

FLOURISHING AND DISTRESS
AMONG QUEER FOLX:
A DUAL CONTINUUM APPROACH TO
QUEER MENTAL HEALTH AND ILLNESS

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Abstract: A growing number of researchers have called for the study of mental health to distinguish between mental healthiness and mental illness as two separate yet related continua. The historic empirical emphasis on mental illness has problematized mental health research, especially for queer folx. Using data from a community-based needs-assessment, the Prism Project (Nay 2019), this study analyzes the associations of key variables with mental healthiness (flourishing) and mental illness (distress). The sample included 868 participants from Oklahoma with 56% from Tulsa. As a local, primarily queer (84%) sample, this study is particularly relevant to Oklahoma's queer community. Analysis followed four phases: (a) coding, exploration, and descriptive statistics, (b) bivariate correlations, (c) group differences, and (d) ordinary least squares regression. Results lend support for the two continua construction of mental health and suggest significant relationships between mental health and gender identity, race, and sexual orientation. Results also showed hope to be a strong predictor of both distress and flourishing but especially of flourishing. Finally, the study concludes with six brief recommendations for research, policy, and intervention.

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GLOSSARY

AFAB/AMAB: The terms “AFAB” and “AMAB” mean “Assigned Female at Birth” and “Assigned Male at Birth,” respectively. These terms are meant to provide a more complex pairing of sex and gender and examine the differences between queer folx on the basis of sex assigned at birth.

Monosexuality: Monosexualities are those sexual orientations within the heterosexual/homosexual binary. This includes identities such as straight, gay, and lesbian. See Ferguson and Gilmour (2018) for more information.

Plurisexuality: Pluri-sexualities (sometimes called non-monosexualities) are those sexual orientations outside the hetero/homo binary. For example, bisexuality, pansexuality, asexuality, and demisexuality all fit the definition of non-monosexuality. See Ferguson and Gilmour (2018) for more information.

Queer Folx: The term queer is meant to include any individual or community who does not fit what society might expect from the cisgender and heterosexual. Use of the word folx denotes the explicit inclusion of people historically omitted from dominant discourse (Merriam-Webster Dictionary, n.d.), especially those of queer gender experience and racial diversity.

CHAPTER I

INTRODUCTION

While scholars typically understand mental health to include both positive and negative attributes, social and behavioral research has overwhelmingly focused on the negative, or mental illness, in turn neglecting to study in much detail the positive, or mental healthiness (Keyes 2007; Seligman and Csikszentmihalyi 2000). This scholastic priority has, in effect, led to the conception of mental healthiness as simply the absence of mental illness. In other words, a commonly accepted definition of mental health situates mental healthiness and illness as opposite poles on a single axis, measured by the presence or absence of a negative symptomology. Little doubt exists on the importance of mental illness research to public health, but to frame mental health as merely the absence or presence thereof is unwarranted and ignores the vital role of mental healthiness in the equation (Keyes 2002, 2005, 2007).

David Satcher, the Surgeon General in 1999, defined mental health (or really, mental healthiness) as “a state of successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with adversity” (U.S. Department of Health and Human Services 1999:4). The World Health Organization (WHO 2005, 2) later defined it as “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.”

Advancing these definitions, Corey Keyes (2002, 2007) proposed a unique

operationalization of mental health as comprised of two distinct yet related constructs, namely mental healthiness and mental illness. His approach, the “Dual Continuum” (sometimes called “Two Continua”) recognizes the importance of delineating the effects of each independent continua and of defining a hierarchy of mental health states where the two interact. For example, “complete mental health” is the state wherein a high degree of mental healthiness pairs with the absence of mental illness—the *summum bonum* of mental health according to the model. Keyes (2007) repeatedly calls for social and behavioral research in the U.S. to renew and equalize efforts toward both preventing mental illness and promoting mental healthiness.

The Dual Continuum Model has had applications in varied contexts such as immigration (du Plooy, Lyons, and Kashima 2019a, 2019b), adult mental health (Franken et al. 2018), substance use recovery (McGaffin et al. 2015), lifespan development (Westerhof and Keyes 2010), and emerging adulthood (Winzer et al. 2014). However, at the time of writing, the author found only one study using the model with queer participants. Bariola, Lyons, and Lucke (2017) applied the model to a sample of lesbians and gay men. With their results, they show that while about one quarter of their sample qualified as experiencing anxiety and depression symptomology, almost half of the sample qualified as “flourishing” on the mental healthiness continuum, highlighting the paradoxical strength marginalized populations sometimes possess concurrent with high rates of negative outcomes. In light of their findings, the authors advocate that mental health research and interventions extend their focus beyond the treatment of mental illness diagnoses and address mental healthiness.

The current study seeks to address this gap in the Dual Continuum literature and in mental health research generally by reanalyzing data from Tulsa, Oklahoma’s *Prism Project* (Nay 2019) and examining the applications of the Dual Continuum Model to a sample of primarily queer folx. First, Chapter II will provide a brief overview of the two continua (positive mental health and mental illness) as described within Keyes’ (2002, 2007) model as well as the status of

social and behavioral queer research, generally. Chapter III will cover the data used, detailing key variables and coding frameworks as well as the analytic strategies of the study. Chapter IV will detail the study findings, and Chapter V will present a concluding discussion. In total, this reanalysis is poised to provide important insight into a more complete picture of mental health for Northeast Oklahoma's queer populations, making a valuable contribution to the currently scarce local data which informs Oklahoma's policy-making and social services.

CHAPTER II

LITERATURE REVIEW

Attending to Mental Healthiness

The concern for conceptualizing mental health more positively with greater attention to subjective well-being is not new. In fact, as Seligman and Csikszentmihalyi (2000) discuss, the scholarly focus on well-being and positive functioning extends back to early humanistic psychologists. The flaw with these early theories lies in their failure to develop a broad empirical basis. In the past several decades, however, mental health theorists have increasingly expanded empirical foundations of well-being and positive functions. For example, positive psychology, which is the study of positive subjective experiences, character strengths, and institutions, has made many contributions to the understanding of positive human functioning (Seligman et al. 2005; Seligman and Csikszentmihalyi 2000). Peterson and Seligman (2004) have even published their *Character Strengths and Virtues* as positive psychology's response to the *DSM-V* (American Psychiatric Association [APA] 2013), which is the current U.S. standard for diagnosing mental illness.

Keyes' (2002) Dual Continuum Model operationalizes mental healthiness as a "syndrome that combines symptoms of emotional well-being with symptoms of psychological and social well-being." The model constructs mental healthiness along three dimensions of positive well-being (emotional, psychological, and social), which together constitute a more holistic picture of mental healthiness. Within this construction, Keyes (2002) creates tertile groupings, calling the

upper tertile group “Flourishing,” which denotes a high degree of mental healthiness. The lower tertile, then, is “Languishing,” which denotes a low degree of mental healthiness. These two groupings form the opposite poles of the mental healthiness continuum.

