Visible Stigma: Transgenders' Experienced Stigma and its Effect on their Mental Health

Research Master's Thesis

Jorick Post (ANR 734245)

Tilburg University

Supervisor: Mark Brandt

Abstract

Three aspects of the minority stress model (Meyer, 2003) were assessed and applied to a transgender population: whether greater visibility of stigma increased experienced stigma, whether greater experienced stigma is associated with poorer mental health, and whether social support can weaken the effect of experienced stigma on mental health. Analyses of data from the Transgender Health Initiative Study (THIS; $N = 350$) showed that greater visibility of stigma did not increase experienced stigma. On the contrary, in some cases less visible stigma was related to higher odds of having experienced stigma. It is likely that other factors than visibility are at play. Greater experienced stigma (discrimination and victimization) was associated with poorer mental health outcomes (suicidal thoughts and suicide attempt). Social support did not weaken the effect of experienced stigma on mental health. However, social support did lower the odds of having had suicidal thoughts. These results provide some support that the minority stress model can be applied to a transgender population.

Keywords: stigma, visibility, mental health, social support, resilience, transgender

Visible Stigma: Transgenders' Experienced Stigma and its Effect on their Mental Health

In June 2018, the World Health Organization released ICD-11, in which gender incongruence, also known as gender dysphoria, was moved out of the category mental disorders and into sexual health conditions (World Health Organization, 2018). The rationale to make this move was that classifying gender dysphoria as a mental disorder can cause enormous stigma for transgender people. However, by keeping it in ICD-11 as a health condition, transgender people can still access the healthcare they need, such as hormonal therapy. In short, the goal of the new classification was to destigmatize transgender identities and to make transgender people more socially accepted (World Health Organization, 2018).

An identity that is stigmatized, such as a transgender identity, is socially devalued with negative stereotypes and beliefs attached to the identity (Goffman, 1963). It has been shown that stigma leads to lowered power and status, which results in discriminatory outcomes, and stigmatized persons can elicit emotional reactions such as pity, anger, anxiety, or disgust in others (Link & Phelan, 2001). However, the core feature of a social stigma is the devaluation and dehumanization by others (Crocker & Quinn, 2000). In general, stigmatized persons are aware of the prejudice against persons with their identity.

Minority Stress Model

Meyer (2003) proposed that a higher incidence of mental disorders found among gay, lesbian, and bisexual people was the result of the hostile and stressful social environment they live in. As gay, lesbian, and bisexual people are subjected to this stressful environment due to their minority status, this effect was dubbed as 'minority stress'. Three processes exist by which gay, lesbian, and bisexual people are subjected to this minority stress: (1) environmental and

other external events, (2) anticipation and expectation, and (3) internalized negative attitudes and prejudices (Meyer, 2003).

The environmental and other external events occur in the person's life as a result of their minority status. These events are said be objective, as they are observable, and create overt stress (Meyer, 2003). An example of such an event could be discrimination or a threat to the individual's safety.

The second process, expectation and anticipation, includes beliefs the person may have that external stressful events will occur. Due to these expectations, the person may try to hide their minority identity to avoid any psychological or physical harm. These negative expectations can cause anxiety or distress, and taking efforts to hide their minority status may cause additional distress.

Finally, in the third process negative attitudes and prejudices that society holds become internalized. An internalized sense of stigma can reduce the person's ability to cope with any external stressful event.

Hendricks and Testa (2012) argued Meyer's model could be applied to transgender people as well, and provided an altered model. Instead of developing internalized homophobia, transgender people could develop internalized transphobia, which should develop in a similar manner as Meyer (2003) described.

Here, I will examine minority stress in a transgender population. More specifically, three aspects of the minority stress model will be examined: the visibility of stigma (which can make hiding one's minority status difficult or impossible), resilience in the form of social support, and the effect of experienced stigma on mental health. These three aspects will be discussed in greater detail below.

Stigma Visibility Association with Perceived Stigma

The minority stress model (Meyer, 2003) posits that if a person believes a stressful event will occur due to their minority status, they may try to hide their minority identity to avoid psychological or physical harm. For gay, lesbian, and bisexual individuals this may be easier than for transgender people, as for transgender persons stigma can be more visible and thus more difficult or impossible to hide. The degree to which a stigma is visible can affect experienced stigma (Goffman, 1963). If a stigma is concealable, the person has some control over either revealing the stigma or trying to pass. In other words, they have some control over their level of 'outness' (Goffman, 1963).

However, if a stigma cannot be concealed, the person has no control over it, and this will affect not only the stigmatized person's behavior, but the behavior of others as well. When a stigmatized person believes that others are unaware of their stigmatized identity, beliefs about the others' possible prejudice should become irrelevant when interpreting the others' behavior (Crocker & Quinn, 2000). A previous experiment found that African American participants who were rejected as potential friend only attributed this rejection to prejudice when the blinds on a one-way mirror were up (and they believed the other person could see them), and did not attribute the rejection to prejudice when the blinds were down (Crocker, Voelkl, Testa, & Major, 1991). Applying this concealability effect to a transgender population, transgender persons who believe they are misgendered more often (i.e. who believe their stigmatized identity is more visible), experience more negative affect and more transgender-felt stigma when thinking about the last time they were misgendered (McLemore, 2014).

However, contrary to the idea that visibility of stigma affects experienced stigma, several previous studies suggest that the frequency of enacted stigma is similar for persons with either

visible or concealable stigmas. For example, two separate studies found no differences between visible and concealable stigmas in how frequently people felt stereotyped in their everyday social interactions, nor how frequently they experienced stigma-related stressors (Cook, Arrow, & Malle, 2011; Hatzenbuehler, Nolen-Hoeksema, & Dovido, 2009). However, both studies compared two different stigmas to each other, namely African American participants (as visible stigma) and sexual minority participants (as concealable stigma). A third study, in contrast, examined a single stigmatized identity; HIV-positive status, which can be either visible or concealable (Stutterheim et al., 2011). Persons with a further progressed infection can have visible side effects, such as an abnormal fat distribution, while a lesser progressed infection does not lead to visible side effects. Compared to persons living with a concealable HIV-positive status, those who had visible symptoms of HIV experienced greater enacted stigma and psychological distress, and had lower self-esteem and social support. However, it is also possible this effect was driven by a difference in the severity of the virus-infection, and not the visibility.

The conflicting results of studies on stigma visibility may be due to comparing different stigmatized identities versus a single stigmatized identity (Chaudoir, Earnsahw, & Andel, 2013). After all, different stigmatized identities can differ in the degree of cultural stigma that is associated with them. It is impossible to tell whether the found non-results can be attributed to the visibility of the stigma, or to the difference in cultural stigma between the samples (Cook et al., 2011; Hatzenbuehler et al., 2009). As such, it is still unclear whether or not visibility of stigma affects experienced stigma.

In a transgender population it is possible to test this idea of stigma visibility with more control. Transwomen may have a more visible and less concealable stigma than transmen on average. After all, estrogen affects appearance less than testosterone (Unger, 2016). For example,

testosterone increases facial and body hair, changes the fat distribution (decreases the fat on hips), increases muscle mass, and deepens the voice. Estrogen slightly increases breast growth, increases body fat, and slows the growth of body and facial hair, but cannot stop the balding process. Transwomen require electrolysis to completely remove facial hair, may need speech therapy to raise their voice, and transwomen are more likely to undergo facial surgery than transmen.

If visibility of stigma matters and transwomen have a more visible and concealable stigma than transmen, transwomen should experience more stigma than transmen. Transmen and transwomen should have relatively similar experiences regarding their transgender status. By comparing these two, we can try to disentangle found differences due to the visibility of the stigma, and due to differences between two separate stigmatized identities.

A previous study found no differences between transmen and transwomen in how often they were misgendered (McLemore, 2014). However, the study's participants were relatively old (on average 36 years) and had started transitioning a long time ago (on average 10 years ago). Participants in an earlier stage of transitioning were misgendered more often than those who started transitioning a long time ago (McLemore, 2014). It is possible a difference between transmen and transwomen is especially apparent during the early stages of transitioning, when the stigma is more visible. If this is the case, how long ago a transgender person started transitioning could be a potential moderator.

Aside from possible differences between transmen and transwomen, those who have undergone transgender-related surgeries should also experience less stigma than those who have not (yet) undergone such surgery. After all, most transgender-related surgeries affect appearance, and could make the stigma less visible. Whether or not a transgender person has received

hormonal treatment should, in the same vein, affect appearance and thus visibility of the stigma. In short, to examine if visibility and concealability of stigma affects experienced stigma, the following hypotheses will be tested:

Visibility hypotheses: (a) Transwomen will experience more stigma than transmen because transwomen's stigma is more visible and less concealable on average.

(b) How long ago a transgender person started transitioning will moderate the effect of gender on experienced stigma, in the sense that differences between transmen and transwomen should be greater when they have not transitioned yet, and should be smaller when they transitioned a long time ago.

(c) Transgender persons who have undergone transgender-related surgeries experience less stigma than those who have not (yet) undergone such surgery.

(d) Transgender persons who have received hormonal therapy should experience less stigma than those who have not, especially transmen should experience less stigma (because testosterone affects appearance more than estrogen).

Perceived Stigma Association with Mental Health

The main point of the minority stress model is to explain how minority stress could lead to poor mental health (Meyer, 2003). Previous research has linked minority stress to psychological distress in transgender populations, and found that minority stress is related to poor health outcomes, such as depression and anxiety (e.g. Kelleher, 2009; Bockting, Miner, Romine, Hamilton, & Coleman, 2013). In an interview with 55 transgender persons regarding their health care experiences, participants reported having experienced being denied services at public establishments, being harassed or assaulted in public areas, being denied a job or fired from work, and being sexually harassed (Poteat, German, & Kerrigan, 2013). Most of the participants

said they had learned to anticipate discrimination. Moreover, the prevalence for each diagnostic category of mental health diagnoses is severalfold higher among transgender youth than among matched cisgender youth (Becerra-Culqui et al.,2018).

In the present thesis, whether these effects of minority stress on mental health can be replicated will be examined. Moreover, the role of gender will be explored. In many countries, men are more likely to commit suicide than women (Möller-Leimkühler, 2002). This gap may be explained by several different factors, including a reluctance to seek help (Möller-Leimkühler, 2002). If this is the case, transmen who experience greater stigma should be at greater risk for suicide than transwomen who experience greater stigma, as transmen may be less inclined to seek help to cope with experienced stigma.

Mental health hypotheses: (a) Greater experienced stigma will be associated with poorer mental health outcomes.

(b) Greater experienced stigma leads to poorer mental health for transmen than for transwomen.

Social Support as Resilience

The minority stress model (Meyer, 2003) proposed persons with a minority identity can develop resilience or increase coping in different ways. Developing resilience can be an important tool to reduce the effect of minority stress on mental health. For transgender persons, developing new types of resilience can be especially important as a more visible stigma can reduce available coping strategies (Mizock & Mueser, 2014). For example, previous research indicated disclosure strategies are used by transgender persons to cope with stigma; they decide when to disclose their identity if they believe it is safe to do so. For those who cannot conceal

their identity, this disclosure strategy cannot be used and this may, in turn, increase stress (Mizock & Mueser, 2014).

Previous research has examined possible coping strategies to combat trauma by interviewing several ethnic minority transgender persons (Singh & McKleroy,2010). A few of the themes that emerged in those interviews were later researched (Bockting et al., 2013). Peer support (of other transgender people) was found to moderate the relationship between social stigma and psychological distress: greater peer support decreased the effect of social stigma on psychological distress. In a different study, social isolation was linked to a stigma-distress association among gay, lesbian, and bisexual people (Hatzenbuehler et al., 2009). Loneliness and having few to no social support was also included in the altered minority stress model for transgender individuals as a potential negative influence on mental health (Hendrick & Testa, 2012). Loneliness can be a result of rejection or unwillingness to accept the person's transgender status by family members and friends. Moreover, living in a society that is generally not accepting of transgender identities can lead to having few available options for support (Hendrick & Testa, 2012).

Can social support in general (and not solely peer support) be a viable form of resilience? In other words, can social support decrease the effect of minority stress on mental health?

Social support hypothesis: Social support will moderate the effect of experienced stigma on mental health, in the sense that greater social support will weaken the effect.

Method

To test the hypotheses, an existing dataset was used, namely the Virginia Transgender Health Initiative Study (THIS for short), for which data was collected in 2005 and 2006 (Bradford, 2005-2006). The 350 participants were asked questions relating to their health status, ability to

get health care, life experiences, and HIV/AIDS. All participants were from Virginia, and were paid $15 for completing the survey. To collect participants, the Virginia Transgender Task Force spoke about the study to community and professional audiences. The survey could be filled out online. Participants were selected based on their age (18 years or older), had to live in or had to attend school in Virginia during the data collection period, and had to self-identify as transgender. Most participants heard of the study from a friend (26.9%), found the study on the internet (21.1%), or learned of the study from their transgender support group (12.9%). Aside from that, newsletters, flyers and posters were used (6.3%), and health care professionals told their patients of the survey (11.7%). Most participants were Caucasian (62%), followed by African American (25%), multi-racial (7%), and Hispanic (4%). The majority of participants was male-to-female (MTF) transgender (65%), the remaining participants were female-to-male (FTM) transgender (35%). The sample contains a broad age range of between 25 years old or younger to 60 years old or older, although most participants were younger than 40 years old (60%). Education-wise participants ranged from having completed 8th grade or less to having a graduate or professional degree. Most participants had completed some college without getting a degree (32%).

Power Analysis

To get an idea of the power of the analyses using the dataset, a few post hoc power analyses were performed. In all power analyses, the α was kept constant at .05. For a regression model with two predictors including an interaction between them, a power of 0.37 would be achieved if the effect size (f) is 0.10, a power of 0.71 if the effect size (f) is 0.15, and a power of 0.93 if the effect size (f) is 0.20. For a model with two predictors, an interaction between them, as well as

two covariates, a power of 0.28 would be achieved if the effect size (f) is 0.10, a power of 0.59 if the effect size (f) is 0.15, and a power of 0.86 if the effect size (f) is 0.20.

