Published in final edited form as:

Psychol Violence. 2015 July 1; 5(3): 314–324. doi:10.1037/a0038442.

Impact of violence research on participants over time: Helpful, harmful, or neither?

Sarah L. Cook, Kevin M. Swartout, Bradley L. Goodnight, Tracy N. Hipp, and Alexandra Bellis

Georgia State University

Abstract

Objective—To investigate the impact of answering survey questions about experiences of stressful, stigmatizing, potentially traumatic and sexually violating events on well being, defined as reactions to research, anxiety, and positive and negative affect over two weeks.

Method—With an ethnically diverse sample of 559 higher education students, we employed a mixed experimental design (with between and within-subjects components) to evaluate changes in positive and negative affect, anxiety, traumatic stress symptoms, and reactions to research. We used multilevel regression models and planned contrasts to determine which, if any, specific characteristics of the survey questions caused changes in well being by comparing the effects of answering a randomly assigned set of survey questions about stressful, stigmatizing, potentially traumatic, or sexually violating life events across a two-week period.

Results—Controlling for baseline post-traumatic stress symptoms and levels of the outcome, we identified few statistically significant effects between conditions or across time. Significant effects included a small decrease in positive affect immediately after responding to questions about sexually violating events, which diminished at two weeks; these same participants perceived fewer drawbacks to research participation. Participants who responded to questions about stressful life events reported greater perceptions of benefits.

Conclusions—Our data support the safety of survey research on sexual assault or other stressful, stigmatizing, or potentially traumatic events.

Keywords

ethics; violence; trauma; victimization; research participation

Motivated by challenges from institutional review boards (IRBs), researchers have begun to study the impact of participating in sensitive research, particularly in vulnerable groups. IRBs take great care to ensure that risks to research participants are minimal and do not

Correspondence concerning this article should be addressed to: Sarah L. Cook, Department of Psychology, Georgia State University, PO Box 5010, Atlanta, GA 30302-5010. scook@gsu.edu.
Sarah L. Cook, Kevin M. Swartout, Bradley L. Goodnight, Tracy N. Hipp, & Alexandra Bellis, Department of Psychology, Georgia State University.

A subset of these data (n=219) were analyzed in a cross-sectional design and published in Cook, S. L., Darnell, D., Anthony, E. R., Tusher, C. P., Zimmerman, L., Enkhtor, D., & Hipp, T. N. (2011). Investigating the effects of trauma-related research on well being. *Accountability in Research*, 18, 297–322.

exceed potential benefits to individuals, science, or society. A small but expanding literature demonstrates few negative effects on participants involved in victimization research, and even some minor benefits (Legerski & Bunnell, 2010). The bulk of these data are limited, however, to cross-sectional studies that preclude causal conclusions with three exceptions (Ferrier-Auerbach, Erbes, & Polusney, 2009; Cook et al., 2011; & Yeater, Miller, Rinehart, & Nason, 2012). These studies move the field forward; but to date no experimental study has examined effects of participation, particularly in research on sexual victimization, over time. The experience of sexual victimization is complex—potentially stressful, stigmatizing, traumatic, and sexually violating—and surveys measuring sexual victimization can strike each of these nerves. Our goal was to disentangle these aspects of questions about sexual violation and determine their respective impact on participants' well being. To accomplish this goal, we randomly assigned participants to experimental conditions and assessed the impact of research participation across two weeks. We conducted a series of four planned contrasts for each of seven outcomes to compare potential sources of distress between conditions and across time.

