization. This study represents among the most comprehensive examinations to date of the association between country-level structural stigma toward sexual minorities and school bullying, which may hold ramifications for adult wellbeing.

## **5.4 STUDY IV: TIME-VARYING EXPOSURE TO STRUCTURAL STIGMA, MINORITY STRESS REACTIONS, AND POOR MENTAL HEALTH AMONG SEXUAL MINORITY MALE MIGRANTS**

### **5.4.1 Method**

#### *5.4.1.1 Participants*

From October 2017 through March 2018, an online survey on mental health determinants among sexual minority men was advertised to which 2,615 individuals responded. Recruitment was done through advertisements in Sweden on dating apps and

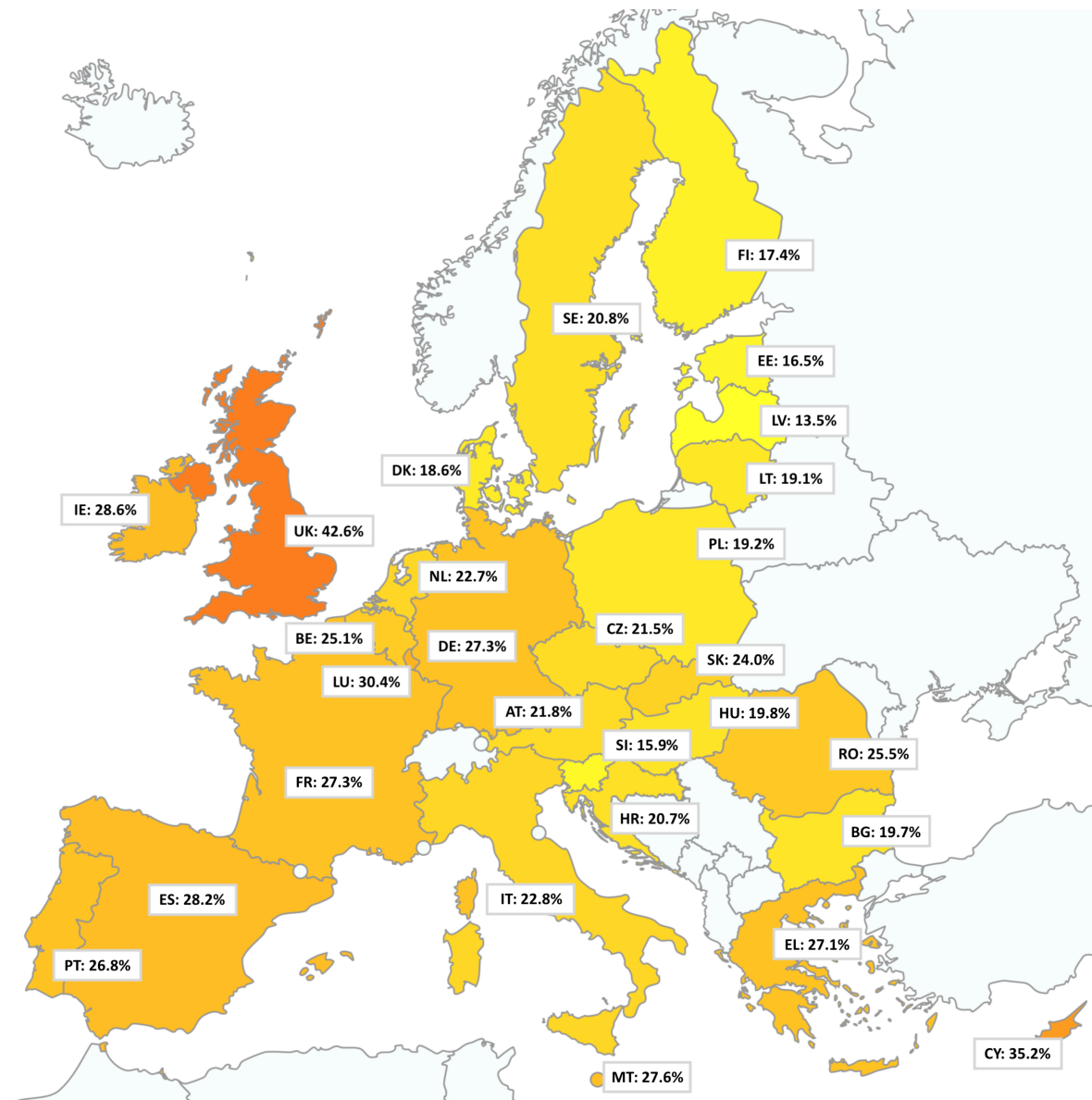
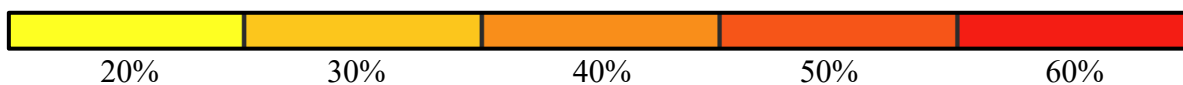


Figure 5.1. Sample proportions of school bullying among sexual minority women in the EU.

Note. Depicting proportions of school bullying adjusted for the nested structure (by country) and individual age. AT: Austria; BE: Belgium; BG: Bulgaria; CY: Cyprus; CZ: Czech Republic; DE: Germany; DK: Denmark; EE: Estonia; EL: Greece; ES: Spain; FI: Finland; FR: France; HU: Hungary; HR: Croatia; IE: Ireland; IT: Italy; LT: Lithuania; LU: Luxembourg; LV: Latvia; MT: Malta; NL: Netherlands; PL: Poland; PT: Portugal; RO: Romania; SE: Sweden; SK: Slovakia; SI: Slovenia; UK: United Kingdom.



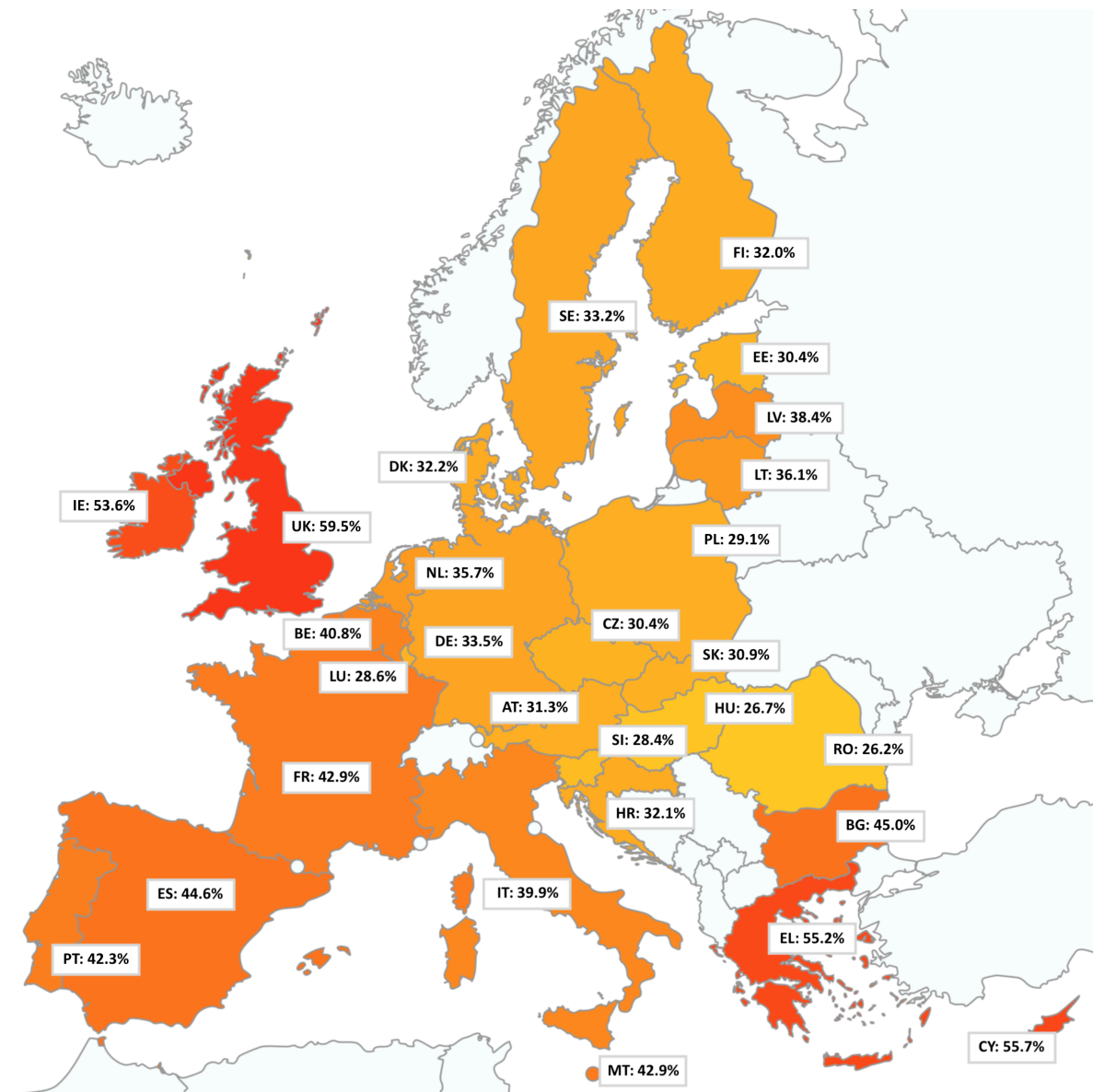
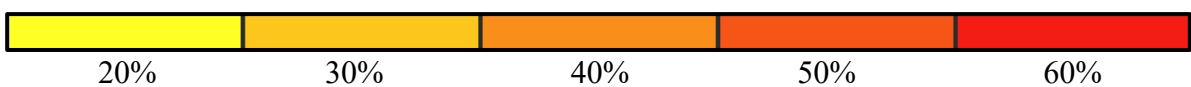


Figure 5.2. Sample proportions of school bullying among sexual minority men in the EU.

Note. Depicting proportions of school bullying adjusted for the nested structure (by country) and individual age. AT: Austria; BE: Belgium; BG: Bulgaria; CY: Cyprus; CZ: Czech Republic; DE: Germany; DK: Denmark; EE: Estonia; EL: Greece; ES: Spain; FI: Finland; FR: France; HU: Hungary; HR: Croatia; IE: Ireland; IT: Italy; LT: Lithuania; LU: Luxembourg; LV: Latvia; MT: Malta; NL: Netherlands; PL: Poland; PT: Portugal; RO: Romania; SE: Sweden; SK: Slovakia; SI: Slovenia; UK: United Kingdom.



social media. A total of 481 men reported to have been born outside of Sweden from whom 247 individuals were included in the current study as they completed the key study variables, lived in Sweden, and self-identified as non-heterosexual.

#### 5.4.1.2 Measures

*Country-of-origin structural stigma.* The level of structural stigma for the participants' various countries of origin was based on country-level measures regarding the average population attitudes toward sexual minorities and the presence of discriminatory laws and policies. The Global Acceptance Index, with data from 2014-2017 across 174 countries, published by the Williams Institute was used as data on population attitudes (Flores, 2019). Data on the global criminalization and the human rights situation of sexual minorities in 2016 were derived from a report by the International Lesbian, Gay, Bisexual, Trans and Intersex Association as a measure of discriminatory laws and unequal policies (Carroll, 2016). Both scores were transformed into z-scores, summed into a composite score, and centered around the score for Sweden. These data are representative of the change in structural stigma from the countries of origin to Sweden for the year that participants moved from these countries as well as the level for the years they lived in these countries, since the relative rank ordering of the different countries with regards to their level of structural stigma has been stable of the past decades according to multiple reports (e.g., Flores, 2019).

*Years living in Sweden.* The number of years living in Sweden was based on participants' self-report.

*Age of arrival to Sweden.* The age of arrival was calculated by subtracting the years of living in Sweden from the self-reported age of participants.

*Poor mental health.* Poor mental health was measured as experiences of psychological distress with the Brief Symptom Inventory-18 scale (Derogatis, 2001; Derogatis & Melisaratos, 1983; Meijer et al., 2011). To create a sum score on mental health problems, participants were asked how bothered or distressed they felt by 18 different depression, anxiety, and somatization symptoms over the past 7 days on a scale from "not at all" (= 0) to "extremely" (= 4).

*Rejection sensitivity.* Sexual orientation-related rejection sensitivity was assessed by presenting participants with 14 hypothetical rejection situations (Pachankis et al., 2008). They were then asked to rate both how concerned or anxious they felt, and how likely it would be, that each situation would happen because of their sexual orientation, measured on scales from "very unconcerned" or "very unlikely" (= 1) to "very concerned" or "very likely"



(= 6), respectively. Scores on anxiousness and likelihood for each item were multiplied and then summed into a total score.

*Internalized homophobia.* A nine-item scale regarding the way participants felt about being gay or bisexual (Martin & Dean, 1992) was used to measure internalized homophobia. With this scale, participants were asked to rate their past-year frequency of nine different negative thoughts and feelings toward their sexual orientation from never (= 1) to often (= 4), then summed into a total score.

*Sexual orientation concealment.* Concealment of sexual orientation was assessed as the extent of sexual orientation outness toward five social groups: “family,” “gay, lesbian, and bisexual friends,” “straight friends,” “co-workers,” and “healthcare providers” (Meyer et al., 2002). Concealment of sexual orientation was dichotomously coded to contain either being out to any person across the different social categories (0 = *not concealing*) or out to none within any of the various groups (1 = *concealing*).

#### 5.4.1.3 Statistical analyses

Regression models using maximum likelihood with robust standard errors in Mplus (v8) were employed to address the study’s research questions. As the data did not meet crucial statistical requirements for multilevel analysis and the data was arguably not nested by design, data was treated as non-hierarchical in single-level models. All regression models were adjusted for country-of-origin income inequality, measured as the annual Gini-index derived from the World Bank (2020), so that changes in mental health were not merely a function of changes in country-level prosperity. First, differences in demographic and study variable by level of country-of-origin structural stigma were tested. Then, the study examined, in a stepwise manner, whether rejection sensitivity, internalized homophobia, and sexual orientation concealment mediated the association between country-of-origin structural stigma and poor mental health. To test if the associations between age of arrival to, or years living in, Sweden and mental health were not merely a function of increased age or the passage of time, these associations were then tested by controlling for age. Next, the study tested whether age of arrival to Sweden and years living in Sweden moderated the association between country-of-origin structural stigma and poor mental health and whether these factors moderated the association between country-of-origin structural and rejection sensitivity, internalized homophobia, and sexual orientation concealment. Finally, moderated mediation models were tested in which rejection sensitivity, internalized homophobia, and sexual orientation concealment would mediate the association between country-of-origin structural stigma and poor mental health, with age of arrival to Sweden and years living in Sweden

moderating the country-of-origin structural stigma to rejection sensitivity, internalized homophobia, and sexual orientation concealment pathways. These moderation effects and indirect effects, conditional on values of the moderators age of arrival to Sweden and years living in Sweden, were then plotted based on significance regions or at fixed values of these moderating variables, i.e., around the 15<sup>th</sup> and 85<sup>th</sup> percentiles of their distributions (at 3 and 30 years, respectively). In all analyses, a significance level of  $\alpha = 0.05$  was used.