Stigma

To measure stigma, seven questions from the survey were used. The first five were the following questions: 'Have you ever been denied enrollment in a health insurance plan because of your transgender status?', 'Have you ever experienced discrimination by a doctor or other health care provider due to your transgender status or gender expression?', 'Have you ever been denied a job you applied to due to your transgender status and/or gender expression?', 'Have you ever been fired from a job due to your employer's reaction to your transgender status and/or gender expression?', and 'Have you ever lost housing or a housing opportunity due to your transgender status and/or gender expression?'. Participants who indicated having been forced to engage in unwanted sexual activity and/or having been physically attacked at least once were asked two more questions: 'In how many of these cases was your transgender status, gender identity or expression the PRIMARY reason for the forced engagement in unwanted sexual activity?' and 'In how many of these cases was your transgender status, gender identity, or expression the PRIMARY reason for the physical attack(s)?'. The first five questions could be answered with 'Yes', 'No', or 'Unsure'. These questions have previously been used to measure discrimination against transgender people (Bradford, Reisner, Honnold, & Xavier, 2013), and the social stigma of transgenderism and its associated victimization (Barboza, Dominguez, & Chace, 2016). Moreover, some questions correspond with the Daily Heterosexist Experiences Questionnaire's victimization scale, which is used to measure minority stress among LGBT adults (Balsam, Beadnell, & Molina, 2013).

Two different measures of stigma were calculated from the selected questions. The first stigma variable included the first five questions, adding 1 to the variable if they had answered 'Yes' to a question. This variable ranged from 0 to 5, and all questions were weighted equally. As the questions relating to unwanted sexual activity and physical attacks originally used a scale, a second stigma variable was made adding these two variables together. This second stigma variable ranged from 0 to 10, for which participants with a score of 0 never had been forced in a sexual activity nor had been physically attacked, and those with a score of 10 had experienced both at least 20 times or more.

Originally, a scale was made including all 7 stigma questions. However, Cronbach's α was incredibly low for this scale, namely .097. The corrected item-total correlations for the questions regarding unwanted sexual activity and physical attacks were 0.121 and 0.050 respectively. When two scales were formed instead, the scale with the first five stigma questions attained a Cronbach's α of .408, and the scale with the final two stigma questions had a Cronbach's α of .490. Although these are still low, this is a significant improvement over using a single scale. From here on, the first stigma scale will be referred to as 'Discrimination', and the second scale as 'Victimization'.

Mental Health Outcomes

To measure mental health outcomes, two questions from the survey were used. Participants were asked 'Have you ever thought about killing yourself?' and 'Have you ever tried to kill yourself?'. Both questions could be answered with 'Yes' or 'No'. Please note that these questions are quite extreme indicators of mental health, but these questions pertain symptoms of

a major depression (American Psychiatric Association, 2013)[1]. A limitation of asking participants whether they have attempted suicide, is that those who have attempted and succeeded will not be in the sample. As such, the data may be biased. The present dataset did not contain any variables pertaining other mental health outcomes, such as other indications of depression, anxiety, or distress. The two mental health questions will be treated separately.

Perceived Support

In order to measure perceived support, the average of several questions was taken and used as a scale (Cronbach's $\alpha = 0.653$). Participants were asked how supportive certain groups were of their gender identity/expression. Each question was about a different group, namely birth family, family by marriage, transgender friends, non-transgender friends, transgender support group, church/temple/mosque, and co-workers. For all questions a 4-point Likert scale was used, ranging from 1 = 'Not at all supportive' to 4 = 'Very supportive'.

Surgery and Hormonal Therapy

For the hypotheses relating to transgender-related surgeries and hormonal therapy, two 'Yes' or 'No' questions were used. Participants were asked to select which transgender-related services they had ever received, one being transgender hormonal therapy, and another being transgender-related surgery of any kind. Out of all participants, 45.4% indicated having received hormonal therapy[2], and 24.0% indicated having undergone surgery.

---

[1] Rates of suicidal ideation and suicide attempts are high in transgender populations. A recent study among transgender adolescents found that 50.8% of transmen and 29.9% of transwomen had attempted suicide (and lived) at least once (Toomey, Syvertsen, & Shramko, 2018). In the present dataset, 223 participants indicated having had suicidal thoughts (63.7%), and 89 participants indicated having attempted suicide (25.4%). This means a sufficient number of participants answered 'yes' to these questions for an accurate analysis.

[2] The dataset contained another question pertaining the use of hormones, namely 'Have you ever taken hormones (estrogen or testosterone) for transgender-related purposes?'. This variable will, however, not be used in the analyses, as those who have self-administered (illegal) hormones

Time Since Transitioning

Participants were asked how old they were when they first sought out any form of transgender-related treatment. This was measured on a scale of 1 = '15 or younger', to 10 = '56 or older'. The dataset also contained a variable of the participants' age in 2006, calculated from their year of birth. This scale ranged from 1 = '25 or younger' to 9 = '60 or older'. To calculate how long ago participants had started transitioning, the age categories of how old they were when they first sought treatment were recoded to match the age categories of their age in 2006. Then, their age when they first sought treatment was subtracted from their age in 2006. This variable was used as an indicator of how long ago the participants had started transitioning. The variable was then mean centered for easier interpretation.

Covariates

Two covariates were controlled for, namely race and education level. As ethnic backgrounds can be stigmatized (e.g. Cook, Arrow, and Malle, 2011), this has to be controlled for to ensure any found effects are due to their transgender identity, and not their ethnic identity. Education level will be controlled for, as lower education level has previously been linked to greater risk of suicide in general (e.g. Li, Page, Martin, and Taylor, 2011), as well as in transgender populations specifically (e.g. Perez-Brumer, Hatzenbuehler, Oldenburg, and Bockting, 2015). Moreover, lower socioeconomic status may be related to refraining from seeking medical help (Wamala, Merlo, Boström, & Hogstedt, 2007) and utilizing mental health services (Burgess, Lee, Tran, &

---

could have answered this question with 'Yes'. Self-prescription of hormones for gender affirmation is a potentially widespread phenomenon, which may have different effects than the desired effects of hormonal therapy as supervised by a physician (Metastasio, Negri, Martinotti, & Corazza, 2018).

van Ryn, 2007). As such, participants with lower education may be underrepresented among those who have received hormonal therapy and have undergone surgery.

Although questions regarding race and education level were included in the original dataset, both questions had too many answer categories, resulting in several categories with too few participants in it for an accurate analysis. As such, both were recoded into fewer categories. Race was recoded into two categories, namely 'White' – which included all 216 Caucasian participants, and 'Non-white' – which included all 130 other participants. Education was recoded into three categories, namely 'Highschool', 'College', and 'Graduate'. Highschool included all 75 participants who had completed highschool or less. College included all 205 participants who had more education than highschool, but less education than graduates. Finally, Graduate included all 68 participants who had at least done some graduate school or more. It was checked whether education was related to hormonal therapy status and surgery status with two chi-square tests. The test checking for independence of hormonal therapy status and education was nearing significance, χ^2 (2, N = 350) = 5.333, p = .069. The test checking for independence of surgery status and education was significant, χ^2 (2, N = 350) = 19.643, p < .001. The standardized residuals of both tests were inspected. Participants who had at least done some graduate school were more likely to have received hormonal therapy (standardized residual = 2.303), as well as to have undergone transgender-related surgery (standardized residual = 4.350). Participants who had at least done some college, but have not attended graduate school were less likely to have had transgender-related surgery (standardized residual = -2.032). As such, education will be included as a control variable.

Results

Visibility Hypotheses

The visibility hypothesis predicts that transgender people whose stigma is more visible will experience more stigma. This was tested using several indicators of visibility.

Hypothesis a tested one of these indicators. Specifically, it predicts that transwomen will experience more stigma than transmen because transwomen's stigma is more visible and less concealable on average. In order to test this hypothesis, two models were tested for each of the stigma dependent variables. First, a linear model was run in which gender (the reference category is male-to-female transgender, or MTF for short) predicted discrimination. Gender was not a significant predictor of discrimination, $\beta = 0.004$, $SE = 0.116$, $t = 0.037$, $p = .971$. The model was rerun with the control variables included. When controlling for race and education, gender still did not have a significant effect on discrimination, $\beta = 0.073$, $SE = 0.118$, $t = 0.623$, $p = .534$.

Next, a linear model was run in which gender (the reference category is MTF) predicted victimization. Gender was not a significant predictor of victimization, $\beta = 0.189$, $SE = 0.188$, $t = 1.005$, $p = .316$. When controlling for race and education, gender was still not a significant predictor of victimization, $\beta = 0.231$, $SE = 0.182$, $t = 1.264$, $p = .207$. Neither of these results support the hypothesis. A full overview of the models in which visibility predicted experienced stigma controlled for race and education can be found in Table 1, on page 21.

Hypothesis b tested how long ago a transgender person started transitioning will moderate the effect of gender on stigma, in the sense that differences between transmen and transwomen should be greater when they have not transitioned yet, and should be smaller when they transitioned a long time ago. In order to test this hypothesis, four models were tested. First, a linear model was run in which an interaction between gender (the reference category is MTF)

and time since transitioning (mean centered) predicted discrimination. The effect of the interaction was not significant, $\beta = 0.222$, $SE = 0.132$, $t = 1.676$, $p = .095$. Secondly, the same linear model was repeated, but now also included the two control variables: race (reference category is white), and education (reference category is high school). The interaction between gender and time since transitioning remained not significant: $\beta = 0.162$, $SE = 0.133$, $t = 1.218$, $p = .224$. These results indicate that the time since transitioning does not moderate the effect of gender on discrimination.

The same models were run predicting victimization. First, a linear model was run in which an interaction between gender (the reference category is MTF) and time since transitioning predicted victimization. The effect of the interaction was not significant, $\beta = -0.036$, $SE = 0.206$, $t = -0.172$, $p = .863$. Secondly, the same linear model was repeated, but now also included the two control variables: race (reference category is white), and education (reference category is highschool). The interaction between gender and time since transitioning remained not significant: $\beta = -0.062$, $SE = 0.197$, $t = -0.315$, $p = .753$. These results indicate that the time since transitioning does not moderate the effect of gender on victimization. None of the four models provide support for the hypothesis. A full overview of the models in which visibility predicted experienced stigma controlled for race and education can be found in Table 1, on page 21.

Hypothesis c tested if transgender persons who have undergone transgender-related surgeries experience less stigma than those who have not (yet) undergone such surgery.

To test this hypothesis, four models were run. First, a linear model was run predicting discrimination by surgery status (the reference category is has not undergone surgery). Those who had undergone a transgender-related surgery significantly experienced more discrimination than those who had not undergone such surgery: $\beta = 0.312$, $SE = 0.127$, $t = 2.514$, $p = .012$. Next,

the same model was repeated, but now also included the two control variables: race (reference is white) and education level (reference is highschool). Those who had undergone a transgender-related surgery significantly experienced more discrimination than those who had not undergone such surgery: β = 0.405, *SE* = 0.131, *t* = 3.101, *p* = .002. Although the results are significant, they are in the opposite direction and thus do not support the hypothesis.

Next, victimization was assessed. A linear model was run predicting victimization by surgery status (the reference category is has not undergone surgery). Those who had undergone a transgender-related surgery did not significantly experience more discrimination than those who had not undergone such surgery: β = -0.206, *SE* = 0.214, *t* = -0.961, *p* = .337. Next, the same model was repeated, but now also included the two control variables: race (reference is white) and education level (reference is highschool). Those who had undergone a transgender-related surgery still did not significantly experience more discrimination than those who had not undergone such surgery: β = -0.006, *SE* = 0.212, *t* = -0.027, *p* = .979. None of these results support the hypothesis. A full overview of the models in which visibility predicted experienced stigma controlled for race and education can be found in Table 1, on page 21.

Hypothesis d tested if transgender persons who have received hormonal therapy should experience less stigma than those who have not, especially transmen should experience less stigma (because testosterone affects appearance more than estrogen).

To test this hypothesis, six models were run. First, a linear model was run predicting discrimination by hormonal therapy status (has not received hormonal therapy was the reference category). This effect was significant; those who had received hormonal therapy experienced more discrimination than those who had not received such therapy, β = 0.362, *SE* = 0.110, *t* = 3.286, *p* = .001. As an interaction between gender and hormonal therapy status was expected, a

linear model was run in which this interaction predicted discrimination. The interaction between gender (reference is MTF) and hormonal therapy status was significant; FTM who had received hormonal therapy experienced less discrimination than MTF who had received this therapy, β = -0.477, *SE* = 0.233, *t* = -2.046, *p* = .042. This interaction model was rerun, but now with the two control variables, race (reference is white) and education (reference is highschool), included as well. The interaction between gender and hormonal therapy status became non-significant, β = -0.435, *SE* = 0.234, *t* = -1.858, *p* = .064. Together, these results provide mixed support for the hypothesis. The effect of hormonal therapy status on experienced discrimination is in the opposite direction of the hypothesis. The interaction between gender and hormonal therapy status is significant and in the right direction, however, it becomes not significant when controlling for race and education.

The same models were repeated with victimization. A linear model was run predicting victimization by hormonal therapy status (has not received hormonal therapy was the reference category). This effect was not significant, β = -0.023, *SE* = 0.183, *t* = -0.125, *p* = .901. As an interaction between gender (reference is MTF) and hormonal therapy status was expected, a linear model was run in which this interaction predicted victimization. This interaction was not significant, β = -0.250, *SE* = 0.390, *t* = -0.641, *p* = .522. Finally, the same model was rerun, but now with the two control variables, race (reference is white) and education (reference is highschool), included as well. The interaction between gender and hormonal therapy status remained not significant, β = -0.172, *SE* = 0.374, *t* = -0.460, *p* = .646. These results do not support the hypothesis. A full overview of the models in which visibility predicted experienced stigma controlled for race and education can be found in Table 1 below.

Table 1

Linear Regressions of Stigma Visibility Predicting Experienced Discrimination and Victimization.