Our experiences with institutional review boards (IRBs) and with community institutions, such as schools and rape crisis centers, highlighted a need to understand how participating in studies on sexual victimization affect participants' well being. Many IRBs, victim service providers, and advocates seem to assume participation in studies on sexual victimization leads to serious negative repercussions. Some school systems have allowed us to ask students questions about physical and psychological victimization, but not sexual. While it is quite possible that questions about sexual victimization could be problematic, particularly among those who have experienced victimization, it is not clear what specific aspects of questions about sexually violating experiences causes distress. Distress could result from participants recalling the stressful or stigmatizing nature of the event. Just as likely, a negative reaction could occur as participants recall the potentially traumatic nature of the event, or the sexual violation itself. One way to disentangle these potential effects on well being is to expose people to questions about events that correspond to these aspects of questions about sexual violation (i.e., stressful, stigmatizing, potentially traumatic, or sexually violating) and compare reactions over time.

To mitigate potential negative effects, we routinely disclose as much information as possible about studies in informed consent agreements, forgo design elements that would otherwise benefit the scientific quality of a study (e.g. counterbalancing measures in favor of placing sensitive questions last), and include information about sexual assault services in debriefing procedures. At times an IRB has required us to interview participants in a psychology clinic and prepare an emergency crisis plan in case a participant needed immediate intervention. These requirements are understandable, but they unintentionally convey the assumption that those who have experienced potentially traumatic or stigmatizing events are uniformly damaged and psychologically fragile, an assumption that unwittingly reinforces women's fear of rape (Riger & Gordon, 1981) and the accompanying stigma (Ahrens, 2006).

IRBs rarely assume that violence and trauma-related studies may produce benefits; particularly, benefits that may even outweigh the costs. The practical result is that informed consent agreements must warn of potential distress but cannot suggest any benefits, despite

compelling evidence that disclosure of difficult life events can lead to positive outcomes (King, 2009; Paez Velasco, & Gonzales, 1999; Park & Bloomberg, 2002; Pennebaker et al., 1987; Petrie, Booth, Pennebaker, Davidson & Thomas, 1995). Reactions to research on potentially traumatic and stigmatizing events may be both negative and positive – but negative reactions may not be necessarily harmful reactions – they may demonstrate engagement in the study, without which benefits may be less likely (Newman & Kaloupek, 2009). For example, in a sample of college men, immediate negative emotional reactions to research on interpersonal violence were positively related to anticipation of future distress but also to the perception of benefits (Edwards, Gidycz, & Desai, 2012a). Below we review relevant literature organized by research design to illustrate our study's contributions.

Cross-Sectional Research

Cross-sectional studies with general samples, not selected for trauma or violent victimization histories, have failed to identify anticipated negative associations between participation in research on trauma and distress and well being (Black, Kresnow, Simon, Arias, & Shelly 2006; DePrince & Freyd, 2004; Newman & Kaloupek, 2004). Results are mixed among studies that have used samples with trauma exposure. Participants who experienced trauma-related distress concurrent with research participation reported more distress (Carlson et al, 2003; Walker, Newman, Koss, & Bernstein, 1997), but also greater benefits (Edwards, Kearns, Calhoun, & Gidycz, 2009). Several studies reported that few participants became upset and regretted their participation (Cromer, Freyd, Binder, De Prince, Becker-Blease, 2006; Newman, Walker, & Gelfand, 1999; Ruzek & Zatrack, 2000; Walker et al., 1997, Carlson et al., 2003).

An innovative mixed-methods study examined some previously unexamined correlates of participating in domestic violence (DV) research (Edwards, Sylaska, & Gidycz, 2014). In a large sample of college women with DV experiences, relationship commitment and satisfaction were positively related to reports of emotional reactions to participation, perceptions of benefits, negative feelings and fear toward one's partner, and thoughts about ending the relationship as a result of research participation. In this case, the research experience may have led women to reevaluate their relationships and potentially increase their safety, an immeasurable benefit.