#### **5.4.2 Results**

In this study, sexual minority men who had migrated from higher-structural-stigma countries reported poorer mental health ( $p < .001$ ), greater rejection sensitivity ( $p = .001$ ), and greater internalized homophobia ( $p < .001$ ) and were more likely to conceal their sexual orientation ( $p = .001$ ), compared with those who had migrated from lower-structural-stigma countries. This study found that greater rejection sensitivity ( $p < .001$ ) and greater internalized homophobia ( $p < .001$ ), but not concealment of sexual orientation ( $p = .058$ ), mediated the positive association between country-of-origin structural stigma and poor mental health with no remaining significant direct effects. The age of arrival to Sweden and the years living in Sweden did not moderate the association between country-of-origin structural stigma and poor mental health ( $p = .316$  and  $p = .093$ , respectively). However, the age of arrival to Sweden did moderate the association between country-of-origin structural stigma and both rejection sensitivity ( $p = .009$ ) and internalized homophobia ( $p = .022$ ), but not sexual orientation concealment ( $p = .260$ ), in such a way that the positive associations between country-of-origin structural stigma and both rejection sensitivity and internalized homophobia were significant among those arriving after the age 12 and 11, but not among those arriving at an earlier age. The years living in Sweden did moderate the association between country-of-origin structural stigma and rejection sensitivity ( $p < .001$ ), internalized homophobia ( $p = .002$ ), and sexual orientation concealment ( $p < .001$ ), in such a way that the positive associations between country-of-origin structural stigma and rejection sensitivity, internalized homophobia, and sexual orientation concealment were significant among those who had lived in Sweden for less than 22, 22, and 17 years, but not among those living in Sweden for longer. This study found that the indirect effects of rejection sensitivity and internalized homophobia, explaining the association between country-of-origin structural stigma and poor mental health, were depending on the age of arrival to Sweden and the years living in Sweden as moderators of the country-of-origin structural stigma to rejection sensitivity and internalized homophobia pathways. Moderator-conditional indirect effects, at combinations of fixed-moderator values, of the association between the country-of-origin

structural stigma and poor mental health show that the indirect effects were only significant at a combination of an older age of arrival to Sweden (i.e., 30 years) with fewer years lived in Sweden (i.e., 3 years) (conditional indirect effects through rejection sensitivity and internalized homophobia:  $p = .003$  and  $p = .006$ , respectively). No such significant conditional indirect effects were found in a similar moderated mediation model with sexual orientation concealment as mediator.

### **5.4.3 Conclusions**

By combining mediation testing with examining life course-varying effects of structural stigma exposure, this study is first to find that the association between greater structural stigma and poorer mental health among sexual minority men might be explained by increased levels of rejection sensitivity and internalized homophobia. These findings suggest that structural stigma exposure may give rise to these individual-level stigma-related factors. That is, these stressful coping patterns seem to be exacerbated with prolonged exposure to higher levels of structural stigma among sexual minority male migrants but may, in turn, reduce as a function of the duration of exposure to lower levels. These findings suggest that prolonged exposure to higher levels of structural stigma may gradually induce cognitive and affective coping patterns to compromise mental health. Yet, these negative coping patterns might, upon moving to lower-structural-stigma contexts, wane over time.

## **5.5 ETHICAL CONSIDERATIONS**

Research into the health and wellbeing of sexual minorities through surveys and questionnaires, as covered in this Ph.D. thesis, required critical ethical reflection in order to ensure the integrity of both the sexual minority population and their data, which included considerations regarding the research subjects, the populations under study, the treatment of data, and engaging the relevant ethics review committee for compliance with the Helsinki declaration (World Medical Association, 2001).

### **5.5.1 Ethical permits**

For all four studies, ethical permits were obtained from the Regional Ethical Review Board in Stockholm. For Study I, ethical permission was granted under registration number 2013/2200-31/2, with the title “Disparities in physical and mental health among sexual minorities.” Study II received ethical approval under registration number 2017/1648–31/5, which carried the title “Socio-demographic determinants of health and health risk factors: Analysis of data from the European Health Interview Survey.” For Study III, ethical

permission was granted under registration number 2017/1852-31/5, with the title “Self-rated quality of life among lesbian, gay, bisexual, and transgender individuals across Europe and the impact of openness, discrimination, and violence: Analysis of data from the EU-LGBT survey.” Study IV received ethical approval under registration number 2017/1853-31/5, which carried the title “Specific psycho-social and environmental stressors influencing mental health among gay, lesbian, bisexual, and queer men.”

### **5.5.2 Research subjects**

During data collection, as done for the empirical studies in this Ph.D. thesis, specific ethical considerations included, but were not limited to, the need to obtain informed consent prior to study inclusion, ensuring the confidentiality of the subjects, not connecting personal details to anonymized datasets, respecting subjects’ decisions to drop out of studies, and not searching for or publicly discussing data that are irrelevant to conducting the study or could breach privacy and confidentiality. Most importantly, whether digitally, on paper-and-pencil basis, or else, a safe environment for sharing sensitive information had to be ensured, free of stigma or judgment regarding gender identity and sexual orientation, sexual behavior and preferences, substance use, and reported mental health issues. Questions regarding prejudice events and mental health problems may have led to the recollection of these issues or reemphasized them, possibly reinforcing rumination. The survey in Study IV was designed in a way that considered this possibility. Specifically, relevant mental health resources were provided during this study when recent suicidality was endorsed.

### **5.5.3 Population under study**

Sexual minority populations are often regarded as an at-risk group for poor mental health and face stigma in many settings. However, although technically they may be a minority in terms of quantity, framing them as such may affirm or enhance the stigma that sexual minorities experience. Apart from for sole purpose of defining and describing a population under study, one could argue that such categorization and a strong focus on differences may lead either to increased segregation and discrimination or to enhanced understanding and empowerment, with the two possibly proving a difficult balance to navigate. Furthermore, as both sexual orientation and gender identity are complex and separate multi-dimensional phenomena, individually articulated experiences of identities within study samples could be fragmented, yet important to the respondents’ view of self, to their narratives and experiences in life, and possibly for their mental health. In quantitative research, researchers often have to resort to pooling individuals into larger categories to

facilitate comparisons between groups and ensure statistical power, particularly when sample sizes may be hampered. However, a limited set of static categories, either when presenting questions or through recoding of data, in the empirical studies of this Ph.D. thesis may not have fully reflected and respected individual reality and, hence, may have interfered with a person's integrity. Observing this precarious balance and respecting individual experiences of identity, wording in this Ph.D. thesis and related materials and the categorization of individuals have been carefully considered.

#### **5.5.4 Collected data**

Individual-level data, as summarized in this Ph.D. thesis, were collected through various methods and from several sources and databases. In all cases, the privacy and confidentiality of study participants had to be ensured. In Study I, survey data were linked to specific data from national Swedish registries, after obtaining respondents' informed consent for this practice. In Study II, a paper-and-pencil follow-back survey has been sent through postal mail, based on a predefined sample of sexual minorities. Theoretically, in case the survey was delivered to the wrong person or was intercepted by others, such a targeted survey could have had negative consequences for individuals, especially, for instance, when concealing their sexual orientation to others. In the improbable case of data leakage, accidental disclosure of a participant's sexual orientation may also occur when recruiting participants through sexual minority-specific dating and social networking websites and apps, such as done in Study III and Study IV. In the very unlikely event that the use of these apps and websites could be linked back to individuals, this may potentially lead to full disclosure of otherwise concealed identities, behavior, or any other sensitive issues. To minimize these risks, several precautions have been taken and mitigation measures have been implemented in the different studies covered in this Ph.D. thesis. In Study II, while a large share of the questions focused on sexual minority experiences, the study was not presented to potential participants as a survey for sexual minorities specifically. Furthermore, returned surveys, data entered into databases, and contact details of participants were all stored separately and securely. For Study III, data security in the EU-LGBT survey was ensured through procedures that deliberately abstained from collecting potentially identifiable data, such as IP address, location information, and routes to the survey website. Study IV used certified secure online software to conduct the web-based survey, which only allowed data access to authorized individuals using two-factor authentication and stored identifiable details separately from the main dataset.

Furthermore, working with large datasets, as done in this Ph.D. thesis, may facilitate data digging and endless hypothesis testing, often even likely to result in significant test results. Research as conducted in the framework of this Ph.D. thesis used a strong theory-driven approach for hypothesis testing to prevent research malpractice.

## 6 DISCUSSION

Aiming to advance the theoretical understanding of the mechanisms underlying the sexual orientation disparity in mental health that may help improve the health equity of sexual minorities, this thesis contributed to this aim in three primary ways. First, this Ph.D. thesis extended current theoretical thinking, drawing from developmental ecology and eco-social theories, by proposing a comprehensive framework on the socio-ecology of sexual minority stigma. This framework focused on how the embodiment of sexual minority stigma, in its various forms, may produce poor mental health, explaining how such mentally taxing stigma may get under sexual minorities' skin. Second, this Ph.D. thesis established representative population-based sexual orientation-based disparities in mental health in Sweden by comparing sexual minorities with heterosexual individuals. Third, this Ph.D. thesis provided evidence for elements of the proposed socio-ecology of sexual minority stigma framework, with a specific attention to the three theses that it postulates: 1) sexual minority stigma across history and the life course (as a chronosystem), 2) sexual minority stigma as multilevel construct with cross-level effects (as a nested system), and 3) mechanisms linking sexual minority stigma to poor mental health.

Adding to the strength of this Ph.D. thesis, a wide range of advanced methods were applied in its constituent studies. First, Study I and II used non-probability population data to examine mental health disparities, overcoming various shortcomings associated with convenience sampling that include the underrepresentation of individuals concealing their sexual identity (Meyer & Wilson, 2009). Second, the methodologies, as employed in Study III and Study IV, used powerful approaches by taking advantage of a large multi-country dataset and the cross-national mobility of sexual minorities, respectively, to identify a high number of locales (i.e., 28 EU countries and 71 countries, respectively). These approaches enabled unique cross-national assessments to examine whether structural stigma drives stigma-related experiences at the interpersonal and individual level across time and context to compromise sexual minorities' mental health.

### 6.1 GENERAL FINDINGS

Large mental health disparities between sexual minorities and heterosexual individuals existed in Sweden in the period between 2010 and 2016. In Study I, sexual minorities in Sweden reported to experience a higher degree of suicidality, depression symptoms, and substance abuse compared to heterosexual individuals, with bisexuals being at highest risk for these mental health problems. Gays and lesbians were at 2.69 higher odds

for suicide ideation, at 5.50 higher odds for suicide attempts, at 1.33 higher odds for depression, and 1.43 higher odds for substance abuse than heterosexual individuals in Sweden. Bisexual individuals were at 3.83 higher odds for suicide ideation, at 6.78 higher odds for suicide attempts, at 2.23 higher odds for depression, and 1.36 higher odds for substance abuse than heterosexual individuals in Sweden. Based on representative population-based data as well, Study 2 confirmed that sexual minorities in Sweden, on average, endorse mild depression symptoms. These findings are in line with earlier published results, showing increased risks for mental health problems among sexual minorities in Sweden compared to heterosexual individuals (Bränström, 2017; Bränström et al., 2018; Bränström & Pachankis, 2018; Lindström et al., 2020; Nystedt et al., 2019).

As the studies in this Ph.D. thesis suggest, sexual minority stigma shows to be a useful paradigm for explaining mental health disparities among sexual minorities. Stigma-related factors, as reported in Study I, II, III, & IV, were negatively associated with sexual minorities' mental health and wellbeing. These factors included structural stigma (Study III & IV), discrimination (Study I), victimization (Study I & III), lack of social support (Study I & II), identity openness (Study II), rejection sensitivity (Study IV), and internalized homophobia (Study IV). This has largely been in line with the literature, as discussed in chapter 2, that has primarily focused on stigma-related psychosocial and interpersonal stressors, following the minority stress model (Meyer, 2003). Specific to suicidality among sexual minorities, this Ph.D. thesis finds that the sexual orientation-based disparity in suicidality may be explained by such stigma-related psychosocial and interpersonal stressors, but that an unexplained part of the disparity may be attributed to factors that have not traditionally been part of the stigma and minority stress frameworks (Study I). That is, minority stress theory may help to explain a large share of the disparity in suicidality between sexual minorities and heterosexual individuals, but experiences and risk factors traditionally related to sexual minority stigma and captured within the minority stress framework may not be able to explain the full sexual orientation-based disparity in suicidality.

In fact, results from Study I show that sexual minorities in Sweden remain at a higher risk for mental health problems compared with heterosexual individuals even though Sweden is among the countries with the lowest levels of sexual minority stigma (see Figure 1.3). Over the past two decades, Sweden has seen an extensive decrease in legislative discrimination, and increases in social acceptance, toward sexual minorities (Hatzenbuehler et al., 2018). Also, Study II shows that sexual minorities in Sweden experience relatively low levels of sexual orientation-based victimization. With these low levels of typical forms of sexual minority stigma in Sweden, other factors that typically have not been considered as a part of



the stigma and minority stress frameworks may need to be identified to help explain the persisting sexual orientation-based disparity in mental health. This may be done by considering other existing or newly developed socio-epidemiological theories, but also by integrating other theories into the minority stress framework that is typically used to study the mental health impact of sexual minority stigma.

Examples of recent studies using theories beyond the traditional minority stress framework that may help explain mental health disparities among sexual minorities include fundamental cause theory (see chapter 2.3.6) but also intra-minority gay community stress theory and the structural theory of suicide. Intra-minority gay community stress theory has recently been developed and used to explain mental health disparities among sexual minority men based on status-focused elements within the gay community, such as those relating to sex, status, competition, and exclusion, representing unique sources of stress from within the gay community (Burton et al., 2020; Pachankis, Clark, et al., 2020). This theory, however, does not necessarily contradict minority stress theory, as it has been suggested that the strong focus on status and related concerns may also derive from sexual minority stigma and norms regarding masculinity (Pachankis, Clark, et al., 2020). Structural theory of suicide (see chapter 2.3.7) posits that increased risk for suicide may be related to barriers to societal integration that represent sociological factors such as not being married or having a partner, not living with children, lack of societal trust, and being unemployed. Results from Study I showed that these factors have the potential to explain an additional 27-32% of the disparity in suicidality between sexual minorities and heterosexual individuals. While some of the risk factors, such as not being married and living with a partner or children, may derive from being part of a quantitative minority, comprising between 2-7% of the general population, these and the other barriers to societal integration may still also derive from stigma and prejudice toward those not fitting heteronormative life paths. It is possible that some of these societal factors may not be directly to the disadvantage of stigmatized sexual minorities but to the advantage of privileged heterosexual individuals. Whether to deliberately stigmatize or not, Western societies have been designed around heteronormative institutions that privilege heterosexual individuals, providing limited opportunities for inclusive or alternative, non-normative forms of life fulfillment for sexual minorities. Therefore, sexual minority stigma, possibly with a broader all-encompassing definition that includes heteronormative factors and alternative pathways through intra-minority sources of stress, may continue to be a resourceful paradigm when studying mental health among sexual minorities.

Another opportunity to critically expand the sexual minority stigma and minority stress paradigm is to integrate minority stress theory with other socio-epidemiological theories, such as developmental ecological theory (Bronfenbrenner, 1979; Bronfenbrenner & Evans, 2000) and eco-social theory (Krieger, 2001, 2014). Based on these theories, sexual minority stigma may operate as a socio-ecological system, as presented in chapter 3.2, that is characterized by a chronosystem (varying across history and the life course), a nested system (as multilevel construct with cross-level effects), and explanatory mechanisms (linking sexual minority stigma to poor mental health).

## **6.2 SEXUAL MINORITY STIGMA ACROSS HISTORY AND THE LIFE COURSE**

The studies, included in this Ph.D. thesis, are among the first to examine sexual minority stigma as a time-varying construct, with stigma exposure varying across the life course, places, and societies. Next to few studies suggesting sexual minority stigma to vary over time as listed in chapter 3.2.1, Study III and Study IV provide additional support on how sexual minority stigma may function within a chronosystem. Findings from Study III suggest that stigma-related factors in childhood, at both the structural level and through the interpersonal sphere, may continue to influence adulthood wellbeing, regardless of exposure to adulthood stigma-related victimization experiences but also because of an increased risk to such adulthood experiences. Previous studies have primarily focused on stigma-related factors to sexual minorities' mental health and wellbeing in either childhood or adulthood in isolation (see chapter 3.1). Findings from Study III show that, besides contemporaneous exposure to stigma-related factors, historical exposures may shape sexual minorities' wellbeing throughout their life course. Whereas Study III measured exposures to sexual minority stigma with sexual minorities remaining in the countries they grew up in, Study IV expanded by examining life-course exposures among sexual minorities that changed structural contexts. This study found that sequelae of sexual minorities' exposures to stigma-related factors in highly stigmatizing birth countries may carry over when migrating to lower-stigma contexts. However, these consequences of sexual minority stigma may wane with the duration of living in these more supportive contexts. Results from these studies provide support for the chronosystem in which sexual minority stigma may operate to compromise sexual minorities' mental health and wellbeing throughout their life course and across contexts, meaning exposures during earlier life and in different stigmatizing climates may continue to compromise sexual minorities' lives in later life or in new contexts.