	Discrimination				Victimization			
	β	SE	t	p	β	SE	t	p
Gender (FTM)	0.073	0.118	0.623	.534	0.231	0.182	1.264	.207
Race: Non-white	0.222	0.122	1.815	.070	0.328	0.189	1.730	.085
Education: College	**-0.401**	**0.147**	**-2.728**	**.007****	0.087	0.228	0.380	.704
Education: Graduate	-0.350	0.186	-1.879	.061	-0.359	0.289	-1.242	.215
Interaction of gender (FTM) and time since transitioning	0.162	0.133	1.218	.224	-0.062	0.197	-0.315	.753
Race: Non-white	**0.381**	**0.172**	**2.209**	**.028***	0.336	0.255	1.315	.190
Education: College	**-0.574**	**0.208**	**-2.763**	**.006****	-0.236	0.308	-0.765	.445
Education: Graduate	**-0.585**	**0.247**	**-2.367**	**.019***	-0.678	0.367	-1.848	.066
Surgery status (Had surgery)	**0.405**	**0.131**	**3.101**	**.002****	-0.006	0.212	-0.027	.979
Race: Non-white	0.229	0.121	1.893	.059	0.301	0.196	1.534	.126
Education: College	**-0.429**	**0.148**	**-2.898**	**.004****	0.006	0.240	0.027	.979
Education: Graduate	**-0.438**	**0.191**	**-2.300**	**.022***	-0.457	0.309	-1.479	.140
Hormonal therapy status (Had hormonal therapy)	**0.419**	**0.112**	**3.752**	**<.001*****	0.114	0.178	0.638	.524
Race: Non-white	0.233	0.123	1.898	.059	0.285	0.196	1.459	.146
Education: College	**-0.379**	**0.148**	**-2.553**	**.011***	-0.009	0.236	-0.040	.969
Education: Graduate	**-0.381**	**0.188**	**-2.029**	**.043***	-0.474	0.298	-1.591	.113
Interaction of hormonal therapy status (had hormonal therapy) and gender (FTM)	-0.435	0.233	-1.858	.064	-0.172	0.374	-0.460	.646
Race: Non-white	0.227	0.123	1.848	.065	0.290	0.196	1.479	.140
Education: College	**-0.402**	**0.150**	**-2.673**	**.008****	-0.064	0.240	-0.267	.790
Education: Graduate	-0.354	0.188	-1.882	.061	-0.485	0.301	-1.612	.108

Note: The reference category for race is white, and the reference category for education is highschool. In none of the models differed college and graduate significantly from each other. Significant results are in bold. * = significant at the .05 level, ** = significant at the .01 level, *** = significant at the .001 level.

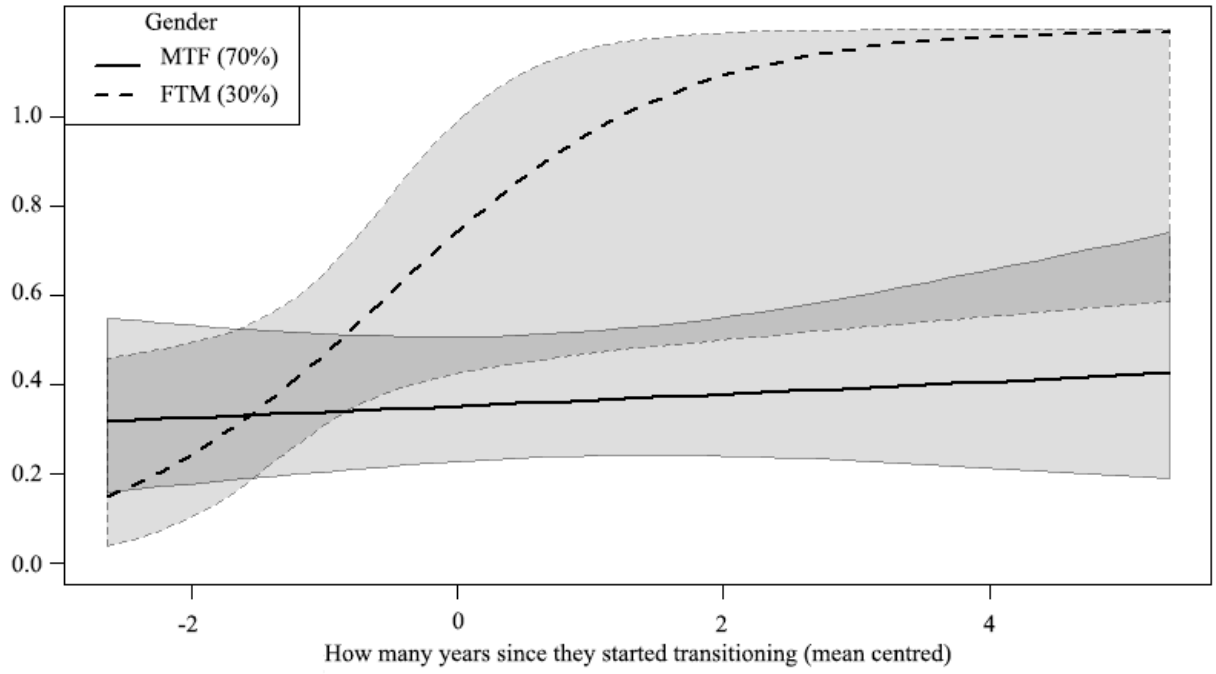
Exploratory analyses. As the results provided little support to the visibility hypotheses, several exploratory analyses were performed. For each specific stigma question five types of linear models were run: (1) gender predicting stigma, (2) an interaction between gender and time since transitioning predicting stigma, (3) surgery status predicting stigma, (4) hormonal therapy status predicting stigma, and (5) an interaction between hormonal therapy status and gender

predicting stigma. Every model was run with and without the two control variables, race and education, included. The significant results of interest will be discussed below. For a full overview of all analyses, please refer to Table S1 through Table S7 in the supplementary materials.

Hormonal therapy status predicted whether a participants had ever been denied enrollment in a health insurance plan, both when no control variables were in the model (*log odds* = 1.575, *SE* = 0.571, *Z* = 2.760, *p* = .006), and when the control variables were included in the model (*log odds* = 1.675, *SE* = 0.588, *Z* = 2.850, *p* = .004). The found effect was in the opposite direction of what would be expected under the visibility hypothesis: having received hormonal treatment increased the chance of having been denied health insurance. When a participant had never received hormonal therapy, they had a 2.72% chance of being denied enrollment, while if they had received hormonal therapy, this probability became 13.00%, when controlling for race and education level.

Whether a participant had been discriminated by a doctor or other health care provider due to their transgender status could be explained by several predictors. First, an interaction between gender (the reference category is MTF) and time since transitioning was a significant predictor (*log odds* = 0.879, *SE* = 0.448, *Z* = 1.963, *p* = .050, when controlling for race and education). For FTM, the longer ago they had transitioned, the more likely it was they had experienced discrimination by a doctor (see Figure 1). This effect is also in the opposite direction as hypothesized.

Figure 1. Probability of 'Have you ever experienced discrimination by a doctor or other health care provider due to your transgender status or gender expression?' by gender, controlled for race and education



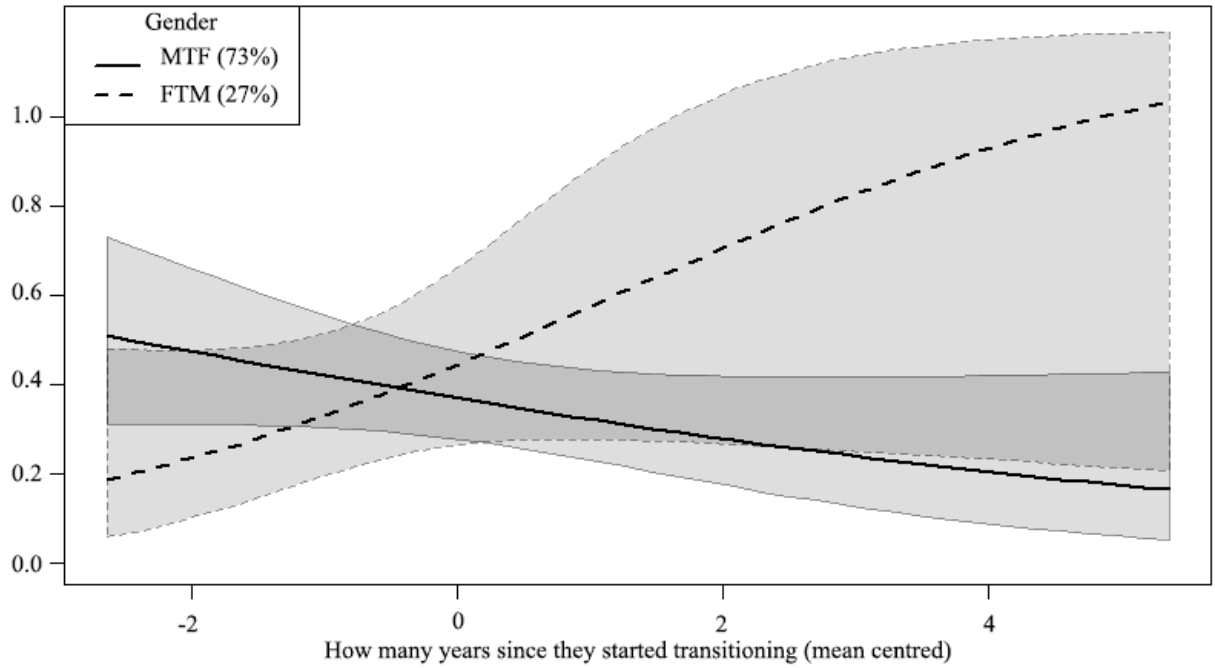
Note: The gray areas indicate a Wald type approximation of the 95% confidence interval.

Aside from the interaction of gender and time since transitioning, both surgery status (*log odds* = 1.058, *SE* = 0.311, *Z* = 3.399, *p* = .001, controlled for race and education) and hormonal therapy status (*log odds* = 1.252, *SE* = 0.292, *Z* = 4.286, *p* < .001, controlled for race and education) predicted having experienced discrimination by a doctor. When a participant had undergone a transgender-related surgery, they had a probability of 61.30% to have experienced discrimination, while they had a probability of 35.48% when they had not undergone surgery. When a participant had received hormonal therapy, they had a probability of 53.96% to have experienced discrimination, while they had a probability of 25.09% when they had not received such therapy. All these results are in the opposite direction as hypothesized.

An interaction between gender and time since transitioning predicted whether participants had ever been denied a job due to their transgender status. This effect was only significant when no control variables were included in the model, *log odds* = 0.635, *SE* = 0.308, *Z* = 2.062, *p* =

.039. The longer ago FTM had transitioned, the more likely they had been denied a job, while for MTF the probability of being denied a job decreased the longer ago they had started transitioning (see Figure 2). This effect is again in the opposite direction as hypothesized.

Figure 2. Probability of 'Have you ever been denied a job you applied for due to your transgender status and/or gender expression?' by gender, controlled for race and education



Note: The gray areas indicate a Wald type approximation of the 95% confidence interval.

When controlling for race and education, hormonal therapy status predicted whether a participant had ever been fired from a job due to their transgender status. Having received hormonal therapy increased the odds of ever being fired, *log odds* = 0.778, *SE* = 0.360, *Z* = 2.163, *p* = .031. The chance of being fired when they had received hormonal therapy was 15.25% for white participants, and 27.74% for non-white participants, while for those who had not received hormonal therapy, these chances were 7.64% for white and 14.99% for non-white participants. These results are in the opposite direction from the hypothesis.

Gender could predict whether a participant had ever lost housing due to their transgender status, *log odds* = 1.416, *SE* = 0.443, *Z* = 3.194, *p* = .001 (controlled for race and education).

FTM were more likely to have lost housing than MTF. For FTM with highschool as highest education, the chance they had lost housing was 31.15%, while for MTF with highschool as highest education, this chance was 9.90%. This result is in the opposite direction as the hypothesis. Taken together, the exploratory analyses provide no support for the hypothesis that greater visibility of stigma enhances experienced stigma. In fact, only results in the opposite direction were found.

Mental Health Hypotheses

The mental health hypothesis predicts that experienced stigma is related to mental health for transgender people.

Hypothesis a tested if greater experienced stigma will be associated with poorer mental health outcomes.

To test this hypothesis, several logistic regressions were run examining the effects of discrimination and victimization separately on suicidal thoughts and suicide attempt. First, whether experienced stigma can explain suicidal thoughts was tested. When discrimination is the sole predictor of suicidal thoughts, the effect of discrimination is not significant, *log odds* = 0.189, *SE* = 0.119, *Z* = 1.586, *p* = .113. However, when controlling for race and education, the effect of discrimination became significant, *log odds* = 0.366, *SE* = 0.133, *Z* = 2.752, *p* = .006. Greater discrimination was associated with a higher probability of having had suicidal thoughts. Next, victimization as the sole predictor of suicidal thoughts was examined. Greater victimization was associated with a higher probability of having had suicidal thoughts, *log odds* = 0.185, *SE* = 0.091, *Z* = 2.044, *p* = .041. When race and education were added to the model as control variables, victimization remained significant, *log odds* = 0.264, *SE* = 0.102, *Z* = 2.597, *p*

= .009. These results support the hypothesis. A full overview of the models in which race and education were controlled for can be seen in Table 2.

Table 2

Logistic Regressions of Discrimination and Victimization Separately Predicting Mental Health.

	Suicidal Thoughts				Suicide Attempt			
	Log odds	SE	Z	p	Log odds	SE	Z	p
Discrimination	0.366	0.133	2.752	.006**	0.322	0.152	2.118	.034*
Race: Non-white	-1.156	0.262	-4.419	<.001***	1.202	0.347	3.467	.001***
Education: College	0.777	0.313	2.486	.013*	-1.303	0.468	-2.785	.005**
Education: Graduate	0.788	0.408	1.929	.054	-1.728	0.555	-3.116	.002**
Victimization	0.264	0.102	2.597	.009**	0.217	0.100	2.164	.030*
Race: Non-white	-1.139	0.262	-4.354	<.001***	1.106	0.351	3.151	.002**
Education: College	0.607	0.310	1.958	.050	-1.288	0.466	-2.764	.006**
Education: Graduate	0.742	0.408	1.816	.069	-1.605	0.553	-2.900	.004**

Note: The reference category for race is white, and the reference category for education is highschool. In none of the models differed college and graduate significantly from each other. * = significant at the .05 level, ** = significant at the .01 level, *** = significant at the .001 level.