Because this model positions mental healthiness as distinct from but related to mental illness, coordination of both continua provides the possibility for five distinct categories (see Table 1). For example, one can experience mental illness without experiencing languishing (complete mental illness). Likewise, one can be languishing without having any presence of mental illness (pure languishing). “Complete mental health,” however, requires both the presence of flourishing and the absence of mental illness (Keyes 2002, 2005, 2007). Furthermore, Keyes (2005) presents the categories hierarchically with complete mental health as the most desirable outcome and complete mental illness as the least desirable outcome (see Table 2).

These categories with the Dual Continuum Model foster utility for quantitative research on mental health. According to Keyes (2002), diagnosis of these particular states of mental health can be appropriately assessed through measurements of well-being and mental illness. Although the most common measure in studies using the Dual Continuum Model is Keyes’ (2006) own Mental Health Continuum—Short Form (MHC-SF), studies have used additional measures to assess mental healthiness, such as the General Health Questionnaire (Winzer et al. 2014). While Keyes (2007) devotes much attention to diagnosing the particular mental states, he does, however, note that continuous assessment must accompany such categorization in order to achieve a more complete analysis.

Mental Health Research with Queer Folx

Currently, studies using the Dual Continuum Model to surmise a complete picture of queer mental health are scarce. Keyword searches for LGBT/Queer mental health and the Dual Continuum/Two Continua Model yielded only one relevant result, the study by Bariola and

colleagues (2017). The lack of Dual Continuum applications does not imply a dearth of mental health research with queer populations in general. In fact, there exists wide scholarship on the disproportionate negative mental health outcomes among queer populations, especially queer youth. Topics range from negative interactions, with law enforcement with the 2015 U.S. Transgender Survey's (James et al. 2016) finding that 58% of transgender and nonbinary participants reported experiencing maltreatment, to adolescent suicidality with the Trevor Project's (2019) report that 39% of queer youth and over half of transgender and nonbinary youth in their sample seriously considered suicide in the preceding twelve months.

Research consistently places queer folx among the most disproportionately affected by negative outcomes such as discrimination and violence, mental illness, childhood trauma, and intimate partner violence (Bragg, Havig, and Muñoz 2018; Kite and Bryant-Lees 2016; Meyer 2003). This prevalence of pathology- and negativity-based research on queer mental health is among the major critiques of the current literature (Fredriksen-Goldsen et al. 2011), though this imbalance is understandable in light of the importance of Minority Stress Theory to recent research on queer mental health. Minority Stress Theory (Meyer 2003) models the causal relationship between the stigmatic stressors associated with marginalized (minority) identities and these profound negative health outcomes seen among queer folx. Meyer's (2003) theory has enabled a profound expansion of social and behavioral research on queer issues. However, despite its utility and importance, Minority Stress Theory simultaneously contributes to the positioning of the research landscape within deficit and pathology-based paradigms for queer research (Barnett et al. 2019; Fredriksen-Goldsen et al. 2011; Vaughan and Rodriguez 2014).

Beyond Minority Stress Theory, the historical (and even current) timbre of scholarly research has been stigmatizing, problematizing, and reductive toward more marginalized queer folx, especially plurisexualities, (Ferguson and Gilmour 2018; Kaestle and Ivory 2012). Additionally, queer genders (i.e., people with queer gender identities such as transgender and

nonbinary folx) are noticeably absent from social and behavioral research (Scherrer and Woodford 2013; Vaughan et al. 2014). The landscape is transforming, however. As Bariola and colleagues' (2017) point out, there has been a growing amount of research on queer well-being and positive outcomes. For example, resilience, which Meyer (2015:210) defines as “the quality of being able to survive and thrive in the face of adversity,” has become a topic of much attention in queer research (see (Bartoş and Langdrige 2019; Colpitts and Gahagan 2016; Gahagan and Colpitts 2017; Meyer 2015). However, in resilience research and in much of the research on queer well-being, the conceptual framework continues to position outcomes along the singular continuum of mental illness and psychopathology. More specifically, resilience refers to the capacity for positively adapting under stress and mitigating the consequences of that stress. While undeniably important to understanding queer experiences of minority stress, resilience is different from and does not adequately encapsulate the Dual Continuum Model’s conceptualization of mental healthiness.

Referencing this major gap in queer mental health research, Bariola and colleagues (2017:44) conclude, “There is a need for a more complete and comprehensive analysis of mental health that considers not only what goes wrong, but also what goes right in [queer folx’] lives.” The current study seeks to address this need by applying the Dual Continuum Model to a sample of primarily queer, Northeast Oklahoma residents. This reanalysis will construct a locally and nationally relevant study through novel, nuanced coding strategies and appropriate quantitative methods. The proceeding results will be a presentation valuable not only to scholars but also to the participants, collaborators, and stakeholders of the original project (i.e., the *Prism Project*).

CHAPTER III

METHOD

The current study uses data from the *Prism Project* (Nay 2019), a comprehensive, community-based needs assessment for queer folx in Tulsa, Oklahoma. Study design was intentionally community-based, with research topics strategically derived from the discussions of a 25-member committee of community leaders representing various local non-profit organizations, social service agencies, community foundations, faith leaders, and social researchers. Furthermore, the University of Oklahoma's Hope Research Center based much of the survey on previous needs assessments in Tulsa and across the U.S. as well as on the research literature (i.e., scales and diagnostic assessments). The well-known 2015 U.S. Transgender Survey (James et al. 2016), for example, profoundly influenced the items used in the Prism Project. Other survey-based studies for comparison included the 2017 Youth Risk Behavior Surveillance (Kann et al. 2018), the Trevor Project's (2019) national survey, and the National Survey on Drug Use and Health (Center for Behavioral Health Statistics and Quality 2018).

The final online survey instrument took approximately 30–45 minutes with questions covering demographic characteristics, psychometric and clinical scales, and a variety of topics specific to queer experiences (e.g., interactions with school, work, law-enforcement, healthcare, mental health, etc.). Appendix B lists all relevant survey items, which does not include all

items from the *Prism Project*, but rather only those items used in the current analysis. Sampling procedures consisted of distribution by the committee's active marketing campaign, which included inter-organization contacts (e.g., to schools, universities, agencies, etc.), social media sharing, personal solicitations, and agencies' emails to their clients. Available from April 1 to May 6, 2019, a total of 868 respondents met the following criteria for inclusion:

1. Respondent must have answered all gender identity questions.
2. Respondent must have answered all sexual orientation questions.
3. Respondent must have reported an Oklahoma ZIP code of residence.
4. Respondent must have completed until at least the end of the second section of the survey instrument (see Appendix A).

Variables

Dependent variables

The *Prism Project* (Nay 2019) used Diener and colleagues' (2009) *Flourishing* scale, which measures psychosocial well-being. While the Flourishing scale does not include any items specific to emotional or affective well-being, the scale was designed to cover the psychological and social aspects of subjective well-being. The *Prism Project* did not assess for emotional well-being; therefore, the current study will focus only on the psychological and social aspects of mental healthiness within the Dual Continuum Model (Keyes 2002). With each set to a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree), the eight items assess self-reported perspectives on psychosocial prosperity regarding relationships, self-esteem, purpose, and optimism. Example questions include "I lead a purposeful and meaningful life" and "I actively contribute to the well-being of others." Scores are calculated by summed index, with possible scores ranging 8–56. Researchers have validated the scale's use across multiple cultures and contexts (Singh, Junnarkar, and Jaswal 2016; Tong and Wang 2017; Villieux et al. 2016).