### 6.3 SEXUAL MINORITY STIGMA AS MULTILEVEL CONSTRUCT

Stigma-related risk factors for poor mental health among sexual minorities can be organized across several levels, namely at the structural, the interpersonal, and the individual level, as researchers have previously suggested (see chapter 3). While factors across these levels have primarily been associated with mental health directly, sexual minority stigma as such a multilevel construct suggests the possibility of cross-level effects shaping mental health and wellbeing. That is, stigma-related factors at different levels coproduce poor mental health, such that sexual minority stigma at one level promotes the manifestation of stigma at another level with both holding negative consequences for mental health. The studies in this Ph.D. thesis found support for the thesis of sexual minority stigma as a multilevel construct.

Findings from study III suggest that stigma at the structural level may promote stigma-related factors at the interpersonal level, such as school bullying during childhood and victimization during adulthood. Structural stigma was associated with reduced adulthood wellbeing through promoting these victimization experiences during both childhood and adulthood, suggesting cross-level effects, while a direct negative association between structural stigma and reduced adulthood wellbeing remained. Several previous studies also found support for the association between structural stigma and interpersonal forms of stigma (see chapter 3.2.2). Yet, few studies have been able to assess the cross-level effects by examining whether interpersonal stigma-related factors may partially explain the association between structural stigma and mental health among sexual minorities (e.g., Hatzenbuehler et al., 2018). One such study, authored by Hatzenbuehler et al. (2018), found that experiences of victimization were mediating the association between structural stigma and sexual orientation-based disparities in psychological distress, but only measured victimization in general rather than stigma-motivated victimization. Therefore, Study III represents among the most comprehensive assessments to date regarding cross-level effects of structural and interpersonal forms of stigma jeopardizing sexual minorities' wellbeing.

Regarding cross-level effects between structural and individual stigma-related factors, the results from Study IV show how factors at the individual level, such as rejection sensitivity and internalized homophobia, may explain the association between structural stigma and poor mental health among sexual minority men. This cross-level effect suggests that structural forms of stigma may give rise to these minority stress reactions at the individual level to compromise sexual minority men's mental health. With one other known study that showed how sexual orientation concealment, also regarded a minority stress reaction at the individual level, may explain the association between structural stigma and mental health (Pachankis & Bränström, 2018), Study IV is second to find support for a cross-

level effect of structural and individual stigma-related factors to compromise mental health among sexual minorities.

The studies in this Ph.D. thesis did not evaluate the question whether interpersonal stigma-related factors may drive individual-level factors. Earlier studies found considerable support for an association between these factors (see chapter 3.2.2). Most of these studies have reported on bivariate associations of stigma-based discrimination and victimization with internalized homophobia, while some linked these interpersonal stigma-related factors to rejection sensitivity and few were able to associate cross-level effects of interpersonal stigma to individual stigma with reduced mental health among sexual minorities (e.g., Dyar et al., 2018; Feinstein et al., 2012; Gold et al., 2011; Pachankis, Rendina, et al., 2015).

#### **6.4 MECHANISMS LINKING SEXUAL MINORITY STIGMA TO POOR MENTAL HEALTH**

Several mechanisms may link stigma-related factors to poor mental health among sexual minorities, which may include behavioral, biological, social, cognitive, and emotional pathways. Study II examined several such mechanisms that may link sexual orientation openness to poor mental health. Its findings suggest that sexual orientation openness is only linked to poor mental health in case when social support is low. This result indicates that sexual orientation openness might not be uniformly healthy or unhealthy. Sexual minorities may use sexual orientation openness as a mechanism to navigate interpersonal situations and their environments. Similarly, Study IV did also not find support for a direct association between sexual orientation concealment and poor mental health and a recent meta-analysis only found a weak positive association (Pachankis, Mahon, et al., 2020).

The theoretical interpretation of the position of minority stress reactions, as assessed in Study IV, within existing, often disagreeing, theoretical frameworks is generally blurred; on the one hand, these factors are interpreted as individual-level stigma-related factors, but on the other hand, they might be framed as psychological mechanisms that would link minority stress events to poor mental health (Meyer, 2019). In the first interpretation, rejection and internalized homophobia may then, through various mechanisms, take a toll on sexual minorities' mental health. Examples of such processes reported in the literature in which rejection sensitivity and internalized homophobia may induce psychological distress include, among other mechanisms (see chapter 3.2.3), disengaged coping (e.g., Feinstein, Davila, et al., 2017) and emotional dysregulation (e.g., Pachankis, Rendina, et al., 2015). When taking on the perspective of framing rejection sensitivity and internalized homophobia as psychological affective and cognitive mediators reflecting patterns of hyper-vigilance and

shame, Study IV found support showing how structural forms of stigma, through these patterns, may jeopardize mental health, as mechanisms linking sexual minority stigma to poor mental health. As discussed in chapter 3.2.3, these different interpretations may not contradict each other and would represent similar mechanisms.

In the sexual minority health literature, various other mechanisms have been identified - as discussed in chapter 2 and more extensively in chapter 3.2.3 - but were not part of the empirical research presented in this Ph.D. thesis.

## **6.5 IMPLICATIONS**

### **6.5.1 Implications for theory**

The findings as reported in this Ph.D. thesis have implications for theories that are used to study the sexual orientation-based disparities in mental health. The presented framework of the socio-ecology of sexual minority stigma further extended the dominant minority stress theory in three important ways, compromising its three central theses. To explain mental health disparities among sexual minorities, the framework posited that sexual minority stigma functions within a chronosystem that varies over time and between contexts, that sexual minority stigma operates as a nested multilevel system with cross-level effects, and that a variety of complex mechanisms link sexual minority stigma to reduced mental health. The empirical studies included in this Ph.D. thesis found support for these additions to the leading theory used in the sexual minority health literature (i.e., minority stress theory). This means that research regarding mental health disparities among sexual minorities might benefit from a broader perspective on sexual minority stigma that incorporates these three aspects.

The socio-ecological nature of sexual minority stigma has been previously suggested by several other scholars (e.g., Brooks, 1981; Hatzenbuehler & Pachankis, 2016; Meyer, 2003; Russell & Fish, 2016), but no researcher to date fully theoretically explored the possibility and the extent of this expanded sociological conceptualization of sexual minority stigma. This Ph.D. thesis aimed to lay out the theoretical foundation for the framework of the socio-ecology of sexual minority stigma, while summarizing the literature that supports this conceptualization and providing empirical evidence for its central theses, particularly in areas where the research literature shows important hiatus. The main knowledge gaps that the empirical studies presented in this Ph.D. thesis addressed include the exploration of the differing and long-lasting mental health effects of sexual minority stigma exposure during different periods of the life course (Study III & IV) and the cross-level effects of structural

and interpersonal (Study III), and structural and individual (Study IV), stigma-related factors on sexual minorities' mental health. Further research is needed to confirm these findings and further solidify the evidence base for the expanded theory.

The studies presented in this Ph.D. thesis further advanced theory by contributing evidence toward establishing causal inferences regarding the impact of stigma-related factors on mental health of sexual minorities. While non-longitudinal data hampered the ability to draw direct causal conclusions from the studies, these studies further contributed by examining mechanisms through which stigma-related factors may operate to compromise sexual minorities' mental health (Study II, III, & IV) and by assessing the reversibility of their effects upon reduction or elimination of the putative cause (Study IV).

The work covered in this Ph.D. thesis also further contributed to the literature on sexual orientation openness, outness, disclosure, and concealment. This Ph.D. thesis further defined and distinguished these different, but related, constructs with the differences in definitions holding potential implications for how each of those constructs may protect and/or compromise sexual minorities' mental health. The double function that visibility management of a sexual minority stigma - an often-concealable stigma - may hold for sexual minorities was further highlighted by the findings presented in this Ph.D. thesis, such as by the unexpected non-significant association between sexual identity concealment and mental health in Study IV. The results from Study II suggest that sexual orientation openness might be only associated with a higher risk for depression in the absence of sufficient social support. Study III showed that sexual minorities at a young age may use concealment as a strategy to navigate their stigmatizing environments and minimize the risk of victimization. However, a large number of studies have also demonstrated the psychological toll of such concealment (e.g., Legate et al., 2012; Pachankis, 2007). This may suggest that, although sexual identity concealment in some circumstances may help explain how sexual minority stigma compromises mental health as a mediator of that association, concealment may also function as a moderator of this association in other circumstances as a means for sexual minorities to mitigate the risk of stigma exposure for poor mental health. The findings from this Ph.D. thesis relating to the mental health consequences of sexual identity concealment and related constructs, may further feed into the ongoing debate in the literature about these consequences and also further contributed to the literature by theoretically distinguishing the typically intertwined and interrelated constructs.

The stigma paradigm as presented in this Ph.D. thesis, even when further expanded by including socio-ecological theories, may not be fully capable of explaining the sexual orientation-based disparity in mental health, particularly suicidality as shown in Study I.

While some of these Durkheimian risk factors for suicidality may still be linked to societal heteronormativity, findings from this study may suggest that a part of the disparity in mental health may not stem from the typical disadvantage of sexual minorities, often captured within the traditional stigma and minority stress paradigm, but potentially from the privileged position of heterosexual individuals. The results from this study may hold implications for theory to incorporate heteronormativity and the privileging of heterosexuality into theories covered in the stigma paradigm.

### **6.5.2 Implications for policy**

While social justice researchers have described ‘recognition’ (from a cultural-valuational dimension) as the main approach toward reducing sexual orientation-based injustice (Fraser, 1995), mental health inequities based on sexual orientation may arguable still require ‘redistribution’ (from a political-economic dimension). Fraser (1995) argued that sexual orientation-based injustice is not rooted in political economy but in cultural values. Nonetheless, injustice may not only be expressed in monetary terms but also in health costs that, with discriminatory legislation and policies, have also been political by design. Affirmative and transformative recognition of sexual minorities is important but, hence, not enough without redistribution of health. It is, therefore, a clear task for governments and policymakers to act and design policies to reduce sexual orientation-based health inequities in today’s societies.

Results from this Ph.D. thesis hold implications for such policies within the cultural-valuational dimension; the findings call for increased efforts to reduce and eliminate stigma toward, and discrimination of, sexual minorities in order to reduce mental health inequities among this population. Governments should provide and secure safe and affirming spaces for sexual minorities to flourish. This extends from fostering a supportive societal culture to establishing safe institutional climates in school and workplaces. This means that governments and policymakers should also take active steps to reshape the norms that perpetuate and feed the system of sexual minority stigma and provide adequate protections against enacted forms of stigma. Policymakers should seek to develop and encourage platforms for sexual minorities to build social support. As sexual minorities only make up a relatively small but sizeable proportion of today’s societies, connecting with peers and a community may be challenging at times and should be further facilitated. Additionally, policies should focus on creating and providing opportunities for sexual minorities to connect with existing forms, and to develop alternative forms, of life fulfillment and purpose, as preventive measures for suicidality. This may be done through the removal of inequitable

barriers that hamper societal integration and hinder sexual minorities' access to traditional forms of life fulfillment and through encouraging alternative forms.

From the redistribution perspective, governments should not only work toward eliminating risk factors, but also proactively promote the mental health of sexual minorities. Societies, even in the absence of sexual minority stigma, may still privilege heterosexual individuals, which may translate into an unjust advantage. At the same time, as sexual minority stigma, even when theoretically eliminated, may have lingering effects, governments should also invest in the provision of affirmative and safe psychotherapeutic interventions that help sexual minorities to cope with the consequences of sexual minority stigma to further reduce the mental health inequity that it accounts for. Securing equitable access to these services is of utmost importance. This includes financial and geographical access, cultural and linguistic access, privacy-secured and timely access, and access across all age groups.

### **6.5.3 Implications for clinical practice**

Regarding clinical practice, findings from this Ph.D. thesis also have implications for psychotherapy as they shed light on a set of different mechanisms. These mechanisms provide various leads for psychotherapeutic interventions to target. This could help break causal psychosocial and emotional mechanisms and patterns linking sexual minority stigma to mental health and help sexual minorities to reshape their narratives toward positive self-schemas and to develop positive coping skills. More specifically regarding the results from the studies presented in this Ph.D. thesis, psychotherapeutic programs could focus on intervening on the affective and cognitive patterns of hypervigilance and shame, connected to rejection sensitivity and internalized homophobia, that link sexual minority stigma to poor mental health. Clinicians could also work with sexual minorities to build and secure social support networks that would provide the space and opportunity to be able to work toward a possible coming out when desired. Furthermore, mental health professionals may work with sexual minorities to explore non-traditional and non-normative means of purpose and life fulfillment to reduce the risk for suicide among their sexual minority clients.

## **6.6 METHODOLOGICAL LIMITATIONS**

This Ph.D. thesis and its constituent studies have to be interpreted in the light of several limitations. First, all four studies were based on cross-sectional data. Even though the sequelae of sexual minority stigma were assessed and modeled over time in Study III and Study IV, the presumed directionality in the examined mechanisms were based in theory but



not confirmed by longitudinal data, hindering the support for putative causal connections. Second, Study I and Study II used representative probability-based sampling to identify population-based cohorts, while the two other studies relied on convenience sampling techniques for recruitment. The latter approach may have resulted in an underrepresentation of sexual minority individuals who were concealing their sexual orientation (Meyer & Wilson, 2009), which could have been a consequence of earlier victimization and possibly deflated some of the victimization to life satisfaction effects in Study III. A similar approach in Study IV, by recruiting through Swedish social media platforms, may also have led to an underrepresentation of sexual minority migrants who were less integrated in society as they may have had greater difficulty navigating the websites in Swedish. This may have resulted in inflated estimates, as more culturally integrated migrants coming from high-stigma countries may have shown greater improvements in mental health over time by possibly being less affected by their country-of-origin structural climate. Third, the datasets used in Study III and Study IV did not allow to include various other well-known explanatory stigma-related factors into the models, such as individual-levels factors in Study III and interpersonal-level factors in Study IV. Study IV did also not test the individual-level mediators in a single model. If included as competing factors in the examined models, these factors might have explained the same share of variance in mental health and wellbeing outcomes. Fourth, the index of structural stigma in Study III and Study IV was operationalized at a fixed moment in time and did not account for historic changes in structural stigma climates over the years. Despite positive changes in climates in some locales and negative changes in others, the relative rank ordering of countries' structural stigma levels has been relatively stable over the past 30 to 40 years (Flores, 2019; Van der Star, Pachankis, et al., 2020). While this stable ranking may not have accounted for the change in structural stigma exposure experienced by the individual over time, it still facilitated the multilevel between-country assessment of mechanistic patterns of the consequences of country-level structural stigma over time. Fifth, the measurement of interpersonal stigma-related factors in studies II and III relied on self-report and the interpretation that sexual orientation was the reason for the victimization. Possible recall bias regarding the motive of these experiences may be fueled by structural stigma. Yet, sexual minorities in Study II were all residing in a single structural context - the relatively low-stigma context of Sweden - and, in Study III, this interpretation would lie along the hypothesized causal pathway and not directly bias the results. Six, three out of the four studies presented in this Ph.D. thesis took place in Sweden, which is known for its relatively supportive climate toward sexual minorities (Bränström & Van der Star, 2013). Particularly with the low levels of victimization

present in Sweden (see Study II), the results of Study I and Study II may be underestimated when attempting to generalize the findings to other global contexts. Seventh, the studies presented in this Ph.D. thesis were unable to test the full proposed model of the socio-ecology of sexual minority stigma and, instead, relied on testing separate elements of the proposed theory. This may have led to the possibility that other counteracting or amplifying connecting mechanisms were left unexamined in the interplay between stigma-related factors.

## **6.7 FUTURE DIRECTIONS FOR RESEARCH**

Besides the specific knowledge gaps listed in chapter 2.5.2, two main directions for future research can be identified; one focusing on the presented conceptualization of sexual minority stigma as a socio-ecological system and the other focusing on how the presented study results may be replicated and/or generalized to other areas and contexts. In order to further develop evidence to support the conceptualization of sexual minority stigma as a socio-ecological system and the role it may play in explaining sexual orientation-based disparities in mental health, future research should focus on two important aspects: to test the model in full by including potentially competing or coproducing mechanisms and to replicate results in longitudinal studies.

In addition, research should focus on assessing to what degree findings from this Ph.D. thesis may extend to gender minority stigma and gender minorities, by including transgender and gender non-conforming individuals in future samples and possibly by adapting existing theories. Future research should also examine how a socio-ecological approach to sexual minority stigma intersects with models for other stigmas and prejudices, such as racism, sexism, transphobia, ableism, and ageism. Prospective studies should also assess this framework in other social contexts, such as non-Western cultures and contexts, to examine generalizability of results and theory. Additional research should further investigate the proposed conceptualization of sexual orientation openness and related constructs and their consequences for sexual minorities' mental health and prospective studies should apply these constructs more consistently and intentionally. Future research should also examine whether other sociological theories and concepts may prove useful, as done with the Durkheimian suicidality theory in Study I, to explore other explanatory factors that may traditionally not fall within the prevailing stigma paradigm and how these may relate to associated constructs, such as heteronormativity and intra-minority sources of stress.