Next, whether experienced stigma can predict having attempted suicide was examined. When discrimination was the sole predictor of suicide attempt, the effect was significant, *log odds* = 0.373, *SE* = 0.138, *Z* = 2.698, *p* = .007. When race and education were added to the model as control variables, discrimination still significantly increased the odds of having attempted suicide, *log odds* = 0.322, *SE* = 0.152, *Z* = 2.118, *p* = .034. When victimization was the sole predictor of suicide attempt, the effect was significant, *log odds* = 0.307, *SE* = 0.095, *Z* = 3.252, *p* = .001. When race and education were added to the model as control variables, victimization still significantly increased the odds of having attempted suicide, *log odds* = 0.217, *SE* = 0.100, *Z* = 2.164, *p* = .030. These results also support the hypothesis. A full overview of the models in which race and education were controlled for can be seen in Table 2 above.

Hypothesis b tested if greater experienced stigma leads to poorer mental health for transmen than for transwomen.

To test this hypothesis, 8 logistic regressions were run in which interactions between gender on the one hand and discrimination and victimization on the other hand could predict having had suicidal thoughts and having attempted suicide. First, a model was run in which an interaction of gender (reference is MTF) and discrimination could predict having had suicidal thoughts. This interaction effect was not significant, *log odds* = 0.555, *SE* = 0.386, *Z* = 1.435, *p* = .151. When race and education were added as control variables to the model, the interaction of gender and discrimination remained not significant, *log odds* = 0.412, *SE* = 0.394, *Z* = 1.044, *p* = .296. Next, a model was run in which an interaction of gender (reference is MTF) and victimization could predict having had suicidal thoughts. This interaction effect was not significant, *log odds* = -0.004, *SE* = 0.210, *Z* = -0.018, *p* = .986. When race and education were added as control variables to the model, the interaction of gender and victimization remained not significant, *log odds* = -0.057, *SE* = 0.213, *Z* = -0.267, *p* = .790. These results do not support the hypothesis. An overview of the models in which race and education were controlled for can be seen in Table 3.

Table 3

Logistic Regressions of an Interaction between Gender and Stigma Predicting Mental Health.

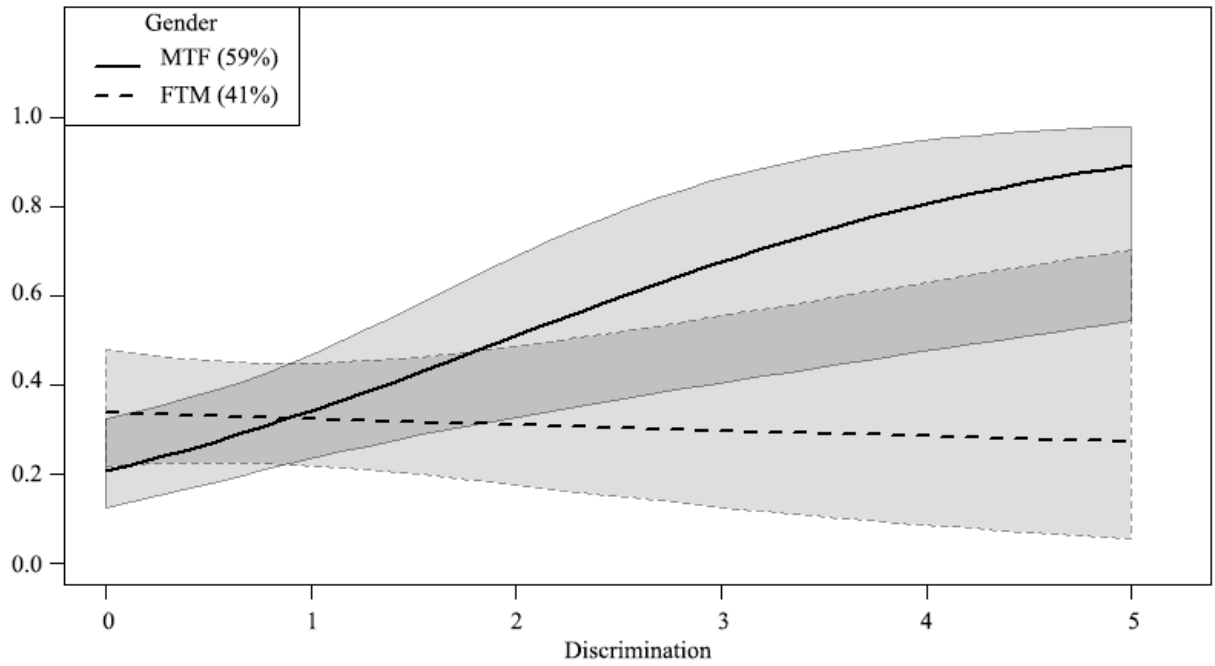
	Suicidal Thoughts				Suicide Attempt			
	Log odds	SE	Z	p	Log odds	SE	Z	p
Interaction Gender (FTM) and Discrimination	0.412	0.394	1.044	.296	-0.759	0.310	-2.448	.014*
Discrimination	0.302	0.150	2.014	.044*	0.698	0.226	3.085	.002**
Race: Non-white	-1.157	0.268	-4.314	<.001***	1.234	0.352	3.504	<.001***
Education: College	0.559	0.326	1.717	.086	-1.315	0.479	-2.744	.006**
Education: Graduate	0.663	0.421	1.576	.115	-1.726	0.565	-3.054	.002**
Gender: FTM	0.722	0.327	2.213	.027*	0.674	0.387	1.739	.082
Interaction Gender (FTM) and Victimization	-0.057	0.213	-0.267	.790	-0.200	0.199	-1.005	.315
Victimization	0.275	0.125	2.196	.028*	0.320	0.154	2.077	.038*
Race: Non-white	-1.138	0.268	-4.251	<.001***	1.118	0.353	3.168	.002**
Education: College	0.427	0.322	1.325	.185	-1.282	0.471	-2.725	.006**
Education: Graduate	0.661	0.417	1.585	.113	-1.571	0.556	-2.826	.005**
Gender: FTM	0.893	0.290	3.077	.002**	0.186	0.328	0.568	.570

Note: The reference category for race is white, the reference category for education is highschool, and the reference category for gender is MTF. In none of the models differed college and graduate significantly from each other. * = significant at the .05 level, ** = significant at the .01 level, *** = significant at the .001 level.

Finally, whether an interaction between gender and stigma could predict having attempted suicide was examined. A model was run in which an interaction between gender (reference is MTF) and discrimination predicted suicide attempt was run. This interaction effect was significant. The more discrimination FTM experienced, the less likely they were to have attempted suicide, *log odds* = -0.714, *SE* = 0.284, *Z* = -2.513, *p* = .012. For MTF, the more discrimination they experienced, the more likely they were to have attempted suicide, *log odds* = 0.714, *SE* = 0.284, *Z* = 2.513, *p* = .012. When race and education were added as control variables, the interaction of gender and discrimination remained significant, *log odds* = -0.759, *SE* = 0.310, *Z* = -2.448, *p* = .014. A plot of this interaction effect can be seen in Figure 3 below. Next, a model was run in which an interaction between gender (reference is MTF) and

victimization predicted suicide attempt was run. This interaction effect was not significant, *log odds* = -0.245, *SE* = 0.195, *Z* = -1.260, *p* = .208. When race and education were added to the model as control variables, the interaction between victimization and gender remained non-significant, *log odds* = -0.200, *SE* = 0.199, *Z* = 1.005, *p* = .315. These results do not support the hypothesis. The only found significant effect of gender interacting with discrimination on suicide attempt was in the opposite direction of the hypothesis. An overview of the models in which race and education were controlled for can be seen in Table 3 above.

Figure 3. Probability of 'Have you ever tried to kill yourself?' by gender, controlled for race and education.



Note: The gray areas indicate a Wald type approximation of the 95% confidence interval.

Full models of stigma and mental health. Discrimination and victimization were tested separately in the described models above. To check whether their effects would persist when both were used as predictors in the same model, several additional logistic models were run. First a full model of suicidal thoughts was built up. The first model included both discrimination and victimization as predictors of suicidal thoughts. In this model, neither discrimination (*log odds* =

0.124, *SE* = 0.125, *Z* = 0.996, *p* = .319), nor victimization (*log odds* = 0.163, *SE* = 0.093, *Z* = 1.746, *p* = .081) was a significant predictor of suicidal thoughts. Then, race, education, and gender were added to the model as control variables. In this full model, discrimination increased the odds of having had suicidal thoughts (*log odds* = 0.296, *SE* = 0.141, *Z* = 2.092, *p* = .037), but victimization remained not significant (*log odds* = 0.203, *SE* = 0.106, *Z* = 1.915, *p* = .056). A full overview of this model can be seen in Table 4 below. The effect of discrimination on suicidal thoughts is in line with the mental health hypotheses.

Table 4

Logistic Regressions of Full Models of Discrimination and Victimization Predicting Mental Health.

	Suicidal Thoughts				Suicide Attempt			
	Log odds	SE	Z	p	Log odds	SE	Z	p
Discrimination	0.296	0.141	2.092	.037*	0.609	0.231	2.638	.008**
Victimization	0.203	0.106	1.915	.056	0.200	0.109	1.841	.066
Gender: FTM	0.898	0.283	3.176	.002**	0.701	0.389	1.804	.071
Race: Non-white	-1.184	0.271	-4.375	<.001***	1.117	0.360	3.105	.002**
Education: College	0.568	0.330	1.720	.086	-1.283	0.480	-2.676	.007**
Education: Graduate	0.765	0.422	1.812	.070	-1.594	0.567	-2.813	.005**
Interaction of Gender (FTM) and Discrimination					-0.875	0.334	-2.617	.009**

Note: The reference category for race is white, the reference category for education is highschool, and the reference category for gender is MTF. In none of the models differed college and graduate significantly from each other. * = significant at the .05 level, ** = significant at the .01 level, *** = significant at the .001 level.

Next, a full model of stigma predicting suicide attempt was built up. First a logistic model was run in which discrimination and victimization predicted suicide attempt. In this model, discrimination was not significant (*log odds* = 0.239, *SE* = 0.151, *Z* = 1.588, *p* = .112), and victimization increased the odds of having attempted suicide (*log odds* = 0.265, *SE* = 0.098, *Z* = 2.705, *p* = .007). Next, as an interaction between discrimination and gender was previously found, this interaction was added to the model. The interaction between gender (reference is

MTF) and discrimination was significant (*log odds* = -0.900, *SE* = 0.312, *Z* = -2.886, *p* = .004), as was the effect of victimization (*log odds* = 0.298, *SE* = 0.100, *Z* = 2.992, *p* = .003). Victimization increased the odds of having attempted suicide, and for FTM greater discrimination lowered those odds. Finally, race and education were added to the model as control variables. The interaction of gender and discrimination persisted (*log odds* = -0.875, *SE* = 0.334, *Z* = -2.617, *p* = .009), but victimization became non-significant (*log odds* = 0.200, *SE* = 0.109, *Z* = 1.841, *p* = .066). The moderation effect of gender on the effect of discrimination on suicide attempt is not in line with the mental health hypothesis as it is in the opposite direction. A full overview of this complete model can be seen in Table 4 above. Moreover, the probabilities of having had suicidal thoughts and of having attempted suicide were calculated for several scenarios based on the full models. These probabilities can be seen in Table S8 and S9 in the supplementary materials.

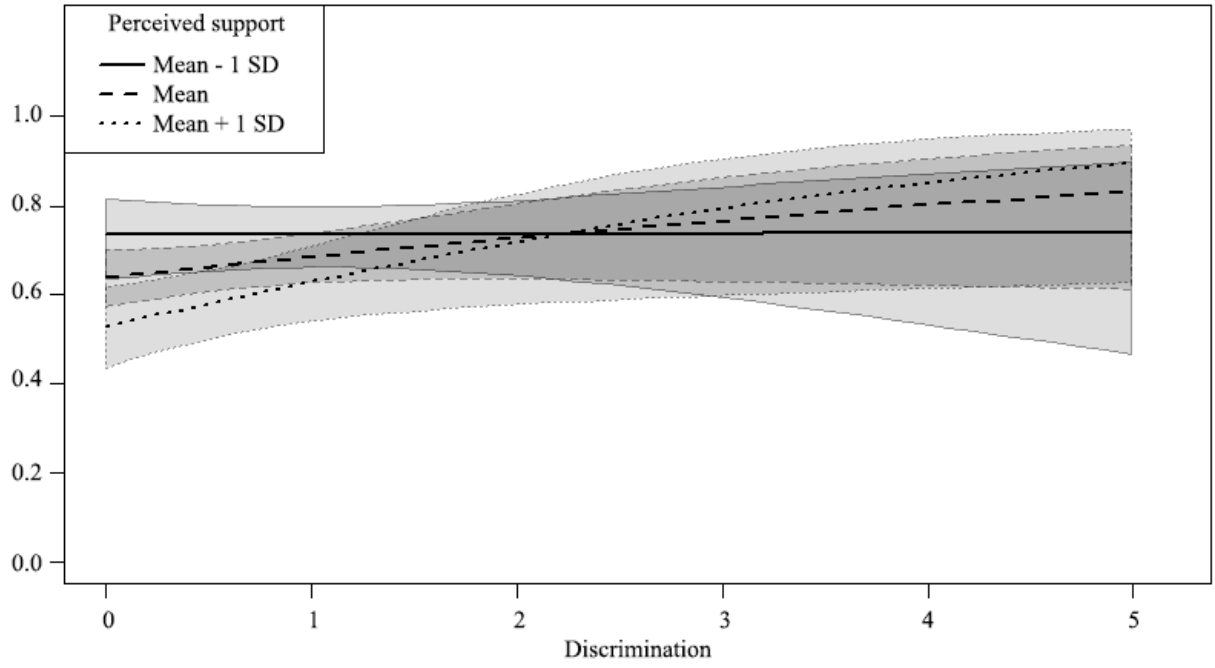
Social Support Hypothesis

The final hypothesis posited that social support will moderate the effect of experienced stigma on mental health, in the sense that greater social support will weaken the effect. To test this hypothesis, it was examined whether interaction effects between social support on the one hand, and discrimination and victimization on the other hand could be found. Suicidal thoughts and suicide attempt were separately analyzed.

