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Associations between Health, Identity Labeling, Sexuality Changes, and Engagement Status of Sexual Orientation Change Efforts

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Abstract

We analyzed a socio-politically diverse sample (*N* = 1324; male = 997, female = 327) of adults who reported experiencing or having experienced same-sex attractions to compare the degree of depression and flourishing between three statuses of sexual orientation change efforts (SOCE): No SOCE, Ongoing SOCE, and Ended SOCE. ANCOVA results controlling for age indicated that the participants with Ongoing SOCE reported greater depression and less flourishing than participants in either the group with No SOCE or the group who had Ended SOCE, who had similar health outcomes. A chi-square analysis indicated that a large plurality of male participants (48.8%) who did not identify as LGBQ+ were located in the Ongoing SOCE group, while the majority (72.1%) who identified as LGBQ+ had ended their SOCE. For female participants, a large plurality (46.9%) of those who had not adopted an LGBQ+ identity were in the Never SOCE group while the majority (50.7%) of females who did identify as LGBQ+ were in the Ended SOCE group. Overall, 16.2% (166/1025) of participants exposed to SOCE reported having developed sufficient other-sex sexual attraction to enjoy other-sex sexual behavior, with a small gender difference of 16.9% (141/832) of males and 13.0% (25/193) of females. In addition, 6.0% (18/299) of participants who had never engaged in SOCE reported developing enough same-sex attractions to enjoy heterosexual sex, split evenly between the genders. Duration of SOCE was not associated with health outcomes and the number of years elapsed following SOCE was correlated with somewhat less depressive symptoms and greater flourishing. We conclude by discussing important limitations and cautions for interpreting our findings within a smallest effect size of interest (SESOI) framework, the benefits of adversarial collaboration, and recommendations for future research.

Keywords: sexual orientation change efforts, LGBQ+, health, sexual identity, adversarial collaboration

Sexual orientation change efforts (SOCE) refer to attempts to eliminate, suppress, or reduce same-sex sexual attractions and behaviors and develop or enhance other-sex sexual attractions and behaviors, often with the assistance of a therapist or religious counselor (APA, 2009, 2021). SOCE are characterized by a variety of practices, including religious and spiritual practices (e.g., praying for a reduction in same-sex attraction), private practices (e.g., avoiding contact with others experiencing same-sex attraction), and therapeutic practices (e.g., treating trauma related to childhood sexual abuse or a same-sex parent's rejection to reduce the experience of same-sex attraction). Of these practices, religious/spiritual and private are most often employed (Dehlin et al., 2015) and studied in the scientific literature (Glassgold, 2022).

SOCE have been widely considered to result in significant psychological distress to minors and adults alike, which has to date resulted in 23 states banning licensed therapists from assisting in SOCE for minors, with ongoing discussions of ways to prohibit SOCE among clients of all ages (Movement Advancement Project, n.d.). An increase in depressive symptoms and suicidality are among the many adverse effects reported when persons with stigmatized sexualities are exposed to or engage in SOCE (Glassgold, 2022), leading major mental health associations to take positions against the use of SOCE by mental health professionals (Gamboni et al., 2018). An expert report submitted to the Human Rights Council of the United Nations described SOCE, along with gender identity change efforts, as amounting to torture (U.N., 2020). This report used such a description in the context of noting how physical violence and other aversive methods are often used with SOCE globally.

Given this backdrop, it is not surprising that SOCE remains a socially and politically contentious topic. Recently, the Supreme Court of the United States ruled 8-1 in *Chiles v. Salazar* that a Colorado law banning speech-based change efforts with minors regulated speech based on viewpoint and hence was subject to rigorous First Amendment scrutiny, throwing the constitutionality of all such laws into question. To our knowledge, there are no other "adversarial collaborations" (see "Research Team" below) among researchers in this area. Hence, this study has the potential to add important nuance and restraint to research on SOCE conducted only by ideologically like-minded researchers.

Sexual Minority Stress and SOCE

Meyer (2003), building on the pioneering work of Brooks (1981), theorized that distal and proximal experiences of minority stress account for the greater prevalence of mental health issues among persons with stigmatized sexualities. Distal stressors in the social contexts of persons with stigmatized sexualities include developmental and ongoing experiences of prejudice, discrimination, harassment, victimization, ostracization, and neglect for being same-sex attracted and not being exclusively heterosexual. Proximal components related to the individual's internal navigation of their stigmatized sexuality include expecting rejection, ruminating on how to meet social expectations, concealing one's sexual orientation, and struggling with internalized homonegativity/stigma. SOCE are generally considered a significant minority stressor (Meyer et al., 2021), conceivably both at distal and proximal levels.

SOCE might be experienced as distal stressors as SOCE may include coercive and unwanted change efforts and/or being provided with pejorative, false, and incomplete information about the lives of lesbian, gay, bisexual, queer (LGBQ+) individuals by a mental health or religious counselor (Haldeman, 2022). SOCE might be experienced as proximal stressors as SOCE might

occur when persons with stigmatized sexualities try to change their attractions and behaviors to mitigate rejection and/or conform to negative beliefs about same-sex behavior (Jones et al., 2021). In this regard, such distal and proximal stressors can restrict persons with a stigmatized sexuality from freely exploring, choosing, and expressing their sexuality without prejudice, fear of ostracization, and self-criticism (International Psychoanalytical Association, 2022). Simultaneously or entirely separately, SOCE may be experienced as a self-determined course of action that represents sincerely held personal and/or religious convictions about same-sex sexual attraction or behavior (cf., Yarhouse & Zaporozhets, 2019).

SOCE and Health Outcomes

SOCE have repeatedly been associated with a variety of negative health outcomes. These include increased anxiety, depression, substance disorders, and/or sexual dysfunction from increased feelings of self-blame, inappropriate guilt, self-hatred, shame, hopelessness/despair, loneliness, loss of faith and trust, and suicidality from failing to change (APA, 2009, 2021). In the present study, we focus on two health-related measures as they relate to SOCE: depression and psychosocial flourishing.

Most studies report that engaging in SOCE is associated with increased depression and suicidality among adults (Dehlin et al., 2015; Flentje et al., 2013; Lee et al., 2021; Ogunbajo et al., 2022) and adolescents (Green et al., 2020; Ryan et al., 2020). A smaller minority of studies have found SOCE to result in decreased depression and suicidality. This has been attributed to the beneficial strategies employed within SOCE, such as receiving support, meeting similar others, and/or addressing trauma (Bradshaw et al., 2015; Kartan & Wade, 2010).

At least one reanalysis of an earlier SOCE study (i.e., Blosnich et al., 2020) has illustrated that studies on SOCE may be limited by the assumptions of the research team who carries them out (Sullins, 2022, 2023). In this reanalysis, Sullins found that controlling for pre-SOCE suicidality would have eliminated differences in suicidality between participants who did and did not engage in SOCE. This reanalysis has ignited a healthy debate about whether any methodological limitations of the literature are overshadowed by ethical concerns and putative human rights violations associated with SOCE (Blosnich et al., 2023; Rosik, 2023; Strizzi & Di Nucci, 2022). In addition, Rivera and Beach (2022) have criticized Sullins' reanalysis as biased and significantly flawed. They also acknowledged the same criticisms apply to Blosnich et al.'s original study, suggesting the need for better research to understand the SOCE-suicide association more definitively.

Engaging in SOCE has also been described as socially isolating due to being restricted from meaningful connection with similar others, romantic partners, and LGBQ+-affirming communities (Goodyear et al., 2021). Researchers have posited the negative sequelae of SOCE, such as depression, can last far into the future and become long-term inhibitors of emotional health (Meanley et al., 2020).

Some individuals who engage in SOCE report experiencing a "honeymoon" period during which time they feel positive and optimistic about their SOCE (Shidlo & Schroeder, 2002). However, this phase appears to give way to disillusionment and distress when they realize their expectations for change will not be met, and they are blamed and/or blame themselves for failing to change (Beckstead & Morrow, 2004). In response, many of these individuals may come to identify as

LGBQ+ and connect with affirming LGBQ+ individuals and communities, leading to resilience against stigma and a reduction in their distress (Jones et al., 2021). In the context of the present study, we note it is this subset of LGBQ+-identified sexual minorities that is overwhelmingly the focus of research about SOCE, making studies that include participants who do not identify as LGBQ+ critical in discerning the extent to which their exclusion is an important omission in the current literature.

Persons who report benefiting from SOCE describe being able to (a) develop self-acceptance; (b) reduce their preoccupation with same-sex sexual fantasies and behaviors; (c) experience a lessening of their same-sex sexual attractions; (d) reduce same-sex sexual behaviors; (e) improve psychological, interpersonal, and spiritual well-being; and (f) develop positive, nonsexual relationships with same-sex peers (Beckstead & Morrow, 2004; Dehlin et al., 2015; Flentje et al., 2014; Stanus, 2018; Sullins & Rosik, 2025). These experiences with SOCE may lead to resilience against social stigma and reduction in minority stress. For example, connecting with similar others may reduce their feelings of shame and isolation for experiencing same-sex attractions, which may help them be more capable of making choices about their attractions (Beckstead & Morrow, 2004). Research comparing the experiences of sexual minorities in The Church of Jesus Christ of Latter-day Saints (LDS) with non-LDS sexual minorities found that, while internalized heterosexism was associated with depression for LDS sexual minorities, aspects of religion/spirituality—such as the meaning that religion/spirituality often provides—buffered other aspects of minority stress (Lefevor et al., 2021).

Conservative religion for sexual minorities can be both a source of stress and a source of wellbeing. However, the consensus among scholars is that engaging in SOCE will exhibit a negative relationship with measures of positive mental health. As Powell and Stein (2014) stated, “We are unlikely to promote human flourishing for minorities by denying key aspects of their experience” (p. S37). Yet, studies of SOCE typically focus on negative health outcomes rather than measures of well-being, and it cannot be assumed that these foci operate inversely regarding their associations with change efforts. Moreover, no studies to our knowledge have examined how the duration of or elapsed time since SOCE may impact current health ratings associated with SOCE.

Taken together, the weight of the extant literature on depression and suicidality suggests that engaging in SOCE is likely to increase depressive symptoms for most who try to change their sexual attractions and behaviors. Although there is scant literature to rely upon, minority stress theory would also predict that SOCE would be associated with decreased psychosocial flourishing. Further, it seems likely that persons with stigmatized sexualities who never engaged in SOCE would exhibit fewer depressive symptoms and more psychosocial flourishing than those who engaged in SOCE but stopped.

SOCE Status, Sexual Identity Labeling, and Reports of Change

We also seek to identify the distribution of two important status variables according to SOCE. First, according to an emerging literature, sexual identity labeling may serve as a useful marker for a constellation of characteristics with notable pertinence to the study of SOCE. As early as 2002, Shidlo and Schroeder observed, “…we have found that conversion therapists and many clients of conversion therapy steadfastly reject the use of *lesbian* and *gay*” (p. 249, authors’ emphases). Crowell et al. (2015) similarly noted that persons with stigmatized sexualities active in conservative faiths often consider their LGBQ+ identity secondary to their religious identity.

This rejection makes sense, given the stigmatizing messages and reactions associated with LGBQ+ experiences that can occur within conservative faith settings. Indeed, recent cross-sectional, quantitative research with the present sample suggests that individuals who reject an LGBQ+ identity appear to be (a) more active in conservative religious settings, (b) full members of their faith institutions, (c) less sexually active, (d) more likely to be single and celibate or in mixed-orientation relationships, (e) less accepting of their same-sex attractions, (d) experience greater other-sex attractions, and (e) place more importance on a family and child-centered life (Lefevor et al., 2020: Rosik et al., 2021a).

Many of these characteristics are common among persons who pursue SOCE (APA, 2009), but, as noted earlier, such persons are often excluded from research about SOCE, whether purposely or inadvertently. This may limit the generalizability of current research. For example, another cross-sectional, quantitative study of our participants found persons with stigmatized sexualities who reject an LGBQ+ identity reported some change-oriented psychotherapy goals as modestly or moderately helpful to them, compared to LGBQ+ identified persons who reported these same goals as modestly to moderately harmful to them (Rosik et al., 2021b; see also Rosik, Lefevor et al., 2023).

We are also interested in the ways in which persons with stigmatized sexualities perceive change of sexual attractions during their use of SOCE (Jones & Yarhouse, 2011; Kartan & Wade, 2010; Sullins & Rosik, 2025). Although there is no way to determine from our data if sexual attractions actually have changed, it makes intuitive sense that those persons who perceive the ability to experience change in their attractions would be more likely to pursue and persist in their SOCE.

The Present Study

We seek to advance the literature in the present study through several unique features. First, our measure of SOCE adheres most closely to the definition as advanced by the APA (APA, 2009), encompassing a variety of methods and providers. We also avoid language that implies such efforts have been coerced so that individuals who may not have had that experience and self-initiated their change effort would not feel excluded. The current literature on SOCE does not distinguish between socially initiated versus self-initiated change efforts, and many scholars suggest that SOCE cannot ever be self-initiated given current restrictions in many political, religious, and familial environments (Haldeman, 2022). Nevertheless, our use of SOCE leaves open the possibility that voluntary, self-initiated SOCE exist and that definitions of SOCE that imply pressure or coercion may unnecessarily restrict the scope of SOCE being studied.