## 7 CONCLUSIONS

Stigma toward sexual minorities has long been studied as the potential primary cause driving sexual orientation-based disparities in mental health. Such stigma may manifest itself at various levels surrounding sexual minorities. A large body of research has identified stigma-related risk factors, such as discriminatory attitudes, laws, and policies at the structural level, victimization and acts of discrimination at the interpersonal level, and concealment of sexual orientation and internalization of negative societal attitudes at the individual level.

In the low-stigma context of Sweden, various sexual orientation-based mental health disparities persist; sexual minorities continue to be at higher risks for suicidality, depression, and substance abuse than heterosexual individuals. These results call for new theoretical approaches to sexual minority stigma by integrating other sociological theories, such as those originally lying outside the stigma paradigm (e.g., the Durkheimian theory on suicidality) and those further informing sexual minority stigma theory by suggesting new dimensions (e.g., eco-social theory). This Ph.D. thesis comprehensively summarized existing evidence and found additional support for understudied areas on how sexual minority stigma may function as a socio-ecological system surrounding sexual minorities. That is, sexual minority stigma might be characterized by a chronosystem exerting spatio-temporal effects across the life course, by cross-level effects in a multilevel construct, and by complex mechanisms that explain how stigma-related factors compromise mental health.

Regarding these three proposed components of the socio-ecology of sexual minority stigma, structural forms of stigma were found to drive stigma-related experiences at the interpersonal level, such as victimization during both childhood and adulthood, to compound sexual minorities' wellbeing. Structural stigma may not only negatively affect sexual minority adults through contemporaneous adulthood experiences, but also through historical experience that may continue to exhibit negative effects on sexual minority adults' wellbeing. Furthermore, structural stigma may gradually give rise to stigma-related factors at the individual level, such as rejection sensitivity and internalized homophobia. High levels of structural stigma exposure may instill these negative coping patterns to jeopardize mental health among sexual minorities, but these coping mechanisms may also wane with time upon exposure to lower structural stigma environments. Other complex mechanistic patterns may link sexual minority stigma to mental health, such as factors related to sexual orientation openness. Openness about sexual orientation may be associated with mental health in specific circumstances, suggesting that non-disclosure may represent an adaptive process that sexual

minorities could use to navigate high-stigma environments to protect their mental health. Yet, sexual minorities in low-stigma contexts may still require a high level of social support from others in order to be able to express their sexual orientation without negative consequences for their mental health.

With the obligation to reduce health inequities among vulnerable groups in society and, more specifically, to improve health equity among sexual minorities, policymakers should work to eliminate structural forms of stigma in societies, through protective and non-discriminatory laws and policies, and actively reduce interpersonal and individual-level stigma-related factors, as these may exhibit long-lasting negative effects on mental health among sexual minorities. Sexual minorities' access to traditional forms of societal integration should be improved, while also the development and exploration of alternative non-normative forms of life fulfillment should be encouraged. Clinical therapists may play vital roles by using evidence-based psychotherapy to intervene on, and break, the putative causal pathways that link sexual minority stigma to poor mental health. Future research should focus on further expanding the evidence base for the socio-ecology of sexual minority stigma model and use longitudinal approaches to further facilitate causal inference regarding its mechanisms.

## 8 ACKNOWLEDGEMENTS

After reaching the concluding remarks of the Ph.D. thesis, I, Arjan van der Star, would like to thank the many people that have been of great support during the four years leading up to the publication of this Ph.D. thesis.

First and foremost, to *Richard Bränström*, my main supervisor. I remember how we first met at a conference in Malta eight years ago and how we started discussing the limited attention for sexual and gender minority mental health within European public health research. Thank you for embarking on this journey with me. Thank you for your trust and believing in me. Thank you for the opportunities, first regarding my Master's thesis and then also the Ph.D. program. Thank you for always thinking in opportunities such as when I dropped the idea to join you in NYC. Thank you for your guidance and wisdom. Thank you for a providing space for me to make mistakes, to struggle, and to grow. Thank you for allowing me to make bold statements, sometimes just to provoke the discussion, but for still keeping me grounded. I am forever grateful for the platform you provided and how you challenged me to continuously try to become a better researcher. Thank you for everything.

To *John Pachankis*, my co-supervisor. Thank you for your sharing your expertise, intellect, and tremendous drive with me. Thank you for continuously inspiring me to reach higher and for your hospitality by inviting me over to join your lab in NYC. You inspired and motivated me at times when I needed it the most.

To *Mats Lekander*, my co-supervisor. Thank you for always being one door away whenever I needed it. Thank you for your endless positivity and asking the right questions when I was about to throw it all in the trash.

To *Petter Tinghög*, my co-supervisor. Thank you for your guidance and support, especially during the early months of this journey, when I had to learn to take on an entirely new role and identity and when all the things I thought I knew were gone.

To *Henny Bos* and *Dineke Zeegers Paget*, my mentors. Thank you for being such a constant factor in my professional career, stretching far beyond this Ph.D. journey. Thank you for often inspiring me to take a step back and look inwards, at times when my self-confidence was at its lowest and I had no idea where I wanted to take my career next or how to get there.

To my office mates in Stockholm, *Mirkka, Neda, Marie, Josefine, Laura, and Felicia*. Thank you for all your patience with me and letting me vent about my frustrations. Thank you for providing me a mirror, showing me that all were very common during the different stages of a Ph.D. program. Thank you for always creating such an uplifting and positive environment.

To my lab mates in NYC, *Erin, Kriti, Ben, Cal* and *TJ*. Thank you for being part of such a transformative period in my life and career. You were always there to teach me new things, to provide me with new perspectives, and to pitch some of my new ideas to. Thank you for your friendship.

To my classmates from the *National Research School for Healthcare Science*. Thank you for sharing this tumultuous journey with me, from beginning to end. Thank you for providing a safe space for learning and knowing that we were all in the same boat and we shared the same struggles and time constraints.

To my parents, *Aad* and *Joke*. Thank you for understanding that I had no other option than to pursue this Ph.D., even at a time when my life just had fallen apart and it suddenly meant that I had to move abroad. Thank you for your unconditional support; no questions asked. Thank you for the endless phone calls and always lending me an ear when I would go through my long lists of struggles. Thank you for your love.

To my sister and brothers, *Petra, John, and Christian*. Thank you for always allowing and encouraging me to be me. Thank you for knowing what to say for me to find back that fighter spirit within, showing me that you always knew that I could do it, and cheering me on every step of the way.

To *Marco*. Thank you, from the bottom of my heart, for being the rock that I could lean on. Thank you for your everlasting friendship and being there for me during the darkest of times. Even when I had no words or, more often, when none of them made sense, you knew exactly what was going on. You always knew when to call. It is safe to say, I could not have done this without you.

To *Raika*. Thank you for your invaluable friendship and your warmth. You always showed me, by example, that no challenge would ever be too big, no adversity too large. You inspired

me to be a true fighter, but with a heart of gold. Thank you for always negging me to schedule more trips to the Netherlands.

To *Conor*. Thank you for being my favorite unofficial coworker. Thank you for providing me with new ideas when I got stuck and always knowing how to immediately relate to the things I was talking about, but then just to crack me up right after. Thank you for your fabulous friendship.

To *Maria, Maya, Beatrice, and Elza*. Thank you for always bringing so much joy to my life in Stockholm. Even when drowning in work, you always knew how to quickly get my real personality out on busy days and shower me with positivity.

To *Salla*. Thank you for so kindly offering to proofread this thesis.

To the *Swedish Research Council* and the *Swedish National Research School for Healthcare Science* for the financial support that covered my position that allowed me to pursue my passion.

But above all, to the *individuals who participated in the studies*. Without you, none of this would have been possible. Thank you for taking the time to so kindly share your experiences, even when times may have seem dark and the world unsupportive. I hope that one day our societies will be a more equal and we all can enjoy our highest attainable levels of mental health, regardless of sexual orientation.





## 9 REFERENCES

- Adam, B. (2015). *Homophobia and Heterosexism*. Hoboken, NJ: John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781405165518.wbeosh043.pub2>
- Adelson, S. L., Stroeh, O. M., & Ng, Y. K. W. (2016). Development and mental health of lesbian, gay, bisexual, or transgender youth in pediatric practice. *Pediatric Clinics*, 63(6), 971-983. <https://doi.org/10.1016/j.pcl.2016.07.002>
- Ahmed, A. M., Andersson, L., & Hammarstedt, M. (2013). Are Gay Men and Lesbians Discriminated against in the Hiring Process? *Southern Economic Journal*, 79(3), 565-585. <https://doi.org/10.4284/0038-4038-2011.317>
- Aranda, F., Matthews, A. K., Hughes, T. L., Muramatsu, N., Wilsnack, S. C., Johnson, T. P., & Riley, B. B. (2015). Coming Out in Color: Racial/Ethnic Differences in the Relationship Between Level of Sexual Identity Disclosure and Depression Among Lesbians. *Cultural Diversity and Ethnic Minority Psychology*, 21(2), 247-257. <https://doi.org/10.1037/a0037644>
- Austin, S. B., Rosario, M., McLaughlin, K. A., Roberts, A. L., Sarda, V., Yu, K., Missmer, S., Anatale-Tardiff, L., & Scherer, E. A. (2018). Sexual orientation and salivary alpha-amylase diurnal rhythms in a cohort of U.S. young adults. *Psychoneuroendocrinology*, 97, 78-85. <https://doi.org/10.1016/j.psyneuen.2018.07.006>
- Baams, L., Grossman, A. H., & Russell, S. T. (2015). Minority stress and mechanisms of risk for depression and suicidal ideation among lesbian, gay, and bisexual youth. *Developmental Psychology*, 51(5), 688-696. <https://doi.org/10.1037/a0038994>
- Balaji, A. B., Bowles, K. E., Hess, K. L., Smith, J. C., Paz-Bailey, G., Taussig, J., Gern, R., Hoyte, T., Salazar, L., White, J., Todd, J., Bautista, G., Flynn, C., Sifakis, F., German, D., Isenberg, D., Driscoll, M., Hurwitz, E., Mimos, Doherty, R., Wittke, C., Prachand, N., Benbow, N., Melville, S., Pannala, P., Yeager, R., Sayegh, A., Dyer, J., Sheu, S., Novoa, A., Thrun, M., Al-Tayyib, A., Wilmoth, R., Higgins, E., Griffin, V., Mokotoff, E., MacMaster, K., Wolverton, M., Risser, J., Rehman, H., Padgett, P., Bingham, T., Sey, E., LaLota, M., Metsch, L., Forrest, D., Beck, D., Cardenas, G., Nemeth, C., Anderson, B. J., Watson, C.-A., Smith, L., Robinson, W. T., Gruber, D., Barak, N., Murrill, C., Neaigus, A., Jenness, S., Hagan, H., Reilly, K. H., Wendel, T., Cross, H., Bolden, B., D'Errico, S., Wogayehu, A., Godette, H., Brady, K. A., Kirkland, A., Sifferman, A., Miguelino-Keasling, V., Velasco, A., Tovar, V., De Leo'n, S. M., Rolo'n-Colo'n, Y., Marzan, M., Courogen, M., Jaenicke, T., Thiede, H., Burt, R., Jia, Y., Opoku, J., Sansone, M., West, T., Magnus, M., Kuo, I., & for the, N. s. g. (2017). Association Between Enacted Stigma and HIV-Related Risk Behavior Among MSM, National HIV Behavioral Surveillance System, 2011. *AIDS and Behavior*, 21(1), 227-237. <https://doi.org/10.1007/s10461-016-1599-z>
- Balsam, K. F., Rothblum, E. D., & Beauchaine, T. P. (2005). Victimization over the life span: a comparison of lesbian, gay, bisexual, and heterosexual siblings. *Journal of Consulting & Clinical Psychology*, 73(3), 477-487. <https://doi.org/10.1037/0022-006x.73.3.477>

- Balsam, K. F., & Szymanski, D. M. (2016). Relationship Quality and Domestic Violence in Women's Same-Sex Relationships: The Role of Minority Stress. *Psychology of Women Quarterly*, 29(3), 258-269. <https://doi.org/10.1111/j.1471-6402.2005.00220.x>
- Bandermann, K. M., & Szymanski, D. M. (2014). Exploring coping mediators between heterosexist oppression and posttraumatic stress symptoms among lesbian, gay, and bisexual persons. *Psychology of Sexual Orientation and Gender Diversity*, 1(3), 213-224. <https://doi.org/10.1037/sgd0000044>
- Beals, K. P., Peplau, L. A., & Gable, S. L. (2009). Stigma management and well-being: The role of perceived social support, emotional processing, and suppression. *Personality and Social Psychology Bulletin*, 35(7), 867-879. <https://doi.org/10.1177/0146167209334783>
- Birkett, M., Newcomb, M. E., & Mustanski, B. (2015). Does It Get Better? A Longitudinal Analysis of Psychological Distress and Victimization in Lesbian, Gay, Bisexual, Transgender, and Questioning Youth. *Journal of Adolescent Health*, 56(3), 280-285. <https://doi.org/10.1016/j.jadohealth.2014.10.275>
- Blais, M., Bergeron, F.-A., Duford, J., Boislard, M.-A., & Hebert, M. (2015). Health Outcomes of Sexual-Minority Youth in Canada: An Overview. *Adolescencia & Saude*, 12(3), 53-73.
- Blais, M., Gervais, J., & Hébert, M. (2014). Internalized homophobia as a partial mediator between homophobic bullying and self-esteem among youths of sexual minorities in Quebec (Canada). *Cien Saude Colet*, 19(3), 727-735. <https://doi.org/10.1590/1413-81232014193.16082013>
- Blondeel, K., de Vasconcelos, S., García-Moreno, C., Stephenson, R., Temmerman, M., & Toskin, I. (2018). Violence motivated by perception of sexual orientation and gender identity: a systematic review. *Bulletin of the World Health Organization*, 96(1), 29-41L.
- Boehmer, U., Miao, X., Linkletter, C., & Clark, M. A. (2014). Health Conditions in Younger, Middle, and Older Ages: Are There Differences by Sexual Orientation? *LGBT Health*, 1(3), 168-176. <https://doi.org/10.1089/lgbt.2013.0033>
- Bränström, R. (2017). Minority stress factors as mediators of sexual orientation disparities in mental health treatment: a longitudinal population-based study. *Journal of Epidemiology & Community Health*, 71(5), 446-452. <https://doi.org/10.1136/jech-2016-207943>
- Bränström, R. (2018). *Health and well-being among young LGBT individuals in Sweden*. Stockholm: Forte – Swedish Research Council for Health, Working Life and Welfare. <https://forte.se/publikation/unga-hbtq/>
- Bränström, R., Hatzenbuehler, M., Tinghög, P., & Pachankis, J. (2018). Sexual orientation differences in outpatient psychiatric treatment and antidepressant usage: evidence from a population-based study of siblings. *Psychiatric Epidemiology*, 33(6), 591-599. <https://doi.org/10.1007/s10654-018-0411-y>

- Bränström, R., Hatzenbuehler, M. L., Pachankis, J. E., & Link, B. G. (2016). Sexual orientation disparities in preventable disease: a fundamental cause perspective. *American Journal of Public Health, 106*(6), 1109. <https://doi.org/10.2105/AJPH.2016.303051>
- Bränström, R., & Pachankis, J. E. (2018). Sexual Orientation Disparities in the Co-Occurrence of Substance Use and Psychological Distress: A National Population-Based Study. *Social Psychiatry and Psychiatric Epidemiology, 4*(53), 403-415. <https://doi.org/10.1007/s00127-018-1491-4>
- Bränström, R., & Van der Star, A. (2013). All inclusive Public Health--what about LGBT populations? *European Journal of Public Health, 23*(3), 353-354. <https://doi.org/10.1093/eurpub/ckt054>
- Bränström, R., & Van der Star, A. (2016). More knowledge and research concerning the health of lesbian, gay, bisexual and transgender individuals is needed. *European Journal of Public Health, 26*(2), 208-209. <https://doi.org/10.1093/eurpub/ckv160>
- Bränström, R., van der Star, A., & Pachankis, J. (2019). European-wide monitoring of sexual and gender minority health: a necessary and feasible task for advancing health equity. *European Journal of Public Health, 29*(2), 199-200. <https://doi.org/10.1093/eurpub/ckz007>
- Bränström, R., van der Star, A., & Pachankis, J. E. (2020). Untethered lives: barriers to societal integration as predictors of the sexual orientation disparity in suicidality. *Social Psychiatry and Psychiatric Epidemiology, 55*(1), 89-99. <https://doi.org/10.1007/s00127-019-01742-6>
- Brennan, D. J., Bauer, G. R., Bradley, K., & Tran, O. V. (2017). Methods used and topics addressed in quantitative health research on gay, bisexual and other men who have sex with men: A systematic review of the literature. *Journal of Homosexuality, 64*(11), 1519-1538. <https://doi.org/http://dx.doi.org/10.1080/00918369.2016.1247537>
- Brewster, M. E., Moradi, B., Deblaere, C., & Velez, B. L. (2013). Navigating the borderlands: the roles of minority stressors, bicultural self-efficacy, and cognitive flexibility in the mental health of bisexual individuals. *Journal of Counseling Psychology, 60*(4), 543-556. <https://doi.org/10.1037/a0033224>
- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge: Harvard University Press.
- Bronfenbrenner, U., & Evans, G. W. (2000). Developmental Science in the 21 st Century: Emerging Questions, Theoretical Models, Research Designs and Empirical Findings. *Social Development, 9*(1), 115-125. <https://doi.org/10.1111/1467-9507.00114>
- Brooks, V. R. (1981). *Minority Stress and Lesbian Women*. Lexington, MA: Lexington Books.