Moreover, the scale has previously been shown to have acceptable reliability with Cronbach's $\alpha=0.87$ (Diener et al. 2009). Cronbach's $\alpha=0.91$ in the current study.

The Kessler Psychological *Distress* 10-item scale (K10) assesses psychological distress, which consists of anxiety and depression symptomologies (Kessler et al. 2002). Widespread use in academic and public health research suggests utility as a measure of mental health in community research and clinical screening (Andrews and Slade 2001; Brooks, Beard, and Steel 2006; Furukawa et al. 2003; Kessler et al. 2002). Furthermore, its use as a clinical screener makes it uniquely useful for operationalizing mental illness under the Dual Continuum Model's categorical and continuous analysis as shown in previous studies (du Plooy et al. 2019a, 2019b). The ten items are each set to 5-point Likert scales with 1 = "none of the time" and 5 = "all of the time." Example items include "How often did you feel tired out for no good reason?" and "How often did you feel restless or fidgety?" Scores are summed with possible scores ranging 10–50. Furthermore, scores can be divided into four categories (low, moderate, high, and very high) as categorized by Andrews and Slade (2001) Lyons, Pitts, and Grierson (2014), and the Victorian Department of Health and Human Services (2018). The scale has also been shown to have acceptable internal consistency reliability with Cronbach's $\alpha=0.92$ (Kessler et al. 2002). Cronbach's $\alpha=0.94$ in the current study. All items are contextualized within the last 30 days for participants.

Primary independent variables

The *Prism Project* (Nay 2019) survey included two items for gender and three items for sexuality. Gender was assessed through self-reported sex assigned at birth and current label used to describe gender identity. For this analysis, responses from the two questions were used to code participants' *gender identity* within an analytic framework, placing participants into the following

four dummy variables: cisgender (reference), transgender, nonbinary, and an unlisted gender identity.

Respondents' ability to select more than one race or ethnic identity enabled the coding to group responses into the four following *race* categories: monoracial, white; monoracial, non-white; biracial; and multiracial. This strategy helped avoid the reduction of racial diversity to a white/not white dichotomy and provide a more specific, diversity-centered analysis while also addressing the need for large enough group sizes for statistical utility. However, due to the small size of the biracial category as originally coded, biracial and multiracial groups needed to be combined into a single multiracial group.

The three items on sexuality included self-reported label (e.g, straight, lesbian, gay, etc.), sexual behavior, and attraction—as is recommended practice for sexual orientation research (Sell 2017; Sexual Minority Assessment Research Team 2009). As with gender identity, responses from all three questions were used to code *sexual orientation* into a single analytic framework, categorizing respondents' sexual orientation into the following four groups: monosexual, heterosexual; monosexual, non-heterosexual; plurisexual; and an unlisted sexual orientation. Use of the monosexual-plurisexual spectrum in this analysis intentionally attends to the commonplace erasure of plurisexualities in social and behavioral research (Ferguson and Gilmour 2018)

Secondary independent variables

First, *self-rated health* (for this study: 1=poor, 5=excellent) has been used as an effective measure in linear regression models in previous studies with queer folx (Allen and Leslie 2019; Wienke and Hill 2013) and as a predictor of well-being (Stanton, Ali, and Chaudhuri 2017).

Second, adverse childhood experiences (*ACEs*) are a well-known predictor of long-term mental and medical health outcomes (Cuijpers et al. 2011; Shanta R Dube et al. 2003; Merrick et al. 2017; Scott et al. 2011). The ACE questionnaire used in the current study consists of 10

dichotomous items concerning childhood abuse and neglect and household dysfunction (Felitti et al. 1998; Dube et al. 2003). Scores are totaled with possible ACE scores ranging from 0–10.

Third, the Adult *Hope* Scale (Snyder et al. 1991) has been shown to predict well-being among general populations (Pleeging, Burger, and van Exel 2019; Şahin et al. 2012). Operationalized as a person’s agency toward goals through identified pathways, the Adult Hope Scale consists of 8 items with 8-point Likert scale response options (1 = definitely false; 8 = definitely true). Example items include “I can think of many ways to get out of a jam” and “My past experiences have prepared me well for my future.” Scores were summed with possible totals ranging 8–64. A reliability generalization analysis showed the scale to have a mean reliability estimate of Cronbach’s $\alpha=0.82$ (SD=0.07, SE=0.01; Hellman, Pittman, and Munoz 2013). Cronbach’s $\alpha=0.91$ in the current study.

Fourth, *social support* has been shown to predict well-being (Stansfeld et al. 2013). The Brief Social Support Scale (BS6; Beutel et al. 2017) is a 6-item measure of self-reported emotional and practical supports. Each item is set to 5-point Likert scale responses (1 = none of the time; 5 = all of the time). Example items include “How often is someone available to take you to the doctor if you needed it?” or “...to confide in or to talk about yourself or your problems?” Scores are totaled, with possible sum scores ranging 6–35. Research using the BS6 has suggested greater social support positively predicts mental health (Beutel et al. 2017, 2019). Additionally, previous studies showed acceptable reliability for BS6 with Cronbach’s $\alpha=0.86$ – 0.87 (Beutel et al. 2017, 2019). Cronbach’s $\alpha=0.92$ in the current study.

Finally, the *Civic Engagement* Scale (Doolittle and Faul 2013) has also been shown to predict well-being (Choudhary and Gupta 2017). Doolittle and Faul (2013:2) define civic engagement as “the process of believing that one can and should make a difference in enhancing his or her community.” The scale evaluates self-reported behaviors (six items) and attitudes (eight

items) regarding civic engagement. All items are set to 7-point Likert scale responses (1= strongly disagree and 7 = strongly agree for attitudes subscale; 1 = never and 7 = always for behaviors subscale). Example items include “I am committed to serve in my community” and “I participate in discussions that raise issues of social responsibility.” The sum of scores range from 14–98. Previous research demonstrates the acceptable reliability with Cronbach’s $\alpha=0.85\text{--}0.91$ (Choudhary and Gupta 2017; Doolittle and Faul 2013). Cronbach’s $\alpha=0.92$ in the current study.

Control variables

For control variables, the current analysis used *age* (continuous), *unemployment* (dichotomous, 1=unemployed), *income* (10 ordinal categories), and self-identified *disability* (dichotomous, 1=disabled). These categories were chosen from previous research experience as well as on precedent from queer research literature (e.g., Stanton et al. 2017; Wienke and Hill 2013).