Further, by studying *engagement* with SOCE in a broad manner (defined as efforts to reduce, change and/or eliminate same-sex sexuality), we focus our analysis not on the content of SOCE per se (e.g., beliefs about gender/sexual diversity, congruence with conservative religious beliefs) but on the self-rejecting and self-accepting *processes* that likely underly many of the negative and positive reports from engagement with SOCE. These processes are studied variously as broad efforts to reduce/change/eliminate an aspect of self and narrowly as specific methods with differing power-dynamic processes of negating and affirming clients and their gender/sexual diversity.

Furthermore, we utilized questions that would allow our analyses to move beyond exposure to SOCE versus non-exposure dichotomies (e.g., Blosnich et al., 2020; Meanley et al., 2020) by

comparing three groups: those who never pursued SOCE, those currently pursuing SOCE, and those who engaged in SOCE in the past but ended their efforts. As SOCE are almost always studied in a binary, retrospective fashion, this limits what can be gleaned from these studies and can subject results to retrospective biases (APA, 2009). The inclusion of an ongoing SOCE group means this group of participants was at least partially providing current rather than retrospective evaluations of their change efforts.

In addition, our questions enabled us to quantify and examine the duration of SOCE and years since ending SOCE. Finally, we sampled a socio-politically diverse group of persons with same-sex attractions who reported varying degrees of same-sex sexual attraction, same-sex sexual behavior, and sexual identity (Lefevor et al., 2019), many who did not identify as LGBQ+. We recruited these individuals through a variety of conservative and liberal networks and venues, increasing the likelihood that our data would capture a broad range of experiences with SOCE. These features of our data enable greater nuance and complexity to the nature and impact of SOCE and clarify the degree of heterogeneity regarding same-sex attracted persons who try to change their sexual orientation.

Consistent with our assessment of the literature on SOCE, we predict:

H_1: Participants currently engaged in SOCE (Ongoing SOCE) would report higher levels of depressive symptoms than participants who had finished their SOCE (Ended SOCE), who would, in turn, report more depression than participants who had never engaged in SOCE (No SOCE).

H_2: Participants with No SOCE history would report greater flourishing than participants who had Ended SOCE, who in turn would report greater flourishing than participants still engaged in Ongoing SOCE.

H_3: More participants who reject an LGBQ+ Identity would be found in the Ongoing SOCE group than in the No SOCE group, which in turn would have more non-LGBQ+-identified participants than the Ended SOCE group.

H_4: More participants who report some change of their sexual attractions would be found in the Ongoing SOCE group than in the No SOCE group, which in turn would have more participants who report some change of their sexual attractions than the Ended SOCE group.

Taken together, these predictions highlight our literature-based expectations that individuals currently engaged in SOCE will evidence worse health outcomes while also being most likely to reject an LGBQ+ identity and report change.

Method

Research Team

In the spirit of adversarial collaboration (Ceci et al., 2024), a socio-politically diverse team of researchers was recruited to reduce bias and increase generalizability. All team members support the right of persons with stigmatized sexualities to pursue their self-determined identities, both sexual and religious. The team was primarily same-sex attracted (SSA)/LGBQ+ identified, and some members have held leadership positions or are well respected in both liberal and conservative organizations, such as North Star, the Alliance for Therapeutic Choice and Scientific Integrity, Affirmation, and the LGBTQ-Affirmative Therapist Guild of Utah. By having at least some

researchers known to and trusted by sexual minorities in both LGBQ+ and conservative religious communities, we believe this diverse team provided access to a more representative and ecologically valid sample of sexual minority persons, hence enhancing generalizability. Additional details regarding the formation and composition of the research team can be found in Lefevor et al. (2019).

Survey Design

Participants were directed to take part in a survey administered through SurveyMonkey.com (4OptionsSurvey.com). The survey was securely designed to identify important aspects of life and relationships for those who experience (or have experienced) same-sex sexual attraction and were involved in one of four relationship options (i.e., single and celibate; single and non-celibate; heterosexual, mixed-orientation relationship; same-sex relationship). We utilized the terminology of same-sex attraction ("SSA") after feedback from conservative stakeholders in the study indicated this would feel inclusive and encourage participation by many of our religiously conservative participants who do not identify as LGBQ+ and therefore might otherwise not partake in the study. Such individuals often use this language to reflect a prioritization of a religious/spiritual identity over an LGBQ+ identity (Lefevor et al., 2020).

The first and second sections of the survey were mandatory for all participants who desired to take part in the study and included demographics, health indicators, and questions related to 10 specific domains (e.g., relational satisfaction, religious identity, values). The third section was optional, consisting of additional questions related to each domain, and items from this section were not examined in the present study. Participants were informed they could withdraw from taking the survey at any time. A description of the survey can be found in Lefevor et al. (2019).

Procedure

Data collection and recruitment

We obtained approval from the Idaho State Institutional Review Board prior to commencing this study. Data collection occurred from September 2016 to June 2017. This involved invitations through (a) news media in Utah; (b) email lists, Facebook groups, and conventions; (c) psychological associations and support networks; and (d) mental health providers. Organizations and networks utilized for recruitment ranged from religiously and/or conservatively oriented to LGBQ+-affirming. To be included in the dataset, participants must have (a) been at least 18 years of age, (b) experienced same-sex sexual attraction at some point in their life, (c) identified their relationship status, and (d) completed the first two sections of the survey. Complete details about participant recruitment can be found in Lefevor et al. (2019).

Measures

The survey included both measures created specifically for this study as well as pre-existing measures and was designed to provide data to inform several studies. The present research incorporated the following variables.

Depressive Symptoms

Current depressive symptoms were measured using the Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001), composed of 9 items, including how often during the past two weeks

participants had been bothered by "feeling down, depressed, or hopeless." Items were rated from 0 = *Not at all* to 3 = *Nearly every day*. Total scores could range from 0 to 27, with higher scores reflecting greater depression. The PHQ-9 has good concurrent validity with the Short Form-20 (SF-20) and diagnosis of major depressive disorder (Kroenke et al., 2001). Cronbach's alpha for the present study was .90.

Flourishing

Psychosocial flourishing was measured using the Flourishing Scale (Diener et al., 2009), an 8-item measure of self-perceived success in areas such as relationships, purpose, and optimism rated on a 7-point Likert scale with anchors of 1 = *Strongly disagree* to 7 = *Strongly agree*. Total flourishing scores could range from 8 to 56, with higher scores indicating greater flourishing. The Flourishing Scale is psychometrically validated and comparable to other psychosocial well-being measures. Cronbach's alpha for the present study was .91.

SOCE Engagement

We utilized existing items in the survey to compute three engagement groups with SOCE comprised of participants who indicated never engaging in SOCE (No SOCE), currently engaged in SOCE (Ongoing SOCE), and having ended their SOCE (Ended SOCE). The question inquiring about engagement in SOCE stated:

> How much time have you spent trying to **reduce, change, and/or eliminate** your same-sex attractions, behavior, or orientation (for example, using avoidance, denial, self-control, religion/faith, counseling/programs, etc.)?

Participants were then asked to answer three age/time-oriented response items:

> **Starting at what age** (if you never have tried, indicate 0):
>
> **Ended at what age**:
>
> I am **still trying** to reduce, change, and/or eliminate my same-sex sexual attractions, behavior, or orientation (indicate "still trying):

Participants who entered 0 for when they started SOCE comprised the No SOCE group (N = 299). The Ongoing SOCE group was comprised of participants who indicated they were still trying to change (N = 318). The Ended SOCE group was comprised of participants who reported they had ended their SOCE (N = 707).

For participants who had or were still engaged in SOCE, we computed the duration of their SOCE by subtracting the age they ended SOCE (using the participants' current age if they were still engaged in SOCE) from the age they began SOCE. For participants who reported having stopped SOCE, we computed the years since SOCE by subtracting their current age from their age at the time they reported ending their pursuit of SOCE.

Sexual Identity Labeling

Participants were provided with 27 options for their sexual identity, which we collapsed into a binary variable comparing non-LGBQ+-identified (e.g., heterosexual with same-sex attraction; same-sex or same-gender attracted; heterosexual/straight; non-heterosexual; do not use a label;

n = 562) with LGBQ+-identified (*n* = 834).

Change of Sexual Attractions

Participants were asked, "Which of these statements describe you? (check any that apply to you)." Seven options were provided regarding sexuality, including currently being contented with one's sexuality (*n* = 820), focusing on managing or seeking recovery in one's sexual addition rather than changing sexuality (*n* = 277), and one's sexual abuse history as continuing to affect sexuality (*n* = 157) or rarely if ever negatively effecting sexuality (*n* = 87). Two options were examined in this study: (a) "I have always had enough sexual attractions to the other sex to make heterosexual sex enjoyable" (*n* = 182) and (b) "I have been able to develop enough sexual attraction to the other sex to make heterosexual sex enjoyable" (*n* = 184). In addition, we assessed Kinsey ratings (Kinsey et al., 1948) of past year engagement in same-sex sexual behavior (*n* = 1075) as well as past year experiences of same-sex sexual attraction, fantasies, and romantic desires (*n* = 1324) on a scale of 0 = *Exclusively heterosexual with no homosexual* to 6 = *Exclusively homosexual with no heterosexual*.

Analytic Strategy

Based on the recommendation of a reviewer, we assessed for differences between participant's identifying as male or female, given known differences in sexuality between the sexes (e.g., fluidity in attractions, sociosexuality; Diamond, 2008; Katz-Wise, 2015; Schmitt, 2003). Where differences were significant, we conducted analyses stratified by this binary identification. Due to age being associated with the dependent variables (depressive symptoms and flourishing), we analyzed H_1 and H_2 utilizing two one-way ANCOVAs, with SOCE status as the independent variable and the health measures as the dependent variables, controlling for age. H_3 involves two nominal variables, which we examine through χ^2 statistics, which were also conducted for H_4, along with ANOVAs for the Kinsey ratings by SOCE group comparisons. Secondary analyses to gain insight into any dose effects of the duration of SOCE and the effect of time following SOCE on health utilized ANOVAs, *t*-scores and partial correlations.

Data Analysis and Statistics

All analyses were conducted using SPSS Statistics 28. Univariate analyses supported the linearity and normality of all our continuous variables. All variables were within the acceptable range of skewness less than 2 and kurtosis less than 4 (West et al., 1995). These impressions were confirmed by examination of residuals. Means, standard deviations, and zero-order correlations of our continuous variables are presented in Table 2. A power analysis indicated that the sample size required to detect a medium effect in ANOVA (f = .25, α = .05, 1- β = 0.8) was 159 (53 per group).

For the one-way ANCOVAs, we assessed for equality of variances using Levene's test. Heteroscedasticity was examined through use of the White and Breusch-Pagan tests and examination of residuals. We examined the interaction between covariate and independent variables to assess the homogeneity-of-slopes assumption, which would not be met were a significant interaction identified. Our checks of these assumptions indicated ANCOVA was appropriate for our outcome measures. Although we will allude to smaller effect sizes in our results, we employed a smallest effect size of interest (SEOSI) framework for determining findings that are likely to have clinical or practical significance and hence most reliable for making

definitive conclusions (Hojat & Xu, 2004). We follow the recommendations of Ferguson (2009) and Schumm (2015), who advocate medium effect sizes as a SESOI, particularly with research that could foreseeably be utilized in political and public policy decisions. We referenced Cohen's (1988) guidelines for identifying medium effects for our SESOI.

Results

Participants

A total of 1499 respondents completed all mandatory questions. Examination of the data identified 27 participants who reported having no experience of same-sex sexual attraction, fantasies, or behaviors throughout their lives. An additional 60 participants responded in a contradictory manner to one or more questions about SOCE engagement (e.g., indicating they were still pursuing SOCE but also that they had ended SOCE at an earlier age). Finally, in order to compare only those participants who identified as female or male, we removed another 88 who identified their gender as something else (e.g., transwoman, genderqueer, other). Removal of these participants led to a total N of 1324 for the present study.

Demographic characteristics of the sample can be found in Table 1. The average age of participants was 39.00 years (*SD* = 14.27). White (91.2%; *n* = 1208) and male (75.3%; *n* = 997) participants were overrepresented. A slight majority of our sample (53.3%; *n* = 706) were affiliated with The Church of Jesus Christ of Latter-day Saints (LDS) while sexual identity labels were divided relatively evenly between those who identified as LGBQ+ and those who did not. Additional sample information can be found in Table 2.

Table 1. *Participant Demographic Characteristics.*

Religious Affiliation	***n***	**%**	**Religious Affiliation**	***n***	**%**
White/Caucasian	1208	91.2	Latter-day Saint/Mormon	706	53.3
Multi-ethnic/None apply	41	3.1	None/Unaffiliated	292	22.1
Latina(o)/Hispanic	40	3.0	Multiple/Other	82	6.2
Black/African-American	13	1.0	Looking, exploring	39	2.9
Asian/Asian-American	8	.6	Catholic	39	2.9
Middle Eastern	6	.5	Evangelical Protestant	37	2.8
All others	8	.6	Judaism	18	1.4
Education	***n***	**%**	Baptist	16	1.2
Less than high school degree	5	.4	Jehovah's Witness	12	.9
High school degree	47	3.5	Methodist	12	.9
Some college, no degree	263	19.9	Episcopalian	11	.8
Associate degree	77	5.8	Pentecostal	11	.8
Bachelor's degree	467	35.3	All others	49	3.7
Graduate degree	453	34.2			
Vocational training	12	.9			

Table 2. *Means, Standard Deviations, Range, and Zero-Order Correlations for Continuous Variables.*

Variable	*M*	*SD*	Range	1	2	3	4	5
1. Depression	6.74	5.94	0-27	----				
2. Flourishing	46.49	7.65	8-56	-.55***	----			
3. Age	38.96	14.27	18-80	-.19***	.10***	----		
4. SOCE Duration	15.93	12.33	0-65	-.05	.03	.61***	----	
5. Years Since SOCE	8.99	9.83	0-53	-.19***	.16***	.63***	-.08*	----

Note: $N = 1324$. *$p < .05$. ***$p < .001$.