Longitudinal Studies

Studies by Edwards and colleagues provide a more nuanced view suggesting that when negative effects of participation in studies about intimate partner violence occur, they diminish over time (Edwards, Probst, Tansill, & Gidycz, 2012b). In a study of 774 college-aged women (88% Caucasian), 7.7% experienced immediate negative emotional reactions and 2.1% reported distress at a two-month follow-up. Edwards et al. (2012b) suggested that trauma symptoms, instead of victimization experiences, best predicted immediate negative reactions, while immediate negative reactions and anticipation of future distress predicted negative reactions at follow-up. Similarly, a small minority of college-aged men who participated in the same study, but who also responded to questions about perpetrating interpersonal violence, reported immediate negative emotional reactions (4.3%), but none at

the two-month follow-up. Notably, Edwards et al. (2012a) is the first study to examine the impact of reporting perpetration.

Experimental Studies

Experimental studies provide more conclusive data. In general, these studies illustrate the complex nature of responses to participation in trauma-related studies. Ferrier-Auerback et al.'s (2009) experimental study on the effects of a trauma-related survey on veterans seeking mental health care demonstrated more sadness and tension among veterans who took a trauma survey, but also perceptions of gain or benefit equivalent to those who took a non-trauma survey.

In a diverse sample of college-aged students (55% reported identifying as an ethnic or racial minority-group member), Cook et al. (2009) unexpectedly found that after exposure to questions about stressful, stigmatizing, potentially traumatic, and sexually violating events, participants rated their negative affect significantly lower than their positive affect with small to medium effect sizes ($ds = .2 - .4$). Further, relative to a control condition, exposure to questions about stressful but common life events elicited more distress and questions about potentially traumatizing and stigmatizing events elicited less distress. Questions about sexually violating experiences, a subset of questions about potentially traumatizing and stigmatizing events, however, did evoke responses in the expected direction. Specifically, questions about sexually violating events, compared to questions about generally common stressful life events, increased fear and decreased attentiveness and feeling a sense of calm.

The most recent study to explore these questions reported those who completed a combined measure of trauma experiences (including victimization) and sexual behavior reported higher positive affect, more benefits, and fewer mental costs relative to participants who completed cognitive measures (Yeater et al., 2012). In line with most previous findings, participants also reported slightly more negative emotion. Importantly, all rated normal life stressors as more distressing than participating in the study. Although informative, it is not possible to distinguish between the effects of questions about stressful, stigmatizing, traumatic, and sexual experiences. All of these types of questions are sensitive but could include positive and negative events, which could lead to different reactions and obscure effects.

Current Study

This study addresses some of the limitations of previous research detailed above. We used an experimental design to evaluate immediate and longer-term effects of participating in a particular type of research. We exposed a large and diverse sample of higher education students to survey questions about stressful, stigmatizing, traumatic, or sexually violating life events, hoping to tease apart the effects of each type of question. We then measured their reactions to their participation, specifically, positive and negative affect, anxiety, traumatic stress symptoms, and reactions to the research experience. We measured reactions to research (i.e., participants' perceptions of ethical treatment, emotional reactions, and

benefits and drawbacks of research participation) at baseline, immediately after exposure, and two weeks post-exposure.

Under the common assumption that participation in sensitive survey research leads to negative outcomes, we hypothesized that participants who answered questions about stressful vs. non-stressful events, stigmatizing vs. non-stigmatizing events, traumatic vs. non-traumatic events, and sexually violating vs. non-sexually violating, respectively, would report immediately after and at 24 hours, but not at two weeks post-exposure: 1) less positive affect, 2) more negative affect, and 3) more anxiety; and at two weeks post-exposure: 4) lower ratings of ethical treatment of research participants, 5) stronger emotional reactions to research, 6) fewer benefits from participating in research, and 7) more drawbacks to research participation. These seven hypotheses allowed us to test the respective effects of answering questions about stressful, stigmatizing, potentially traumatic, and sexually violating events on seven variables operationalizing reactions to research.

