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COMMENTARY

Correcting a False Research Narrative: A Commentary on Sullins (2022)

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Sullins' (2022) report about the relationship of sexual orientation change efforts (SOCE) and suicidality among sexual minority persons suffers from a fatal flaw that renders the conclusions of the paper invalid. In Blosnich et al. (2020), we demonstrated that SOCE was associated with higher lifetime prevalence of suicide ideation, suicide planning, and suicide attempt with no/minor injury. Sullins critiqued our research because we did not consider the temporal order of SOCE and suicidality, something we clearly discussed in our paper. Sullins used the same *Generations* data to suggest a different outcome by attempting to create the temporal order of SOCE and suicidality. However, the same limitations that prevented us from assessing temporal order also undermined his findings: no data in the *Generations* study are available to assess the timing of SOCE initiation, so there is no way to establish temporal order. The only difference between Sullins' and our analysis is that Sullins ignored this significant limitation and proceeded to conclude not only that SOCE was not associated with suicidality but that it was protective. Sullins claimed to correct a "false research narrative" in Blosnich et al. (2020). However, the false narrative that requires correction is Sullins' own conclusions based on misplaced certainty in his faulty methods.

Both Blosnich et al. (2020) and Sullins (2022) used the same *Generations* dataset (information about the study's methodology and rationale is available online at http://www.generations-study.com). Sullins used various suicidal outcomes, but for sake of clarity, we focus this commentary on the outcome of suicide attempt. In the *Generations* data, suicide attempts can be timed according to the respondent's self-reported age of attempt. Suicide attempt was asked with one item: "Did you ever make a suicide attempt (i.e., purposefully hurt yourself with at least some intention to die)?" If respondents reported one attempt, they were asked the age of that sole attempt ("About how old were you?"). If a respondent indicated multiple suicide attempts, then they were asked to report their age for both first and last attempt ("About how old were you the very first time?" and "About how old were you the most recent time?"). For SOCE exposure, the only information available on timing in the *Generations* dataset comes from one question that asked, "About how old were you the *last* time you received treatment to change your sexual orientation?" [emphasis added]. Using these questions, Sullins created "pre-SOCE suicidality" variables among which he claims to categorize a suicide attempt *prior* to SOCE by cross-referencing the age of suicide attempt (or age of first suicide attempt, if more than one suicide attempt was reported) with the age of *last* exposure to SOCE. Sullins then used this "pre-SOCE suicidality," which is a misleading variable name, in analyses that exonerate SOCE as harmless.

Sullins asserted that if SOCE exposure occurred after a suicide attempt, then SOCE could not have caused the suicide attempt. He underscored this point in the discussion to explain to the reader the importance of temporal precedence—that is, a cause must precede the effect in time. But as we show here, Sullins' categorization is faulty and therefore the entire premise of his analytical approach is highly suspect.

Sullins mistook the time of *last* exposure to SOCE to be the time of exposure to SOCE as a whole. This is patently and demonstrably wrong for two reasons consistently demonstrated in the research literature: (1) SOCE exposure can be prolonged in duration and (2) most people who experienced SOCE have been exposed to multiple SOCE attempts. In terms of duration of SOCE exposure, Nicolosi et al. (2000)

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found that average duration of SOCE among their sample of 882 individuals exposed to SOCE was 3.4 years. Spitzer (2003) documented an average SOCE duration of 4.7 years for 79% of his sample of 200 individuals previously exposed to SOCE but were no longer involved in SOCE at the time of interview data collection. Import2021antly, for the remaining 21% of individuals in Spitzer's sample who were still undergoing SOCE at the time of interview data collection, the mean duration of SOCE was 15.0 years. Shidlo and Schroeder (2002), whose work Sullins cites, found an average duration of over two years. Regarding number of SOCE attempts, Spitzer (2003) reported that 90% of the participants had more than one type of SOCE. Salway et al. (2021) found that nearly 66% of people exposed to SOCE reported two or more attempts at SOCE. Clearly, the age of *last* exposure to SOCE is rarely, if ever, the correct estimate for age of initial exposure to SOCE. To estimate temporal order, the ages of first *and* last exposure to SOCE are necessary, but the age of first exposure to SOCE was not collected by the *Generations* survey.