SOCE Engagement and Health

Depressive Symptoms

An independent-samples t-test showed that females ($M = 7.8$, $SD = 6.1$) reported significantly higher depression scores than males ($M = 6.4$, $SD = 5.8$), $t(1322) = 3.89$, $p = .001$, $d = 0.24$ or $r = .12$, indicating a small effect. We thus conducted separate analyses for participants who identified as male or female.

Table 3 presents the adjusted means and standard errors for depressive symptoms (separately for males and females) and flourishing (for the full sample) across the three SOCE groups. Levene's test of equality of error variances was significant among male participants depression scores, $F(2, 994) = 5.56$, $p = .004$, indicating heterogeneity of variances. We found that using robust (HC2) standard errors in the ANCOVA to adjust for this violation (Hayes & Cai, 2007) did not meaningfully alter the findings, so we proceeded with the unadjusted ANCOVA. The covariate, age, was significantly related to depressive symptoms among male participants, $F(1,993) = 26.00$, $p < .001$, $\eta^2_p = .026$. After controlling for age, there remained significant main effect of SOCE group on depression, $F(2, 993) = 7.63$, $p < .001$, $\eta^2_p = .015$, representing a small effect size. Pairwise robust comparisons showed that male participants in the Ongoing SOCE group had significantly higher depression scores than those in the Never SOCE group ($p = .001$) and the Ended SOCE group ($p = .005$), which did not significantly differ from each other ($p = .553$). Stated in terms of percentage of at least a moderate degree (PHQ-9 > 10) of depressive symptoms, 28.5% (76/267) of the Ongoing SOCE group met this criterion, compared to 23.7% (134/431) in the Ended SOCE group and 16.4% (27/165) in the Never SOCE group. These results provide partial support for our first hypothesis. There was a lack of relationship between depressive symptoms and duration of engagement in SOCE for male participants, $r(827) = -.01$, $p = .79$.

In examining the effect of time on depression post-SOCE, we found male and female participants also differed on the length of their time following SOCE. We conducted an independent-samples t-test to assess this difference. Levene's test for equality of variances was significant, $F(1, 704) = 11.37$, $p < .001$, indicating that the assumption of equal variances was violated. Therefore, results are reported using the Welch correction. There was a significant difference in years since participants had ended their SOCE, with males having less recent experiences on average ($M = 9.51$, $SD = 10.16$) than females ($M = 6.93$, $SD = 8.09$), $t(264.75) = 3.21$, $p = .001$, $d = 0.26$ or $r = .14$. Hence, we examined this variable separately for males and females. We conducted a one-way (ANOVA) to examine whether depression scores differed among male participants as a function of the time (in years) after ending SOCE using quartile points to demarcate four groups. Results

revealed a significant effect of time since SOCE on depression scores among males, $F(3, 560) = 9.96$, $p < .001$, $\eta^2 = .051$, a small to medium effect.

Table 3. *Estimated Marginal Means for Depression and Flourishing by SOCE Engagement and Gender.*

SOCE Group	SOCE Status	*n*	Mean	Std. Error
Depression (Female)	Never SOCE	134	7.29	0.50
	Ongoing SOCE	51	10.15	0.81
	Ended SOCE	142	7.54	0.49
Depression (Male)	Never SOCE	165	5.45	0.45
	Ongoing SOCE	267	7.49	0.35
	Ended SOCE	565	6.13	0.24
Flourishing (Combined)	Never SOCE	299	47.02	0.44
	Ongoing SOCE	328	45.04	0.43
	Ended SOCE	707	46.92	0.29

Note. Values are estimated marginal means controlling for age. For females, covariate age = 35.57 years; for males, age = 40.08 years; for combined flourishing, age = 38.96 years. SOCE = Sexual Orientation Change Efforts.

Post hoc Bonferroni tests indicated that male participants 0-2 years following SOCE reported greater depressive symptoms ($M = 8.35$, $SD = 6.31$) than those 3-5 years post-SOCE ($M = 5.95$, $SD = 5.49$, $p = .002$), 6-12 years after SOCE ($M = 5.33$, $SD = 5.39$, $p < .001$), and 13+ years subsequent to SOCE ($M = 5.12$, $SD = 5.34$, $p < .001$). No other significant differences were found among the groups (ps > .05).

We conducted similar ANCOVA procedures for our female participants. The assumption of homogeneity of variances was satisfied, $F(2, 324) = 0.02$, $p = .985$. After adjusting for age, there was a significant main effect of SOCE engagement status on depression, $F(2, 323) = 4.87$, $p < .008$, partial $\eta^2_p = .029$, indicating a small effect. The covariate, age, was also significant, $F(1, 323) = 33.80$, $p < .001$, $\eta^2_p = .095$. Pairwise robust comparisons indicated that female participants in the Ongoing SOCE group reported significantly higher depression than those in the Never SOCE group and the Ended SOCE group, ps = .008 and .018, respectively. No significant difference was found between the Never and Ended SOCE groups ($p = 1.000$). In terms of percentage per group of females with moderate (PHQ-9 > 10) or higher depression scores, 41.2% (21/51) of participants in the Ongoing SOCE group met this criterion, compared to 33.8% (48/142) in the Ended SOCE group and 30.6% (41/134) in the Never SOCE group. These findings also partially supported our first hypothesis. The bivariate correlation between the duration of SOCE engagement and depression scores indicated a significant, small negative association, $r(193) = -.17$, $p = .02$. However, this association was fully attenuated when controlling for age, $r(190) = .13$, $p = .07$.

In comparing female participants' depression scores over time following SOCE (segmented by quartile cutoffs in years) using ANOVA, we found the assumption of homogeneity of variances was not met, $F(3, 138) = 8.95$, $p < .001$; therefore, Welch's ANOVA was used. The analysis indicated

a significant effect of years since SOCE on depression, $F(3, 71.65) = 7.33$, $p < .001$, $\eta^2 = .15$, reflecting a medium effect size. Post hoc Dunnett T3 tests showed that female participants two or fewer years following SOCE reported significantly higher depression ($M = 10.75$, $SD = 7.37$) than those 5-9 years following SOCE ($M = 5.71$, $SD = 4.34$; $p = .002$) and 10+ years after SOCE ($M = 5.06$, $SD = 4.27$; $p < .001$), but not higher than participants 3-4 years post-SOCE ($M = 7.39$, $SD = 5.63$, $p = .095$). No other pairwise differences between SOCE groups were statistically significant ($ps > .05$).

Flourishing

Assessment for differences between male and female identified participants indicated similar levels of flourishing ($t(1322) = .67$, $p = .50$, $d = .04$ or $r = .02$, so we conducted analyses on a combined dataset. The assumption of homogeneity of variances was slightly violated, $F(2, 1321) = 3.11$, $p = .045$; however, use of robust (HC2) standard errors in the ANCOVA to adjust for this violation again did not substantively modify the findings, so we proceeded with the unadjusted ANCOVA. Age was a significant covariate, $F(1, 1320) = 17.03$, $p < .001$, partial $\eta^2_p = .013$. As seen in Table 3, after controlling for age, there remained statistically significant main effect of SOCE engagement status on flourishing, $F(3, 1320) = 7.55$, $p < .001$, partial $\eta^2_p = .011$, a small effect size. Adjusted means pairwise comparisons (Bonferroni adjusted) revealed that participants continuing with SOCE reported significantly less flourishing than those who had never experienced SOCE ($p = .001$) or had ended SOCE ($p < .001$). The difference between the Never SOCE and Ended SOCE groups was not significant (p = .85). These findings provided partial support to our second hypothesis. In addition, duration of SOCE was not significantly correlated with flourishing, $r(1324) = .03$, $p = .38$.

We again used ANOVA to examine levels of flourishing among respondents following SOCE (in years) using quartile demarcation. The assumption of homogeneity of variances was met, $F(3, 702) = 0.59$, $p = .62$. The ANOVA indicated a statistically significant effect of time since SOCE on flourishing, $F(3, 702) = 8.34$, $p < .001$, $\eta^2 = .034$, reflecting a small effect. Pairwise post hoc comparisons with Bonferroni adjustment revealed that participants who ended their change effort 10+ years earlier ($M = 48.65$, $SD = 6.16$) reported significantly higher flourishing than participants who were 0-2 years ($M = 45.16$, $SD = 7.02$; $p < .001$) and 3-5 years post-SOCE ($M = 46.43$, $SD = 7.38$; $p = .018$). Participants who were 5-9 years out from their SOCE ($M = 47.50$, $SD = 7.45$) also reported significantly higher flourishing than those who ended their SOCE 0-2 years prior ($p = .012$). No other group differences were significant.

Sexual Identity Labeling, Pre-Existing and Developed Ability to Enjoy Other-Sex Sexual Behavior

Preliminary analyzes indicated a significant relationship between gender and sexual identity, $\chi^2(1, 1317) = 15.32$, $p < .001$, $\varphi = .116$. Males ($n = 420$; 42.2%) were more likely than females ($n = 96$; 29.9%) to have not adopted an LGBQ+ identity. Hence, we also examined these variables stratified by male and female identification. A chi-square test indicated a significant relationship between SOCE group and sexual identity among male participants, $\chi^2(2, 996) = 185.8$, $p < .001$, $\varphi = .431$, reflecting a medium to large effect size. Self-identified males currently in SOCE were more likely to not identify as LGBQ+ (77.1%, 205/266) than those who had never (36.4%, 60/165) or had ended SOCE (27.4%, 155/565). Similarly for female participants, there was a significant association between SOCE engagement status and sexual identity among females, $\chi^2(2, N = 321) = 16.4$, $p < .001$, $\varphi = .23$, a small to medium effect size. Female participants who were still engaged

in SOCE were more likely to not have adopted an LGBQ+ identity (47.1%, 24/51) than those who had never engaged in SOCE (34.9%, 45/129) or had ended their SOCE (19.1%, 27/141). These findings partially confirmed our third hypothesis.

We predicted that participants in the group with Ongoing SOCE would report having the highest degree of other-sex sexual attraction to make other-sex sexual behavior enjoyable. We found a significant difference between male and female participants on this variable, $\chi^2(1, 1{,}324) = 44.51$, $p < .001$, $\varphi = .18$, indicating a small-to-moderate effect size. Examination of the crosstabulation showed that 24.8% of females (81/327) and 10.1% of males (101/997) reported having enough opposite-sex attraction (OSA) to enjoy sex prior to SOCE. Hence, we again stratified our analysis of this variable between males and females.

For males, as seen in Table 4, the association between SOCE engagement status and reporting always having enough OSA to enjoy heterosexual sex was statistically significant, $\chi^2(2, 997) = 10.98$, $p = .004$, $\varphi = .105$, reflecting a small effect size. Male participants who were currently engaged in SOCE were most likely to report having enough OSA to enjoy sex (15.0%, 40/267), followed by those who had never engaged in SOCE (10.9%, 18/165), and those who had ended their SOCE (7.6%, 43/565). Pairwise effects were all small ($\varphi \approx .04$ - $.08$). The largest difference was between ongoing versus ended SOCE ($\varphi = .08$), reflecting that male participants in ongoing SOCE were somewhat more likely to report enough OSA than those who had ended SOCE. Table 4 additionally indicates that among female participants, the relationship between SOCE status and always having sufficient OSA to make heterosexual sex enjoyable was also statistically significant, $\chi^2(2, 327) = 13.73$, $p = .001$, $\varphi = .205$, indicating a small-to-medium effect. Female participants who had never undergone SOCE were the most likely to report always having enough OSA to enjoy heterosexual sex (33.6%, 45/134), followed by those who had ended their SOCE (22.5%, 32/142) and those who were continuing their SOCE (7.8%, 4/51). Pairwise comparisons revealed small to medium effects between groups, with the largest difference between female participants who had never engaged in SOCE and those with ongoing SOCE ($\varphi = .27$).

Table 4. *Associations Between SOCE Engagement and Having Enough Opposite-Sex Attraction (OSA) to Enjoy Sex by Gender.*

SOCE Group	Enough OSA to Enjoy Sex	Male *n* (%)	Female *n* (%)
Never SOCE	No	147 (89.1%)	89 (66.4%)
	Yes	18 (10.9%)	45 (33.6%)
Ongoing SOCE	No	227 (85.0%)	47 (92.2%)
	Yes	40 (15.0%)	4 (7.8%)
Ended SOCE	No	522 (92.4%)	110 (77.5%)
	Yes	43 (7.6%)	32 (22.5%)
Total	No	896 (89.9%)	246 (75.2%)
	Yes	101 (10.1%)	81 (24.8%)
χ^2(df = 2)		10.95**	13.81***
Cramér's *V*		.11	.21
N		997	327

Note. SOCE = sexual orientation change efforts; OSA = opposite-sex attraction. **$p < .01$. ***$p < .001$.