Method

Participants

Participants ($N=559$; 445 women, 113 men) were college students enrolled in introductory undergraduate psychology courses at a large, urban, southeastern university. The diversity of the student body reflected the racial and ethnic make-up of the international city in which it is nestled. Approximately 20 percent of the sample reported being born outside of the United States, representing 48 different countries. Approximately 34 percent of the sample identified as African American ($n=187$), 32 percent as Caucasian ($n=177$), 16 percent as Asian/Pacific Islander ($n=87$), 11 percent as bi-racial/multi-racial ($n=60$), 6 percent as Latino/a ($n=31$), 1 percent each as Caribbean ($n=7$), of African descent ($n=5$), and as other/unknown ($n=5$)¹. The mean age for participants was 21 years ($SD=5.0$), with a range from 17 to 56 years. The majority of the sample (90 percent) identified as heterosexual.

Design

Using an experimental design, we measured traumatic stress symptoms, positive and negative affect, and anxiety over four time points (i.e., baseline, immediately post-exposure, 24 hours post-exposure, and two weeks post-exposure). Because we assessed participants' affect, anxiety, and traumatic stress symptoms at three post-exposure time points, we could infer whether trajectories of these outcomes were generally consistent or changed across time (Singer & Willet, 2003). We could not make inferences concerning change over time for other outcomes because we measured them at two time points only.

Exposure conditions—We randomly assigned participants to one of six conditions, one control and five experimental. The control condition was defined by presumably innocuous questions on birth order from the Personality Attributions to Birth Rank Questionnaire (Herrera, Zajonc, Wieczorkowska, & Cichomski, 2003). The other five conditions were defined by questions about stressful events; stressful and stigmatizing events; stressful and

¹Percentages exceed 100 due to rounding.

potentially traumatic events; stressful, stigmatizing, and potentially traumatic events; and sexually violating events, which we presumed also included elements of stress, stigma, and trauma. We collapsed these conditions from six to four for this study, as described as contrast groupings below.

We created exposure conditions by combining questions from 10 survey instruments about a range of life events (i.e., Social Readjustment Scale by Holmes & Rahe, 1967, Life Events Checklist by Johnson & McCutcheon, 1980, Recent Life Events-College Scale by Waelde, Silvern, & Hodges, 1994, Undergraduate Stress Questionnaire by Crandall, Preisler, & Asuuprungs, 1992, Traumatic Stress Institute Life Event Questionnaire by MacIain & Pearlman, 1992, Traumatic Life Events Questionnaire by Kubany Leisen, Kaplan, Watson, Haynes, Owens, et al., 2000), Stalking Behavior Checklist by Coleman, 1997, Crimes Against You by Herek, Gillis, & Cogan, 1999, Northern California Men's Health Study, and Sexual Experiences Survey by Koss et al., 2007. We generated additional questions where needed, particularly to define stigmatizing events. We assembled 300 questions in total.

Coders from the research team sorted these 300 questions into conditions (e.g., stressful and stigmatizing but not traumatic or sexually violating). A team of 16 independent researchers each placed 50 items into one of the five exposure categories. The research team and independent reviewers agreed on the independent researchers' categorization of approximately 60% of events. Of the 118 remaining, 74 were sorted by consensus or deleted. The process resulted in equivalent exposure conditions with questions about 40 events in each. Details can be found in Cook et al. (2011).

Contrast groupings—To test hypotheses for this study we collapsed the six conditions described above into four contrast groupings to compare the impact of items that were:

- a. stressful (e.g. have you experienced a change in the health of a family member? from Social Readjustment Scale; Holmes & Rahe, 1967) vs. non-stressful;
- b. stigmatizing (e.g., has a parent been incarcerated? developed by the research team) vs. non-stigmatizing;
- c. traumatic (e.g., have you been a victim of attack because of sexual orientation? adapted from the Crimes Against You; Herek, 1999) vs. non-traumatic; and
- d. sexually violating (e.g., has someone put their penis, or fingers, or objects (such as a bottle or candle) into your vagina [women] or anus/butt [women/men] after this person used some degree of physical force such as holding you down with his or her body weight or pinning your arms?" from the Sexual Experiences Survey (Koss et al., 2007) vs. non-sexually violating life events.