Analytic Strategy

Analysis of the data was administered in four phases—the first three conducted with SPSS version 27 software and the fourth conducted with Stata IC version 16.1. Phase I included coding of variables, construction of mental health states, and the exploration of descriptive and frequency statistics. Phase II included the correlation analyses between variables. Phase III included assessment of group differences (ANOVA, crosstabulation, X^2 tests) in distress and flourishing, and mental health states by gender identity, race, and sexual orientation. Finally, Phase IV included two ordinary least squares regression models, one for distress, the other for flourishing. Each model introduced variables in four nested steps: (1) control variables, (2) primary independent variables, (3) secondary independent variables, and (4) mental health counterpart (i.e., flourishing for the distress model; distress for the flourishing model). In each model, the final reference for all dichotomous and dummy variables included the following

characteristics: not self-identified as disabled; not unemployed; cisgender; monoracial, white; and hetero-/monosexual.

CHAPTER IV

RESULTS

Phase I: Coding, Exploration, and Descriptive Statistics

The survey results provide a broad overview of queer experiences in Oklahoma—with the majority (56%) of respondents reporting a Tulsa ZIP code of residence, the remaining respondents from Oklahoma City and other more rural areas across central and Northeast Oklahoma. Regarding race and ethnicity, 70.9% of respondents reported being only white. Fifty-two (16%) participants reported being cisgender and heterosexual, 42 of whom were women. See Table 3 for a more detailed description of the sample’s demographic characteristics.

Total scores for all scale measures were computed, and categories of distress and flourishing were created. For distress, scores were grouped according to Andrews and Slade’s (2001) analysis, which recommends the following: (a) 10–15 = low, (b) 16–21 = moderate, (c) 22–29 = high, (d) 30–50 = very high. Under this coding, 19.7% of respondents were low in distress, 22.8% were moderate, 25.7% were high, and 31.8% were very high in distress. However, the Dual Continuum model’s categorical analysis simplifies mental illness into a dichotomous framework; therefore, low and moderate distress were combined, as were high and very high, creating two categories: low distress and high distress. For flourishing scores, groups were created based on tertiles: (a) lower tertile = languishing, (b) middle tertile = moderate mental healthiness, and (c) upper tertile = flourishing.

Initially, the construction of mental health states followed Keyes' (2005) framework of five discrete levels (see Table 1). However, due to small group size, this analysis followed Bariola and colleagues' (2017) decision to combine moderate mental health and pure languishing, resulting in the following four groups: high distress with languishing (29.9%), high distress without languishing (27.6%), without high distress or flourishing (20.5%), flourishing without high distress (22.0%).

Phase II: Bivariate Correlations

Table 4 contains the bivariate correlations for the dependent, secondary independent, and control variables. Distress and flourishing had a large ($d > 0.5$) negative correlation between them, and with the exception of hope, all measures had statistically significant ($p < 0.05$) correlations with distress and flourishing scores with small ($d > 0.10$) to moderate ($d > 0.30$) effect sizes. For distress scores, moderate negative correlations include age, income, and self-rated health; conversely, moderate positive correlations include ACEs and disability. All negative correlations with flourishing were small, but moderate positive correlations include civic engagement, self-rated health, and social support. Notably, hope was the only measure to have strong a large correlation with either distress or flourishing, which was strongest between hope and flourishing.

For the primary independent variables, only race had any statistically significant correlation with either distress or flourishing. Distress scores had a small negative correlation with the monoracial, white category ($d = -0.17$; $p < 0.01$) and a small positive correlation with the multiracial category ($d = 0.18$; $p < 0.01$). The monoracial, white category also had a positive correlation with flourishing scores, but this relationship was minimal ($d = 0.08$; $p < 0.05$).

Phase III: Group Differences

For categorical analysis of group differences, Table 5 shows the crosstabulation results of gender identity, race, and sexual orientation with mental health states as the dependent for each. X^2 tests were used to statistically examine the statistical significance and strength of these associations. The resulting tests showed statistically significant associations between mental health states and gender identity, race, and sexual orientation.

To achieve a more continuous assessment of mental health, one-way ANOVAs were used to test for statistically significant differences between groups in context of gender identity, race, and sexual orientation (Table 6). With the exception differences in flourishing scores by race categories, all models were statistically significant—albeit with small effect sizes ($\eta^2 < 0.02$). Bonferroni post-hoc comparisons were used to examine the specific group differences for statistical significance with $\alpha = 0.05$. First, cisgender respondents reported significantly lower distress scores and significantly higher flourishing scores than each other gender identity category. Multiracial respondents reported significantly higher distress scores than both monoracial categories. Finally, while the two monosexual categories did not significantly differ from each other in terms distress scores, each had significantly lower scores than both plurisexual respondents and respondents who had an unlisted sexual orientation—reflecting a divide in distress scores on the basis of the monosexual-plurisexual dichotomy. This divide was also reflected in flourishing scores where plurisexual respondents reported significantly lower scores than both monosexual groups.

Phase IV: Ordinary Least Squares Regression

For the final analytic phase, nested OLS regression functioned as a continuous-level, multi-variate analysis to model the statistical predictors of distress and flourishing scores and to compare the patterns between models. However, visual and statistical exploration revealed

violation of a few assumptions, prompting the need for key transformations of the data and adjustments to the regression models themselves. First, visual plotting and descriptive statistics suggested skewness for distress and flourishing scores. To reduce skewness, square roots were used for distress scores and flourishing scores were squared. Second, White's test suggested the presence of heteroscedasticity for the distress model. Omitting both hope and flourishing from the model did remove heteroscedasticity, which may reflect their strong correlation—though removing only one or the other does little. To control for heteroscedasticity without removing both hope and flourishing, White's robust standard errors were used for the distress model. Third, the mean variance inflation factors (VIFs) were less than 2.0 for each model (distress = 1.69; flourishing = 1.68). In both models, the non-heterosexual/monosexual dummy variable and the plurisexual dummy variable had VIFs above 4.0. Combining the two codes decreased VIFs; however, changes in t-values and statistical significance were minimal and did not justify the loss of categorical specificity between the monosexual-plurisexual dichotomy. Thus, the variables were left separate in both models. Other than these two, hope was the only variable with a VIF above 2 (VIF = 2.29) for the distress model, and distress was the only variable with the same in the flourishing model (VIF = 2.29). All other assumptions were met.

Distress model

For the control variables in the distress model (Table 7, Model 1), all variables had statistically significant associations with distress (square root) scores. Holding all else constant, age and income had statistically significant negative associations with distress whereas disability and unemployment had a significant positive association with distress. Notably, age had the strongest standardized effect with a 15.95-year increase (one standard deviation) in age associated with a decrease of 0.36 (model 4) to 0.40 (model 1) standard deviations in distress square root scores, holding all other variables constant.

With model 2's introduction of the primary independent variables of gender identity, race, and sexual orientation, only the plurisexual category had a statistically significant association with distress. Holding all else constant, results show the plurisexual category having a mean distress (square root) score of 0.33 higher than the reference group (i.e., not disabled; not unemployed; cisgender; monoracial, white; and hetero-/monosexual). This mean difference decreased to 0.11 in later models yet remained statistically significant. While the change in R^2 from model 1 to model 2 was statistically significant, the additional 1% of explained variance is not substantive.