We also stratified our examination of participants' responses to the item about having developed

enough other-sex attraction to make heterosexual sex enjoyable, as male and female participants differed modestly in their perceived experience, $\chi^2(1, 324) = 4.45$, $p = .035$, $\varphi = .06$, representing a small effect. Specifically, 15.0% of males (150/997) reported developing enough OSA, compared to 10.4% of females (34/327). Among the male participants, as presented in Table 5, the association between SOCE engagement status and reporting that one had developed enough OSA to enjoy sex among males was statistically significant, $\chi^2(2, 997) = 52.43$, $p < .001$, $\varphi = .229$, representing a small-to-moderate effect size. In partial support of our fourth hypothesis, males in the ongoing SOCE were most likely to report developing enough OSA (28.1%, 75/265), compared with those who had ended SOCE (11.7%, 66/565) or had never engaged in SOCE (5.5%, 9/165). Pairwise comparisons indicated that the strongest difference was between the Never SOCE and Ongoing SOCE groups, $\varphi = .33$, $p < .001$, a moderate effect. The Ended SOCE group differed modestly from both Never SOCE ($\varphi = .16$, $p = .002$) and Ongoing SOCE ($\varphi = .18$, $p = .001$), reflecting smaller but still significant differences in reported OSA development.

For female participants, Table 5 indicates the association between SOCE engagement status and having developed enough OSA to enjoy heterosexual sex was also statistically significant, $\chi^2(2, 327) = 8.82$, $p = .012$, $\varphi = .164$, reflecting a small effect. Participants with ongoing SOCE were more likely to report developing enough OSA (21.6%, 11/51) than those who had ended their SOCE (9.9%, 14/142) or those who never engaged in SOCE (6.7%, 9/134), partially in line with our fourth hypothesis. Pairwise comparisons showed the largest difference between Never SOCE and Ongoing SOCE ($\varphi = .20$, $p = .009$, indicating a small-to-medium effect), with smaller differences between Ongoing and Ended SOCE ($\varphi = .13$, $p = .041$) and between Never and Ended SOCE ($\varphi = .05$, ns).

Table 5. *Associations Between SOCE Engagement and Developing Enough Opposite-Sex Attraction (OSA) by Gender.*

SOCE Group	Developed Enough OSA	Male *n* (%)	Female *n* (%)
Never SOCE	No	156 (94.5%)	125 (93.3%)
	Yes	9 (5.5%)	9 (6.7%)
Ongoing SOCE	No	192 (71.9%)	40 (78.4%)
	Yes	75 (28.1%)	11 (21.6%)
Ended SOCE	No	499 (88.3%)	128 (90.1%)
	Yes	66 (11.7%)	14 (9.9%)
Total	No	847 (85.0%)	293 (89.6%)
	Yes	150 (15.0%)	34 (10.4%)
χ^2(df = 2)		52.3***	8.75*
Cramér's *V*		.23	.16
N		997	327

Note. SOCE = sexual orientation change efforts; OSA = opposite-sex attraction. *$p < .05$. ***$p < .001$.

In terms of opposite-sex attraction and engagement with SOCE among male participants, 10.0% (83/832) reported OSA prior to SOCE sufficient to enjoy heterosexual sex, which was nearly evenly split between the ongoing and ended SOCE groups. Only 18 male participants (1.8%) across the male sample reported having had sufficient OSA while never engaging in SOCE. Of those currently engaged in SOCE, 16.9% (141/832) of male participants reported developing sufficient OSA to

enjoy heterosexual sex, and 53.2% (75/141) of these were in the ongoing SOCE group. Less than 1% (9/997) reported developing OSA outside of any SOCE engagement. Subtracting 20 male participants who reported both having and developing sufficient OSA in order to avoid duplication, the results show that 24.5% (204/832) of males exposed to SOCE indicated they either had or developed enough OSA for enjoyable heterosexual sex. In context of our entire sample, 23.1% (231/997) of all male participants indicated they either had or developed enough OSA for enjoyable heterosexual sex.

Examining the relationship between experiencing SOCE and opposite-sex attraction among female participants, 18.7% (36/193) reported always having sufficient OSA to enjoy heterosexual sex, most of these (89%, 32/36) having ended their SOCE. It should also be noted that of all female participants who reported sufficient OSA, 56% (45/81) reported no SOCE involvement. Of the female respondents, 13% (25/193) who pursued SOCE indicated they developed enough OSA to enjoy sex. Only 2.8% (9/327) of the female sample had developed sufficient OSA and never engaged in SOCE. Subtracting six participants who reported both sufficient and developed OSA so as to avoid duplication, our findings indicate that 28.5% (55/193) of female respondents exposed to SOCE had either had or developed sufficient OSA to enjoy heterosexual sex. In context of our entire sample, 33.3% (109/327) of all female participants indicated they either had or developed enough OSA for enjoyable heterosexual sex.

Regarding sexual behavior in the past year, we first assessed for gender differences between males and females in the full SOCE sample. Levene's test indicated unequal variances, $F(1, 1073) = 26.46$, $p < .001$, so equal variances were not assumed. Results showed that males ($M = 4.14$, $SD = 2.48$) reported significantly more same-sex sexual behavior than females ($M = 2.83$, $SD = 2.72$), $t(382.49) = 6.83$, $p < .001$, $d = 0.52$, representing a moderate effect size. Our analyzes therefore were done separately for males and females.

Among male participants, ANOVA findings indicated there was a significant effect of SOCE group on Kinsey sexual behavior scores, $F(2, 822) = 86.16$, $p < .001$, $\eta^2 = .17$, indicating a large effect size. The assumption of homogeneity of variances was violated, as indicated by Levene's test, $F(2, 822) = 9.85$, $p < .001$; therefore, we confirmed this result with the Welch ANOVA, which was also significant, $F(2, 312.54) = 78.63$, $p < .001$. Post hoc comparisons using Dunnett's T3 adjustment showed that males currently undergoing SOCE reported significantly lower Kinsey scores (indicating less same-sex behavior; $M = 2.33$, $SD = 2.41$) than both males who had never participated in SOCE ($M = 4.66$, $SD = 2.26$; $p < .001$) and those who had ended SOCE ($M = 4.75$, $SD = 2.19$; $p < .001$). There was no significant difference between the Never SOCE and Ended SOCE groups ($p = .964$). Together, these results suggest that male participants currently engaged in SOCE reported significantly less same-sex sexual behavior in the past year compared to those who never participated or who have ended SOCE efforts.

We further conducted ANOVA to examine differences in male participants Kinsey sexual behavior across four groups defined by quartile splits in years since SOCE. Descriptively, scores were similar across the 0-2, 3-5, and 6-12 year post-SOCE groups (Ms = 4.46, 4.52, and 4.58), whereas males 13+ years after SOCE reported a higher mean ($M = 5.45$). Levene's test indicated heterogeneity of variances, $F(3, 482) = 23.10$, $p < .001$, and the Welch's ANOVA confirmed a significant overall difference among groups, $F(3, 261.79) = 8.78$, $p < .001$. The standard ANOVA also showed a significant effect, $F(3, 482) = 5.56$, $p < .001$, $\eta^2 = .033$, reflecting a small effect. Post-hoc Bonferroni adjusted comparisons indicated that those 13+ years following SOCE had significantly higher

Kinsey scores than respondents in the other groups (*p*s = .003-.013), whereas no differences were found among the first three groups (*p*s = 1.000). Overall, male participants further removed from SOCE reported higher sexual behavior scores.

We conducted similar ANOVAs for the female participants. The effect of SOCE group on Kinsey past sexual behavior scores was significant, $F(2, 247) = 6.42$, $p = .002$, $\eta^2 = .049$, suggesting a small-to-medium effect. The assumption of homogeneity of variances was not met, $F(2, 247) = 8.15$, $p < .001$, based on Levene's test. Therefore, Welch's ANOVA was used to confirm robustness of the results, which was significant, $F(2, 88.61) = 6.73$, $p = .002$, indicating that mean Kinsey scores differed significantly among SOCE groups. Post hoc comparisons using Dunnett's T3 adjustment indicated that female participants who had ended SOCE ($M = 3.45$) reported significantly higher Kinsey scores than those who had never participated in SOCE ($M = 2.32$; $p = .007$) and those with ongoing SOCE ($M = 2.03$; $p = .012$). The difference between the never and ongoing groups was not significant ($p = .911$). As a whole, these results suggest that female respondents who were currently engaged in SOCE reported less same-sex sexual behavior in the past year than those who had ended SOCE but a similar level to those who had never engaged in SOCE.

Years since SOCE demarcated by quartile splits were not associated with our female participants' Kinsey sexual behavior scores. The ANOVA indicated no significant group differences, $F(3, 116) = 2.18$, $p = .094$, and effect sizes were small ($\eta^2 = .053$). Post-hoc comparisons showed no significant differences between any groups (all *p*s > .148).

There was also a difference between males and females in their reported experience of same-sex attraction during the past year. Levene's test indicated unequal variances, $F(1, 1302) = 111.02$, $p < .001$, so equal variances were not assumed. Chi-square results showed that males ($M = 5.08$, $SD = 1.31$) reported significantly higher levels of same-sex attraction than females ($M = 3.74$, $SD = 1.81$), $t(428.18) = -12.22$, $p < .001$, with a large effect size, $d = 0.81$. We subsequently stratified further analyses by identification as male or female.

ANOVA procedures for SOCE group differences in past year sexual attractions for the male participants were significant, $F(2, 983) = 40.47$, $p < .001$, $\eta^2 = .076$, representing a medium effect. Levene's test indicated a significant violation of the homogeneity of variance assumption, $F(2, 983) = 33.34$, $p < .001$; therefore, Welch's ANOVA was utilized to confirm the findings, which were also significant, $F(2, 331.53) = 36.88$, $p < .001$, $\eta^2 = .076$. Post hoc comparisons using Dunnett's T3 test indicated that individuals in the ended SOCE group ($M = 5.36$, $SD = 1.00$) reported significantly higher same-sex attraction than both the never SOCE group ($M = 5.01$, $SD = 1.66$; $p = .030$) and the ongoing SOCE group ($M = 4.52$, $SD = 1.46$; $p = .001$. In addition, the Never SOCE group reported significantly greater attraction than the ongoing SOCE group ($p = .006$). These findings suggest that male participants who had completed SOCE reported higher levels of same-sex attraction than those who were currently pursuing SOCE or had never engaged in it.

Years since SOCE were not, on average, associated with differences in same-sex attraction during the past year among male participants, $F(3, 558) = 0.51$, $p = .678$, $\eta^2 = .003$. Means across groups were highly similar (*M*s = 5.30-5.44). Post-hoc comparisons using Bonferroni adjustments showed no significant pairwise differences between any of the four periods of years since ending SOCE (all *p*s ≥ .814).

We also found differences for past year sexual attractions among female participants, $F(2, 315) =$

16.98, $p < .001$, $\eta^2 = .097$, representing a medium-to-large effect. Levene's test indicated that the assumption of homogeneity of variances was violated, $F(2, 315) = 6.60$, $p = .002$. Consequently, we checked this finding utilizing Welch's ANOVA, which also showed a significant effect of SOCE status on same-sex attraction, $F(2, 148.04) = 16.03$, $p < .001$, $\eta^2 = .097$. Post hoc comparisons using the Dunnett's T3 procedure indicated that participants who had never engaged in SOCE ($M = 3.05$, $SD = 1.95$) reported significantly lower same-sex attraction than those with ongoing SOCE ($M = 4.37$, $SD = 1.44$), $p < .001$, and those who had ended SOCE ($M = 4.13$, $SD = 1.61$), $p < .001$. The difference between the ongoing and ended SOCE groups was not significant ($p = .68$). These findings suggest that female respondents with any SOCE involvement—past or ongoing—reported higher levels of same-sex attraction than those who had never participated in SOCE.

Similar to the male participants, years following SOCE demarcated by quartile splits was not associated with differences in past year Kinsey same-sex attraction scores among female participants, $F(3, 135) = 2.18$, $p = .094$, $\eta^2 = .046$, reflecting a small effect size. Group means ranged from 3.66 to 4.67. Bonferroni adjusted corrections revealed no significant pairwise differences (all ps $\geq .085$).

Discussion

At the outset of this discussion, we observe that vast majority of our findings did not exceed our smallest effect size of interest (SESOI), which we set to be at the medium effect level in keeping with Ferguson (2009) and Schumm (2015). This carries the implication that much of our results may not be of clinical or practical significance and should therefore be interpreted with caution. However, our findings are largely in keeping with the existing literature on SOCE, though to our knowledge, no other study in this area has employed a SESOI interpretive framework.

SOCE and Well-Being

We found that participants engaged in SOCE reported significantly more depressive symptoms and less flourishing than either those who had stopped pursuing change or those who had never actively pursued it. This finding supports the conceptualization of SOCE as a distal and proximal stressor (Meyer, 2003), which may have mental health consequences for same-sex attracted persons.

The most established explanation for these findings is that continuing to feel depressed and not flourishing and deciding to stop trying to reduce, change, or eliminate their same-sex sexual experiences was a health-promoting decision for the majority of our participants. This explanation resonates with the APA's (2021) resolution on sexual orientation change efforts and other studies showing that, for most people who have been studied, trying to reduce, change, or eliminate same-sex sexuality increases distress (Dehlin et al., 2015; Flentje et al., 2013; Lee et al., 2021; Ogunbajo et al., 2022). This finding of heightened distress is particularly notable given the imprecision with which we measured our variables: SOCE were measured as a lifetime variable, but health outcome variables were measured in the past 2 weeks. The fact that there is a relationship between an individual's efforts to change their sexuality over their lifetime and current mental health suggests that these efforts may cause some degree of lasting distress, for example by increasing chronic exposure to minority stress, which can affect subsequent mental health (Pachankis, 2015)

At the same time, we recognize several alternative or additional explanations for our findings.