- Bry, L. J., Mustanski, B., Garofalo, R., & Burns, M. N. (2017). Management of a Concealable Stigmatized Identity: A Qualitative Study of Concealment, Disclosure, and Role Flexing Among Young, Resilient Sexual and Gender Minority Individuals. *Journal of Homosexuality*, 64(6), 745-769. <https://doi.org/10.1080/00918369.2016.1236574>
- Burton, C. L., Bonanno, G. A., & Hatzenbuehler, M. L. (2014). Familial social support predicts a reduced cortisol response to stress in sexual minority young adults. *Psychoneuroendocrinology*, 47, 241-245. <https://doi.org/10.1016/j.psyneuen.2014.05.013>
- Burton, C. L., Clark, K. A., & Pachankis, J. E. (2020). Risk From Within: Intraminority Gay Community Stress and Sexual Risk-Taking Among Sexual Minority Men. *Annals of Behavioral Medicine*. <https://doi.org/10.1093/abm/kaaa014>
- Burton, C. L., Wang, K., & Pachankis, J. E. (2019). Psychotherapy for the Spectrum of Sexual Minority Stress: Application and Technique of the ESTEEM Treatment Model. *Cognitive and Behavioral Practice*, 26(2), 285-299. <https://doi.org/10.1016/j.cbpra.2017.05.001>
- Caceres, B. A., Brody, A. A., Halkitis, P. N., Dorsen, C., Yu, G., & Chyun, D. A. (2018). Sexual Orientation Differences in Modifiable Risk Factors for Cardiovascular Disease and Cardiovascular Disease Diagnoses in Men. *LGBT Health*, 5(5), 284-294. <https://doi.org/10.1089/lgbt.2017.0220>
- Caceres, B. A., Markovic, N., Edmondson, D., & Hughes, T. L. (2019). Sexual Identity, Adverse Life Experiences, and Cardiovascular Health in Women. *Journal of Cardiovascular Nursing*, 34(5), 380-389. <https://doi.org/10.1097/jcn.0000000000000588>
- Carroll, A. (2016). *State-Sponsored Homophobia 2016: A world survey of sexual orientation laws: criminalisation, protection and recognition*. Geneva: The International Lesbian, Gay, Bisexual, Trans and Intersex Association.
- Cochran, S. D. (2001). Emerging Issues in Research on Lesbians' and Gay Men's Mental Health: Does Sexual Orientation Really Matter? *American Psychologist*, 56(11), 931. <https://doi.org/10.1037/0003-066X.56.11.931>
- Cohen, J. M., Blasey, C., Barr Taylor, C., Weiss, B. J., & Newman, M. G. (2016). Anxiety and Related Disorders and Concealment in Sexual Minority Young Adults. *Behavior Therapy*, 47(1), 91-101. <https://doi.org/10.1016/j.beth.2015.09.006>
- Collier, K. L., van Beusekom, G., Bos, H. M. W., & Sandfort, T. G. M. (2013). Sexual orientation and gender identity/expression related peer victimization in adolescence: a systematic review of associated psychosocial and health outcomes. *Journal of Sex Research*, 50(3-4), 299-317. <https://dx.doi.org/10.1080/00224499.2012.750639>
- Collins, N. L., & Miller, L. C. (1994). Self-Disclosure and Liking: A Meta-Analytic Review. *Psychological Bulletin*, 116(3), 457-475. <https://doi.org/10.1037/0033-2909.116.3.457>

- Colpitts, E., & Gahagan, J. (2016). The utility of resilience as a conceptual framework for understanding and measuring LGBTQ health. *International Journal for Equity in Health*, 15, Article 60. <https://doi.org/10.1186/s12939-016-0349-1>
- Connolly, M. D., Zervos, M. J., Barone, C. J., II, Johnson, C. C., & Joseph, C. L. (2016). The mental health of transgender youth: Advances in understanding. *Journal of Adolescent Health*, 59(5), 489-495. <https://doi.org/http://dx.doi.org/10.1016/j.jadohealth.2016.06.012>
- Constitution of the World Health Organization, United Nations (1964) New York: United Nations.
- Craney, R. S., Watson, L. B., Brownfield, J., & Flores, M. J. (2018). Bisexual women's discriminatory experiences and psychological distress: Exploring the roles of coping and LGBTQ community connectedness. *Psychology of Sexual Orientation and Gender Diversity*, 5(3), 324-337. <https://doi.org/10.1037/sgd0000276>
- Crocker, J., & Major, B. (1989). Social Stigma and Self-Esteem: The Self-Protective Properties of Stigma. *Psychological Review*, 96(4), 608-630. <https://doi.org/10.1037/0033-295X.96.4.608>
- D'Augelli, A. R., Hershberger, S. L., & Pilkington, N. W. (1998). Lesbian, Gay, and Bisexual Youth and Their Families: Disclosure of Sexual Orientation and Its Consequences. *American Journal of Orthopsychiatry*, 68(3), 361-371. <https://doi.org/10.1037/h0080345>
- D'Augelli, A. R., Pilkington, N. W., & Hershberger, S. L. (2002). Incidence and mental health impact of sexual orientation victimization of lesbian, gay, and bisexual youths in high school. *School Psychology Quarterly*, 17(2), 148-167. <https://doi.org/10.1521/scpq.17.2.148.20854>
- Day, J. K., Ioverno, S., & Russell, S. T. (2019). Safe and supportive schools for LGBT youth: Addressing educational inequities through inclusive policies and practices. *Journal of School Psychology*, 74, 29-43. <https://doi.org/10.1016/j.jsp.2019.05.007>
- Derogatis, L. R. (2001). *Brief Symptom Inventory (BSI)-18: Administration, scoring and procedures manual*. Minneapolis: NCS Pearson.
- Derogatis, L. R., & Melisaratos, N. (1983). The Brief Symptom Inventory: an introductory report. *Psychological Medicine*, 13(3), 595-605. <https://doi.org/10.1017/S0033291700048017>
- Durkheim, É. (1897). *Le Suicide: Etude de Sociologie*. Paris: Ancienne Librairie Germer Baillière.
- Dyar, C., Feinstein, B. A., Eaton, N. R., & London, B. (2018). The Mediating Roles of Rejection Sensitivity and Proximal Stress in the Association Between Discrimination and Internalizing Symptoms Among Sexual Minority Women. *Archives of Sexual Behavior*, 47(1), 205-218. <https://doi.org/10.1007/s10508-016-0869-1>

- Eliason, M. J., Radix, A., McElroy, J. A., Garbers, S., & Haynes, S. G. (2016). The “Something Else” of Sexual Orientation: Measuring Sexual Identities of Older Lesbian and Bisexual Women Using National Health Interview Survey Questions. *Women's Health Issues, 26*(s1), S71-S80. <https://doi.org/10.1016/j.whi.2016.03.012>
- Eriksson, M., Ghazinour, M., & Hammarström, A. (2018). Different uses of Bronfenbrenner’s ecological theory in public mental health research: what is their value for guiding public mental health policy and practice? *Social Theory & Health, 16*(4), 414-433. <https://doi.org/10.1057/s41285-018-0065-6>
- ESS. (2012). *European Social Survey Round 6 Data*. Bergen: Norwegian Centre for Research Data. <http://www.europeansocialsurvey.org>
- Everett, B. G., Rosario, M., McLaughlin, K. A., & Austin, S. B. (2014). Sexual orientation and gender differences in markers of inflammation and immune functioning. *Annals of Behavioral Medicine, 47*(1), 57-70. <https://doi.org/10.1007/s12160-013-9567-6>
- Feinstein, B., Dyar, C., & London, B. (2017). Are Outness and Community Involvement Risk or Protective Factors for Alcohol and Drug Abuse Among Sexual Minority Women? *Archives of Sexual Behavior, 46*(5), 1411-1423. <https://doi.org/10.1007/s10508-016-0790-7>
- Feinstein, B. A. (2019). The Rejection Sensitivity Model as a Framework for Understanding Sexual Minority Mental Health. *Archives of Sexual Behavior*. <https://doi.org/10.1007/s10508-019-1428-3>
- Feinstein, B. A., Davila, J., & Dyar, C. (2017). A weekly diary study of minority stress, coping, and internalizing symptoms among gay men. *Journal of Consulting and Clinical Psychology, 85*(12), 1144-1157. <https://doi.org/10.1037/ccp0000236>
- Feinstein, B. A., Goldfried, M. R., & Davila, J. (2012). The relationship between experiences of discrimination and mental health among lesbians and gay men: An examination of internalized homonegativity and rejection sensitivity as potential mechanisms. *Journal of Consulting and Clinical Psychology, 80*(5), 917-927. <https://doi.org/10.1037/a0029425>
- Fish, J. N., Rice, C. E., Lanza, S. T., & Russell, S. T. (2019). Is Young Adulthood a Critical Period for Suicidal Behavior among Sexual Minorities? Results from a US National Sample. *Prevention Science, 20*(3), 353-365. <https://doi.org/10.1007/s11121-018-0878-5>
- Flores, A. (2019). *Social Acceptance of LGBT People in 174 Countries, 1981 to 2017*. Williams Institute: Los Angeles, CA.
- Flores, A., Herman, J., Gates, G., & Brown, T. (2016). *How many adults identify as transgender in the United States?* Williams Institute: Los Angeles, CA.
- Frale, D. E., Platt, L., & Hoey, S. (1998). Concealable stigmas and positive self-perceptions: feeling better around similar others. *Journal of Personality and Social Psychology, 74*(4), 909. <https://doi.org/10.1037/0022-3514.74.4.909>

- Fraser, N. (1995). From Redistribution to Recognition? Dilemmas of Justice in a 'Post-Socialist' Age. *New Left Review*, 68-149.
- Fredriksen-Goldsen, K. I., & Kim, H.-J. (2015). Count Me In: Response to Sexual Orientation Measures Among Older Adults. *Research on Aging*, 37(5), 464-480. <https://doi.org/10.1177/0164027514542109>
- Fredriksen-Goldsen, K. I., Simoni, J. M., Kim, H.-J., Lehavot, K., Walters, K. L., Yang, J., Hoy-Ellis, C. P., & Muraco, A. (2014). The health equity promotion model: Reconceptualization of lesbian, gay, bisexual, and transgender (LGBT) health disparities. *American Journal of Orthopsychiatry*, 84(6), 653-663. <https://doi.org/10.1037/ort0000030>
- Freitas, D. F., Coimbra, S., & Fontaine, A. M. (2017). Resilience in LGB youths: A systematic review of protection mechanisms. *Paideia*, 27(66), 69-79. <http://dx.doi.org/10.1590/1982-43272766201709>
- Frost, D. M., & Fingerhut, A. W. (2016). Daily exposure to negative campaign messages decreases same-sex couples' psychological and relational well-being. *Group Processes & Intergroup Relations*, 19(4), 477-492. <https://doi.org/10.1177/1368430216642028>
- Galderisi, S., Heinz, A., Kastrup, M., Beezhold, J., & Sartorius, N. (2015). Toward a new definition of mental health. *World Psychiatry*, 14(2), 231-233. <https://doi.org/10.1002/wps.20231>
- Gamarel, K. E., Mereish, E. H., Manning, D., Iwamoto, M., Operario, D., & Nemoto, T. (2015). Minority Stress, Smoking Patterns, and Cessation Attempts: Findings From a Community-Sample of Transgender Women in the San Francisco Bay Area. *Nicotine & Tobacco Research*, 18(3), 306-313. <https://doi.org/10.1093/ntr/ntv066>
- Gates, G. (2011). *How Many People are Lesbian, Gay, Bisexual and Transgender?* Williams Institute: Los Angeles, CA.
- Gates, J. L. (2014). *LGB/T Demographics: Comparisons among population-based surveys.* Williams Institute: Los Angeles, CA.
- Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identity.* Englewood Cliffs, New Jersey: Prentice Hall.
- Gold, S. D., Feinstein, B. A., Skidmore, W. C., & Marx, B. P. (2011). Childhood physical abuse, internalized homophobia, and experiential avoidance among lesbians and gay men. *Psychological Trauma*, 3(1), 50-60. <https://doi.org/10.1037/a0020487>
- Goldbach, J., Fisher, B. W., & Dunlap, S. (2015). Traumatic Experiences and Drug Use by LGB Adolescents: A Critical Review of Minority Stress. *Journal of Social Work Practice in the Addictions*, 15(1), 90-113. <https://doi.org/10.1080/1533256x.2014.996227>

- Goldbach, J. T., Tanner-Smith, E. E., Bagwell, M., & Dunlap, S. (2014). Minority stress and substance use in sexual minority adolescents: a meta-analysis. *Prevention Science, 15*(3), 350-363. <https://dx.doi.org/10.1007/s11121-013-0393-7>
- Goldberg, S. K., Conron, K. J., & Halpern, C. T. (2019). Metabolic Syndrome and Economic Strain Among Sexual Minority Young Adults. *LGBT Health, 6*(1), 1-8. <https://doi.org/10.1089/lgbt.2018.0053>
- Graham, R., Berkowitz, B., Blum, R., Bockting, W., Bradford, J., de Vries, B., Garofalo, R., Herek, G., Howell, E., & Kasprzyk, D. (2011). *The health of lesbian, gay, bisexual, and transgender people: Building a foundation for better understanding*. Washington, DC: Institute of Medicine.
- Grey, J. A., Robinson, B. B. E., Coleman, E., & Bockting, W. O. (2013). A systematic review of instruments that measure attitudes toward homosexual men. *Journal of Sex Research, 50*(3-4), 329-352. <http://dx.doi.org/10.1080/00224499.2012.746279>
- Griffith, K. H., & Hebl, M. R. (2002). The Disclosure Dilemma for Gay Men and Lesbians: "Coming Out" at Work. *Journal of Applied Psychology, 87*(6), 1191-1199. <https://doi.org/10.1037/0021-9010.87.6.1191>
- Haas, A. P., Eliason, M., Mays, V. M., Mathy, R. M., Cochran, S. D., D'Augelli, A. R., Silverman, M. M., Fisher, P. W., Hughes, T., Rosario, M., Russell, S. T., Malley, E., Reed, J., Litts, D. A., Haller, E., Sell, R. L., Remafedi, G., Bradford, J., Beautrais, A. L., Brown, G. K., Diamond, G. M., Friedman, M. S., Garofalo, R., Turner, M. S., Hollibaugh, A., & Clayton, P. J. (2011). Suicide and suicide risk in lesbian, gay, bisexual, and transgender populations: Review and recommendations. *Journal of Homosexuality, 58*(1), 10-51. <http://dx.doi.org/10.1080/00918369.2011.534038>
- Hall, W. J. (2018). Psychosocial risk and protective factors for depression among lesbian, gay, bisexual, and queer youth: A systematic review. *Journal of Homosexuality, 65*(3), 263-316. <http://dx.doi.org/10.1080/00918369.2017.1317467>
- Hamilton, C. J., & Mahalik, J. R. (2009). Minority Stress, Masculinity, and Social Norms Predicting Gay Men's Health Risk Behaviors. *Journal of Counseling Psychology, 56*(1), 132-141. <https://doi.org/10.1037/a0014440>
- Hammack, P. L., Frost, D. M., Meyer, I. H., & Pletta, D. R. (2018). Gay Men's Health and Identity: Social Change and the Life Course. *Archives of Sexual Behavior, 47*(1), 59-74. <https://doi.org/10.1007/s10508-017-0990-9>
- Hatzenbuehler, M. L. (2009). How Does Sexual Minority Stigma "Get Under the Skin"? A Psychological Mediation Framework. *Psychological Bulletin, 135*(5), 707-730. <https://doi.org/10.1037/a0016441>
- Hatzenbuehler, M. L. (2014). Structural stigma and the health of lesbian, gay, and bisexual populations. *Current Directions in Psychological Science, 23*(2), 127-132.
- Hatzenbuehler, M. L. (2016). Structural stigma: Research evidence and implications for psychological science. *American Psychologist, 71*(8), 742. <https://doi.org/10.1037/amp0000068>