Starting with suicidal thoughts, a logistic model was run in which an interaction of social support and discrimination predicted suicidal thoughts. This interaction effect was significant, *log odds* = 0.315, *SE* = 0.159, *Z* = 1.982, *p* = .047. Participants who had greater social support were more likely to have had suicidal thoughts when they experienced more discrimination than participants who had less social support. A plot of this moderation effect can be seen in Figure 4

below. However, when race, education, and gender were added as control variables, the moderation effect became non-significant, *log odds* = 0.166, *SE* = 0.167, *Z* = 0.996, *p* = .319. Next, a logistic model was run in which an interaction of social support and victimization predicted suicidal thoughts. This interaction effect was not significant (*log odds* = -0.233, *SE* = 0.192, *Z* = -1.213, *p* = .225), and remained non-significant when controlling for race, education, and gender (*log odds* = -0.172, *SE* = 0.194, *Z* = -0.889, *p* = .374). These results do not support the hypothesis. The found moderation effect of social support and discrimination is in the opposite direction, while the moderation effect of social support and victimization is in the right direction, but not significant. The models in which the control variables were included can be seen in Table 5 below.

Figure 4. Probability of 'Have you ever thought about killing yourself?' by perceived support



Note: The gray areas indicate a Wald type approximation of the 95% confidence interval.

Next, suicide attempt was analyzed. A logistic model was run in which an interaction of social support and discrimination predicted suicide attempt. This interaction was not significant

(*log odds* = -0.249, *SE* = 0.213, *Z* = -1.171, *p* = .241), and remained non-significant when controlling for race, education, and gender (*log odds* = -0.143, *SE* = 0.236, *Z* = -0.608, *p* = .543). Then, a logistic model was run in which an interaction of social support and victimization predicted suicide attempt. This interaction was not significant (*log odds* = -0.049, *SE* = 0.167, *Z* = -0.292, *p* = .770), and also remained non-significant when controlling for race, education, and gender (*log odds* = 0.009, *SE* = 0.196, *Z* = 0.048, *p* = .962). These results do not support the hypothesis that social support moderates the effect of stigma on mental health. The models in which the control variables were included can be seen in Table 5 below.

Table 5

Social Support Moderation Analyses of the Effect of Stigma on Mental Health.

	Suicidal Thoughts				Suicide Attempt			
	Log odds	SE	Z	p	Log odds	SE	Z	p
Interaction Social Support and Discrimination	0.166	0.167	0.996	.319	-0.143	0.236	-0.608	.543
Discrimination	-0.180	0.534	-0.337	.736	0.760	0.752	1.011	.312
Social Support	-0.564	0.264	-2.139	.032*	0.017	0.312	0.055	.956
Race: Non-white	-1.030	0.278	-3.708	<.001***	1.248	0.353	3.528	<.001***
Education: College	0.594	0.332	1.791	.073	-1.315	0.474	-2.771	.006**
Education: Graduate	0.848	0.434	1.956	.050	-1.685	0.559	-3.015	.003**
Gender: FTM	0.943	0.288	3.275	.001**	0.174	0.236	-0.608	.543
Interaction Social Support and Victimization	-0.172	0.194	-0.889	.374	0.009	0.196	0.048	.962
Victimization	0.793	0.649	1.221	.222	0.180	0.600	0.300	.764
Social Support	-0.434	0.204	-2.077	.038*	-0.107	0.264	-0.406	.685
Race: Non-white	-1.056	0.276	-3.834	<.001***	1.174	0.356	3.287	.001***
Education: College	0.497	0.329	1.508	.132	-1.302	0.471	-2.763	.006**
Education: Graduate	0.859	0.431	1.993	.046*	-1.590	0.558	-2.851	.004**
Gender: FTM	0.900	0.288	3.128	.002**	0.152	0.319	0.478	.633

Note: The reference category for race is white, the reference category for education is highschool, and the reference category for gender is MTF. In none of the models differed college and graduate significantly from each other. * = significant at the .05 level, ** = significant at the .01 level, *** = significant at the .001 level.

Main effect social support. As the moderation analyses did not support the hypothesis that social support moderates the effect of stigma on mental health, it was assessed whether social support had a main effect on mental health. In other words, can greater social support reduce the probability of having had suicidal thoughts and having attempted suicide?

First, a logistic model was run in which suicidal thoughts was predicted by social support, controlling for discrimination, race, education, and gender. Social support lowered the probability of having had suicidal thoughts, *log odds* = -0.402, *SE* = 0.202, *Z* = -1.987, *p* = .047. Next, a logistic model was run in which the probability of having had suicidal thoughts was predicted by social support, controlling for victimization, race, education, and gender. Again, social support lowered this probability, *log odds* = -0.477, *SE* = 0.197, *Z* = -2.417, *p* = .016.

Secondly, a logistic model was run in which the probability of having attempted suicide was predicted by social support, controlling for discrimination, race, education, and gender. The effect of social support was not significant, *log odds* = -0.090, *SE* = 0.257, *Z* = -0.351, *p* = .726. Lastly, a model was run in which the probability of having attempted suicide was predicted by social support, controlling for victimization, race, education, and gender. In this model, social support was again not significant, *log odds* = -0.104, *SE* = 0.254, *Z* = -0.409, *p* = .682. Greater social support seems to only lower the probability of having had suicidal thoughts, and not the probability of having attempted suicide.

Discussion

In the present thesis, three aspects of the minority stress model (Meyer, 2003) applied to a transgender population were assessed. First of all, whether or not visibility of stigma affects experienced stigma was examined in several ways. Secondly, if experienced stigma affects mental health was tested. Lastly, a possible moderation effect of social support on the effect of

experienced stigma on mental health was investigated. This thesis provides mixed support for the hypotheses. Each aspect will be discussed separately below.

Visibility of Stigma

Is a more visible or less concealable stigma associated with greater experienced stigma? Experienced discrimination and victimization was compared between different groups within a transgender population. Transmen were compared to transwomen, those who had undergone transgender-related surgery were compared to those who had not, and those who had received hormonal therapy were compared to those who had not received such therapy. Additionally, a possible interaction between gender and time since transitioning was examined (previous research found stronger differences in earlier transitioning stages (McLemore, 2014)), as well as a possible interaction between gender and hormonal therapy status (testosterone affects appearance more than estrogen). The results provided very little support of the hypothesis. The only significant effect in the right direction was that transmen who have received hormonal therapy experienced less discrimination than transwomen who had received such therapy. This effect, however, disappeared when controlling for race and education.

In several exploratory analyses, it was tested if visibility of stigma affected specific stigma domains. Multiple significant results were found. However, all were in the opposite direction as hypothesized. Those who had undergone a transgender-related surgery were more likely to have been denied enrollment in a health insurance plan, as were those who had received hormonal therapy. The same pattern was found for experiencing discrimination by a doctor or other health care provider. Moreover, those who had received hormonal therapy were more likely to have been fired from a job. Finally, transmen were more likely than transwomen to have lost housing. In all these cases, those who should have a less visible stigma experienced greater stigma.

A possible explanation could be that those who experience more stigma are more likely to seek out medical treatment. This could, however, indicate that receiving medical treatment does not lessen experienced stigma. To test this, experienced stigma before and after treatment could be compared within subjects. The dataset only contained questions about whether participants had 'ever' experienced different types of stigma. Possibly, when participants answered with 'yes', the event participants referred to had taken place a long time ago. Even so, an event that took place a long time ago may have been a traumatic experience that still presently affects the participant. Instead of using 'yes' or 'no' as answer categories, a Likert scale could be used, so participants can indicate how much their experiences affect them.

An explanation for differences in experiencing discrimination by a doctor between those who have received medical treatment and those who have not, is that those who have received medical treatment have likely had more encounters with doctors than those who do not seek medical treatment. There may simply have been more opportunities for them to experience this discrimination. If so, this could indicate that doctors and other health care providers may require additional training in how to handle transgender patients.

Differences between those who had sought out medical treatment and those who had not regarding enrollment in health insurance plans could have emerged due to financial costs. Health insurance companies could see transgender persons who actively seek medical treatment as too expensive and deny them as client. After all, transgender-related surgeries can cost thousands of dollars, and hormonal therapy will be required for the rest of the client's life. In this case, the health insurance company will know that a person is transgender based on their medical history, making visibility irrelevant.

Finally, these contradictory findings that within a single stigmatized identity, those with less visible stigma experience more stigma may be explained by a different process. Not only those with a visible stigma face difficulties, but those who can conceal their stigma experience considerable stressors too (Pachankis, 2007). Keeping a stigma concealed may be internally stressful, and could lead to ambiguous social situations. Perhaps future research could uncover if persons with a visible stigma experience more stigmatizing environmental and other external events, while persons with a concealable stigma may experience a greater internalized sense of stigma. Both these processes should lead to poorer mental health, according to the minority stress model (Meyer, 2003), and may explain previous found visibility effects within a single stigmatized identity (Stutterheim et al., 2011).

In sum, this thesis does not support the idea that visibility of stigma affects experienced stigma. Although perhaps no effects were found due to too little power, if an effect of visibility exists, it is most likely small and other factors may play a greater role in experiencing stigma. Lastly, if a possible effect is small, future research should not test this hypothesis by comparing two different stigmatized identities to each other, as it complicates disentangling effects of differences between stigmatized identities and effects of stigma visibility. Instead, differences in visibility of stigma within a single stigmatized identity should be assessed.

Mental Health

According to the minority stress model (Meyer, 2003), experiencing stigma will lead to worse mental health outcomes. Indeed, both greater discrimination and greater victimization taken separately were found to increase the odds of having had suicidal thoughts and of having attempted suicide. These effects persisted when controlling for race and education.

In many countries, more men attempt suicide than women. This gap may be explained by several different factors, including a reluctance of men to seek help (Möller-Leimkühler, 2002). This indicates an interaction; transmen who experience greater stigma should be at greater risk for suicide than transwomen, as transmen are less inclined to seek help to cope with stigma. No interaction between gender identity and stigma was found regarding having suicidal thoughts. However, the opposite was true: the more discrimination a transman experienced, the lower his odds of having attempted suicide. On the other hand, for transwomen the odds of having attempted suicide increased as they had experienced more discrimination.

Although these results seem contradictory to the hypothesis, previous research may offer an explanation. Previous research has consistently found that men tend to use more lethal methods, such as firearms, than women when attempting suicide (Denning, Conwell, King, & Cox, 2000). Perhaps the odds of having attempted suicide decreased for transmen as they had experienced more stigma, because those who had attempted suicide were more likely to die (and would not be in this dataset). In other words, greater discrimination increased the odds of having attempted suicide for both transmen and transwomen, but transmen used more lethal methods, resulting in less survivors. The only way to examine this would be by comparing records of suicide attempts and suicidal deaths among transmen and transwomen.

Aside from models that tested the effect of discrimination and victimization on mental health separately, models in which both discrimination and victimization predicted mental health were run as well to test if discrimination and victimization could explain mental health on top of each other. In these models, victimization became not significant. Discrimination increased the odds of having had suicidal thoughts. The interaction between gender and discrimination as discussed above remained in the model predicting suicide attempt. Two explanations for the non-

significant results of victimization exist. First of all, perhaps discrimination and victimization may overlap, in the sense that victimization does not add anything on top of discrimination. Secondly, victimization was nearing significance in both full models. Perhaps no significant effect was found due to too low power. In a larger sample victimization may be a significant predictor.

In short, support was found for the idea that greater experienced stigma is associated with poorer mental health in a transgender population. However, whether transmen are at greater risk of suicide when they experience greater stigma than transwomen, and whether victimization can explain mental health outcomes on top of discrimination requires further research.

Social Support

The minority stress model (Meyer, 2003) proposed persons with a minority identity can develop resilience in different ways. The present thesis assessed whether social support could be a form of resilience, in that it moderates the negative effect of stigma on mental health. The results provide mixed support. A moderation effect of social support on the effect of discrimination on suicidal thoughts was found. However, this moderation effect became non-significant when controlling for race, education, and gender. Moreover, the found moderation effect was in the opposite direction, in that greater social support worsened the effect of discrimination on mental health. No other significant moderation effects of social support were found.

A main effect of social support, in that greater social support is associated with better mental health, was assessed. Social support was only found to reduce the odds of having had suicidal thoughts, but not the probability of having attempted suicide.

Perhaps social support is, as a construct, too general. Peer support (of other transgender people) was found to moderate the effect of social stigma on psychological distress in previous research (Bockting et al., 2013). Maybe support from specific groups is more important than support from other groups. For example, support from groups with which one frequently interacts may be more important than support from a group one hardly interacts with. Another possible explanation is that the used mental health outcomes (suicidal thoughts and suicide attempt) are too extreme: social support may provide limited coping resources in these cases. If so, social support could be an effective form of resilience for less extreme forms of poor mental health. Further research could shed light on this.

In short, no support was found for the idea that social support could weaken the effect of experienced stigma on mental health. However, other factors may be at play. Further research is required to paint a clearer picture.

Limitations

The present thesis has a few limitations. First, although the dataset contained variables appropriate for the analyses, all questions were categorical variables. Instead of letting participants choose 'yes' or 'no' for each experienced stigma question, a Likert scale would have been preferred. A more accurate measure of experienced stigma could be made if participants could indicate how often they experienced each type of stigma. Moreover, the use of categories for age is less accurate than using year of birth. Secondly, for the models in which many variables were used, the power to detect small effects may have been too small. However, the transgender population is difficult to sample, and the dataset had a decent sample size of 350 participants. Some effects were nearing significance and may have been significant if a larger sample was used. Lastly, the variables pertaining to mental health may be biased. The used

variables were only related to symptoms of a major depression. As such, it is possible that the found effects do not translate to other mental health indicators, such as anxiety. Aside from that, the question of whether or not the participants had attempted suicide is likely biased, because those who have attempted suicide and succeeded will not be in the dataset.