For his analyses, Sullins appears to subtract age of suicide attempt from age of last SOCE exposure, completely ignoring the frequency and duration of SOCE. Using this approach, Sullins divides the sample into three groups according to whether they had their (first) suicide attempt before, during, or after SOCE. The respondents who were categorized by Sullins as having had a "pre-SOCE suicide attempt" are those for whom the difference between ages of last SOCE exposure and suicide attempt was one year or more. For example, a respondent who reported a suicide attempt at age 15 and the last SOCE exposure at age 17 was categorized by Sullins as someone who had a suicide attempt before SOCE exposure. Accordingly, Sullins concludes such a respondent's suicide attempt was not predicated on exposure to SOCE. Yet, as we show in Table 1, research evidence does not support Sullins' conclusion. A person whose age of *last* SOCE exposure at age 17 could have started their SOCE at age 15 or earlier, which means their suicide attempt at age 15 could have coincided with SOCE or occurred after a previous SOCE exposure.

Nonetheless, Sullins categorized 20 respondents as having had a "pre-SOCE suicide attempt," which he interpreted to mean that SOCE could have not been a cause in their suicide attempts. Using the knowledge from existing studies on frequency and duration of SOCE, we re-examined the data in *Generations.* We found that of the group of 20 respondents Sullins defined as people with "pre-SOCE suicide attempts," at least 65% could have been misclassified (Fig. 1). If we assumed a SOCE exposure duration of two to four years, nine respondents could be reclassified as having a suicide attempt during SOCE. Furthermore, four respondents who were classified as having a "pre-SOCE suicide attempt" reported multiple suicide attempts. Although these four respondents reported their *first* suicide attempt prior to *last* SOCE, they reported their last suicide attempt *during or after* exposure to *last* SOCE. For example, one respondent with multiple suicide attempts indicated age of last SOCE at 24 and their first suicide attempt at age 22; Sullins presumably classified this respondent as "pre-SOCE suicide attempt." However,

Table 1 Summary of studies reporting on number of episodes/types of sexual orientation change efforts (SOCE) and duration of SOCE

Authors	Year published	Sample size exposed to SOCE	Country	Number of episodes/types of SOCE	Duration of SOCE
Byrd	2000	79	US	NR	4.2 years (mean)
Nicolosi et al.	2000	882	US	NR	3.4 years (mean)
Shidlo and Schroeder	2002	202	US	58.4% ≥ 2 types	26 months (mean)
Spitzer	2003	200	US	90% ≥ 1 type	4.7 years (mean for 79% of sample no longer in SOCE at time of interview) 15.0 years (mean for 21% of sample still in SOCE at time of interview)
Beckstead and Morrow	2004	50	US	NR	4 years (mean)
Flentje et al.	2014	38	US	3 (mean)	40 weeks/episode (mean)
Bradshaw et al.	2015	898	US	NR	4.3 years for men; 5.0 years for women (mean)
Dehlin et al.	2015	1060	Global	2.6 types (mean)	4.7 years (mean for SOCE-related psychotherapy)
Salway et al.	2021	910	Canada	65.1% reported ≥ 2 SOCE attempts	23.8% reported duration > 1 year
Meanley et al.	2019	219	US	NR	23.5% reported duration > 1 year
Goodyear et al.	2022	22	Canada	NR	72.5% reported duration ≥ 1 year
Kinitz et al.	2022	22	Canada	NR	4.7 years (mean)