- Hatzenbuehler, M. L. (2017). Advancing Research on Structural Stigma and Sexual Orientation Disparities in Mental Health Among Youth. *Journal of Clinical Child and Adolescent Psychology, 46*(3), 463-475. <https://dx.doi.org/10.1080/15374416.2016.1247360>
- Hatzenbuehler, M. L., Bränström, R., & Pachankis, J. E. (2018). Societal-level explanations for reductions in sexual orientation mental health disparities: Results from a ten-year, population-based study in Sweden. *Stigma and Health, 3*(1), 16. <https://doi.org/10.1037/sah0000066>
- Hatzenbuehler, M. L., Corbin, W. R., & Fromme, K. (2011). Discrimination and alcohol-related problems among college students: A prospective examination of mediating effects. *Drug and Alcohol Dependence, 115*(3), 213-220. <https://doi.org/10.1016/j.drugalcdep.2010.11.002>
- Hatzenbuehler, M. L., Dovidio, J. F., Nolen-Hoeksema, S., & Phills, C. E. (2009). An implicit measure of anti-gay attitudes: Prospective associations with emotion regulation strategies and psychological distress. *Journal of Experimental Social Psychology, 45*(6), 1316-1320. <https://doi.org/10.1016/j.jesp.2009.08.005>
- Hatzenbuehler, M. L., McLaughlin, K. A., Keyes, K. M., & Hasin, D. S. (2010). The impact of institutional discrimination on psychiatric disorders in lesbian, gay, and bisexual populations: a prospective study. *American Journal of Public Health, 100*(3), 452. <https://doi.org/10.2105/AJPH.2009.168815>
- Hatzenbuehler, M. L., McLaughlin, K. A., & Slopen, N. (2013). Sexual orientation disparities in cardiovascular biomarkers among young adults. *American Journal of Preventive Medicine, 44*(6), 612-621. <https://doi.org/10.1016/j.amepre.2013.01.027>
- Hatzenbuehler, M. L., Nolen-Hoeksema, S., & Dovidio, J. (2009). How Does Stigma "Get Under the Skin"? The Mediating Role of Emotion Regulation. *Psychological Science, 20*(10), 1282-1289. <https://doi.org/10.1111/j.1467-9280.2009.02441.x>
- Hatzenbuehler, M. L., Nolen-Hoeksema, S., & Erickson, S. J. (2008). Minority stress predictors of HIV risk behavior, substance use, and depressive symptoms: Results from a prospective study of bereaved gay men. *Health Psychology, 27*(4), 455-462. <https://doi.org/10.1037/0278-6133.27.4.455>
- Hatzenbuehler, M. L., & Pachankis, J. E. (2016). Stigma and Minority Stress as Social Determinants of Health Among Lesbian, Gay, Bisexual, and Transgender Youth: Research Evidence and Clinical Implications. *Pediatric Clinics of North America, 63*(6), 985-997. <https://doi.org/10.1016/j.pcl.2016.07.003>
- Hatzenbuehler, M. L., Phelan, J. C., & Link, B. G. (2013). Stigma as a fundamental cause of population health inequalities. *American Journal of Public Health, 103*(5), 813. <https://doi.org/10.2105/AJPH.2012.301069>
- Hatzenbuehler, M. L., Shen, Y., Vandewater, E. A., & Russell, S. T. (2019). Proposition 8 and Homophobic Bullying in California. *Pediatrics, 143*(6). <https://doi.org/10.1542/peds.2018-2116>

- Hatzenbuehler, M. L., Slopen, N., & McLaughlin, K. A. (2014). Stressful life events, sexual orientation, and cardiometabolic risk among young adults in the United States. *Health Psychology, 33*(10), 1185-1194. <https://doi.org/10.1037/hea0000126>
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.
- Hayman, B., & Wilkes, L. (2016). Older lesbian women's health and healthcare: A narrative review of the literature. *Journal of Clinical Nursing, 25*(23-24), 3454-3468. <https://doi.org/http://dx.doi.org/10.1111/jocn.13237>
- Herek, G. M. (2004). Beyond "homophobia": Thinking about sexual prejudice and stigma in the twenty-first century. *Sexuality Research & Social Policy, 1*(2), 6-24. <https://doi.org/10.1525/srsp.2004.1.2.6>
- Herek, G. M., & McLemore, K. A. (2013). Sexual Prejudice. *Annual Review of Psychology, 64*, 309-333. <https://doi.org/10.1146/annurev-psych-113011-143826>
- Holi, M. M., Marttunen, M., & Aalberg, V. (2003). Comparison of the GHQ-36, the GHQ-12 and the SCL-90 as psychiatric screening instruments in the Finnish population. *Nordic Journal of Psychiatry, 57*(3), 233-238. <https://doi.org/10.1080/08039480310001418>
- Holtzen, D. W., Kenny, M. E., & Mahalik, J. R. (1995). Contributions of Parental Attachment to Gay or Lesbian Disclosure to Parents and Dysfunctional Cognitive Processes. *Journal of Counseling Psychology, 42*(3), 350-355. <https://doi.org/10.1037/0022-0167.42.3.350>
- ILGA-Europe. (2012). *Rainbow Europe map and index*. Brussels: International Lesbian, Gay, Bisexual, Trans & Intersex Association in Europe. <http://www.ilga-europe.org>
- James, C. A., Schwartz, D. R., Roberts, K. E., Hart, T. A., Loutfy, M. R., Myers, T., & Calzavara, L. (2012). Childhood Emotional Abuse and Psychological Distress in Gay and Bisexual Men. *Journal of Aggression, Maltreatment & Trauma, 21*(8), 851-869. <https://doi.org/10.1080/10926771.2012.719590>
- Johnson, M. J., & Amella, E. J. (2014). Isolation of lesbian, gay, bisexual and transgender youth: A dimensional concept analysis. *Journal of Advanced Nursing, 70*(3), 523-532. <http://dx.doi.org/10.1111/jan.12212>
- Juster, R.-P., Smith, N. G., Ouellet, É., Sindi, S., & Lupien, S. J. (2013). Sexual Orientation and Disclosure in Relation to Psychiatric Symptoms, Diurnal Cortisol, and Allostatic Load. *Psychosomatic Medicine, 75*(2). <https://doi.org/10.1097/psy.0b013e3182826881>
- Juster, R. P., Doyle, D. M., Hatzenbuehler, M. L., Everett, B. G., DuBois, L. Z., & McGrath, J. J. (2019). Sexual orientation, disclosure, and cardiovascular stress reactivity. *Stress, 22*(3), 321-331. <https://doi.org/10.1080/10253890.2019.1579793>
- Katz-Wise, S. L., Rosario, M., & Tsappis, M. (2016). LGBT Youth and Family Acceptance. *Pediatric Clinics of North America, 63*(6), 1011. <https://doi.org/10.1016/j.pcl.2016.07.005>

- Kaufman, T. M. L., Baams, L., & Dubas, J. S. (2017). Microaggressions and depressive symptoms in sexual minority youth: The roles of rumination and social support. *Psychology of Sexual Orientation and Gender Diversity, 4*(2), 184-192. <https://doi.org/10.1037/sgd0000219>
- Kaysen, D., Kulesza, M., Balsam, K. F., Rhew, I. C., Blayney, J. A., Lehavot, K., & Hughes, T. L. (2014). Coping as a mediator of internalized homophobia and psychological distress among young adult sexual minority women. *Psychology of Sexual Orientation and Gender Diversity, 1*(3), 225-233. <https://doi.org/10.1037/sgd0000045>
- Kealy-Bateman, W., & Pryor, L. (2015). Marriage equality is a mental health issue. *Australasian Psychiatry, 23*(5), 540-543. <http://dx.doi.org/10.1177/1039856215592318>
- Kertzner, R. (2009). Marital rights, mental health, and public policy. *Journal of Gay & Lesbian Mental Health, 13*(3), 187-193. <http://dx.doi.org/10.1080/19359700902913153>
- King, M., Semlyen, J., Tai, S. S., Killaspy, H., Osborn, D., Popelyuk, D., & Nazareth, I. (2008). A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay and bisexual people. *BMC Psychiatry, 8*(1), 70. <https://doi.org/10.1186/1471-244X-8-70>
- Krieger, N. (1994). Epidemiology and the web of causation: Has anyone seen the spider? *Social Science & Medicine, 39*(7), 887-903. [https://doi.org/10.1016/0277-9536\(94\)90202-X](https://doi.org/10.1016/0277-9536(94)90202-X)
- Krieger, N. (2001). Theories for social epidemiology in the 21st century: an ecosocial perspective. *International Journal of Epidemiology, 30*(4), 668-677. <https://doi.org/10.1093/ije/30.4.668>
- Krieger, N. (2014). Discrimination and Health Inequities. *International Journal of Health Services, 44*(4), 643-710. <https://doi.org/10.2190/HS.44.4.b>
- Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9. *Journal of General Internal Medicine, 16*(9), 606-613. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
- Kuerbis, A., Mereish, E. H., Hayes, M., Davis, C. M., Shao, S., & Morgenstern, J. (2017). Testing Cross-Sectional and Prospective Mediators of Internalized Heterosexism on Heavy Drinking, Alcohol Problems, and Psychological Distress Among Heavy Drinking Men Who Have Sex With Men. *Journal of Studies on Alcohol and Drugs, 78*(1), 113-123. <https://doi.org/10.15288/jsad.2017.78.113>
- Kuyper, L., & Fokkema, T. (2011). Minority stress and mental health among Dutch LGBs: Examination of differences between sex and sexual orientation. *Journal of Counseling Psychology, 58*(2), 222-233. <https://doi.org/10.1037/a0022688>
- Lamoureux, A., & Joseph, A. J. (2014). Toward transformative practice: Facilitating access and barrier-free services with LGBTTIQQ2SA populations. *Social Work in Mental Health, 12*(3), 212-230. <http://dx.doi.org/10.1080/15332985.2013.875092>

- Lannert, B. K. (2015). Traumatogenic processes and pathways to mental health outcomes for sexual minorities exposed to bias crime information. *Trauma, Violence, & Abuse, 16*(3), 291-298. <http://dx.doi.org/10.1177/1524838014526067>
- Legate, N., Ryan, R. M., & Weinstein, N. (2012). Is coming out always a “good thing”? Exploring the relations of autonomy support, outness, and wellness for lesbian, gay, and bisexual individuals. *Social Psychological and Personality Science, 3*(2), 145-152. <https://doi.org/10.1177/1948550611411929>
- Lelutiū-Weinberger, C., Rendina, H. J., Mirandola, M., Gios, L., Folch, C., Rafila, A., & Pachankis, J. E. (2019). The Role of Gay-Related Stigma in HIV-Risk Behavior Among Sexual Minority Men in Europe. *AIDS and Behavior, 23*(3), 684-694. <https://doi.org/10.1007/s10461-018-2306-z>
- Lewis, N. M. (2009). Mental health in sexual minorities: Recent indicators, trends, and their relationships to place in North America and Europe. *Health and Place, 15*(4), 1029-1045. <https://doi.org/10.1016/j.healthplace.2009.05.003>
- Lewis, R. J., Milletich, R. J., Mason, T. B., & Derlega, V. J. (2014). Pathways Connecting Sexual Minority Stressors and Psychological Distress Among Lesbian Women. *Journal of Gay & Lesbian Social Services, 26*(2), 147-167. <https://doi.org/10.1080/10538720.2014.891452>
- Liao, K. Y.-H., Kashubeck-West, S., Weng, C.-Y., & Deitz, C. (2015). Testing a mediation framework for the link between perceived discrimination and psychological distress among sexual minority individuals. *Journal of Counseling Psychology, 62*(2), 226-241. <https://doi.org/10.1037/cou0000064>
- Lindström, M., Nystedt, T. A., Rosvall, M., & Fridh, M. (2020). Sexual orientation and poor psychological health: a population-based study. *Public Health, 178*, 78-81. <https://doi.org/10.1016/j.puhe.2019.09.004>
- Link, B. G., & Phelan, J. C. (2001). Conceptualizing Stigma. *Annual Review of Sociology, 27*(1), 363-385. <https://doi.org/10.1146/annurev.soc.27.1.363>
- Livingston, N. A., Christianson, N., & Cochran, B. N. (2016). Minority stress, psychological distress, and alcohol misuse among sexual minority young adults: A resiliency-based conditional process analysis. *Addictive Behaviors, 63*, 125-131. <https://doi.org/10.1016/j.addbeh.2016.07.011>
- Livingston, N. A., Flentje, A., Brennan, J., Mereish, E. H., Reed, O., & Cochran, B. N. (2020). Real-time associations between discrimination and anxious and depressed mood among sexual and gender minorities: The moderating effects of lifetime victimization and identity concealment. *Psychology of Sexual Orientation and Gender Diversity, 7*(2), 132-141. <https://doi.org/10.1037/sgd0000371>
- Logie, C. H., Lacombe-Duncan, A., MacKenzie, R. K., & Poteat, T. (2016). Minority Stress and Safer Sex Practices Among Sexual Minority Women in Toronto, Canada: Results from a Cross-Sectional Internet-Based Survey. *LGBT Health, 3*(6), 407-415. <https://doi.org/10.1089/lgbt.2016.0005>

- Lucassen, M. F., Stasiak, K., Samra, R., Frampton, C. M., & Merry, S. N. (2017). Sexual minority youth and depressive symptoms or depressive disorder: A systematic review and meta-analysis of population-based studies. *Australian and New Zealand Journal of Psychiatry*, *51*(8), 774-787. <https://dx.doi.org/10.1177/0004867417713664>
- Lyons, A. (2015). Resilience in lesbians and gay men: A review and key findings from a nationwide Australian survey. *International Review of Psychiatry*, *27*(5), 435-443. <https://dx.doi.org/10.3109/09540261.2015.1051517>
- Malterud, K., & Bjorkman, M. (2016). The Invisible Work of Closeting: A Qualitative Study About Strategies Used by Lesbian and Gay Persons to Conceal Their Sexual Orientation. *Journal of Homosexuality*, *63*(10), 1339-1354. <https://doi.org/10.1080/00918369.2016.1157995>
- Marshall, E., Claes, L., Bouman, W. P., Witcomb, G. L., & Arcelus, J. (2016). Non-suicidal self-injury and suicidality in trans people: A systematic review of the literature. *International Review of Psychiatry*, *28*(1), 58-69. <http://dx.doi.org/10.3109/09540261.2015.1073143>
- Martin, J. L., & Dean, L. (1992). Summary of measures: Mental health effects of AIDS on at-risk homosexual men. Unpublished Manuscript. Columbia University; Mailman School of Public Health.
- Mason, T. B., & Lewis, R. J. (2015). Minority Stress and Binge Eating Among Lesbian and Bisexual Women. *Journal of Homosexuality*, *62*(7), 971-992. <https://doi.org/10.1080/00918369.2015.1008285>
- Mason, T. B., & Lewis, R. J. (2016). Minority Stress, Body Shame, and Binge Eating Among Lesbian Women: Social Anxiety as a Linking Mechanism. *Psychology of Women Quarterly*, *40*(3), 428-440. <https://doi.org/10.1177/0361684316635529>
- Massad, J. A. (2002). Re-Orienting Desire: The Gay International and the Arab World. *Public Culture*, *14*(2), 361-385.
- Matarazzo, B. B., Barnes, S. M., Pease, J. L., Russell, L. M., Hanson, J. E., Soberay, K. A., & Gutierrez, P. M. (2014). Suicide risk among lesbian, gay, bisexual, and transgender military personnel and veterans: what does the literature tell us? *Suicide & Life-Threatening Behavior*, *44*(2), 200-217. <https://dx.doi.org/10.1111/sltb.12073>
- Mayer, K. U. (2009). New directions in life course research. *Annual Review of Sociology*, *35*, 413-433. <https://doi/10.1146/annurev.soc.34.040507.134619>
- Mays, V. M., Juster, R. P., Williamson, T. J., Seeman, T. E., & Cochran, S. D. (2018). Chronic Physiologic Effects of Stress Among Lesbian, Gay, and Bisexual Adults: Results From the National Health and Nutrition Examination Survey. *Psychosomatic Medicine*, *80*(6), 551-563. <https://doi.org/10.1097/psy.0000000000000600>
- McDonald, K. (2018). Social support and mental health in LGBTQ adolescents: A review of the literature. *Issues in Mental Health Nursing*, *39*(1), 16-29. <http://dx.doi.org/10.1080/01612840.2017.1398283>