Conclusion

Three aspects of the minority stress model (Meyer, 2003) applied to a transgender population were assessed: the effect of visibility of stigma on experienced stigma, the effect of experienced stigma on mental health, and social support as a possible moderator on the effect of stigma on mental health. Greater visibility of stigma was not found to increase experienced stigma. On the contrary, in some cases less visible stigma was related to higher odds of having experienced stigma. Greater experienced stigma was associated with poorer mental health outcomes. Social support did not weaken the effect of experienced stigma on mental health. However, social support does lower the odds of having had suicidal thoughts. These results provide some support that the minority stress model can be applied to a transgender population.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

Balsam, K. F., Beadnell, B., & Molina, Y. (2013). The Daily Heterosexist Experiences Questionnaire: Measuring minority stress among lesbian, gay, bisexual, and transgender adults. *Measurement and Evaluation in Counseling and Development*, *46*(1), 3-25.

Barboza, G. E., Dominguez, S., & Chace, E. (2016). Physical victimization, gender identity and suicide risk among transgender men and women. *Preventive Medicine Reports*, *4*, 385-390.

Becerra-Culqui, T. A., Liu, Y., Nash, R., Cromwell, L., Flanders, W. D., Getahun, D., ... & Quinn, V. P. (2018). Mental health of transgender and gender nonconforming youth compared with their peers. *Pediatrics*, *141*(5), e20173845.

Bockting, W. O., Miner, M. H., Swinburne Romine, R. E., Hamilton, A., & Coleman, E. (2013). Stigma, mental health, and resilience in an online sample of the US transgender population. *American Journal of Public Health*, *103*(5), 943-951.

Bradford, J. B. Virginia Transgender Health Initiative Study (THIS), 2005-2006. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2015-09-24.

Bradford, J., Reisner, S. L., Honnold, J. A., & Xavier, J. (2013). Experiences of transgender-related discrimination and implications for health: Results from the Virginia Transgender Health Initiative Study. *American Journal of Public Health*, *103*(10), 1820-1829.

Burgess, D., Lee, R., Tran, A., & van Ryn, M. (2007). Effects of perceived discrimination on mental health and mental health services utilization among gay, lesbian, bisexual and transgender persons. *Journal of LGBT Health Research*, *3*(4), 1-14.

Chaudoir, S. R., Earnshaw, V. A., & Andel, S. (2013). "Discredited" versus "discreditable": Understanding how shared and unique stigma mechanisms affect psychological and physical health disparities. *Basic and Applied Social Psychology*, *35*(1), 75-87.

Cook, J. E., Arrow, H., & Malle, B. F. (2011). The effect of feeling stereotyped on social power and inhibition. *Personality and Social Psychology Bulletin*, *37*(2), 165-180.

Crocker, J., & Quinn, D. M. (2000). Social stigma and the self: Meanings, situations, and self-esteem. In T. F. Heatherton, R. E. Kleck, M. R. Hebl, & J. G. Hull (Eds.), *The social psychology of stigma* (pp. 153-183). New York, NY, US: Guilford Press.

Crocker, J., Voelkl, K., Testa, M., & Major, B. (1991). Social stigma: The affective consequences of attributional ambiguity. *Journal of Personality and Social Psychology*, *60*(2), 218-228.

Denning, D. G., Conwell, Y., King, D., & Cox, C. (2000). Method choice, intent, and gender in completed suicide. *Suicide and Life-Threatening Behavior*, *30*(3), 282-288.

Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity*. New York, NY: Simon and Schuster.

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.

Hendricks, M. L., & Testa, R. J. (2012). A conceptual framework for clinical work with transgender and gender nonconforming clients: An adaptation of the minority stress model. *Professional Psychology: Research and Practice, 43*(5), 460-467.

Kelleher, C. (2009). Minority stress and health: Implications for lesbian, gay, bisexual, transgender, and questioning (LGBTQ) young people. *Counselling Psychology Quarterly, 22*(4), 373-379.

Li, Z., Page, A., Martin, G., & Taylor, R. (2011). Attributable risk of psychiatric and socio-economic factors for suicide from individual-level, population-based studies: A systematic review. *Social Science & Medicine, 72*(4), 608-616.

Link, B. G., & Phelan, J. C. (2001). Conceptualizing stigma. *Annual Review of Sociology, 27*, 363-385.

McLemore, K. A. (2015). Experiences with misgendering: Identity misclassification of transgender spectrum individuals. *Self and Identity, 14*(1), 51-74.

Metastasio, A., Negri, A., Martinotti, G., & Corazza, O. (2018). Transitioning bodies. The case of self-prescribing sexual hormones in gender affirmation in individuals attending psychiatric services. *Brain Sciences, 8*(5), 88.

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological Bulletin, 129*(5), 674-697.

Mizock, L., & Mueser, K. T. (2014). Employment, mental health, internalized stigma, and coping with transphobia among transgender individuals. *Psychology of Sexual Orientation and Gender Diversity, 1*(2), 146-158.

Möller-Leimkühler, A. M. (2003). The gender gap in suicide and premature death or: Why are men so vulnerable? *European Archives of Psychiatry and Clinical Neuroscience, 253*(1), 1-8.

Pachankis, J. E. (2007). The psychological implications of concealing a stigma: A cognitive-affective-behavioral model. *Psychological Bulletin, 133*(2), 328-345.

Perez-Brumer, A., Hatzenbuehler, M. L., Oldenburg, C. E., & Bockting, W. (2015). Individual- and structural-level risk factors for suicide attempts among transgender adults. *Behavioral Medicine, 41*(3), 164-171.

Poteat, T., German, D., & Kerrigan, D. (2013). Managing uncertainty: A grounded theory of stigma in transgender health care encounters. *Social Science & Medicine, 84*, 22-29.

Singh, A. A., & McKleroy, V. S. (2011). "Just getting out of bed is a revolutionary act" The resilience of transgender people of color who have survived traumatic life events. *Traumatology*, *17*(2), 34-44.

Stutterheim, S. E., Bos, A. E., Pryor, J. B., Brands, R., Liebregts, M., & Schaalma, H. P. (2011). Psychological and social correlates of HIV status disclosure: The significance of stigma visibility. *AIDS Education and Prevention*, *23*(4), 382-392.

Toomey, R. B., Syvertsen, A. K., & Shramko, M. (2018). Transgender adolescent suicide behavior. *Pediatrics*, *142*(4), e20174218.

Unger, C. A. (2016). Hormone therapy for transgender patients. *Translational Andrology and Urology*, *5*(6), 877-884.

Wamala, S., Merlo, J., Boström, G., & Hogstedt, C. (2007). Perceived discrimination, socioeconomic disadvantage and refraining from seeking medical treatment in Sweden. *Journal of Epidemiology & Community Health*, *61*(5), 409-415.

World Health Organization (2018, June 18). International Classification of Diseases. Retrieved from https://www.who.int/health-topics/international-classification-of-diseases

Table 1

Linear Regressions of Stigma Visibility Predicting Experienced Discrimination and Victimization.

	Discrimination				Victimization			
	β	SE	t	p	β	SE	t	p
Gender (FTM)	0.073	0.118	0.623	.534	0.231	0.182	1.264	.207
Race: Non-white	0.222	0.122	1.815	.070	0.328	0.189	1.730	.085
Education: College	**-0.401**	**0.147**	**-2.728**	**.007****	0.087	0.228	0.380	.704
Education: Graduate	-0.350	0.186	-1.879	.061	-0.359	0.289	-1.242	.215
Interaction of gender (FTM) and time since transitioning	0.162	0.133	1.218	.224	-0.062	0.197	-0.315	.753
Race: Non-white	**0.381**	**0.172**	**2.209**	**.028***	0.336	0.255	1.315	.190
Education: College	**-0.574**	**0.208**	**-2.763**	**.006****	-0.236	0.308	-0.765	.445
Education: Graduate	**-0.585**	**0.247**	**-2.367**	**.019***	-0.678	0.367	-1.848	.066
Surgery status (Had surgery)	**0.405**	**0.131**	**3.101**	**.002****	-0.006	0.212	-0.027	.979
Race: Non-white	0.229	0.121	1.893	.059	0.301	0.196	1.534	.126
Education: College	**-0.429**	**0.148**	**-2.898**	**.004****	0.006	0.240	0.027	.979
Education: Graduate	**-0.438**	**0.191**	**-2.300**	**.022***	-0.457	0.309	-1.479	.140
Hormonal therapy status (Had hormonal therapy)	**0.419**	**0.112**	**3.752**	**<.001*****	0.114	0.178	0.638	.524
Race: Non-white	0.233	0.123	1.898	.059	0.285	0.196	1.459	.146
Education: College	**-0.379**	**0.148**	**-2.553**	**.011***	-0.009	0.236	-0.040	.969
Education: Graduate	**-0.381**	**0.188**	**-2.029**	**.043***	-0.474	0.298	-1.591	.113
Interaction of hormonal therapy status (had hormonal therapy) and gender (FTM)	-0.435	0.233	-1.858	.064	-0.172	0.374	-0.460	.646
Race: Non-white	0.227	0.123	1.848	.065	0.290	0.196	1.479	.140
Education: College	**-0.402**	**0.150**	**-2.673**	**.008****	-0.064	0.240	-0.267	.790
Education: Graduate	-0.354	0.188	-1.882	.061	-0.485	0.301	-1.612	.108

Note: The reference category for race is white, and the reference category for education is highschool. In none of the models differed college and graduate significantly from each other. Significant results are in bold. * = significant at the .05 level, ** = significant at the .01 level, *** = significant at the .001 level.

Table 2

Logistic Regressions of Discrimination and Victimization Separately Predicting Mental Health.

	Suicidal Thoughts				Suicide Attempt			
	Log odds	SE	Z	p	Log odds	SE	Z	p
Discrimination	0.366	0.133	2.752	.006**	0.322	0.152	2.118	.034*
Race: Non-white	-1.156	0.262	-4.419	<.001***	1.202	0.347	3.467	.001***
Education: College	0.777	0.313	2.486	.013*	-1.303	0.468	-2.785	.005**
Education: Graduate	0.788	0.408	1.929	.054	-1.728	0.555	-3.116	.002**
Victimization	0.264	0.102	2.597	.009**	0.217	0.100	2.164	.030*
Race: Non-white	-1.139	0.262	-4.354	<.001***	1.106	0.351	3.151	.002**
Education: College	0.607	0.310	1.958	.050	-1.288	0.466	-2.764	.006**
Education: Graduate	0.742	0.408	1.816	.069	-1.605	0.553	-2.900	.004**

Note: The reference category for race is white, and the reference category for education is highschool. In none of the models differed college and graduate significantly from each other. * = significant at the .05 level, ** = significant at the .01 level, *** = significant at the .001 level.

Table 3

Logistic Regressions of an Interaction between Gender and Stigma Predicting Mental Health.

	Suicidal Thoughts				Suicide Attempt			
	Log odds	SE	Z	p	Log odds	SE	Z	p
Interaction Gender (FTM) and Discrimination	0.412	0.394	1.044	.296	-0.759	0.310	-2.448	.014*
Discrimination	0.302	0.150	2.014	.044*	0.698	0.226	3.085	.002**
Race: Non-white	-1.157	0.268	-4.314	<.001***	1.234	0.352	3.504	<.001***
Education: College	0.559	0.326	1.717	.086	-1.315	0.479	-2.744	.006**
Education: Graduate	0.663	0.421	1.576	.115	-1.726	0.565	-3.054	.002**
Gender: FTM	0.722	0.327	2.213	.027*	0.674	0.387	1.739	.082
Interaction Gender (FTM) and Victimization	-0.057	0.213	-0.267	.790	-0.200	0.199	-1.005	.315
Victimization	0.275	0.125	2.196	.028*	0.320	0.154	2.077	.038*
Race: Non-white	-1.138	0.268	-4.251	<.001***	1.118	0.353	3.168	.002**
Education: College	0.427	0.322	1.325	.185	-1.282	0.471	-2.725	.006**
Education: Graduate	0.661	0.417	1.585	.113	-1.571	0.556	-2.826	.005**
Gender: FTM	0.893	0.290	3.077	.002**	0.186	0.328	0.568	.570

Note: The reference category for race is white, the reference category for education is highschool, and the reference category for gender is MTF. In none of the models differed college and graduate significantly from each other. * = significant at the .05 level, ** = significant at the .01 level, *** = significant at the .001 level.

Table 4

Logistic Regressions of Full Models of Discrimination and Victimization Predicting Mental Health.

	Suicidal Thoughts				Suicide Attempt			
	Log odds	SE	Z	p	Log odds	SE	Z	p
Discrimination	0.296	0.141	2.092	.037*	0.609	0.231	2.638	.008**
Victimization	0.203	0.106	1.915	.056	0.200	0.109	1.841	.066
Gender: FTM	0.898	0.283	3.176	.002**	0.701	0.389	1.804	.071
Race: Non-white	-1.184	0.271	-4.375	<.001***	1.117	0.360	3.105	.002**
Education: College	0.568	0.330	1.720	.086	-1.283	0.480	-2.676	.007**
Education: Graduate	0.765	0.422	1.812	.070	-1.594	0.567	-2.813	.005**
Interaction of Gender (FTM) and Discrimination					-0.875	0.334	-2.617	.009**

Note: The reference category for race is white, the reference category for education is highschool, and the reference category for gender is MTF. In none of the models differed college and graduate significantly from each other. * = significant at the .05 level, ** = significant at the .01 level, *** = significant at the .001 level.

Table 5

Social Support Moderation Analyses of the Effect of Stigma on Mental Health.

	Suicidal Thoughts				Suicide Attempt			
	Log odds	SE	Z	p	Log odds	SE	Z	p
Interaction Social Support and Discrimination	0.166	0.167	0.996	.319	-0.143	0.236	-0.608	.543
Discrimination	-0.180	0.534	-0.337	.736	0.760	0.752	1.011	.312
Social Support	-0.564	0.264	-2.139	.032*	0.017	0.312	0.055	.956
Race: Non-white	-1.030	0.278	-3.708	<.001***	1.248	0.353	3.528	<.001***
Education: College	0.594	0.332	1.791	.073	-1.315	0.474	-2.771	.006**
Education: Graduate	0.848	0.434	1.956	.050	-1.685	0.559	-3.015	.003**
Gender: FTM	0.943	0.288	3.275	.001**	0.174	0.236	-0.608	.543
Interaction Social Support and Victimization	-0.172	0.194	-0.889	.374	0.009	0.196	0.048	.962
Victimization	0.793	0.649	1.221	.222	0.180	0.600	0.300	.764
Social Support	-0.434	0.204	-2.077	.038*	-0.107	0.264	-0.406	.685
Race: Non-white	-1.056	0.276	-3.834	<.001***	1.174	0.356	3.287	.001***
Education: College	0.497	0.329	1.508	.132	-1.302	0.471	-2.763	.006**
Education: Graduate	0.859	0.431	1.993	.046*	-1.590	0.558	-2.851	.004**
Gender: FTM	0.900	0.288	3.128	.002**	0.152	0.319	0.478	.633

Note: The reference category for race is white, the reference category for education is highschool, and the reference category for gender is MTF. In none of the models differed college and graduate significantly from each other. * = significant at the .05 level, ** = significant at the .01 level, *** = significant at the .001 level.