In each contrast, the comparison group comprised all other conditions (see Table 1). Contrasts were not mutually exclusive. We selected this planned-contrast strategy to test our specific hypotheses; an all-comparisons approach would have increased experiment-wise error with alpha correction rendering detection of statistical significance nearly impossible.

Random assignment—We used block randomization to assign participants to the original six conditions, where each block included a random order of conditions. The number of blocks was equal to the number of participants in each condition.

Manipulation check—To ensure validity of our classification of questions we asked participants to report their agreement to statements about the yes/no questions they answered on a 3-point Likert-type scale. Participants in corresponding conditions, when compared to excluded groups (See Table 1), were significantly more likely to report that they received questions about life events that would be a) stressful to most people, $t(542) = 8.26, p < .01, d = .71$, b) that most people would be hesitant to tell others about for fear of shame, embarrassment, or discrimination (stigma), $t(543) = 9.27, p < .01, d = .8$, c) that most people would respond to with intense fear, helplessness, or horror, (potentially traumatic) $t(542) = 6.52, p < .01, d = .56$, and d) that included sexually violating behavior, $t(543) = 8.19, p < .01, d = .7$.

Procedures

The university's Institutional Review Board (IRB) approved all procedures. We recruited undergraduate students to participate through a web-based program designed to track student involvement in research. The study was billed as concerning stressful events in college students' lives and we gave participants the option to receive academic credit, financial compensation, or a combination of both. Upon meeting, we introduced the study to participants, verbalized informed consent materials, and obtained participants' written consent. We informed students they would not know all details of the study until its completion. Students had the option to withdraw data after debriefing. No student withdrew data, declined to participate, or reported adverse events.

Participants first completed a paper-and-pencil questionnaire that included baseline measures. Second, they completed the randomly assigned exposure questions. Third, respondents answered questions to check the experimental manipulation. Finally, participants completed outcome measures through a confidential, web-based learning management system immediately after exposure, 24 hours post-exposure, and two weeks post-exposure. We retained 65% ($n = 363$) of the original sample at 24 hours and 67% ($n = 243$) of the 24-hour sample at two weeks. Little's MCAR test indicated data were missing completely at random, $\chi^2(25) = 26.31, p = .39$, and not due to any study variable or condition.

Outcome Constructs and Variables

Table 2 presents constructs, instruments, variables, timing of measures, and relevant psychometric information for this study. We strove to include widely-used and well-validated instruments: 1) Positive and Negative Affect Scales (PANAS-X) to measure general positive and negative affect (Watson & Clark, 1994); 2) the State Trait Anxiety Inventory (STAI; Spielberger, 1983) to capture immediate shifts in anxiety; and 3) The Traumatic Stress Checklist (TSC; Elliott & Briere, 1992) to assess the impact of trauma. These measures are well-validated (see Orme, Reis, & Herz, 1986; Metzger, 1976; Zlotnick et al., 1996, respectively). We administered the TSC at baseline, 24-hours post-exposure, and

two-weeks post-exposure because we expected changes in trauma symptoms to emerge only after some time had passed. To assess participants' evaluations of the costs and benefits of participation in the study, we used the Reactions to Research Participation Questionnaire (RRPQ; Newman, Willard, Sinclair, & Kaloupek, 2001). We modified this instrument slightly by adding items dropped in the original psychometric study ("Participating upset me more than I expected," "I found the experience of participating to be stressful," and "I felt calm while participating"), but were clearly relevant to our study. Because less psychometric data is available on the RRPQ we conducted an exploratory factor analysis. As a result, we selected four subscales to represent reactions to research and deleted one original item that did not load on any subscale ("I found questions too personal"). We administered this modified RRPQ immediately post-exposure and at two weeks post-exposure.