- McGarrity, L. A., & Huebner, D. M. (2013). Is being out about sexual orientation uniformly healthy? The moderating role of socioeconomic status in a prospective study of gay and bisexual men. *Annals of Behavioral Medicine*, 47(1), 28-38. <https://doi.org/10.1007/s12160-013-9575-6>
- McGeough, B. L., & Sterzing, P. R. (2018). A Systematic Review of Family Victimization Experiences Among Sexual Minority Youth. *Journal of Primary Prevention*, 39(5), 491-528. <https://doi.org/10.1007/s10935-018-0523-x>
- Meidlinger, P. C., & Hope, D. A. (2014). Differentiating disclosure and concealment in measurement of outness for sexual minorities: The Nebraska Outness Scale. *Psychology of Sexual Orientation and Gender Diversity*, 1(4), 489. <https://doi.org/10.1037/sgd0000080>
- Meijer, R. R., De Vries, R. M., & Van Bruggen, V. (2011). An Evaluation of the Brief Symptom Inventory–18 Using Item Response Theory: Which Items Are Most Strongly Related to Psychological Distress? *Psychological Assessment*, 23(1), 193-202. <https://doi.org/10.1037/a0021292>
- Mereish, E. H., Katz-Wise, S. L., & Woulfe, J. (2017). Bisexual-Specific Minority Stressors, Psychological Distress, and Suicidality in Bisexual Individuals: the Mediating Role of Loneliness. *Prevention Science*, 18(6), 716-725. <https://doi.org/10.1007/s11121-017-0804-2>
- Mereish, E. H., & Poteat, V. P. (2015). A relational model of sexual minority mental and physical health: The negative effects of shame on relationships, loneliness, and health. *Journal of Counseling Psychology*, 62(3), 425-437. <https://doi.org/10.1037/cou0000088>
- Meyer, I. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological Bulletin*, 129(5), 674-697. <https://doi.org/10.1037/0033-2909.129.5.674>
- Meyer, I. (2007). Prejudice and Discrimination as Social Stressors. In I. N. Meyer, ME. (Ed.), *The Health of Sexual Minorities*. Berlin: Springer.
- Meyer, I. H. (1995). Minority stress and mental health in gay men. *Journal of Health and Social Behavior*, 36(1), 38-56. <https://doi.org/10.2307/2137286>
- Meyer, I. H. (2013). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychology of Sexual Orientation and Gender Diversity*, 1(S), 3-26. <http://dx.doi.org/10.1037/2329-0382.1.S.3>
- Meyer, I. H. (2019). Rejection Sensitivity and Minority Stress: A Challenge for Clinicians and Interventionists. *Archives of Sexual Behavior*. <https://doi.org/10.1007/s10508-019-01597-7>
- Meyer, I. H., Rossano, L., Ellis, J. M., & Bradford, J. (2002). A brief telephone interview to identify lesbian and bisexual women in random digit dialing sampling. *Journal of Sex Research*, 39(2), 139-144. <https://doi.org/10.1080/00224490209552133>

- Meyer, I. H., Schwartz, S., & Frost, D. M. (2008). Social patterning of stress and coping: does disadvantaged social statuses confer more stress and fewer coping resources? *Social Science & Medicine*, 67(3), 368-379. <https://doi.org/10.1016/j.socscimed.2008.03.012>
- Meyer, I. H., & Wilson, P. A. (2009). Sampling lesbian, gay, and bisexual populations. *Journal of Counseling Psychology*, 56(1), 23. <https://doi.org/10.1037/a0014587>
- Mohr, J., & Fassinger, R. (2000). Measuring dimensions of lesbian and gay male experience. *Measurement and Evaluation in Counseling and Development*. <https://doi.org/10.1037/t07099-000>
- Moleiro, C., & Pinto, N. (2015). Sexual orientation and gender identity: review of concepts, controversies and their relation to psychopathology classification systems. *Frontiers in Psychology*, 6, 1511. <https://doi.org/10.3389/fpsyg.2015.01511>
- Moody, R. L., Starks, T. J., Grov, C., & Parsons, J. T. (2018). Internalized Homophobia and Drug Use in a National Cohort of Gay and Bisexual Men: Examining Depression, Sexual Anxiety, and Gay Community Attachment as Mediating Factors. *Archives of Sexual Behavior*, 47(4), 1133-1144. <https://doi.org/10.1007/s10508-017-1009-2>
- Morris, J. F., Waldo, C. R., & Rothblum, E. D. (2001). A model of predictors and outcomes of outness among lesbian and bisexual women. *American Journal of Orthopsychiatry*, 71(1), 61. <https://doi.org/10.1037/0002-9432.71.1.61>
- Nakamura, N., & Zea, M. C. (2010). Experiences of homonegativity and sexual risk behaviour in a sample of Latino gay and bisexual men. *Culture, Health & Sexuality*, 12(1), 73-85. <https://doi.org/10.1080/13691050903089961>
- Newcomb, M. E., & Mustanski, B. (2010). Internalized homophobia and internalizing mental health problems: a meta-analytic review. *Clinical Psychology Review*, 30(8), 1019-1029. <https://doi.org/10.1016/j.cpr.2010.07.003>
- Nystedt, T., Rosvall, M., & Lindström, M. (2019). Sexual orientation, suicide ideation and suicide attempt: A population-based study. *Psychiatry Research*, 275, 359-365. <https://doi.org/10.1016/j.psychres.2019.04.007>
- OECD. (2019). *Society at a Glance 2019: OECD Social Indicators*. Paris: Organisation for Economic Co-operation and Development.
- Pachankis, E. J., Hatzenbuehler, L. M., Berg, C. R., Fernández-Dávila, J. P., Mirandola, J. M., Marcus, J. U., Weatherburn, J. P., & Schmidt, J. A. (2017). Anti-LGBT and Anti-immigrant Structural Stigma: An Intersectional Analysis of Sexual Minority Men's HIV Risk When Migrating to or Within Europe. *Journal of Acquired Immune Deficiency Syndromes*, 76(4), 356-366. <https://doi.org/10.1097/QAI.0000000000001519>
- Pachankis, J. E. (2007). The psychological implications of concealing a stigma: a cognitive-affective-behavioral model. *Psychological Bulletin*, 133(2), 328-345. <https://doi.org/10.1037/0033-2909.133.2.328>

- Pachankis, J. E., & Bränström, R. (2018). Hidden from happiness: structural stigma, sexual orientation concealment, and life satisfaction across 28 countries. *Journal of Consulting and Clinical Psychology, 5*(86), 403-415. <https://doi.org/10.1037/ccp0000299>
- Pachankis, J. E., Clark, K. A., Burton, C. L., Hughto, J. M. W., Bränström, R., & Keene, D. E. (2020). Sex, Status, Competition, and Exclusion: Intraminority Stress From Within the Gay Community and Gay and Bisexual Men's Mental Health. *Journal of Personality and Social Psychology.* <https://doi.org/10.1037/pspp0000282>
- Pachankis, J. E., Cochran, S. D., & Mays, V. M. (2015). The mental health of sexual minority adults in and out of the closet: A population-based study. *Journal of Consulting and Clinical Psychology, 83*(5), 890-901. <https://doi.org/10.1037/ccp0000047>
- Pachankis, J. E., & Goldfried, M. R. (2006). Social anxiety in young gay men. *Journal of Anxiety Disorders, 20*(8), 996. <https://doi.org/10.1016/j.janxdis.2006.01.001>
- Pachankis, J. E., Goldfried, M. R., & Ramrattan, M. E. (2008). Extension of the Rejection Sensitivity Construct to the Interpersonal Functioning of Gay Men. *Journal of Consulting and Clinical Psychology, 76*(2), 306-317. <https://doi.org/10.1037/0022-006X.76.2.306>
- Pachankis, J. E., Hatzenbuehler, M. L., Hickson, F., Weatherburn, P., Berg, R. C., Marcus, U., & Schmidt, A. J. (2015). Hidden from health: structural stigma, sexual orientation concealment, and HIV across 38 countries in the European MSM Internet Survey. *AIDS, 29*(10), 1239-1246. <https://doi.org/10.1097/qad.0000000000000724>
- Pachankis, J. E., Hatzenbuehler, M. L., Mirandola, M., Weatherburn, P., Berg, R. C., Marcus, U., & Schmidt, A. J. (2017). The Geography of Sexual Orientation: Structural Stigma and Sexual Attraction, Behavior, and Identity Among Men Who Have Sex with Men Across 38 European Countries. *Archives of Sexual Behavior, 46*(5), 1491-1502. <https://doi.org/10.1007/s10508-016-0819-y>
- Pachankis, J. E., Hatzenbuehler, M. L., Rendina, H. J., Safren, S. A., & Parsons, J. T. (2015). LGB- Affirmative Cognitive-Behavioral Therapy for Young Adult Gay and Bisexual Men: A Randomized Controlled Trial of a Transdiagnostic Minority Stress Approach. *Journal of Consulting and Clinical Psychology, 83*(5), 875-889. <https://doi.org/10.1037/ccp0000037>
- Pachankis, J. E., Hatzenbuehler, M. L., & Starks, T. J. (2014). The influence of structural stigma and rejection sensitivity on young sexual minority men's daily tobacco and alcohol use. *Social Science & Medicine, 103*, 67-75. <https://doi.org/10.1016/j.socscimed.2013.10.005>
- Pachankis, J. E., Mahon, C., Jackson, S. D., Fetzner, B. K., & Bränström, R. (2020). Sexual orientation concealment and mental health: A meta-analytic review. *Psychological Bulletin.* Ahead of print. <https://doi.org/10.1037/bul0000271>



- Pachankis, J. E., McConocha, E. M., Reynolds, J. S., Winston, R., Adeyinka, O., Harkness, A., Burton, C. L., Behari, K., Sullivan, T. J., Eldahan, A. I., Esserman, D. A., Hatzenbuehler, M. L., & Safren, S. A. (2019). Project ESTEEM protocol: a randomized controlled trial of an LGBTQ-affirmative treatment for young adult sexual minority men's mental and sexual health. *BMC Public Health*, *19*(1), 1086. <https://doi.org/10.1186/s12889-019-7346-4>
- Pachankis, J. E., Rendina, H. J., Restar, A., Ventuneac, A., Grov, C., & Parsons, J. T. (2015). A Minority Stress--Emotion Regulation Model of Sexual Compulsivity Among Highly Sexually Active Gay and Bisexual Men. *Health Psychology*, *34*(8), 829-840. <https://doi.org/10.1037/hea0000180>
- Pachankis, J. E., Sullivan, T. J., Feinstein, B. A., & Newcomb, M. E. (2018). Young Adult Gay and Bisexual Men's Stigma Experiences and Mental Health: An 8-Year Longitudinal Study. *Developmental Psychology*, *54*(7), 1381-1393. <https://doi.org/10.1037/dev0000518>
- Pandya, A. (2014). Mental health as an advocacy priority in the lesbian, gay, bisexual, and transgender communities. *Journal of Psychiatric Practice*, *20*(3), 225-227. <https://dx.doi.org/10.1097/01.pra.0000450322.06612.a1>
- Perales, F. (2016). The Costs of Being "Different": Sexual Identity and Subjective Wellbeing over the Life Course. *Social Indicators Research*, *127*(2), 827-849. <https://doi.org/10.1007/s11205-015-0974-x>
- Perales, F., & Todd, A. (2018). Structural stigma and the health and wellbeing of Australian LGB populations: Exploiting geographic variation in the results of the 2017 same-sex marriage plebiscite. *Social Science & Medicine*, *208*, 190-199. <https://doi.org/10.1016/j.socscimed.2018.05.015>
- Persson, T. J., & Pfaus, J. G. (2015). Bisexuality and mental health: Future research directions. *Journal of Bisexuality*, *15*(1), 82-98. <http://dx.doi.org/10.1080/15299716.2014.994694>
- Pescosolido, B. A., & Martin, J. K. (2015). The Stigma Complex. *Annual Review of Sociology*, *41*(1), 87-116. <https://doi.org/10.1146/annurev-soc-071312-145702>
- Plöderl, M., Faistauer, G., & Fartacek, R. (2010). The Contribution of School to the Feeling of Acceptance and the Risk of Suicide Attempts among Austrian Gay and Bisexual Males. *Journal of Homosexuality*, *57*(7), 819-841. <https://doi.org/10.1080/00918369.2010.493401>
- Plöderl, M., Sellmeier, M., Fartacek, C., Pichler, E.-M., Fartacek, R., & Kralovec, K. (2014). Explaining the suicide risk of sexual minority individuals by contrasting the minority stress model with suicide models. *Archives of Sexual Behavior*, *43*(8), 1559-1570. <https://doi.org/10.1007/s10508-014-0268-4>
- Plöderl, M., & Tremblay, P. (2015). Mental health of sexual minorities. A systematic review. *International Review of Psychiatry*, *27*(5), 367-385. <http://dx.doi.org/10.3109/09540261.2015.1083949>

- Pöge, K., Dennert, G., Koppe, U., Güldenring, A., Matthigack, E. B., & Rommel, A. (2020). The health of lesbian, gay, bisexual, transgender and intersex people. *Journal of Health Monitoring*, 5. <https://doi.org/10.25646/6449>
- Pompili, M., Lester, D., Forte, A., Seretti, M. E., Erbuto, D., Lamis, D. A., Amore, M., & Girardi, P. (2014). Bisexuality and suicide: a systematic review of the current literature. *Journal of Sexual Medicine*, 11(8), 1903-1913. <https://dx.doi.org/10.1111/jsm.12581>
- Poushter, J., & Kent, N. O. (2020). *The Global Divide on Homosexuality Persists*. Washington DC: Pew Research Center.
- Preston, D. B., D'Augelli, A. R., Kassab, C. D., Cain, R. E., Schulze, F. W., & Starks, M. T. (2004). The influence of stigma on the sexual risk behavior of rural men who have sex with men. *AIDS Education & Prevention*, 16(4), 291-303. <https://doi.org/10.1521/aeap.16.4.291.40401>
- Puckett, J. A., Levitt, H. M., Horne, S. G., & Hayes-Skelton, S. A. (2015). Internalized heterosexism and psychological distress: The mediating roles of self-criticism and community connectedness. *Psychology of Sexual Orientation and Gender Diversity*, 2(4), 426-435. <https://doi.org/10.1037/sgd0000123>
- Puckett, J. A., Newcomb, M. E., Garofalo, R., & Mustanski, B. (2017). Examining the Conditions Under Which Internalized Homophobia Is Associated with Substance Use and Condomless Sex in Young MSM: the Moderating Role of Impulsivity. *Annals of Behavioral Medicine*, 51(4), 567-577. <https://doi.org/10.1007/s12160-017-9878-0>
- Ragins, B. R. (2004). Sexual orientation in the workplace: The unique work and career experiences of gay, lesbian and bisexual workers. In *Research in personnel and human resources management* (pp. 35-120). Bingley: Emerald Group Publishing Limited.
- Raifman, J., Moscoe, E., Austin, S. B., & McConnell, M. (2017). Difference-in-differences analysis of the association between state same-sex marriage policies and adolescent suicide attempts. *JAMA Pediatrics*, 171(4), 350-356. <https://doi.org/10.1001/jamapediatrics.2016.4529>
- Ramón Mendos, L. (2019). *State-Sponsored Homophobia 2019: Global Legislation Overview Update*. Geneva: The International Lesbian, Gay, Bisexual, Trans and Intersex Association.
- Reitzel, L. R., Smith, N. G., Obasi, E. M., Forney, M., & Leventhal, A. M. (2017). Perceived distress tolerance accounts for the covariance between discrimination experiences and anxiety symptoms among sexual minority adults. *Journal of Anxiety Disorders*, 48, 22-27. <https://doi.org/10.1016/j.janxdis.2016.07.006>
- Rendina, H. J., Gamarel, K. E., Pachankis, J. E., Ventuneac, A., Grov, C., & Parsons, J. T. (2017). Extending the Minority Stress Model to Incorporate HIV-Positive Gay and Bisexual Men's Experiences: a Longitudinal Examination of Mental Health and Sexual Risk Behavior. *Annals of Behavioral Medicine*, 51(2), 147-158. <https://doi.org/10.1007/s12160-016-9822-8>