NR = not reported

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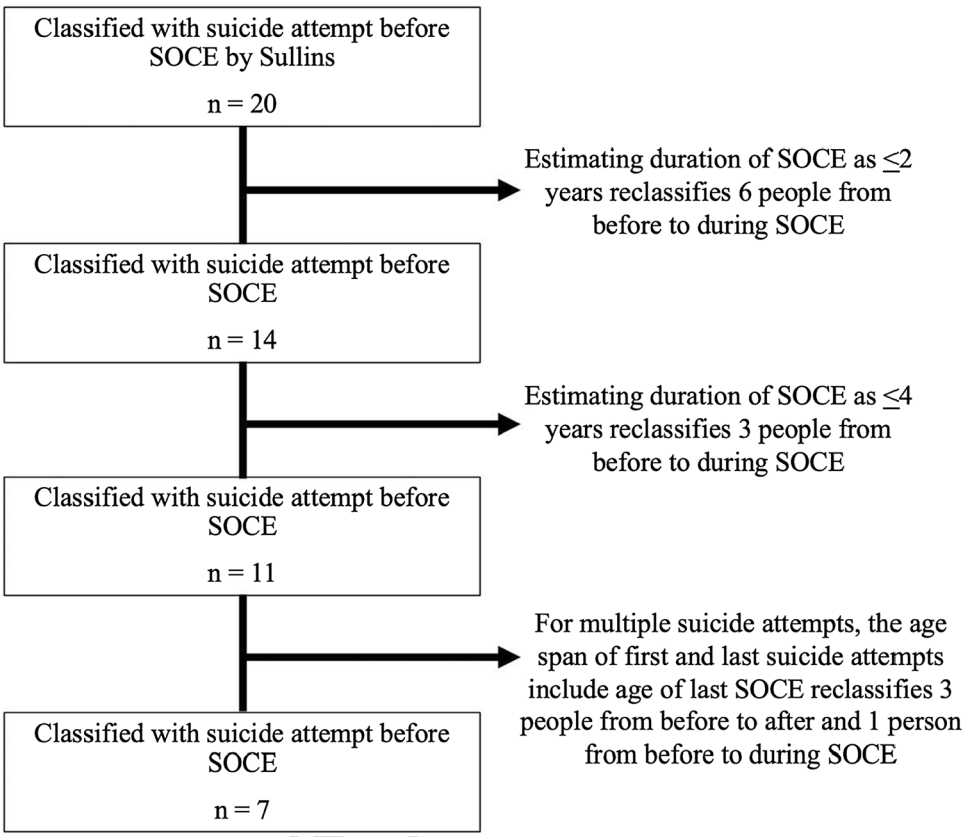

Fig. 1 Mistaken classifications of Sullins' (2022) temporal categorization of suicide attempts as occurring before sexual orientation change efforts (SOCE)

Sullins ignores that this respondent reported their last suicide attempt at age 24, which was during the respondent's *last* SOCE exposure. Taken together, if we estimate an average SOCE duration of four years, as research evidence suggests, and correct Sullins' oversight about individuals with multiple suicide attempts, of his original group of 20 respondents with alleged "pre-SOCE suicide attempt," 13 may have been misclassified, leaving only seven with a probable pre-SOCE suicide attempt (Fig. 1).

As discussed by Blosnich et al. (2020), *Generations* data do not allow timing of SOCE exposure. Sullins made temporal categorizations by presuming information that does not exist in the dataset and by ignoring research evidence that strongly suggests his temporal estimates are flawed. With unfounded categorization of *Generations* data, Sullins concluded that SOCE could not cause the suicide attempt and went further to conclude that it might *lower* the likelihood of a suicide attempt. As we have shown here, if we were to join Sullins in guessing exposure to SOCE, we would determine that most suicide attempts ought to be classified as having occurred during or after SOCE, not before SOCE. We are not suggesting, however, that is what researchers should do. Researchers ought to use the data that are available, not create data they *wished* they had. The risk in presuming data is that a researcher's bias would influence the estimates they create—thereby constructing misleading research findings.

Sullins critiqued our paper by writing that we did not determine to what extent suicidality may have preceded SOCE exposure. He is correct—as clearly explained in that paper, we did not estimate temporal order because the data did not allow for this. Instead, based on the data available, we used conventional statistical approaches to assess lifetime associations without making assumptions that are not supported by the data. Further research would be needed to establish temporal order for more accurate causal inferences.

Sullins' (2022) analyses are predicated on a fabricated classification of temporal order. We stand by our former critique of Sullins' problematic use of *Generations* data (Meyer & Blosnich, 2022) and underscore that Sullins' (2022) analyses and conclusions are invalid.

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Declarations

Conflict of interest The views expressed are those of the authors and do not necessarily reflect the position or policy of the institutions, National Institutes of Health, or the United States Government.

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