First, it is possible that the relationship between SOCE, depressive symptoms, and flourishing could be explained by one or more preexisting or intervening variables. For example, it may be that individuals who are most distressed about their sexual orientation are most likely to engage in SOCE and then, in doing so, many become disillusioned with their SOCE and feel better about themselves for ending such efforts and exploring other options (Beckstead & Morrow, 2004). Alternatively, it may be that some individuals who persist with SOCE have more distress prior to their SOCE than those who ended their change efforts and continue in their SOCE because they still find benefit in it, regardless of any experience of change (Sullins, 2022). Future work is needed to examine these possibilities.

Second, each of our three SOCE groups evidenced substantial variation within the group, meaning that at least some participants who were currently engaged in SOCE reported increased flourishing and decreased depression. Finally, as noted above, the group differences may not be clinically significant. Based on published scale norms, we observe the majority of all three groups were in the same range for both dependent variables: depression in the mild range (i.e., 5-10; Kroenke et al., 2001) and flourishing at moderate levels of flourishing (Deiner et al., 2009, 2010; Hone et al., 2014). The sole exception was found among female participants still engaging in SOCE, who were just above the cutoff for moderate depression. Thus, although there may be statistically significant differences between the groups, it may be difficult to observe differences between the groups clinically.

SOCE and Identification

Approximately 35.3% (182/516) of participants who had ended their SOCE did not identify as LGBQ+. Not identifying as LGBQ+ has been associated with greater religious activity and more conservative theological orientation (Lefevor et al., 2020; Rosik et al., 2021a). Though there are other reasons why participants may not have identified as LGBQ+ (e.g., general dislike for labels, neoliberal conceptions of sexuality, prejudice about such labels, internalized stigma), this robust percentage may suggest that many who ended their SOCE were, after an average of several years (9.51 years for males, 6.93 years for females), not alienated from their conservative faith regardless of any experience of change. Some of these individuals' change efforts (e.g., not engaging in same-sex sexual behavior) may have been subsumed into a broader pursuit of religious discipleship.

The distribution of sexual identity labels between SOCE groups provided an intriguing contrast. In line with our third hypothesis, nearly half of male participants (48.8%; 205/420) who did not identify as LGBQ+ were from the Ongoing SOCE group and only 14.3% (60/420) of the males in the Never SOCE group did not identify as LGBQ+. By contrast, for females, the Never SOCE group had the highest percentage (46.9%, 45/96) of non-LGBQ+ identified participants, with the least number of females (25%, 23/96) in the Ongoing SOCE group. These differences may be a reflection of the effects of differential attraction fluidity between males and females, which could lead males to pursue change efforts at greater levels than females. Our results also suggest that males who reject LGBQ+ identities are more likely (77.1%, 205/266) than females not identified as LGBQ+ (47.1%, 24/51) to be actively pursuing SOCE. Males who are same-sex attracted and reject an LGBQ+ identity are more likely to pursue and continue to pursue some form of SOCE compared to their female counterparts who reject an LGBQ+ identity. At least for our sample, the results are also consistent with the proposition that many persons with stigmatized sexualities who may not have achieved their goals for change come to adopt an LGBQ+ identity.

SOCE and Change

Regarding reports of change, our fourth prediction was supported in part for the male respondents. As we predicted, males in ongoing SOCE were more likely to report the development of enough other-sex sexual attraction to enjoy other-sex sexual behavior than those with no SOCE history. Of the males who reported developing OSA, 50% (75/150) were currently engaged in change efforts, followed by those who had ended SOCE (44%, 66/150), which we did not predict. Overall, 16.9% (141/832) of male participants who reported trying to reduce, change, or eliminate their same-sex sexuality stated they had developed enough OSA to make heterosexual sex enjoyable. Among female participants who reported developing sufficient OSA, 41.2% (14/34) had ended their SOCE, while another 32.4% (11/34) were still engaged in change efforts. This result was contrary to our expectations. Overall, 13% (25/193) of female participants who reported trying to reduce, change, or eliminate their same-sex sexuality indicated they had developed enough OSA to enjoy heterosexual sex. Although we did not ask about efforts to develop other-sex sexual attractions, these trends may reflect that many people who were trying to reduce, change, or eliminate their same-sex sexuality may also have been trying to enhance their other-sex sexuality.

Based on these statistics, the most conservative estimate of participants in our sample who are seeking to reduce, change, or eliminate their same-sex sexuality who also report having developed sufficient other-sex attraction to enjoy heterosexual sex is just under 17% for males and 13% for females. These figures might be slightly more if any of those who reported already having sufficient other-sex attraction to enjoy heterosexual sex experienced further strengthening of their other-sex attractions during their SOCE. Such an estimate would be in line with one of the few SOCE studies that considered changes in other-sex attractions (Jones & Yarhouse, 2011).

Among male participants who reported already having sufficient OSA to enjoy heterosexual sex, 42.6% (43/101) came from the Ended SOCE group, followed closely by those still engaged in SOCE (39.6%, 40/101). Overall, 10% (83/832) of male participants who reported trying to reduce, change, or eliminate their same-sex sexuality stated they already experienced sufficient OSA to enjoy heterosexual sex. Taken together, 24.5% (204/832) of male participants reporting SOCE experience either developed or already had sufficient OSA to enjoy heterosexual sex. For female respondents who reported having sufficient OSA to enjoy heterosexual sex, 55.6% (45/81) had never engaged in SOCE, along with another 39.5% (32/81) who had ended SOCE. Female participants who reported such preexisting OSA comprised of 18.7% (36/193) of those females who indicated a history of SOCE. Combining these findings for female participants suggests that 28.5% (55/193) either developed or already experience enough OSA to enjoy heterosexual sex.

These findings are also consistent with reports of greater sexual attraction fluidity among females, and it is not surprising in this light that female participants who had no experience of SOCE reported having sufficient OSA more often (33.6%, 45/134) than did male respondents (10.9%, 18/165). They also indicated having a SOCE history less frequently (58.4%, 191/327) than their male counterparts (83.5%, 832/997). The variability in our findings is consistent with research (Savin-Williams, 2016) indicating that some individuals are sexually attracted to only one gender (monosexual), whereas others are attracted to more than one gender (plurisexual). The observed variability in changes in attraction does not necessarily suggest a shift from a monosexual to plurisexual orientation; rather, it may reflect fluidity in patterns of attraction within an existing

plurisexual orientation.

Of course, these figures must be viewed with caution. We do not know if SOCE influenced participants' perceived changes in sexual attractions, particularly because we did not inquire whether participants were seeking to develop other-sex sexual attractions. Nor can these changes, if they occurred, be definitively equated with a change in sexual orientation, as is suggested by the Kinsey ratings. Developing enough sexual attraction to enjoy heterosexual sex also does not necessarily imply that these participants could or would have enjoyed or been able to sustain heterosexual relationships. Similarly, we do not know the final outcomes of those participants who remained in their SOCE, which could increase or decrease these percentages. Given a median SOCE duration of 13 years (for males) and 10 years (for females), effort justification may also distort reports of change, as people seek to justify the time and effort they have invested in their SOCE. Furthermore, we did not assess the degree to which participants may have perceived a diminishing of same-sex sexual attractions and/or behavior, which, even in the absence of increased other-sex sexual attraction, might have strengthened a conservative religious identity or heterosexual marriage for many participants. However, the majority of our participants appear to have not experienced enough other-sex sexual attraction to enjoy other-sex sexual behavior in the course of their SOCE, and many of these may maintain or adopt an LGBQ+ identity.

Our findings regarding participants' past year sexual behavior is consistent with the view that those still engaged in SOCE were limiting their behavioral expression of their same-sex sexual attractions, while individuals who had ended their change efforts were more likely to engage in same-sex sexual relationships. Post-hoc analyses indicated that Kinsey sexual behavior ratings were positively associated with the years elapsed since ending SOCE for both males, $r(486) = .20$, $p < .001$, and females, $r(120) = .20$, $p < .001$, but this was not the case for Kinsey ratings of sexual attractions. This suggests some movement toward increased same-sex sexual behavior once efforts to reduce, change, or eliminate same-sex sexuality were ceased. Yet, the only statistically significant increase in same-sex behavior by quartile grouping occurred among the males and this came 13+ years after ending SOCE. Furthermore, among the male participants, 53.7% (n = 108) of the Ongoing SOCE participants reported a past year Kinsey sexual behavior score of 0 or 1 compared to only 18.1% (n = 88) of the Ended SOCE group and 19.0% (n = 24) of the Never SOCE group. The majority of male participants still engaged in SOCE appear to be limiting their same-sex behavior, plausibly due to religious proscriptions. However, among female participants, 61.0% (61/100) of the never SOCE group and 56.7% (17/30) reporting ongoing SOCE indicated their past year Kinsey sexual behavior score was 0 or 1, compared to 35.8% (n = 43/120) who had ended SOCE. It may be that female participants found it easier than male participants to limit same-sex behavior apart from any SOCE given their greater opposite-sex attractions, as suggested below. The numbers for the ended SOCE groups may also indicate nearly one-fifth of our male sample and over one-third of our female sample who reported ending their change effort continued to attempt to live within the sexual behavior prescriptions of their conservative religion.

As pertains to the experience of sexual attractions, it may be that participants who did not use SOCE experienced enough (more than incidental) other-sex sexual attraction to enable them to function adequately within their preferred choice of relationships and religious and/or LGBQ+ communities, making the use of SOCE less needed. This appears to have particularly been the case among female participants, who reported significantly less same-sex attraction (SSA) when

having never pursued SOCE than when having any SOCE history. Male participants, on the other hand, reported greater past year SSA after having ended SOCE than when never engaging in SOCE or continuing in SOCE. This may reflect individuals who experienced a more fixed sense of their SSA, pursued SOCE, and ultimately decided to end their change efforts.

Male participants who ended their involvement with SOCE reported, on average, only incidental other-sex sexual attractions, consistent with the probability that many of these participants did not experience change and adopted an LGBQ+ identity. In contrast, female participants who had ended SOCE, on average, reported more than incidental OSA and those who had never undertaken SOCE indicated they experienced heterosexual and same-sex attractions equally. This is consistent with other data pertinent to the relative difficulty of developing sufficient other-sex sexual attraction to make other-sex sexual behavior enjoyable among males and, to a lesser extent, females. Among male participants, 8.0% (*n* = 13) of the Never SOCE group reported a Kinsey attraction rating of 0 or 1, 6.9% (*n* = 22) of the Ongoing SOCE participants and 1.2% (*n* = 24) of the Ended SOCE participants did so. For females, the respective SOCE group percentages were 25.8% (*n* = 33), 7.8% (*n* = 4), and 8.7% (*n* = 12), again suggesting the female participants were experience greater variability in their sexual attractions. Of course, our findings are only averages, and it is reasonable to expect there are many trajectories regarding the change and/or stability of same-sex sexual behavior, attraction, and identity.

Additional Observations

Duration of SOCE

Our findings did not suggest that the length of time participants pursued change was associated in a dose-specific manner with depressive symptoms or flourishing for either male or female respondents. These results are consistent with recent prospective research (Pela & Sutton, 2021) and may suggest perceived negative or positive reports from SOCE are connected to the methods that persons with same-sex attractions utilize to address their sexual orientation distress rather than the length of time they engage in those methods (Rosik, Lefevor et al., 2023). Yet, another interpretation of these findings could be that some participants ended their SOCE and some continued their SOCE due to other variables besides their method of change. For the males in our sample, the mean SOCE duration was 22.2 (*SD* = 14.7) years for those still engaged in SOCE and 13.75 (*SD* = 10.5) years for those who had ended their SOCE. For female participants, the corresponding averages were 19.4 (*SD* = 11.6) and 11.7 (*SD* = 9.1). Future research would ideally investigate which SOCE and other variables influence persistence and termination of SOCE for which clients.

Post-SOCE Experience

Among participants who had completed their engagement in SOCE, our bivariate correlations indicate that longer elapsed time following SOCE was associated with less depression and greater flourishing. This was true for both male and female participants. Depressive symptoms were greatest and flourishing lowest during the first two years following SOCE, with minimal change in the years that followed. The trend pertaining to depression did appear to be stronger for female participants. However, these findings all represented small effects, as suggested by the mean ranges between post-SOCE quartile demarcated groups. The mean difference for depression between highest and lowest group mean depression score was 3.24 scale points for male

participants and 5.68 scale points for females. These differences for flourishing were 3.16 for the males and 4.48 for the females. We do note that female participants 0-2 years after ending SOCE reported levels of depressive symptoms just above the cutoff (*M* = 10.7, *SD* = 7.4) for moderate depression, which in subsequent years had reduced to mild levels of depressive symptoms. Beyond this, we did not find evidence that, on average, our participants reported clinically worse outcomes immediately after SOCE that improved over time or had experiences where reported positive initial health outcomes grew clinically worse over time post-SOCE. However, these results do not negate the likelihood that some participants may have felt worse or did not improve during their SOCE but felt better post-SOCE.