Model 3 introduced the secondary independent variables of ACEs, civic engagement, hope, self-rated health, and social support. The change in R^2 from model 2 to model 3 was statistically significant and substantive, gaining an additional 16% of explained variance in distress scores. All secondary independent variables except civic engagement had statistically significant associations with distress scores. More specifically, an increase of one ACE was associated with an increase of 0.03 in distress square root scores, with all else constant. Hope, self-rated health, and social support all had statistically significant negative associations with distress. In terms of standardized coefficients, hope had the strongest effect of the secondary independents with one standard deviation increase in hope scores associated with a 0.25 standard deviation decrease in distress, holding all else constant.

The change in R^2 with introduction of flourishing in model 4 was statistically significant, but as with model 2, the additional 1% of explained variance is not substantive. In all, the full model (Table 7) explained 54% of the variance in distress square root scores. Flourishing scores had a statistically significant association with distress scores with a standard deviation increase in flourishing associated with a 0.17 standard deviation decrease in distress. Notably, the introduction of flourishing diminished the effect of hope on distress, decreasing its standardized coefficient from 0.25 to 0.17. This change made the effect of self-rated health the largest of the

secondary independent variables. Specifically, a one standard deviation increase in self-rated health was associated with a decrease of 0.19 standard deviations in distress square root scores, holding all else constant.

Flourishing model

All control variables in the flourishing model (Table 8, Model 1) had statistically significant associations with squared flourishing scores. Age and income had positive associations with flourishing, but disability and unemployment had negative associations with flourishing. After the introduction of all variables, income was the only control variable to remain statistically significant.

The introduction of the primary independent variables of gender identity, race, and sexual orientation in model 2 led to a statistically significant—albeit minimal—change in R^2 . Of the primary independents, only gender identity had statistically significant associations with distress, with the transgender, nonbinary, and unlisted gender identities categories each having negative associations with flourishing. The unlisted gender identities category had the largest effect, having a squared flourishing score mean of 345.92 less than the reference (i.e., not disabled; not unemployed; cisgender; monoracial, white; and hetero-/monosexual), holding all else constant. All primary independent variables lost statistical significance in model 3, but the unlisted gender identities category regained a statistically significant negative association with flourishing in model 4—though its effect was diminished.

In model 3, the introduction of the secondary independent variables (ACEs, civic engagement, hope, self-rated health, and social support) led to a statistically significant change in R^2 and an increase of 42% of explained variance in squared flourishing scores. Civic engagement, hope, self-rated health, and social support all initially had statistically significant positive associations with flourishing with self-rated health losing significance in model 4. Of these, hope

had the strongest standardized effect, suggesting a standard deviation increase in hope being associated with one-half standard deviation (0.52) increase in squared flourishing scores, holding all other variables constant. Social support had the second largest standardized effect on flourishing in model 3. Holding all else constant, a standard deviation increase in social support was associated a 0.19 standard deviation increase in squared flourishing scores.

Finally, the change in R^2 from model 3 to model 4 was also statistically significant but minimal with a gain of 2% explained variance. In total, the full regression model (Table 8) explained 58% of the variance in squared flourishing scores (adjusted R^2). With the addition of distress, the effects of hope and social support diminished, but hope continued to have the largest standardized effect (0.47). Distress, then, had the second largest effect with a standard deviation increase in scores associated with a 0.21 standard deviation decrease in squared flourishing scores, holding everything else constant.

CHAPTER V

CONCLUSION

The present analyses warrant discussion of five important findings. First, results provide evidence for the Dual Continuum Model's differentiation of mental healthiness and illness in social and behavioral research. Specifically, while the relationship between flourishing and distress was large ($d > 0.5$), they were not so strongly correlated to conclude they measured a singular, broader construct of mental health. Between the two OLS regression models (Tables 7 and 8), distress had a larger standardized effect on flourishing than that of flourishing on distress scores, signaling a weight in effectual direction from mental illness to mental healthiness. Future research on the causal pathways between the two continua may reveal greater insight to this finding. In total, the differences in associations between distress and flourishing suggest strong utility for assessment of both mental healthiness and mental illness in research.

Second, findings extend previous mental health research. Three examples illustrate these comparisons. For the first example, a recent study showed hope to be positively associated with flourishing and negatively associated with distress. In fact, hope had the largest associations of all positive psychology measures in their study of LGBTQ individuals (Antebi-Gruszka, Friedman, and Schrimshaw 2021). In the current analysis, hope had consistently strong associations with both flourishing and distress but especially with flourishing. Next, past research has shown civic engagement to be associated with flourishing (Choudhary and Gupta 2017) and distress (Olesen and Berry 2011). In the current analysis, civic engagement having statistically significant

correlations with both flourishing (positive) and distress (negative). In the regression models however (Tables 7 and 8), civic engagement had a positive association with flourishing and no statistically significant relationship with distress at all. This lack in relationship between civic engagement and distress may be a result of the chosen civic engagement scale by Doolittle and Faul (2013), which has not yet been widely used in mental health research. Studies such as Oleson and Berry's (2011) use other measures of civic engagement, complicating comparisons between their results and the current analysis. For a final example, ACEs are a well-established predictor of myriad negative health outcomes in adulthood with little research connecting ACEs to positive outcomes like psychological and social well-being (Mosley-Johnson et al. 2019). Results of the current analysis suggest a small negative correlation between ACEs and flourishing, but in the context of other, stronger predictor variables in the regression (Table 8), ACEs did not have a statistically significant association with flourishing. In all, this finding supports the influence of ACEs on mental illness yet suggests other factors may have a greater role in explaining mental healthiness.

Third, results support investigation of mental health differences across gender identity, race, and sexual orientation. Crosstabulation and X^2 results suggest a statistically significant association between mental health states and these three variables. Concerning continuous assessments of mental health, both distress and flourishing scores showed statistically significant differences across gender identity, race, and sexual orientation categories—though interestingly, flourishing scores did not significantly differ across race groups. While bivariate results suggest statistically significant relationships for these variables, OLS regression results show they are not necessarily as substantially important in explaining differences in distress and flourishing as are ACEs, civic engagement, hope, self-rated health, or social support.

Fourth, one consistent finding across all analyses is the importance of plurisexuality, highlighting the need for further attention to a commonly erased and stigmatized sexual

orientation spectrum in research (Ferguson and Gilmour 2018; Kaestle and Ivory 2012). Crosstabulation and X^2 results support coding sexual orientation across the monosexual/plurisexual divide, and ANOVA results suggest statistically significant differences between coded orientations. OLS regression results showed the plurisexual orientation category was the only statistically significant predictor of distress of all gender identity, race, or sexual orientation categories. This finding may reflect the particular challenges in facing not only heterosexuality norms but also norms of monosexuality with plurisexual identities facing stigma and exclusion from both heterosexuals and other queer folk. In sum, these results suggest plurisexual identities such as bisexual, pansexual, and asexual face unique disadvantages in terms of mental illness.

Fifth, results supported recognizing the role of the normative gender binary to mental health outcomes—specifically the differences in outcomes on the basis of participants’ adherence to the normative gender binary. Crosstabulation, X^2 , and ANOVA results all suggest significant differences between cisgender, binary transgender, and non-binary participants’ mental health (states and scores). For OLS regression, this dimension was also the only statistically significant predictor of flourishing scores among the primary independent variables of gender identity, race, and sexual orientation. These results support the previous research on the differences in mental health outcomes between cisgender, transgender, and non-binary folk due to stigmatic stressors associated with minority gender status (Lefevor et al. 2019). In other words, the further removed one is from the normative gender binary (i.e., cisgender → transgender → nonbinary), the more harassment, stressors, and stigma they will likely receive from others.