Table S1

Exploratory Analyses of 'Have You Ever Been Denied Enrollment in a Health Insurance Plan Because of Your Transgender Status?' Explained by Stigma Visibility Predictors.

	No control variables				Controlling for race and education			
	Log odds	SE	Z	p	Log odds	SE	Z	p
Gender (FTM)	-0.166	0.472	-0.351	.726	0.011	0.493	0.023	.982
Race: Non-white					0.504	0.492	1.025	.305
Education: College					-0.542	0.540	-1.004	.315
Education: Graduate					-0.593	0.771	-0.770	.441
Interaction of gender (FTM) and time since transitioning	0.067	0.444	0.152	.880	0.047	0.462	0.103	.918
Race: Non-white					0.451	0.602	0.749	.458
Education: College					-0.016	0.740	-0.021	.983
Education: Graduate					-0.112	0.922	-0.122	.903
Surgery status (Had surgery)	0.728	0.475	1.532	.126	**1.025**	**0.508**	**2.018**	**.044***
Race: Non-white					0.622	0.515	1.208	.227
Education: College					-0.642	0.566	-1.135	.257
Education: Graduate					-0.852	0.808	-1.054	.292
Hormonal therapy status (Had hormonal therapy)	**1.575**	**0.571**	**2.760**	**.006****	**1.675**	**0.588**	**2.850**	**.004****
Race: Non-white					0.597	0.534	1.117	.264
Education: College					-0.609	0.586	-1.040	.298
Education: Graduate					-0.813	0.800	-1.017	.309
Interaction of hormonal therapy status (had hormonal therapy) and gender (FTM)	-2.230	1.342	-1.661	.097	-2.003	1.357	-1.476	.140
Race: Non-white					0.582	0.529	1.100	.271
Education: College					-0.656	0.594	-1.105	.269
Education: Graduate					-0.744	0.810	-0.919	.358

Note: The reference category for race is white, and the reference category for education is highschool. Significant results are in bold. * = significant at the .05 level, ** = significant at the .01 level.

Table S2

Exploratory Analyses of 'Have You Ever Experienced Discrimination by a Doctor or Other Health Care Provider due to Your Transgender Status or Gender Expression?' Explained by Stigma Visibility Predictors.

	No control variables				Controlling for race and education			
	Log odds	SE	Z	p	Log odds	SE	Z	p
Gender (FTM)	0.085	0.277	0.307	.759	0.241	0.292	0.825	.410
Race: Non-white					0.044	0.294	0.150	.881
Education: College					-0.627	0.343	-1.829	.067
Education: Graduate					-0.273	0.430	-0.636	.525
Interaction of gender (FTM) and time since transitioning	**0.938**	**0.438**	**2.142**	**.032***	**0.879**	**0.448**	**1.963**	**.050***
Race: Non-white					0.043	0.363	0.118	.906
Education: College					**-0.985**	**0.439**	**-2.245**	**.025***
Education: Graduate					-0.784	0.513	-1.529	.126
Surgery status (Had surgery)	**0.913**	**0.288**	**3.169**	**.002****	**1.058**	**0.311**	**3.399**	**.001*****
Race: Non-white					0.063	0.305	0.207	.836
Education: College					**-0.754**	**0.358**	**-2.106**	**.035***
Education: Graduate					-0.669	0.467	-1.432	.152
Hormonal therapy status (Had hormonal therapy)	**1.164**	**0.281**	**4.138**	**<.001*****	**1.252**	**0.292**	**4.286**	**<.001*****
Race: Non-white					0.082	0.315	0.259	.796
Education: College					-0.609	0.365	-1.670	.095
Education: Graduate					-0.455	0.459	-0.992	.321
Interaction of hormonal therapy status (had hormonal therapy) and gender (FTM)	-0.293	0.592	-0.495	.621	-0.365	0.609	-0.600	.549
Race: Non-white					0.118	0.317	0.371	.710
Education: College					-0.704	0.374	-1.884	.060
Education: Graduate					-0.446	0.466	-0.956	.339

Note: The reference category for race is white, and the reference category for education is highschool. Significant results are in bold. * = significant at the .05 level, ** = significant at the .01 level, *** = significant at the .001 level.

Table S3

Exploratory Analyses of 'Have You Ever Been Denied a Job You Applied for Due to Your Transgender Status and/or Gender Expression?' Explained by Stigma Visibility Predictors.

	No control variables				Controlling for race and education			
	Log odds	SE	Z	p	Log odds	SE	Z	p
Gender (FTM)	0.034	0.308	0.109	.913	0.291	0.333	0.874	.382
Race: Non-white					0.416	0.329	1.265	.206
Education: College					**-1.077**	**0.378**	**-2.851**	**.004****
Education: Graduate					**-1.072**	**0.489**	**-2.191**	**.028***
Interaction of gender (FTM) and time since transitioning	**0.635**	**0.308**	**2.062**	**.039***	0.547	0.319	1.714	.087
Race: Non-white					0.568	0.413	1.375	.169
Education: College					**-1.156**	**0.481**	**-2.402**	**.016***
Education: Graduate					**-1.469**	**0.593**	**-2.477**	**.013***
Surgery status (Had surgery)	0.255	0.330	0.773	.440	0.511	0.356	1.437	.151
Race: Non-white					0.405	0.343	1.181	.237
Education: College					**-0.998**	**0.384**	**-2.599**	**.009****
Education: Graduate					**-1.021**	**0.514**	**-1.986**	**.047***
Hormonal therapy status (Had hormonal therapy)	0.209	0.299	0.700	.484	0.346	0.313	1.107	.268
Race: Non-white					0.374	0.342	1.092	.275
Education: College					**-0.831**	**0.381**	**-2.182**	**.029***
Education: Graduate					-0.912	0.500	-1.826	.068
Interaction of hormonal therapy status (had hormonal therapy) and gender (FTM)	-0.799	0.657	-1.217	.224	-0.741	0.682	-1.087	.277
Race: Non-white					0.348	0.344	1.011	.312
Education: College					**-0.937**	**0.399**	**-2.351**	**.019***
Education: Graduate					-0.902	0.507	-1.779	.075

Note: The reference category for race is white, and the reference category for education is highschool. Significant results are in bold. * = significant at the .05 level, ** = significant at the .01 level.

Table S4

Exploratory Analyses of 'Have You Ever Been Fired from a Job due to Your Employer's Reaction to Your Transgender Status and/or Gender Expression?' Explained by Stigma Visibility Predictors.

	No control variables				Controlling for race and education			
	Log odds	SE	Z	p	Log odds	SE	Z	p
Gender (FTM)	-0.591	0.385	-1.536	.125	-0.553	0.395	-1.399	.162
Race: Non-white					0.650	0.368	1.767	.077
Education: College					-0.068	0.416	-0.163	.871
Education: Graduate					-0.155	0.563	-0.276	.783
Interaction of gender (FTM) and time since transitioning	0.456	0.383	1.192	.233	0.430	0.405	1.062	.288
Race: Non-white					0.560	0.423	1.326	.185
Education: College					-0.218	0.485	-0.449	.653
Education: Graduate					-0.599	0.640	-0.936	.349
Surgery status (Had surgery)	0.510	0.373	1.368	.171	0.724	0.398	1.821	.069
Race: Non-white					**0.766**	**0.382**	**2.007**	**.045***
Education: College					-0.256	0.439	-0.582	.561
Education: Graduate					-0.306	0.599	-0.511	.609
Hormonal therapy status (Had hormonal therapy)	0.600	0.347	1.728	.084	**0.778**	**0.360**	**2.163**	**.031***
Race: Non-white					**0.757**	**0.381**	**1.988**	**.047***
Education: College					-0.012	0.439	-0.026	.979
Education: Graduate					-0.163	0.583	-0.279	.780
Interaction of hormonal therapy status (had hormonal therapy) and gender (FTM)	-1.282	0.841	-1.524	.128	-1.190	0.854	-1.393	.164
Race: Non-white					0.703	0.384	1.833	.067
Education: College					0.080	0.449	0.178	.859
Education: Graduate					-0.020	0.592	-0.034	.973

Note: The reference category for race is white, and the reference category for education is highschool. Significant results are in bold. * = significant at the .05 level.

Table S5

Exploratory Analyses of 'Have You Ever Lost Housing or a Housing Opportunity Due to Your Transgender Status and/or Gender Expression?' Explained by Stigma Visibility Predictors.

	No control variables				Controlling for race and education			
	Log odds	SE	Z	p	Log odds	SE	Z	p
Gender (FTM)	**1.107**	**0.398**	**2.778**	**.005****	**1.416**	**0.443**	**3.194**	**.001****
Race: Non-white					0.609	0.423	1.441	.150
Education: College					**-1.210**	**0.477**	**-2.535**	**.011***
Education: Graduate					**-1.874**	**0.833**	**-2.249**	**.025***
Interaction of gender (FTM) and time since transitioning	0.436	0.342	1.276	.202	0.369	0.400	0.923	.356
Race: Non-white					**1.464**	**0.542**	**2.703**	**.007****
Education: College					**-1.732**	**0.626**	**-2.768**	**.006****
Education: Graduate					**-2.748**	**1.021**	**-2.693**	**.007****
Surgery status (Had surgery)	-0.693	0.561	-1.236	.216	-0.329	0.584	-0.562	.574
Race: Non-white					0.470	0.438	1.074	.283
Education: College					-0.732	0.470	-1.558	.119
Education: Graduate					-1.424	0.858	-1.660	.097
Hormonal therapy status (Had hormonal therapy)	-0.131	0.421	-0.312	.755	0.034	0.433	0.079	.937
Race: Non-white					0.413	0.449	0.919	.358
Education: College					-0.815	0.476	-1.713	.087
Education: Graduate					-1.567	0.841	-1.864	.062
Interaction of hormonal therapy status (had hormonal therapy) and gender (FTM)	-1.372	0.942	-1.457	.145	-0.973	0.974	-0.999	.318
Race: Non-white					0.527	0.457	1.154	.248
Education: College					**-1.294**	**0.529**	**-2.446**	**.014***
Education: Graduate					**-1.800**	**0.884**	**-2.037**	**.042***

Note: The reference category for race is white, and the reference category for education is highschool. Significant results are in bold. * = significant at the .05 level, ** = significant at the .01 level.

Table S6

Exploratory Analyses of 'How Many Times Since Age 13 Have You Been Forced to Engage in Unwanted Sexual Activity with Your Transgender Status, Gender Identity or Expression as the PRIMARY Reason?' Explained by Stigma Visibility Predictors.

	No control variables				Controlling for race and education			
	β	SE	t	p	β	SE	t	p
Gender (FTM)	-0.580	0.368	-1.576	.119	-0.599	0.374	-1.600	.114
Race: Non-white					**1.013**	**0.376**	**2.698**	**.009****
Education: College					0.389	0.469	0.829	.410
Education: Graduate					0.399	0.724	0.552	.583
Interaction of gender (FTM) and time since transitioning	0.413	0.601	0.686	.496	0.362	0.679	0.532	.597
Race: Non-white					0.453	0.541	0.839	.406
Education: College					0.406	0.661	0.615	.542
Education: Graduate					0.324	0.956	0.339	.736
Surgery status (Had surgery)	0.097	0.488	0.199	.843	0.353	0.508	0.695	.489
Race: Non-white					0.874	0.381	2.295	.025*
Education: College					0.151	0.464	0.326	.745
Education: Graduate					-0.162	0.735	-0.220	.826
Hormonal therapy status (Had hormonal therapy)	-0.288	0.374	-0.771	.443	-0.031	0.392	-0.079	.937
Race: Non-white					**0.846**	**0.389**	**2.174**	**.033***
Education: College					0.141	0.467	0.302	.764
Education: Graduate					0.014	0.718	0.019	.985
Interaction of hormonal therapy status (had hormonal therapy) and gender (FTM)	-0.485	0.748	-0.648	.519	-0.691	0.783	-0.883	.380
Race: Non-white					**0.870**	**0.384**	**2.265**	**.027***
Education: College					0.328	0.472	0.695	.489
Education: Graduate					0.660	0.783	-0.883	.380

Note: The reference category for race is white, and the reference category for education is highschool. Significant results are in bold. * = significant at the .05 level, ** = significant at the .01 level.

Table S7

Exploratory Analyses of 'How Many Times Since Age 13 Have You Been Physically Attacked with Your Transgender Status, Gender Identity or Expression as the PRIMARY Reason?' Explained by Stigma Visibility Predictors.

	No control variables				Controlling for race and education			
	β	SE	t	p	β	SE	t	p
Gender (FTM)	-0.099	0.274	-0.361	.719	0.010	0.276	0.038	.970
Race: Non-white					**0.593**	**0.293**	**2.025**	**.045***
Education: College					-0.388	0.353	-1.099	.274
Education: Graduate					-0.608	0.472	-1.286	.201
Interaction of gender (FTM) and time since transitioning	0.052	0.231	0.226	.821	0.025	0.225	0.109	.913
Race: Non-white					**0.928**	**0.371**	**2.499**	**.014***
Education: College					-0.315	0.453	-0.696	.489
Education: Graduate					-0.724	0.574	-1.261	.211
Surgery status (Had surgery)	0.079	0.308	0.256	.798	0.346	0.316	1.096	.276
Race: Non-white					**0.681**	**0.293**	**2.324**	**.022***
Education: College					-0.390	0.342	-1.140	.257
Education: Graduate					-0.720	0.481	-1.495	.138
Hormonal therapy status (Had hormonal therapy)	0.167	0.276	0.605	.546	0.422	0.279	1.511	.134
Race: Non-white					**0.713**	**0.301**	**2.367**	**.020***
Education: College					-0.420	0.345	-1.219	.225
Education: Graduate					-0.718	0.473	-1.518	.132
Interaction of hormonal therapy status (had hormonal therapy) and gender (FTM)	-0.892	0.563	-1.583	.116	-0.715	0.560	-1.277	.204
Race: Non-white					**0.677**	**0.303**	**2.235**	**.027***
Education: College					-0.463	0.356	-1.302	.196
Education: Graduate					-0.679	0.485	-1.399	.204

Note: The reference category for race is white, and the reference category for education is highschool. Significant results are in bold. * = significant at the .05 level.