Findings in Light of SESOI Considerations

Given the recommendations of Ferguson (2009) and Schumm (2015) we set a medium effect size as our significant effect size of interest (SESOI) in identifying our most robust and plausibly reliable findings. This standard precluded nearly all of our results pertaining to the impact of SOCE on our health indicators, underscoring the need for caution in interpreting our findings as definitively signifying clinically significant harm. The one exception to this occurred among female participants who ended their SOCE and appear to have their distress greatly reduced five or more years later (i.e., from a mean PHQ-9 of 10.7 to 5.7). Nevertheless, our findings were consistent with the general direction of the existing SOCE literature, which admittedly has neither typically presented effect size statistics nor been subject to a SESOI lens.

Overall, for our participants, findings suggest that although SOCE engagement may be more likely to result in negative rather than positive outcomes for most participants, these negative effects are more modest than is typically assumed. However, our findings offer theoretically meaningful support for the view that SOCE is associated with higher distress, as we identified no results that suggested SOCE may decrease distress or increase flourishing. These mixed results may also reflect that harm from SOCE occurs in more specific contexts than the current literature usually captures, and that research should focus in a more nuanced manner on potential moderators of harm (e.g., coercive versus non-coercive contexts; aversive behavioral techniques versus solely speech-based therapy approaches; same-sex attracted, monosexual people's efforts to experience fluidity versus plurisexual people's efforts to experience monosexuality). The study of the relationship between SOCE and harm will likely be beneficially advanced by moving from a global focus on harm to examining when and where and with whom SOCE is strongly associated with harm.

Our results also provide reliable support to the observation that males undergoing SOCE are much less likely to identify as LGBQ+ than either males who have never engaged in SOCE or those who have ended SOCE. This likely reflects a deep commitment to a conservative religious identity during SOCE, which often appears to accommodate or be replaced by an LGBQ+ identity once change efforts have concluded. This impression is supported by male participants much lower same-sex sexual behavior during their SOCE compared to those who have never undertaken SOCE or have stopped their change efforts.

The remaining findings that exceeded our SESOI are indicative of the differences in the fluidity of sexuality between males and females. We found a large effect between male and female participants in reported same-sex attractions in the past year, with the former indicating higher levels of SSA. In addition, much higher reported past year experiences of SSA among males were

found among the ended SOCE group compared to the never SOCE group, which still averaged higher SSA than the ongoing SOCE group. This finding may reflect a sorting process where males with higher SSA end up ending their SOCE while others with less SSA persevere with their change efforts. This may also account for the highest percentage of male participants (28.1%) reporting having developed sufficient OSA to enjoy heterosexual sex occurring in the Ongoing SOCE group. Female participants, in contrast, who had never engaged in SOCE reported experiencing much less past year SSA than those in either the ongoing or ended SOCE groups. For females, greater experiences of SSA may have more to do with who enters into SOCE than who leaves. Finally, and also consistent with this analysis, we found that male participants described having significantly more past year same-sex behavior than female respondents, though much less the case for males still engaged in SOCE.

The Anatomy of Retraction

We note in connection with our summary of the SESOI implications of our findings that an earlier version of this paper was published online in a journal published by the American Psychological Association (APA) and then retracted six months later (Rosik, Beckstead, et al., 2023). Essentially, after publication, we identified a coding error in the PHQ-9 as well as the need for one of our tables to be reformatted. Correction of these errors actually strengthened support for our hypotheses. While we believed these to be correctable as opposed to retractable offenses, at the same time our paper was receiving significant blowback from APA colleagues, arguing we had minimized and distorted the harms of SOCE. Great concern was expressed about the potential political implications of this paper and how it could hurt sexual minorities. During this time, a commentary on our paper was published online (Last et al., 2023) in the same journal that expressed these concerns as well as leveled an *ad hominin* attack on the first author (CR). In attempting to appease these concerns, we suggested further corrections that involved a greater emphasis on minority stress and the harms of SOCE. The extent of these changes purportedly led to the editor's decision to retract the paper, with strong encouragement to address concerns and resubmit our work.

We consequently reworked the paper to attend to the critiques of Last and colleagues as well as many others who were expressing their alarm about our initial interpretation of our findings and the potential political implications. Although the initial submission of the paper was approved by all three reviewers, the resubmission following retraction was assigned to only one of the prior reviewers, who reapproved the revised paper. However, two new reviewers, described as experts in the field, were also assigned by the editor to comment on the paper, and both provided fairly harsh criticism of our work and recommended against publication. This ended our saga with the journal in April of 2024, although our complaint regarding the *ad hominem* attack that was filed in July of 2024 was not resolved until March of 2026, when we were informed the Last et al. comment would not be changed or retracted. Interested readers can access a more detailed account of these events in the comment that accompanies this article, found in the Appendix.

Future SOCE Research

Several aspects of our methodology allowed for more accurate and nuanced findings concerning SOCE. We encourage researchers in this area to utilize socio-politically diverse research teams and sexual minority recruitment networks, as well as participants who have not adopted an LGBQ+ sexual identity. Our experience as a research team has always been collegial but, at times,

challenging in arriving at consensus language. In the present study, for example, we experienced differences over the degree to which statistical versus clinical significance should be stressed in the interpretation of our results. Multiple rounds of draft reviews by all team members meant the process of manuscript development could be more labor-intensive. However, any loss of time was more than offset by being able to identify and adjust language and interpretations that might cause LGBQ+ or conservatively religious communities to feel their experiences were not being accurately represented.

We believe our research team is the first to engage in such "adversarial collaboration" (Kahneman, 2003) in this literature. Adversarial collaboration is an underutilized method of encouraging scholars with significantly different perspectives and experiences to work together to resolve or at least build some consensus around a scientific dispute (Lefevor et al., 2019). Among its many virtues, adversarial collaborations can mitigate confirmation bias, reduce socially motivated research, constrain unfounded researcher interpretations of findings, prevent straw man and *ad hominin* characterizations of ideological opponents, develop otherwise improbable professional relationships and networks, provide a check on questionable research practices that inflate effect sizes, and build greater (if rarely complete) consensus (Ceci et al., 2024; Clark et al., 2022; Duarte et al., 2015). In addition, funders of adversarial collaborations can distinguish themselves as supporting accuracy-seeking research over performative research. We have found our sociopolitical diversity to be a strength of our approach that we think deserves replication.

Adversarial collaboration is an improvement over the standard comment-rejoinder format represented elsewhere (see Blosnich et al., 2023; Glassgold & Haldeman, 2023; Strizzi & Nucci, 2023; Sullins, 2022; 2023), as peer review is built into the research process. We believe further efforts along these lines within this field of study are desirable and hold promise in decreasing the cultural and political polarization around change efforts that currently exists. There is further ground available for consensus building, provided researchers and other community stakeholders are willing to venture out beyond their ideological silos and meaningfully engage with one another.

Finally, we also believe that research on SOCE should more regularly utilize psychometrically established health scales with available normative information to avoid questionable interpretations such as those associated with the high-low fallacy (Reyna, 2017). In this fallacy, significant differences between groups at one end (or interpretive range) of a scale are treated as if they represented conceptual differences between groups that are psychometrically represented as opposite ends (or different interpretive ranges) of the scale. Attention to such details can assist researchers in discerning where statistical significance may not reflect clinical significance (Hojat & Xu, 2004). We believe such considerations will more fully and accurately capture and contextualize the heterogeneous experiences of same-sex attracted persons who pursue sexual orientation change.

Limitations

Some limitations of the present study should be emphasized. A few of our analyses with female SOCE participants were slightly underpowered, adding further caution to our conclusions. The cross-sectional nature of the research design does not allow for causative attributions. For example, as noted, we cannot determine whether participants still engaged in SOCE had more depressive symptoms because of their SOCE or before their pursuit of SOCE. Similarly, participants

were asked to retrospect about their engagement with SOCE, which they may remember differently based on their current value commitments. However, one-quarter of our sample was still engaging in SOCE, a group rarely examined in this literature. Furthermore, this study offers no information as to whether sexual orientation can change during the use of SOCE, only that a minority of participants may report this in terms of increased other-sex sexual attractions sufficient to enjoy other-sex sexual behavior, while a smaller minority who did not use SOCE also reported this increase without such efforts. Given the length of participants' change efforts, it is possible that factors other than SOCE might have contributed to the reports of change (e.g., non-SOCE related psychotherapy, change in romantic relationships, reduction of shame). In this regard, our results may reflect naturalistic change, which is generally not recognized to be a result of personal agency nor to necessarily constitute a change in sexual orientation (APA, 2021; Diamond, 2008).

Our study also did not assess participant motivations for using SOCE, which might shed further light on the question of negative outcomes. Although internalized homophobia (IH) and sexual orientation concealment are plausible motivations for many of our participants, we think it is good practice not to overgeneralize constructs developed for and with LGBQ+-identified groups onto sexual minorities who may prioritize their conservatively religious identities (see Maassen et al., 2023). There is a temptation in the SOCE field to interpret this latter group's motivations according to what social scientists believe about them rather than what they actually believe about themselves. For example, given the religious motivations of a large portion of those using SOCE (APA, 2009), it is possible that for some individuals IH may reflect a self-determined adherence to conservative religious teachings on sexuality rather than an indicator of heightened shame and self-loathing (Lefevor et al., 2020; Rosik et al., 2022; see also Rosik, 2007a, 2007b, for an example of such worldview considerations related to homophobia).

In addition, our measure of depression was relatively narrow in its measurement timeframe (i.e., last 2 weeks). A broader window of assessment, such as one year or lifetime occurrence, would admittedly be desirable in future research to establish the degree of robustness in our findings. That said, however, we also note this is a limitation shared by much of the literature about SOCE, which includes use of the PHQ-9 (e.g., Chan et al., 2022; Salim et al., 2024; Tran et al., 2024), the Kessler Psychological Distress Scale (a 30-day timeframe; e.g., Higbee et al., 2022; Jones et al., 2022; Mammadli et al., 2024; Veale et al., 2022), and time at self-report assessments of distress (e.g., Bradshaw et al., 2105; Salway et al., 2020). We would not want to dismiss this literature *en masse* solely based on this limitation.

Our operationalization of SOCE via engagement status did not allow us to examine the effects of specific SOCE strategies, which is a common limitation in the literature with a few exceptions (Bradshaw et al., 2015; Rosik, Lefevor, et al., 2023). We were unable to disentangle the potential differential impact of change efforts facilitated by licensed therapists versus religious counselors, a limitation also shared by many SOCE studies (e.g., Blosnich et al., 2020; Green et al., 2020; Higbee et al., 2022; Meanley et al., 2022). Unlike some SOCE research (e.g., Blosnich et al., 2020; Higbee et al., 2022; Ogunbajo et al., 2022), our operationalization of SOCE did not imply coercion or social pressure, which may also influence outcomes. Future research could investigate which efforts and which aspects of SOCE impact which aspects of sexuality, mental health, and flourishing.

The three types of SOCE engagement we examined also limit our ability to make direct

comparisons with other SOCE research, although a rough comparison might be obtained by focusing only on the Never SOCE (i.e., no engagement) and Ended SOCE (i.e., engagement) groups. It is noteworthy that the current study found these groups to have approximately similar distress levels, which may partially be a function of the purposeful inclusion of non-LGBQ+-identified participant experiences.

Although our definition of SOCE was consistent with that of the APA, we recognize the operationalization of SOCE in this literature has heretofore lent itself to findings that may lack reliability, validity, and hence generalizability. For example, del Rio-Gonzalez et al. (2021) note their definition of SOGICE "…may encompass a wide variety of change efforts, ranging from prayer to shock therapies as well as variation in frequency, duration, and voluntariness" (p. 470). This definitional underspecification has likely contributed to SOCE prevalence estimates that range from 3.5% (Salway et al., 2020) to 73% (Dehlin et al., 2015). In general, we believe the field will benefit from a more standardized approach to defining and contextualizing SOCE. Finally, our sample contained a majority of participants who were White, college-educated, and affiliated with The Church of Jesus Christ of Latter-day Saints and, hence, our results may not generalize to other ethnic, socioeconomic, or conservatively religious faiths.

Overall, the research methods in current studies about SOCE, including this one, are limited by their research designs (e.g., correlational, limited samples, over-reliance on self-report measures and measures of unknown validity and reliability). The 2009 APA report on SOCE concluded, "Given the limited amount of methodologically sound research, we cannot draw a conclusion regarding whether recent forms of SOCE are or are not effective" (p. 43). This report further concluded,

> Across studies, it is unclear what specific individual characteristics and diagnostic criteria would prospectively distinguish those individuals who will later perceive that they have succeeded and benefited from nonaversive SOCE from those who will later perceive that they have failed or been harmed. (p. 43)

Therefore, given the lack of demonstrated reliability and validity of SOCE, the potential for increased self-reported distress for most clients, and the diversity in clients' sexual orientations and life trajectories, therapists should neither initiate SOCE nor provide interventions with the expectation of facilitating a specific sexual orientation and identity outcome. Clinical approaches should facilitate the unique identity development of each client seeking SOCE and offer interventions to reduce the effects of minority stress on clients' identity development.