Limitations

The present study contained a few important limitations. First, assessment of mental healthiness included only psychological and social well-being as the original survey did not have

items on emotional or affective well-being. This limited the application of the Dual Continuum Model in analysis, and future research would benefit from using more appropriate assessment of mental healthiness such as the Mental Health Continuum scale (Keyes 2002). Second, educational achievement was omitted from analysis due to issues of heteroscedasticity. Alternative assessment or coding of education may address this issue for future analysis (e.g., recoding educational achievement from into a single dichotomous variable or a series of dummy variables).

Third, the nature of the study's cross-sectional, community-based design presents a few inherent limitations. Explorations of causal pathways in mental health outcomes are limited by cross-sectional design. The sampling procedure's dependence on the steering committee's own networks may have biased the sample itself (i.e., more white, more educated, higher income than should be expected in Northeast Oklahoma). The length of the original survey and the self-selection of participants' engagement with the survey may have contributed to sampling bias as well. Future studies may benefit from more rigorous, diverse sampling procedure and research design (e.g., mixed- or multi-methods, historical and community analyses, emphasizing racial diversity, etc.). Finally, the local, community-based design may limit generalizability to Northeast Oklahoma; however, this need not be merely a limitation since the local specificity of the study offers greater utility for policy and intervention purposes in Oklahoma than does more general research.

Recommendations

Modeling the community-driven spirit of original study (Nay 2019) in which the steering committee developed a detailed list of recommendations based on the needs-assessment findings, the following are six recommendations for future research, policy, and intervention in light of the current analysis. First, future research must address the dual nature of mental health, evaluating mental healthiness and illness as two discrete continua. For maximum understand of mental

health, researchers must examine the particularities and distributions of mental healthiness and mental illness together. Second, future research should incorporate rigorous, complex, and inclusive design in order to extend possible analyses current understandings of queer mental health. Such research may take the form of historical and community analyses, qualitative interviews, and longitudinal analysis. Third, public health policy in Oklahoma should prioritize mental healthiness in addition to mental illness. A recent, extensive project by Tulsa's social services community provides an exemplar 10-year plan for improving mental health outcomes (Aron et al. 2018). The State of Oklahoma can propel plans like these through funding, policy-making, and legislative action. Fourth, Oklahoma's state and local governments, businesses, and organizations should provide protections and resources for queer folx. As of the writing of this study, Oklahoma does not provide protections against employment or housing discrimination on the basis of sexual orientation or gender identity (Mallory and Sears 2019). Providing basic protections against discrimination for queer folx is one avenue forward. Fifth, mental health interventions should foster mental healthiness in addition to treating mental illness. In other words, clinicians and service providers should work to increase queer folx' emotional, psychological, and social well-being in addition to simply treating symptoms of mental illness. Sixth, treatment providers should prioritize evidence-based, culturally competent interventions for queer folx. Clinicians and providers should maintain a queer-affirming practice, show sensitivity to the coming out process, and they should focus on cultural competency training for their continuing education (i.e., working with racially diverse and queer clients).

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APPENDIX A

TABLES

Table 1: *Categories of Mental Health*

Complete mental health	Presence of flourishing paired with the absence of mental illness.
Moderate mental health	Absence of flourishing or languishing paired with the absence of mental illness.
Pure languishing	Presence of languishing paired with the absence of mental illness.
Pure mental illness	Presence of mental illness paired with the absence of languishing.
Complete mental illness	Presence of mental illness paired with the presence of languishing.

SOURCE: Keyes (2005).

Table 2: *Mental Health States Hierarchy*

Complete Mental Illness	>	Pure Mental Illness	≈	Pure Languishing	>	Moderate Mental Health	>	Complete Mental Health
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SOURCE: Keyes (2005, 541, Figure 1).

Table 3: *Sample Demographic Characteristics and Variable Descriptive Statistics*
(*n* = 804–868)

	<i>M</i> / %	<i>SD</i>	<i>Min/Max</i>
Age	38.19	15.95	13–89
ACEs	3.02	2.60	0–10
Civic engagement	75.03	14.21	14–98
Disabled ^b	28.0%	—	0, 1
Distress	25.14	9.98	10–50
Flourishing	44.70	9.04	8–56
Gender identity ^b			
Cisgender	78.9%	—	0, 1
Transgender	9.9%	—	0, 1
Nonbinary	8.6%	—	0, 1
An unlisted gender identity	2.5%	—	0, 1
Hope	49.76	10.17	8–64
Income	5.35	2.36	1–10
Race ^b			
Monoracial, white	70.9%	—	0, 1
Monoracial, non-white	11.8%	—	0, 1
Multiracial	17.4%	—	0, 1
Self-rated health	3.19	1.02	1–5
Sexual orientation ^b			
Hetero-/monosexual	7.9%	—	0, 1
Non-hetero-/monosexual	54.3%	—	0, 1
Plurisexual	33.1%	—	0, 1
An unlisted orientation	4.7%	—	0, 1
Social support	22.37	6.44	6–30
Unemployed ^b	6.2%	—	0, 1

^b Dichotomous, 1 = yes.

Table 4: Correlations for Dependent, Secondary Independent, and Control Variables (n = 804–868)

	1	2	3	4	5	6	7	8	9	10	11
1. Age	—										
2. ACEs	-.17**	—									
3. Civic engagement	.12**	0.01	—								
4. Disability ^a	-.18**	.24**	-0.03	—							
5. Distress	-.47**	.31**	-.23**	.36**	—						
6. Flourishing	.17**	-.19**	.41**	-.23**	-.51**	—					
7. Hope	.17**	-.18**	.46**	-.30**	-.53**	.66**	—				
8. Income	.26**	-.17**	.22**	-.36**	-.36**	.24**	.34**	—			
9. Self-rated health	0.06	-.25**	.14**	-.34**	-.43**	.36**	.43**	.28**	—		
10. Social support	0.01	-.25**	.22**	-.23**	-.37**	.42**	.42**	.33**	.32**	—	
11. Unemployment ^a	-.18**	.12**	-.09*	.09**	.28**	-.20**	-.24**	-.13**	-.10**	-.09**	—

Note. ACEs = adverse childhood experiences.

^a Dichotomous variable, 1 = yes.