- Rice, C. E., Vasilenko, S. A., Fish, J. N., & Lanza, S. T. (2019). Sexual minority health disparities: an examination of age-related trends across adulthood in a national cross-sectional sample. *Annals of Epidemiology*, *31*, 20-25. <https://doi.org/10.1016/j.annepidem.2019.01.001>
- Rich, A. J., Salway, T., Scheim, A., & Poteat, T. (2020). Sexual Minority Stress Theory: Remembering and Honoring the Work of Virginia Brooks. *LGBT Health*, *7*(3), 124-127. <https://doi.org/10.1089/lgbt.2019.0223>
- Riggle, E. D. B., Rostosky, S. S., Black, W. W., & Rosenkrantz, D. E. (2016). Outness, Concealment, and Authenticity: Associations With LGB Individuals' Psychological Distress and Well-Being. *Psychology of Sexual Orientation and Gender Diversity*. <https://doi.org/10.1037/sgd0000202>
- Rivers, I. (2004). Recollections of bullying at school and their long-term implications for lesbians, gay men, and bisexuals. *Crisis*, *25*(4), 169-175. <https://doi.org/10.1027/0227-5910.25.4.169>
- Robinson, J. P., Espelage, D. L., & Rivers, I. (2013). Developmental trends in peer victimization and emotional distress in LGB and heterosexual youth. *Pediatrics*, *131*(3), 423. <https://doi.org/10.1542/peds.2012-2595>
- Rodriguez-Seijas, C., Eaton, N. R., & Pachankis, J. E. (2019). Prevalence of psychiatric disorders at the intersection of race and sexual orientation: Results from the National Epidemiologic Survey of Alcohol and Related Conditions-III. *Journal of Consulting & Clinical Psychology*, *87*(4), 321-331. <https://doi.org/10.1037/ccp0000377>
- Rosario, M., Corliss, H. L., Everett, B. G., Russell, S. T., Buchting, F. O., & Birkett, M. A. (2014). Mediation by Peer Violence Victimization of Sexual Orientation Disparities in Cancer-Related Tobacco, Alcohol, and Sexual Risk Behaviors: Pooled Youth Risk Behavior Surveys. *American Journal of Public Health*, *104*(6), 1113-1123. <https://doi.org/10.2105/ajph.2013.301764>
- Rosario, M., Hunter, J., Maguen, S., Gwadz, M., & Smith, R. (2001). The Coming-Out Process and Its Adaptational and Health-Related Associations Among Gay, Lesbian, and Bisexual Youths: Stipulation and Exploration of a Model. *American Journal of Community Psychology*, *29*(1), 133-160. <https://doi.org/10.1023/A:1005205630978>
- Rosario, M., Schrimshaw, E. W., & Hunter, J. (2009). Disclosure of sexual orientation and subsequent substance use and abuse among lesbian, gay, and bisexual youths: critical role of disclosure reactions. *Psychology of Addictive Behaviors*, *23*(1), 175. <https://doi.org/10.1037/a0014284>
- Rosario, M., Schrimshaw, E. W., & Hunter, J. (2011). Different Patterns of Sexual Identity Development over Time: Implications for the Psychological Adjustment of Lesbian, Gay, and Bisexual Youths. *Journal of Sex Research*, *48*(1), 3-15. <https://doi.org/10.1080/00224490903331067>

- Rosario, M., Schrimshaw, E. W., Hunter, J., & Braun, L. (2006). Sexual identity development among lesbian, gay, and bisexual youths: Consistency and change over time. *Journal of Sex Research, 43*(1), 46-58. <https://doi.org/10.1080/00224490609552298>
- Ross, L. E., Salway, T., Tarasoff, L. A., MacKay, J. M., Hawkins, B. W., & Fehr, C. P. (2018). Prevalence of depression and anxiety among bisexual people compared to gay, lesbian, and heterosexual individuals: A systematic review and meta-analysis. *Journal of Sex Research, 55*(4-5), 435-456. <http://dx.doi.org/10.1080/00224499.2017.1387755>
- Rozbroj, T., Lyons, A., Pitts, M., Mitchell, A., & Christensen, H. (2014). Assessing the applicability of e-therapies for depression, anxiety, and other mood disorders among lesbians and gay men: Analysis of 24 Web- and mobile phone-based self-help interventions. *Journal of Medical Internet Research, 16*(7), 144-154. <http://dx.doi.org/10.2196/jmir.3529>
- Russell, S. T., & Fish, J. N. (2016). Mental Health in Lesbian, Gay, Bisexual, and Transgender (LGBT) Youth. *Annual Review of Clinical Psychology, 12*, 465-487. <https://dx.doi.org/10.1146/annurev-clinpsy-021815-093153>
- Russell, S. T., Muraco, A., Subramaniam, A., & Laub, C. (2009). Youth empowerment and high school Gay-Straight Alliances. *Journal of Youth & Adolescence, 38*(7), 891-903. <https://doi.org/10.1007/s10964-008-9382-8>
- Ryan, C., Russell, S. T., Huebner, D., Diaz, R., & Sanchez, J. (2010). Family acceptance in adolescence and the health of LGBT young adults. *Journal of Child and Adolescent Psychiatric Nursing, 23*(4), 205-213. <https://doi.org/10.1111/j.1744-6171.2010.00246.x>
- Saewyc, E. M., Konishi, C., Rose, H. A., & Homma, Y. (2014). School-Based Strategies to Reduce Suicidal Ideation, Suicide Attempts, and Discrimination among Sexual Minority and Heterosexual Adolescents in Western Canada. *International Journal of Child, Youth & Family Studies, 5*(1), 89-112. <https://doi.org/10.18357/ijcyfs.saewyce.512014>
- Schneeberger, A. R., Dietl, M. F., Muenzenmaier, K. H., Huber, C. G., & Lang, U. E. (2014). Stressful childhood experiences and health outcomes in sexual minority populations: a systematic review. *Social Psychiatry and Psychiatric Epidemiology, 49*(9), 1427-1445. <https://doi.org/10.1007/s00127-014-0854-8>
- Schrimshaw, E. W., Siegel, K., Downing, M. J., & Parsons, J. T. (2013). Disclosure and concealment of sexual orientation and the mental health of non-gay-identified, behaviorally bisexual men. *Journal of Consulting & Clinical Psychology, 81*(1), 141. <https://doi.org/10.1037/a0031272>
- Schwartz, D. R., Stratton, N., & Hart, T. A. (2016). Minority stress and mental and sexual health: Examining the psychological mediation framework among gay and bisexual men. *Psychology of Sexual Orientation and Gender Diversity, 3*(3), 313-324. <https://doi.org/10.1037/sgd0000180>

- Selemogwe, M., & White, D. (2013). An overview of gay, lesbian and bisexual issues in Botswana. *Journal of Gay & Lesbian Mental Health, 17*(4), 406-414. <http://dx.doi.org/10.1080/19359705.2013.793223>
- Semlyen, J., King, M., Varney, J., & Hagger-Johnson, G. (2016). Sexual orientation and symptoms of common mental disorder or low wellbeing: combined meta-analysis of 12 UK population health surveys. *BMC Psychiatry, 16*, 67. <https://dx.doi.org/10.1186/s12888-016-0767-z>
- Semp, D. (2011). Questioning heteronormativity: using queer theory to inform research and practice within public mental health services. *Psychology & Sexuality, 2*(1), 69-86. <https://doi.org/10.1080/19419899.2011.536317>
- Senreich, E. (2010). The Effects of Honesty and Openness About Sexual Orientation on Gay and Bisexual Clients in Substance Abuse Programs. *Journal of Homosexuality, 57*(3), 364-383. <https://doi.org/10.1080/00918360903542990>
- Skerrett, D. M., Kolves, K., & De Leo, D. (2015). Are LGBT populations at a higher risk for suicidal behaviors in Australia? Research findings and implications. *Journal of Homosexuality, 62*(7), 883-901. <https://dx.doi.org/10.1080/00918369.2014.1003009>
- Smit, P. J., Brady, M., Carter, M., Fernandes, R., Lamore, L., Meulbroek, M., Ohayon, M., Platteau, T., Rehberg, P., Rockstroh, J. K., & Thompson, M. (2012). HIV-related stigma within communities of gay men: A literature review. *AIDS Care, 24*(4), 405-412. <https://doi.org/10.1080/09540121.2011.613910>
- Smith, A. (1997). *Cultural diversity and the coming-out process: Implications for clinical practice*. Thousands Oaks: Sage Publications.
- Straub, K. T., McConnell, A. A., & Messman-Moore, T. L. (2018). Internalized heterosexism and posttraumatic stress disorder symptoms: The mediating role of shame proneness among trauma-exposed sexual minority women. *Psychology of Sexual Orientation and Gender Diversity, 5*(1), 99-108. <https://doi.org/10.1037/sgd0000263>
- Sullivan, M. K. (2004). Homophobia, History, and Homosexuality: Trends for Sexual Minorities. *Journal of Human Behavior in the Social Environment, 8*(2-3), 1-13. [https://doi.org/10.1300/J137v08n02\\_01](https://doi.org/10.1300/J137v08n02_01)
- Susser, M. (1998). Does risk factor epidemiology put epidemiology at risk? Peering into the future. *Journal of Epidemiology and Community Health, 52*(10), 608. <https://doi.org/10.1136/jech.52.10.608>
- Szymanski, D. M., & Carretta, R. F. (2020). Religious-Based Sexual Stigma and Psychological Health: Roles of Internalization, Religious Struggle, and Religiosity. *Journal of Homosexuality, 67*(8), 1062-1080. <https://doi.org/10.1080/00918369.2019.1601439>
- Szymanski, D. M., Dunn, T. L., & Ikizler, A. S. (2014). Multiple minority stressors and psychological distress among sexual minority women: The roles of rumination and maladaptive coping. *Psychology of Sexual Orientation and Gender Diversity, 1*(4), 412-421. <https://doi.org/10.1037/sgd0000066>

- Szymanski, D. M., & Henrichs-Beck, C. (2014). Exploring Sexual Minority Women's Experiences of External and Internalized Heterosexism and Sexism and their Links to Coping and Distress. *Sex Roles, 70*(1), 28-42. <https://doi.org/10.1007/s11199-013-0329-5>
- Tabaac, A. R., Perrin, P. B., & Trujillo, M. A. (2015). Multiple mediational model of outness, social support, mental health, and wellness behavior in ethnically diverse lesbian, bisexual, and queer women. *LGBT Health, 2*(3), 243-249. <https://doi.org/10.1089/lgbt.2014.0110>
- Taylor, J. (2018). Bisexual mental health: A call to action. *Issues in Mental Health Nursing, 39*(1), 83-92. <http://dx.doi.org/10.1080/01612840.2017.1391904>
- Tudge, J. R. H., Mokrova, I., Hatfield, B. E., & Karnik, R. B. (2009). Uses and Misuses of Bronfenbrenner's Bioecological Theory of Human Development. *Journal of Family Theory & Review, 1*(4), 198-210. <https://doi.org/10.1111/j.1756-2589.2009.00026.x>
- Tulloch, T. G., Rotondi, N. K., Ing, S., Myers, T., Calzavara, L. M., Loutfy, M. R., & Hart, T. A. (2015). Retrospective Reports of Developmental Stressors, Syndemics, and Their Association with Sexual Risk Outcomes Among Gay Men. *Archives of Sexual Behavior, 44*(7), 1879-1889. <https://doi.org/10.1007/s10508-015-0479-3>
- Ullrich, P. M., Lutgendorf, S. K., & Stapleton, J. T. (2003). Concealment of homosexual identity, social support and CD4 cell count among HIV-seropositive gay men. *Journal of Psychosomatic Research, 54*(3), 205-212. [https://doi.org/10.1016/S0022-3999\(02\)00481-6](https://doi.org/10.1016/S0022-3999(02)00481-6)
- Van der Star, A., Bränström, B., & Pachankis, J. E. (2020). Lifecourse-varying exposure to structural stigma, minority stress reactions, and mental health among sexual minority male migrants. *Submitted for publication*.
- Van der Star, A., & Bränström, R. (2015). Acceptance of sexual minorities, discrimination, social capital and health and well-being: a cross-European study among members of same-sex and opposite-sex couples. *BMC Public Health, 15*, 812. <https://doi.org/10.1186/s12889-015-2148-9>
- Van der Star, A., Pachankis, J. E., & Bränström, R. (2019). Sexual Orientation Openness and Depression Symptoms: A Population-Based Study. *Psychology of Sexual Orientation and Gender Diversity, 6*(3), 369-381. <https://doi.org/10.1037/sgd0000335>
- Van der Star, A., Pachankis, J. E., & Bränström, R. (2020). Country-level structural stigma, school-based and adulthood victimization, and life satisfaction among sexual minority adults: A life course approach. *Submitted for publication*.
- Walch, S. E., Ngamake, S. T., Bovornusvakool, W., & Walker, S. V. (2016). Discrimination, internalized homophobia, and concealment in sexual minority physical and mental health. *Psychology of Sexual Orientation and Gender Diversity, 3*(1), 37-48. <https://doi.org/10.1037/sgd0000146>

- Wang, S. B., & Borders, A. (2017). Rumination mediates the associations between sexual minority stressors and disordered eating, particularly for men. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 22(4), 699-706. <https://doi.org/10.1007/s40519-016-0350-0>
- Whitehead, M. (1991). The concepts and principles of equity and health. *Health Promotion International*, 6(3), 217-228. <https://doi.org/10.1093/heapro/6.3.217>
- WHO. (2001). *Strengthening mental health promotion*. Geneva: United Nations.
- Wickberg, D. (2000). Homophobia: On the Cultural History of an Idea. *Critical Inquiry*, 27(1), 42-57. <https://doi.org/10.1086/448997>
- Williams, S. L., Mann, A. K., & Fredrick, E. G. (2017). Proximal Minority Stress, Psychosocial Resources, and Health in Sexual Minorities. *Journal of Social Issues*, 73(3), 529-544. <https://doi.org/10.1111/josi.12230>
- Wolford-Clevenger, C., Cannon, C. J., Flores, L. Y., Smith, P. N., & Stuart, G. L. (2017). Suicide risk among transgender people: A prevalent problem in critical need of empirical and theoretical research. *Violence and Gender*, 4(3), 69-72. <https://doi.org/10.1089/vio.2017.0006>
- Woodford, M. R., Kulick, A., Garvey, J. C., Sinco, B. R., & Hong, J. S. (2018). LGBTQ Policies and Resources on Campus and the Experiences and Psychological Well-Being of Sexual Minority College Students: Advancing Research on Structural Inclusion. *Psychology of Sexual Orientation and Gender Diversity*, 5(4), 445-456. <https://doi.org/10.1037/sgd0000289>
- Woodford, M. R., Kulick, A., Sinco, B. R., & Hong, J. S. (2014). Contemporary heterosexism on campus and psychological distress among LGBQ students: The mediating role of self-acceptance. *American Journal of Orthopsychiatry*, 84(5), 519-529. <https://doi.org/10.1037/ort0000015>
- World Bank. (2020). *International Comparison Program Database: GINI index*. Washington DC: World Bank. <https://data.worldbank.org/indicator/si.pov.gini>
- World Medical Association. (2001). Declaration of Helsinki: Ethical principles for medical research involving human subjects. *Bulletin of the World Health Organization*, 79(4), 373-374.
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30-41. [https://doi.org/10.1207/s15327752jpa5201\\_2](https://doi.org/10.1207/s15327752jpa5201_2)