Table S8

Probabilities of Having Had Suicidal Thoughts.

		White			Non-white		
		Highschool	College	Graduate	Highschool	College	Graduate
MTF	No discrimination, no victimization	65.6%	77.1%	80.3%	36.8%	50.7%	55.6%
	Full discrimination, no victimization	97.3%	98.5%	98.7%	91.8%	95.2%	96.0%
	No discrimination, full victimization	93.6%	96.2%	96.9%	81.6%	88.7%	90.5%
	Full discrimination, full victimization	99.6%	99.8%	99.8%	98.8%	99.3%	99.5%
FTM	No discrimination, no victimization	82.4%	89.2%	90.9%	58.9%	71.6%	75.4%
	Full discrimination, no victimization	98.9%	99.4%	99.5%	96.5%	98.0%	98.3%
	No discrimination, full victimization	97.3%	98.4%	98.7%	91.6%	95.1%	95.9%
	Full discrimination, full victimization	99.9%	99.9%	99.9%	99.5%	99.7%	99.8%

Note: The probabilities are based on the full models of stigma predicting mental health as presented in Table 4.

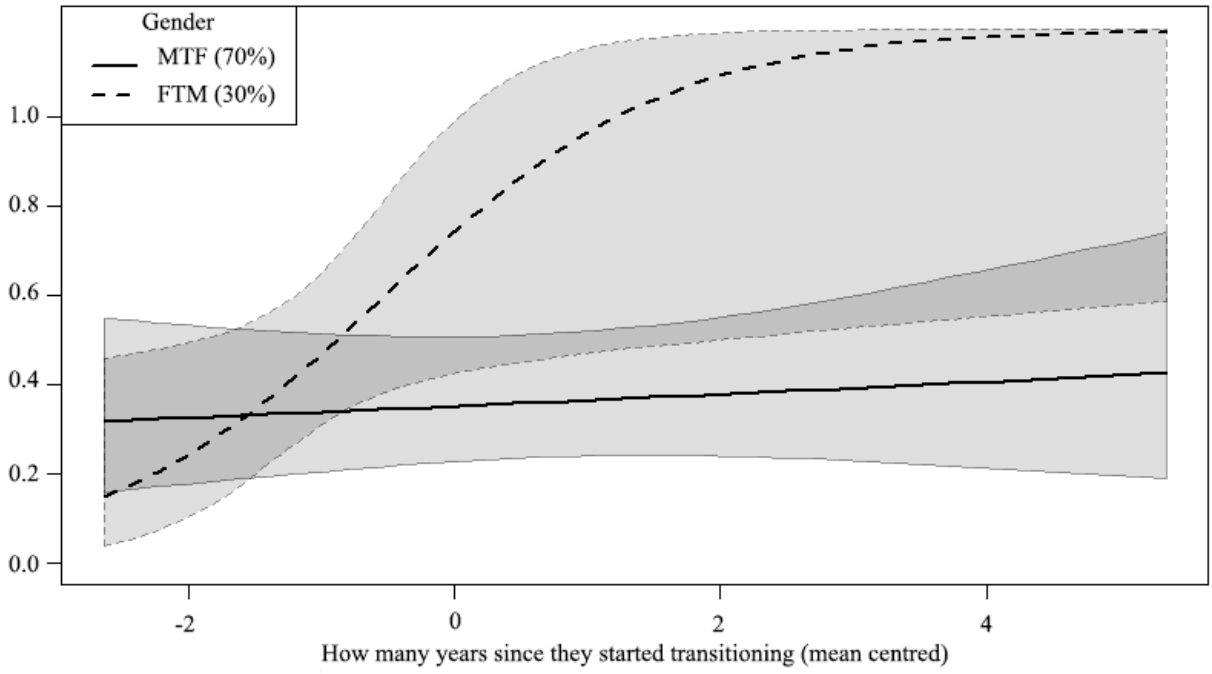
Table S9

Probabilities of Having Attempted Suicide.

		White			Non-white		
		Highschool	College	Graduate	Highschool	College	Graduate
MTF	No discrimination, no victimization	47.9%	20.3%	15.7%	73.7%	43.7%	36.3%
	Full discrimination, no victimization	99.8%	99.1%	98.8%	99.9%	99.7%	99.6%
	No discrimination, full victimization	87.2%	65.4%	58.0%	95.4%	85.2%	80.9%
	Full discrimination, full victimization	100%	99.9%	99.8%	100%	100%	99.9%
FTM	No discrimination, no victimization	64.9%	33.9%	27.3%	85.0%	61.1%	53.5%
	Full discrimination, no victimization	11.4%	3.5%	2.6%	28.3%	9.9%	7.4%
	No discrimination, full victimization	93.2%	79.2%	73.6%	97.7%	92.1%	89.5%
	Full discrimination, full victimization	48.9%	21.0%	16.3%	74.5%	44.8%	37.3%

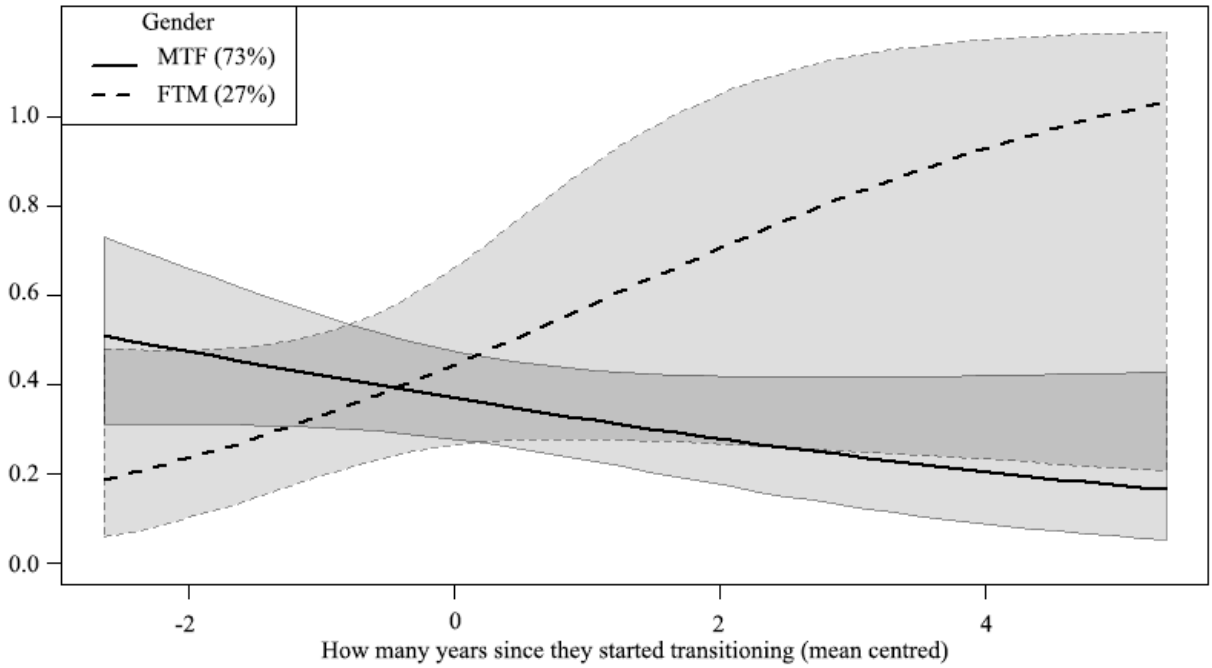
Note: The probabilities are based on the full models of stigma predicting mental health as presented in Table 4.

Figure 1. Probability of 'Have you ever experienced discrimination by a doctor or other health care provider due to your transgender status or gender expression?' by gender, controlled for race and education



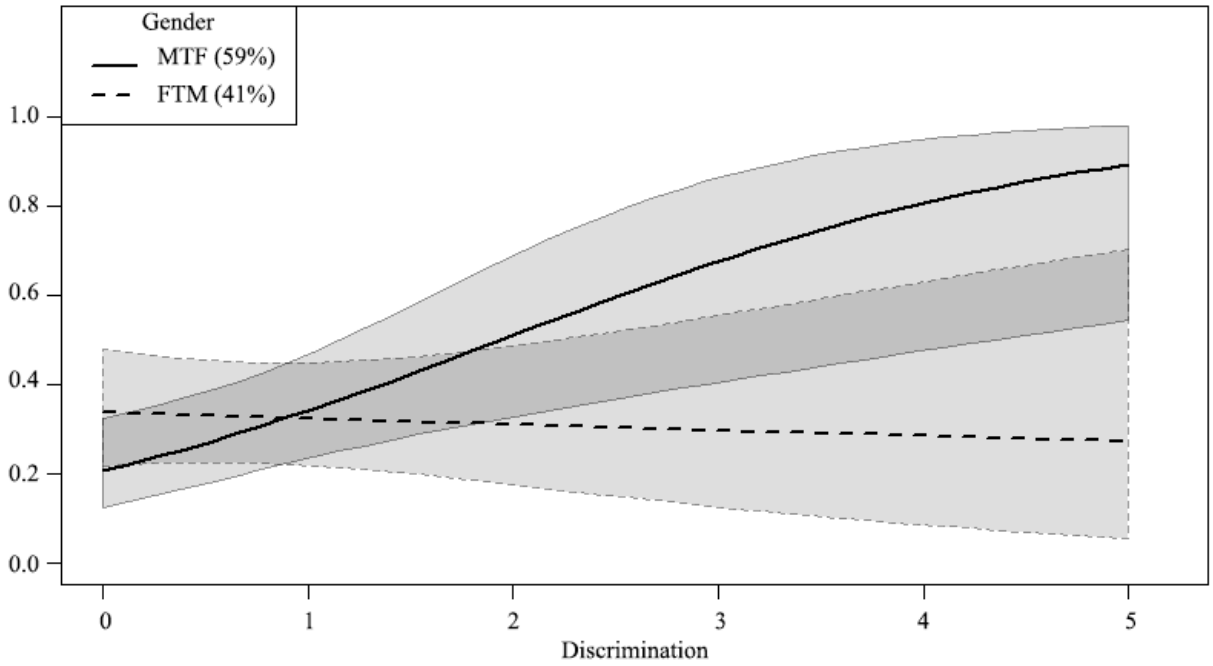
Note: The gray areas indicate a Wald type approximation of the 95% confidence interval.

Figure 2. Probability of 'Have you ever been denied a job you applied for due to your transgender status and/or gender expression?' by gender, controlled for race and education



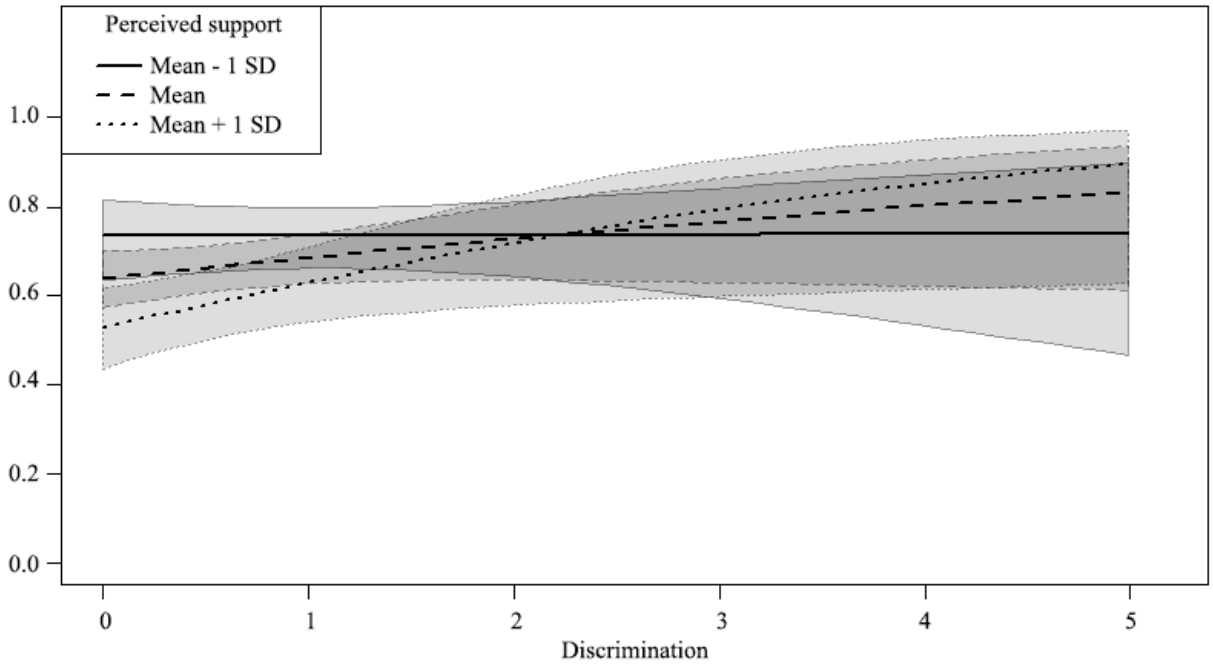
Note: The gray areas indicate a Wald type approximation of the 95% confidence interval.

Figure 3. Probability of 'Have you ever tried to kill yourself?' by gender, controlled for race and education.



Note: The gray areas indicate a Wald type approximation of the 95% confidence interval.

Figure 4. Probability of 'Have you ever thought about killing yourself?' by perceived support



Note: The gray areas indicate a Wald type approximation of the 95% confidence interval.