Table 5: *Mental Health States by Gender Identity, Race, and Sexual Orientation (n = 868)*

	Distress with languishing No. (%)	Distress without languishing No. (%)	Without distress or flourishing No. (%)	Flourishing without distress No. (%)	(df) X ²	Cramer's V
Total sample	259 (29.8)	240 (27.6)	178 (20.5)	191 (22.0)	(9) 62.30**	0.16
Gender identity						
Cisgender	172(25.1)	187 (27.3)	151 (22.0)	175 (25.5)		
Transgender	32 (37.2)	27 (31.4)	20 (23.3)	7 (8.1)		
Nonbinary	39 (52.0)	21 (28.0)	7 (9.3)	8 (10.7)		
An unlisted gender identity	16 (72.7)	5 (22.7)	—	1 (4.5)		
Race					(6) 24.81**	0.12
Monoracial, white	167 (26.7)	166 (27.0)	138 (22.4)	147 (23.9)		
Monoracial, non-white	36 (35.3)	21 (20.6)	20 (19.6)	25 (24.5)		
Multiracial	59 (39.1)	53 (35.1)	20 (13.2)	19 (12.6)		
Sexual orientation					(9) 56.31**	0.15
Hetero-/monosexual	14 (25.7)	14 (20.3)	16 (23.2)	25 (36.2)		
Non-hetero-/monosexual	121 (25.7)	112 (23.8)	113 (24.0)	125 (26.5)		
Plurisexual	111 (38.7)	97 (33.8)	45 (15.7)	34 (11.8)		
An unlisted orientation	13 (31.7)	17 (41.5)	4 (9.8)	7 (17.1)		

*p < .05. **p < .01.

Table 6: *One-Way ANOVAs for Distress and Flourishing by Gender Identity, Race, and Sexual Orientation (n = 868)*

	Distress					Flourishing				
	<i>M</i>	<i>SD</i>	<i>F</i>	η^2	<i>M</i>	<i>SD</i>	<i>F</i>	η^2		
Gender identity	(3, 864)		22.70**	0.07			16.92**			
Cisgender	(n = 685)	23.81	9.58		45.75	8.56		0.06		
Transgender	(n = 86)	28.35	9.93		41.27	8.76				
Nonbinary	(n = 75)	31.44	10.01		41.28	9.76				
An unlisted gender identity	(n = 22)	32.64	8.27		37.05	12.61				
Race	(2, 865)		16.59**	0.04			2.68	0.01		
Monoracial, white	(n = 615)	24.06	9.5		45.15	8.84				
Monoracial, non-white	(n = 102)	25.73	10.24		43.64	10.06				
Multiracial	(n = 151)	29.16	10.61		43.56	9.04				
Sexual orientation	(3, 864)		25.68**	0.08			6.36**	0.02		
Hetero-/monosexual	(n = 69)	21.43	9.55		47.35	8.64				
Non-hetero-/monosexual	(n = 471)	23.17	9.56		45.31	9.01				
Plurisexual	(n = 287)	28.86	9.7		42.97	9.15				
An unlisted orientation	(n = 41)	27.98	9		45.34	7.38				

* $p < .05$. ** $p < .01$.

Table 7: OLS Regression Results with Robust Standard Errors for the Square Root of Distress Scores (n=775)

	Model 1			Model 2			Model 3			Model 4		
	B	Robust		B	Robust		B	Robust		B	Robust	
		SE	B		SE	B		SE	B		SE	B
Constant	6.11	0.11		5.71	0.16		7.69	0.23		7.92	0.23	
Age	-0.02	0	-0.40**	-0.02	0	-0.36**	-0.02	0	-0.37**	-0.02	0	-0.36*
Disability (1 = yes)	0.43	0.07	0.20**	0.39	0.07	0.18**	0.13	0.06	0.06*	0.13	0.06	0.06*
Income	-0.08	0.01	-0.18**	-0.07	0.01	-0.16**	-0.01	0.01	-0.03	-0.02	0.01	-0.04
Unemployment (1 = yes)	0.49	0.11	0.11**	0.48	0.11	0.11**	0.28	0.13	0.06*	0.26	0.13	0.06*
Transgender ^a				0.09	0.09	0.03	-0.07	0.08	-0.02	-0.07	0.08	-0.02
Nonbinary ^a				0.17	0.1	0.05	0	0.09	0	-0.02	0.09	-0.01
An unlisted gender identity ^a				0.13	0.13	0.02	-0.02	0.13	0	-0.08	0.13	-0.01
Mono-/Non-white ^b				-0.03	0.09	-0.01	-0.08	0.08	-0.02	-0.09	0.08	-0.03
Multi-racial ^b				0.09	0.08	0.04	0.1	0.07	0.04	0.1	0.07	0.04
Non-hetero-/Monosexual ^c				0.18	0.12	0.09	0.14	0.11	0.07	0.12	0.1	0.06
Plurisexual ^c				0.33	0.12	0.16**	0.23	0.11	0.11*	0.22	0.11	0.11*
An unlisted orientation ^c				0.3	0.17	0.07	0.28	0.15	0.06	0.27	0.15	0.06
ACEs				0.03	0.01	0.09**	0.03	0.01	0.09**	0.03	0.01	0.08**
Civic engagement				0	0	0.01	0	0	0.01	0	0	0.03
Hope				-0.02	0	-0.25**	-0.02	0	-0.25**	-0.02	0	-0.17**
Self-rated health				-0.19	0.03	-0.20**	-0.19	0.03	-0.20**	-0.18	0.03	-0.19**
Social support				-0.02	0	-0.12**	-0.02	0	-0.12**	-0.01	0	-0.09**
Flourishing							-0.02	0.01	-0.17**	-0.02	0.01	-0.17**
R ²		0.36			0.37			0.53			0.54	
Adj. R ²		—			—			—			—	
F for DR ²		130.41**			2.40*			46.93**			12.02**	

* $p < .05$. ** $p < .01$.

^aReference = cisgender

^bReference = monoracial, white

^cReference = hetero-/monosexual

Table 8: OLS Regression Results for Squared Flourishing Scores ($n=793$)

	Model 1			Model 2			Model 3			Model 4		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Constant	1665.5	87.19		1897.9	136.57		-808.76	148.25		-49.28	190.65	
Age	5.89	1.54	0.13**	5.31	1.63	0.12**	4.58	1.18	0.10**	1.34	1.27	0.03
Disability (1 = yes)	-209.09	55.65	-0.14**	-175.45	56.44	-0.11**	11.42	42.12	0.01	34.5	41.31	0.02
Income	53.3	10.98	0.18**	47.17	11.09	0.16**	-25.96	8.42	-0.09**	-27.31	8.22	-0.09**
Unemployment (1 = yes)	-345.76	105.39	-0.11**	-305.18	105.43	-0.10**	-36.6	76.12	-0.01	12.17	74.77	0.00
Transgender ^a				-258.01	79.84	-0.11**	-12.38	57.82	-0.01	-23.82	56.51	-0.01
Nonbinary ^a				-213.79	88.41	-0.09*	-79.5	63.8	-0.03	-77.72	62.32	-0.03
An unlisted gender identity				-345.92	147.32	-0.08*	-204.3	105.34	-0.05	-208.46	102.89	-0.05*
Mono-/Non-white ^b				-38.78	77.5	-0.02	-20.64	55.47	-0.01	-30.94	54.21	-0.01
Multi-racial ^b				34.54	64.31	0.02	-1.46	46.44	0	14.43	45.43	0.01
Non-hetero-/Monosexual ^c				-161.94	94.04	-0.12	-98.77	67.15	-0.07	-82	65.65	-0.06
Plurisexual ^c				-143.54	98.95	-0.1	-75.22	70.8	-0.05	-45.22	69.32	-0.03
An unlisted orientation ^c				-16.91	138.77	-0.01	-89.93	99.47	-0.03	-53.26	97.34	-0.02
ACEs							-12.05	7.03	-0.05	-7.34	6.91	-0.03
Civic engagement							7.81	1.39	0.16**	7.91	1.35	0.16**
Hope							35.85	2.22	0.52**	32.4	2.24	0.47**
Self-rated health							54.51	19.11	0.08**	27.91	19.16	0.04
Social support							20.44	2.99	0.19**	17.75	2.96	0.17**
Distress										-14.56	2.38	-0.21**
R ²	0.13			0.15			0.57			0.59		
Adj. R ²	0.13			0.14			0.56			0.58		
F for DR ²	28.90**			2.58**			148.60**			37.51**		

* $p < .05$. ** $p < .01$.