Conclusion

We analyzed three groups of adults who reported experiencing or having experienced same-sex attractions based on their engagement with SOCE (No SOCE, Ongoing SOCE, and Ended SOCE). ANCOVA results controlling for age indicated that both male and female participants with Ongoing SOCE reported greater depressive symptoms and less flourishing than participants in either the group with No SOCE or who had Ended SOCE, who had similar health outcomes. Chi-square analyses indicated that male participants rejecting an LGBQ+ identity were disproportionately found in the group with Ongoing SOCE while over 70% of LGBQ+-identified male respondents reported having ended their SOCE. For female participants, a large plurality of those who had not adopted an LGBQ+ identity were in the Never SOCE group while the majority

of females who did identify as LGBQ+ were in the Ended SOCE group. A relatively small minority of SOCE participants reported either already having or developing sufficient other-sex sexual attraction to enjoy other-sex sexual behavior, while a smaller few reported changing without SOCE (*n* = 18). We caution against interpreting these findings as definitive indicators of clinical harm or change, as a large majority of our findings represented small effects and thus did not exceed our SESOI requirement (i.e., a medium effect) for confidence in avoiding false positives. Duration of SOCE was not associated with health and the number of years elapsed following SOCE was negatively associated with depressive symptoms and positively associated with flourishing, although with small effects, with the exception of female participants' more reliable experience of lessening depression post-SOCE.

Persons who try to change their same-sex sexual attractions and/or behaviors are a highly heterogeneous group, and research methods that capture the greatest degree of this diversity are likely to provide the most accurate accounting of this diversity and the effects of SOCE. Our findings suggest there is more complexity going on than the current narratives around SOCE allow. SOCE can certainly lead to negative sequela, but we hope future research builds upon our findings and (a) attends to scale norms, (b) uses socio-politically diverse research teams (adversarial collaboration) and recruits religiously diverse samples, (c) moves beyond exposure versus non-exposure analyses, (d) accounts for age as well as the range of plurisexual and monosexual orientations and experiences, (e) uses comprehensive pre- and post-assessments about distress and flourishing and (f) examines specific methods of SOCE and (g) affirmative methods. We encourage therapists to focus on providing interventions to (a) reduce clients' experience with minority stress, (b) increase emotional well-being, and (c) remain agnostic about the client's identity trajectory.

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Appendix

PSOGD Retraction Account

For those who have an interest in retracted papers, I (CR) anticipate that a timeline of details surrounding the earlier retraction of this research will be of interest. What occurred in our case is likely to be instructive regarding contemporary challenges to providing scholarship that may challenge established narratives within organized psychology. I will share this story from my perspective, as I am the co-author that brought nearly all of the scrutiny to our paper. However, I will also endeavor to tell this tale in as factual a manner as possible, having cross-checked details by consulting with my co-authors. Ultimately, I will leave it up to the reader to decide the appropriateness of the retraction and my treatment.

The first iteration of this paper was submitted to the journal *Psychology of Sexual Orientation and Gender Diversity* on March 7, 2022. I received an acknowledgement of reception from the Editor that day and was informed that our submission would be sent out for review. We received the initial reviewer feedback on June 9, 2022, with encouragement to resubmit a revised manuscript by August 7, 2022. Among the associate Editor's comments for us to attended to was an expressed concern about the mention of the high-low fallacy and that "…it almost sounds like you are trying to move away from indicating the SOCE causes harm in the language you use. I would suggest you consider how this section is being framed and how it could be interpreted." Meanwhile, the three reviewers provided generally positive appraisals of the manuscript, including "This is an outstanding study in all aspects—well conconceptualized, designed and implemented. I also appreciate the substantial effort to mitigate researcher biases and to consider alternative hypotheses, including those that may be unpopular."

We submitted our revised version (2.0) of the paper on July 29, 2022. On October 31, 2022, we received the second wave of reviewer feedback and encouragement by the Editors to further revise and resubmit no later than December 31, 2022. The only additional comment forwarded to us came from a different reviewer than was quoted earlier: "Thank you for your thoughtful engagement with my reflections and suggestions. I think what you have contributed will be a helpful addition to the broader literature, and your model of a collaborative team representing diverse viewpoints is inspiring." We resubmitted the revised (3.0) manuscript on December 14, 2022. On January 5, 2023, we were notified that our paper had been accepted for publication in *PSOGD*. Online publication of our research occurred on May 4, 2023. Subsequently, a cascade of events that ultimately led to retraction was set into motion.

On July 20, 2023, *PSOGD* published a critical comment about our article [Last et al., (2023). The misuse of scientific uncertainty claims in sexual orientation change efforts research: Comment on Rosik, Beckstead, and Lefevor (2023). *Psychology of Sexual Orientation and Gender Diversity. Advance* online publication. https://doi.org/10.1037/sgd0000661]. The comment began with some reasonable methodological concerns, which we appreciated, but then devolved into an *ad hominin* attack on me (CR). One of the critiques concerned how we had defined SOCE. Although operationalization of SOCE is admittedly an issue in this literature, one of my co-authors ironically observed that he had helped craft the APA's definition in their 2009 report, *Appropriate therapeutic responses to sexual orientation*, a definition he believed was in keeping with how we defined SOCE in our paper.

On July 21, 2023, I brought to the *PSOGD*'s peer review coordinator's attention that I had discovered a couple of errors in the manuscript that needed correction. One was a coding error in our measure of depression which, unbeknownst to me, had been coded differently for an earlier project using our dataset in order to make certain statistical analyses (i.e., the range for the scale was coded as 1-4 instead of 0-3 as the instrument indicates). This coding was not in keeping with how the PHQ-9 scale is normally scored and hence could create misleading interpretations, although the statistical significance of our findings remained the same. In addition, on August 19, 2023, I informed the publications Editor that one of our tables was not formatted properly and needed to be adjusted. It's worth noting that correcting these errors actually strengthened support for two of our hypotheses. Again, we believed these problems were correctable and did not anticipate that retraction was in the offing.

While all this was going on, one of my coauthors attended the APA's 2023 annual convention and reported that he had received considerable blowback from many colleagues about our paper and about working collaboratively with me. He felt he had not considered the broader sociopolitical milieu surrounding publication of research such as ours. He reported hearing from colleagues who expressed fears, hurt, and their own experiences being minimized. They reportedly asserted the paper downplayed the harms from SOCE and expressed concerns that lawyers, judges, and law makers will only read the abstract and come away with a false impression on this issue. This coauthor also indicated that one of his colleagues had asked for his name to be removed from a paper they were working on while another refused to work on a grant with him because of his collaboration with me. He also acknowledged that he had met with the Editor and associate Editor along with two authors of the published comment, and as a result of this, wanted to make some additional changes to the revision (4.0) of the manuscript as regarded the interpretation of harms from SOCE. In addition to the aforementioned changes, these further changes included removing a section on interpretation which was viewed by colleagues as minimizing harm (whereas I saw it as contextualizing harm) and adjusting terminology from SOCE to SISOCE (self-initiated sexual orientation change efforts) to address critiques of our definition of SOCE. I expressed concerns that these changes were being made primarily for political considerations but also knew at this point compliance was likely to be our only hope of having the paper remain published. Subsequently, after several email communications with the journal's Production Editor, my coauthors and I finalized and submitted a corrected version (4.0) of the manuscript that incorporated all these changes as well as text for the correction notice.

On September 22, 2023, we submitted a rejoinder to Last et al.'s comment, as we were originally told was allowed. On October 2, 2023, the Production Editor, in consultation with the Editor and Associate Editor, notified us "I regret to inform you that I will not be able to move forward with the correction notice as-is because I did not follow our policy for correction notices. I apologize. All major corrections must be approved by the journal Editor." Furthermore, we were informed that due to the extent of the edits, "We will need to retract the original article and have you resubmit the revised version through Editorial Manager. This is also necessary because some of the edits are in response to the published reply by Last et al., which will also need to be retracted." That same day, the Editor suggested some language for the retraction notification along with a confirmation that the Last et al. comment would also be retracted. In addition, the Editor noted a desire to "expedite the peer review process and use one of the original reviewers (if available). I will also engage a reviewer who will not be familiar with the original manuscript article or the reply."

The following day, October 3, 2023, we submitted a counter proposal for the retraction language to the Editor. Some brief back and forth led to agreement as to the final language below, which was submitted to the APA for approval.

> The retraction was requested by the Editor and all authors of the original article consented. There was no unethical researcher conduct or improper methodology that violated standard scientific practice. However, after the article was published online-first, the first author became aware that the data for one of the dependent measures in the study had been improperly coded and that one table was inaccurately formatted. Subsequent corrections led to a change in greater support for one of the hypotheses. Additionally, a reply to this article by Last et al. (2023) was published, and the authors were keen to incorporate the concerns expressed. In essence, the retraction is issued with the desire to provide greater accuracy and interpretive clarity to sensitive findings that might be misused and model the benefits from adversarial collaboration in research. The volume of corrections necessitated by the changes related to data analysis and interpretation warranted that the original article be retracted. A corrected version will be resubmitted for peer review and potential publication.

On October 5, 2023, the journal Editor sent along via email the final retraction language that had been approved by the APA, which removed the second, fourth, and seventh sentences entirely, along with a reference to adversarial collaboration, and read as follows:

> The retraction was requested by the Editor and all authors of the original article consented. After the article was published online-first, the first author became aware that data for one of the dependent measures in the study had been improperly coded and that this impacted the study findings. Additionally, a reply to this article by Last et al. (2023) was published, and the authors were keen to incorporate the concerns expressed. The retraction is issued with the desire to provide greater accuracy and interpretive clarity to sensitive findings that might be misused. A corrected version will be resubmitted for peer review and potential publication.

The Editor also attached an article on retractions, noting, “I feel like it normalizes retractions and also addresses that the majority of retractions are from corrections (not from ethical misconduct)” [Kullgren, K. A., & Carter, B. D. (2015). Retraction experience, lessons learned, and recommendations for clinician researchers. *Clinical Practice in Pediatric Psychology, 3*(4), 352–357. https://doi.org/10.1037/cpp0000120]. The official date of the published retraction was November 27, 2023 [Retraction of Rosik et al. (2023) (2024). *Psychology of Sexual Orientation and Gender Diversity, 11*(1), 176. https://doi.org/10.1037/sgd0000697].

On November 23, 2023, the journal Editor gave notice that they “will not be publishing the rejoinder in anticipation of your resubmission of your original article.” We were also told that this decision was final. I will take the liberty of including our rejoinder here in its entirety (sans references) for posterity’s sake, some of which was incorporated into the resubmitted manuscript (4.0) as well as the current paper (5.0).

Sociopolitical Diversity in SOCE Research is Not a Scientific Liability: Rejoinder to Last et al. (2023)

We appreciate the opportunity to address publicly the criticisms of Last et al.'s (2023) on our recent study (Rosik et al., 2023). We are grateful for Last et al.'s critiques and consider commentaries such as theirs to be a crucial way that public scholarship is advanced. We further welcome their criticisms as part of precisely the type of adversarial collaboration that we are dedicated to engaging with in our team. Nonetheless, we believe that the way in which Last et al. engaged with our work embodies attitudes that ultimately undermine the advancement of science. We briefly describe two major changes that we made because of Last et al.'s critiques and then center on the bigger question of why adversarial collaboration is so difficult to pursue well.

Last et al. (2023) described our definition of SOCE as "conceptually imprecise and expansive" (p. 2), highlighting that we focus on "independent, solitary, and self-imposed strategies" (p. 1) to SOCE as opposed to SOCE that a parent, religious leader, therapist, or institution initiates and requires. We understand Last et al.'s concerns to center on the ways that our definition of SOCE differs from the American Psychological Association's (APA) definition of SOCE and the way that findings may be used to comment on the harms associated with therapist-led SOCE which is currently a hot-button political topic. Although we believe that our initial definition of SOCE fits within the APA's descriptions of SOCE (APA, 2009, 2021), we can also see harms that could be done if readers interpreted our findings as referring to therapist-led SOCE. As such, we have amended our initial language to discuss "self-initiated sexual orientation change efforts" (SISOCE) to highlight its divergence from therapist-led SOCE. We also note that our study was comprised entirely of cisgender adults, and affirm that results should not be used to comment on SOCE with minors or gender identity change efforts.

Last et al. (2023) also strongly criticized our study for minimizing "findings on the associations between 'SOCE' and mental health outcomes" (p. 4), heavily critiquing a section dedicated as a cautionary note to interpretation. We understand this critique to be also situated in the contemporary political moment where the US federal and state governments are contemplating SOCE and the harms associated with SOCE and where interpretations like ours may be utilized to suggest that SOCE are not harmful. Although we view our initial approach to our findings to be grounded in meaningful scientific principles, we also recognize the impact that a dismissive or uninformed attitude toward our findings may have. As such, we have revised our discussion of our findings to balance more clearly the range of interpretations to our data. We begin by discussing the harms reported in our data and how they align with the APA (2009, 2021) task forces' findings and then discuss the implications of the variability in our data and its clinical significance. For us, the discussion of all perspectives is an important part of our "adversarial collaboration," as we seek to minimize bias in interpretations and misuse of our findings.

Although internalized homophobia (IH) and sexual orientation concealment are plausible motivations for the pursuit of SISOCE by many of our participants, we think it is good practice not to overgeneralize constructs developed for and with LGBTQ+-identified groups onto sexual minorities who may prioritize their traditionally religious identities. There is a temptation in the SOCE field to interpret this latter group's motivations according to what social scientists believe about them rather than what they actually believe about themselves. For example, it is possible that IH may reflect for some individuals a self-determined adherence to traditional religious teachings on sexuality rather than an indicator of heightened shame and self-loathing (Lefevor et al., 2020; Rosik, Lefevor, McGraw et al., 2022).

Regarding our measures of suicidality and depression, we acknowledge that our measures were "relatively narrow" in their timeframe. However, this is a limitation shared by much of the SOCE (and SISOCE) literature, which includes use of the PHQ-9 (e.g., Chan et al., 2022; Salim et al., 2023), the Kessler Psychological Distress Scale (a 30-day timeframe; e.g., Higbee et al., 2022; Jones et al., 2022; Veale et al., 2022), and time at self-report assessments of distress (e.g., Bradshaw et al., 2105; Salway et al., 2020). Rather than dismiss our findings, we believe the prudent way forward is to conduct additional research with expanded reporting timeframes, differentiated definitions of SOCE and their impact, and comprehensive pre- and post-assessments about distress and flourishing that incorporate sociopolitically diverse sexual minorities. We stand by our clinical implications that caution providers in not harming a client's identity trajectory by offering, encouraging, or discouraging SOCE or SISOCE but focusing instead on exploring and facilitating each client's unique identity development and offering interventions to reduce the effects of minority stress on clients' identity development.

The most troublesome aspect of Last et al.'s (2023) comment is their reliance on *ad hominin* arguments against one of us (CR). They appear to criticize us for being exactly what we acknowledge we are: a sociopolitically *diverse* research team. In their critique—which is more aptly understood as an attack—Last and colleagues cite a decade-old, acontextual interpretation (not a direct quote) of a newspaper reporter. This second-hand and dated statement does not accurately reflect CR's actual beliefs, which are described in our present and recent work in several places: "SOCE can certainly cause harm…" (p. 11) and "Our results indicate sexual minorities who rely on punitive cognitive and behavioral aversive techniques need to be informed these methods of managing their distress are unlikely to be helpful and, in fact, are overwhelmingly likely to produce harm" (Rosik et al., 2022, p. 11). We feel saddened by Last et al.'s reliance on this kind of *ad hominin* attack to further their aims.

Beyond our sadness with the use of an *ad hominin* attack, we see the function of this attack as seeking to undermine precisely the kind of "adversarial collaboration" that our team intentionally embodies. Adversarial collaboration is a method of encouraging scholars with significantly different perspectives and experiences to work together to resolve or at least build some consensus around a scientific dispute (Kahneman, 2003; Lefevor et al., 2019). Among its many

> virtues, adversarial collaborations can mitigate confirmation bias, reduce socially motivated research, constrain unfounded researcher interpretations of findings, prevent straw man characterizations of ideological opponents, develop otherwise improbable professional relationships, provide a check on questionable research practices, and build greater (if rarely complete) consensus (Clark et al., 2022; Duarte et al., 2015). In addition, funders of adversarial collaborations can distinguish themselves as supporting accuracy-seeking research over performative research. Hence, we maintain our sociopolitical diversity is a strength of our approach, not a liability.
>
> Adversarial collaboration is an improvement over the standard comment-rejoinder format represented here and elsewhere (see Blosnich et al., 2023; Glassgold & Haldeman, 2023; Strizzi & Nucci, 2023; Sullins, 2022; 2023), as additional peer review is built into the research process. We are unaware of any other attempt at adversarial collaboration within the SOCE literature but believe further efforts along these lines within the APA and Division 44 are desirable and hold promise in decreasing the cultural polarization around change efforts that currently exists. There is further ground available for consensus building provided researchers and other community stakeholders are willing to venture out beyond their ideological silos and meaningfully engage with one another. As such, we sincerely hope Last and colleagues agree with us in these aspirations and invite them to engage with us in this kind of collaboration.

On January 10, 2024, we resubmitted the newly revised (4.0) version of our paper to *PSOGD*. On April 4, 2024, the journal Editor informed us that, based on the reviewers' comments, our manuscript would not be moved forward for publication. The Editor expressed appreciation for our increased (though not sufficient) framing of results in terms of minority stress and taking more care regarding "how the findings might be interpreted in light of recent legislation and the political climate." We were also informed that not one but in fact two new expert reviewers were consulted for the review process. The third reviewer, who had reviewed the original manuscript, again approved its publication, commenting, "This is a thoughtful engagement with (sic) an addition to the SOCE literature."

However, the new reviewers both panned the paper, with one stating at the outset, "This paper reads like an interesting academic exercise in trying to rename/repackage conversion therapy. While some of the findings are interesting, I find that if this paper is published a great deal of harm can come to the LGBTQ/queer/tans (sic) community." Of particular interest was the other new reviewer's concerns with our terminology, as it appears to apply equally to the APA's SOCE definition, from which we borrowed:

> The discussion glosses over a major concern about the authors' definition of SISOCE: it is nonspecific and could include anything from nightly prayer to some of the worst methods of SOCE (e.g., aversion methods). The authors try to extol this broadness as a strength as previous studies often focused on more formal methods (e.g., SOCE from a religious leader or counselor); it may be. However, it is also a significant limitation because it leads to a definition lacking in validity and reliability when participants are too free to interpret a phenomenon; especially in a quantitative survey.

While the saga as regards retraction was now concluded, I noticed subsequently that although our online paper now included the watermark "RETRACTED" on each page, there was no such notification on the Last et al. comment. I inquired with the journal Editor on June 4, 2024, who apologized and informed me, "I did request a retraction of Last et al.'s reply. However, APA informed me that it was not their policy to retract replies." Having been advised by the APA's Chief Editorial Advisor (CEA) that our only line of recourse would be to submit a complaint and request for retraction of the comment (or at least the *ad hominem* attack on me), we submitted a formal letter of complaint to the journal Editor on July 3, 2024. On July 11, 1024, the Editor acknowledged receiving the formal complaint and also confessed to a conflict of interest in that they had a current research project with one of my coauthors and were thus handing the complaint off to the CEA for further action. Our complaint letter read as follows:

> At the suggestion of [the CEA], we would like to make a formal complaint regarding the Last et al. (2023) comment on our target article. The basis of this complaint is the authors' reliance upon *ad hominem* attacks towards one of us (CR) for literally the last half of their comment. We are confident that such argumentation would have been flagged by your office for being "out of bounds" and subsequently disallowed were the sociopolitical dynamics inversed, as would be the right thing to do. Several serious concerns should be raised about the use of this fallacy ("attacking the person, not the idea"), which is widely recognized not only as false scientific reasoning but also personally reprehensible behavior.
>
> First, Last et al. attacked only CR, even though all of us were well aware of and signed off on the possible interpretations of the data. Why do Last et al. not speculate about all of our motivations? It is apparent they took some effort to surf the Internet seeking information solely for the purposes of discrediting CR, something we would expect from activists but not from purported scholars whose intent should not be on disseminating personal information about CR that seemed to suit their partisan interests in an APA journal. To make matters worse, some of the information is misleading or blatantly false. They cite a decade-old, acontextual interpretation (not a direct quote) of a newspaper reporter (i.e., "In 2012, when California was debating its ban, then president of NARTH, Rosik, told the Los Angeles Times that there is no evidence that SOCE are harmful, despite the scientific consensus even at that time"; Last et al., 2023), a poor precedent for scholarly ethics. This second-hand and dated statement does not accurately reflect CR's actual beliefs, which Last et al. conveniently ignored and which are described in our present and recent work in several places: "SOCE can certainly cause harm…" (p. 11 in the retracted article) and "Our results indicate sexual minorities who rely on punitive cognitive and behavioral aversive techniques need to be informed these methods of managing their distress are unlikely to be helpful and, in fact, are overwhelmingly likely to produce harm" (Rosik et al., 2022, p. 11). The scholarly issue Last et al. should have stuck to regards their belief the results were minimized whereas from CR's perspective the findings were simply being contextualized. This is a legitimate scientific debate that has no need to devolve into *ad hominem* attacks. Were Last et al. writing for a personal blog or partisan website, then we would live (and have lived) with such comments. However, *PSOGD* is a well-respected APA journal that presumably prides itself on high-level scholarly discourse. Do the journal Editors really believe this part of the Last et al. comment meets such standards?

Second, we submit that both the *APA Code of Ethics* and the *COPE* Principles to which the APA subscribes argue against the use of an *ad hominem* line of reasoning. Our concern in part is motivated by Principle B of the *Code* which reads, "They [psychologists] are concerned about the ethical compliance of their colleagues' scientific and professional conduct." The following quotes from these sources seem relevant to the question at hand:

> The development of a dynamic set of ethical standards for psychologists' work-related conduct requires a personal commitment and lifelong effort to act ethically; to encourage ethical behavior by students, supervisees, employees, and colleagues; and to consult with others concerning ethical problems. (*APA Code of Ethics*, Preamble)
>
> Because psychologists' scientific and professional judgments and actions may affect the lives of others, they are alert to and guard against personal, financial, social, organizational, or political factors that might lead to misuse of their influence (*APA Code of Ethics*, Principle A)
>
> Reports with *ad hominem* attacks should be returned to the reviewer for them to remove, together with a clear explanation from the Editor why the report cannot be used if it contains hostile language.
>
> If there are personal insults and *ad hominem* attacks on the author or investigator, it is appropriate to screen to maintain civil, courteous, and respectful discourse. (*COPE* comments for reviewers, https://publicationethics.org/resources/forum-discussion-topics/editing-reviewer-comments.)

We believe these standards have not been met by *PSOGD* Editors and Last et al. in their comment. Recently, Radun (2023) has written about nonfinancial conflicts of interest (COI) and noted, "If such reviews contain personal insults or question the author's motivation, they should always be discarded because they are clear signs of a serious COI" (p. 334), and, "In conclusion, ignoring or downplaying the nonfinancial COI of Editors and peer-reviewers, especially regarding controversial issues in small research fields, is indeed dangerous and harmful to the scholarly community" (p. 339). We agree with these sentiments.

Third, Last et al. cite the Southern Poverty Law Center, an organization that regularly employs extreme rhetoric (e.g., a "hate map") and has twice been implicated in firearm attacks on conservative agencies and lawmakers in the United States, severely wounding a U.S. senator, and which has been successfully sued for mislabeling someone as anti-Muslim. It is fair to disagree with the political and policy positions of Focus on the Family, but to use a blatantly partisan organization's blanket characterizations of them as "anti-LGBT+" and engaged in "prejudice and discrimination" is to engage in potentially libelous behavior that shows no scholarly interest in understanding a different viewpoint. Rather, Last et al.'s writing takes an activist tone here we believe is unsuited for a scholarly journal like *PSOGD*. Seeking understanding of diverse viewpoints is precisely what has made our collaboration so unique and, in light of Last et al., so needed.

We could list further concerns, but these should be sufficient to justify our request that

> the Last et al. comment in its current form be retracted. At the very least, the *ad hominem* portions of the comment should be removed and explained why in the retraction. We appreciate the opportunity to make this case.

On August 9, 2024, I inquired with the CEA about the status of the complaint. On August 27, 2024, she responded that APA's Publications and Communications (P&C) Board decided in a recent meeting "that commentaries on retracted papers are not automatically retracted along with the original article." She also noted the issue of how to adjust the commentary in response to our complaint was being handled by the APA publisher in consultation with her team and she was not aware of any decision on that matter yet. On October 25, 2024, I again inquired with the CEA about the status of the complaint. She responded on October 28, 2024, indicating the P&C Board had clarified its policies related to our request and the publisher's team had provided input to the journal Editor. As a result, they were referring our complaint back to the journal Editor. In a separate email the same day, the Editor indicated consulting back with journal's Editorial team "as to how to implement adjustments," adding that "any changes will first be discussed and finalized with the authorship group of the Reply itself."

On January 24, 2025, I again inquired with the Editor about the status of the complaint, who assured me that same day this matter remained a priority. I inquired again on May 7, 2025. The following day the journal Editor responded indicating there have been several meetings involving the authorship team of the comment, the Editorial leadership board, and a Division 44 liaison who is providing advisement on the matter, who also met with the comment's authorship team. The Editor assured me it had been a thorough process and was moving forward, although no final decision had been made. On October 27, 2025, I emailed the journal Editor and CEA requesting another update on the status of the complaint. On December 15, 2025, the Editor informed me that he had met with the APA Division 44 leadership, who are ultimately responsible for the PSOGD journal. He indicated that the leadership agreed "that it is best to take the complaint to their executive committee for a vote."

Finally, on March 6, 2026, I received this email from a representative of the Division 44 Executive Board:

> Dear Dr. Rosik:
>
> The American Psychological Association's Division 44 Executive Board met on February 1, 2026 to review the formal complaint regarding the Last et al. (2023) commentary titled, "The Misuse of Scientific Uncertainty Claims in Sexual Orientation Change Efforts Research: Comment on Rosik, Beckstead, and Lefevor (2023)". After careful evaluation and discussion, the Board held a formal vote in accordance with its governance procedures.
>
> At this time, the Board determined that retraction of the commentary is not warranted, consistent with longstanding policy regarding such publications. The matter is now considered closed unless new substantive information emerges.
>
> We thank you for bringing this concern to our attention.

With this adjudication, the matter was concluded, allowing the *ad hominem* attacks against me to remain in the professional literature, purportedly in keeping with established policy, but

perhaps more so as a testament to the influence of ideological preferences.

One final note to this vexing tale occurred in the process of preparing this chronicle of events. I discovered that the available online version of our retracted article is now missing the title page, which included the abstract and impact statement. This development seems to echo back to earlier concerns about lawyers, judges and law makers only reading the abstract and forming the "wrong" impression about our research, particularly given the first sentence of our impact statement: "This study suggests that engaging with sexual orientation change efforts (SOCE) is associated with increased distress but that these increases in distress may be of uncertain practical significance and interpretive meaning." Thankfully, this happens to be an interpretation that our JOIBS reviewers perceived to be relevant and thus encouraged us to include in the current paper so as to add a rare diverse viewpoint in the scholarly discussion surrounding SOCE.

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