^aReference = cisgender

^bReference = monoracial, white

^cReference = hetero-/monosexual

APPENDIX B

DEPENDENT AND INDEPENDENT VARIABLE SURVEY ITEMS

Sexual Identity:

All people are different in their experiences and identities. The following questions are designed to allow you to define your own sexual identity, which includes different areas such as biological sex, gender identity, self-identified sexual orientation, your experiences, and your attraction to other people.

Sex is the biological status of a person typically assigned at birth. Intersex is the biological and physiological status that is neither male nor female.

What is/was your sex assigned at birth?

- Male
- Female
- Intersex

Gender identity refers to the sense of one's self as man, woman, transgender, or something else.

What is your gender identity?

- Man
 - Woman
 - Transgender man (FTM)
 - Transgender woman (MTF)
 - Gender non-binary
 - Genderqueer
 - Genderfluid
 - Other not listed (please specify)
-

Do you consider yourself to be:

- Straight/heterosexual
 - Gay or Lesbian
 - Bisexual
 - Asexual
 - Pansexual
 - Other not listed (please specify)
-

In the past three years who have you had sex with?

- Exclusively males
 - Mostly males
 - Equally males and females
 - Mostly females
 - Exclusively females
 - I have not had sex
 - Other not listed (please specify)
-

All people are different in the way they are attracted to other people, whether it be sexual, romantic, emotional, or spiritual.

Which best describes your feelings?

- Exclusively attracted to males
 - Mostly attracted to males
 - Equally attracted males and females
 - Mostly attracted to females
 - Exclusively attracted to females
 - Attracted to neither
 - Unsure
 - Other not listed (please specify)
-

Self-Rated Health

Would you say that in general, your health is...

- Excellent
- Very good
- Good
- Fair
- Poor

Flourishing

Below are eight statements with which you may agree or disagree. Please indicate your agreement with each item by indicating the response for each statement using the options given.

Strongly disagree = 1, Disagree = 2, Slightly disagree = 3, Neither agree nor disagree = 4, Slightly agree = 5, Agree = 6, Strongly Agree = 7

1. I lead a purposeful and meaningful life.
2. My social relationships are supportive and rewarding.
3. I am engaged and interested in my daily activities
4. I actively contribute to the well-being of others.
5. I am competent and capable in the activities that are important to me.
6. I am a good person and live a good life.
7. I am optimistic about my future.
8. People respect me

Hope

Below are eight statements with which you may agree or disagree. Please indicate your agreement with each item by indicating the response for each statement using the options given.

Definitely false = 1, Mostly false = 2, Somewhat false = 3, Slightly false = 4, Slightly true = 5, Somewhat true = 6, Mostly true = 7, Definitely true = 8

1. I can think of many ways to get out of a jam.
2. I energetically pursue my goals.
3. There are lots of ways around any problem.
4. I can think of many ways to get the things in life that are important to me.
5. Even when others get discouraged, I know I can find a way to solve the problem.
6. My past experiences have prepared me well for my future.
7. I've been pretty successful in life.
8. I meet the goals that I set for myself.

Social Support

People sometimes look to others for companionship, assistance, or other types of support. If you needed it, how often is someone available...

None of the time = 1, A little of the time = 2, Some of the time = 3, Most of the time = 4, All of the time = 5

1. ... to take you to the doctor if you needed it?
2. ...to prepare your meals if you are unable to do it yourself
3. ... to help with daily chores if you are sick?
4. ... to give you good advice about a crisis?
5. ... to confide in or talk to about yourself or your problems?
6. ... who understands your problems?

Civic Engagement: Attitudes

Below are eight statements with which you may agree or disagree. Please indicate your agreement with each item by indicating that response for each statement using the options given.

Strongly disagree = 1, Disagree = 2, Slightly disagree = 3, Neither agree nor disagree = 4, Slightly agree = 5, Agree = 6, Strongly Agree = 7

1. I feel responsible for my community.
2. I believe I should make a difference in my community.
3. I believe that I have a responsibility to help the poor and the hungry.
4. I am committed to serve in my community.
5. I believe that all citizens have a responsibility to their community.
6. I believe that it is important to be informed of community issues.
7. I believe that it is important to volunteer.
8. I believe it is important to financially support charitable organizations.

Civic Engagement: Behaviors

Below are eight statements with which you may agree or disagree. Please indicate your agreement with each item by indicating the response for each item using the options given.

Never = 1, 2, 3, 4, 5, 6, Always = 7

1. I am involved in structured volunteer position(s) in the community.
2. When working with others, I make positive changes in the community.
3. I help members of my community.
4. I stay informed of events in my community.
5. I participate in discussions that raise issues of social responsibility.
6. I contribute to charitable organizations with the community.

Adverse Childhood Experiences

These last questions are about your childhood and negative experiences you may have experienced.

No = 0, Yes = 1

1. Before you turned 18, **did a parent, caregiver, or other adult in the household often ...**
Swear at you, insult you, put you down, or humiliate you?
or
Act in a way that made you afraid that you might be physically hurt?
2. Before you turned 18, **did a parent, caregiver, or other adult in the household often ...**
Push, grab slap, or throw something at you?
or
Ever hit you so hard that you were injured?
3. Before you turned 18, **did an adult or person at least 5 years older than you ever ...**
Touch or fondle you or have you touch their body in a sexual way?
or
Try to or actually have oral, anal, or vaginal sex with you?
4. Before you turned 18, **did you often feel that ...**
No one in your family loved you or thought you were important or special?
or
Your family didn't look out for each other, feel close to each other, or support each other?
5. Before you turned 18, **did you often feel that ...**
You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?
or
Your parents were too drunk or high to take care of you or take you to the doctor if you needed?
6. Before you turned 18, **did your parents or primary caregivers ever separate or divorce?**

7. Before you turned 18, **was your mother or stepmother ...**
Often pushed, grabbed, slapped, or had something thrown at her?
or
Sometimes or often kicked, bitten, hit with a fist, or hit with something hard?
or
Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?
8. Before you turned 18, **did you live with anyone who was a problem drinker or alcoholic or who used street drugs?**
9. Before you turned 18, **was a household member depressed or mentally ill or did a household member attempt suicide?**
10. Before you turned 18, **did a household member go to prison?**

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