Data Analysis Strategy

All models were constructed and analyzed using the MIXED procedure in SAS v.9.3 with full-information maximum likelihood (FIML) estimation. FIML produces estimates more accurately than alternative methods when data are missing completely at random, minimizing the threat to statistical power due to missing values (Wothke, 2000). In preliminary models, we statistically controlled for gender because our sample was composed of predominantly women and race (coded as African American or not). These covariates were not significant predictors of any of the intercepts or slopes in our models; therefore, the following results are based upon updated models not controlling for these covariates to simplify interpretations. We did, however, control for baseline levels of both post-traumatic stress symptoms and each model's dependent variable (in models not predicting traumatic stress symptoms). We chose to control for traumatic stress symptoms in all models because we did not have a full assessment of stressful, stigmatizing, potentially traumatic, or sexually violating events for all participants, and previous research showed that current distress predicted reactions to research (Edwards, et al. 2012b).

All models were operationalized as multilevel regression models with measurements nested within people. For hypotheses 1–3, we constructed latent growth curve models with time operationalized as days since exposure to research: 0 (immediately post-exposure), 1 (24 hours post-exposure) and 14 (two weeks post-exposure). For hypotheses 4–7, we constructed intercept-only models, measured at 24 hours and two weeks post-exposure. We did not administer the RRPQ at the 24-hour follow-up because we believed there would be little change from the immediate time point. Planned contrast estimates and corresponding standard errors were calculated to test respective effects of answering questions about stressful, stigmatizing, potentially traumatic, and sexually violating events. We conducted separate analyses for each outcome: positive and negative affect, anxiety, traumatic stress symptoms, perceptions of costs, and perceptions of benefits of participation. To characterize the magnitude of change over time, mean difference scores were calculated as the average estimated change from baseline to follow-up for the control condition subtracted from the average estimated change from baseline to each follow-up for each experimental condition. Estimated values from the multilevel growth models were used to compute these difference scores. We then used a standard method to obtain Cohen's *d* condition effect sizes by dividing the mean difference scores by the control group baseline standard deviation

(Cohen, 1988). Positive effect size values represent increases in outcomes across time; negative values represent decreases.

Results

Descriptive Statistics

Relatively large percentages of each contrast group reported experiencing events measured by the surveys: 327 participants (70%) in the stressful group; 157 participants (56%) in the stigmatizing group; 169 (61%) in the potentially traumatic group and 30 (33%) in the sexually violating group. Means and standard deviations of each outcome, for each condition, at each time point are presented in the supplementary, online materials (please insert web link here).

Effects of the Covariate

Not surprisingly, baseline trauma symptoms (TSC scores) were related to outcomes: PANAS positive ($B = -.29, SE = .12, p = .02$), PANAS negative ($B = .49, SE = .09, p < .01$), and STAI outcomes ($B = .24, SE = .07, p < .01$), and were retained in subsequent analyses. We tested interactions between TSC scores and this study's four conditions, essentially asking whether people who experience increased trauma symptoms respond differently to the question conditions; we did not detect any significant interactions. Results below pertain to main effects.

Hypothesis Testing

We first estimated three multilevel growth models to predict positive and negative affect and anxiety and three multilevel intercept-only models to predict the costs and benefits of research participation (see Table 3). For the three growth models, parameter estimates represent intercepts and slopes. The intercepts refer to each group's estimated levels of each outcome immediately post-exposure. Slopes refer to the average rate of linear change in each outcome across time. For the intercept-only models, parameter estimates are average post-exposure levels of the outcome. To test our specific hypotheses, we carried out four planned contrasts using intercepts and slopes, their standard errors, effect sizes, and 95% confidence levels from each model (see Table 4). Finally, we carried out four planned contrast using intercepts only with their standard errors, effect sizes, and 95% confidence models. Overall, few intercept or slope contrasts reached conventional levels of statistical significance, even before considering alpha-level adjustments.

Hypothesis 1: Positive affect—Estimates of positive affect immediately post-exposure (intercepts) clustered together across conditions, ranging in the middle of the scale from 2.41 to 2.52 (see Table 3). We found a significant difference between participants exposed to sexual vs. non-sexual questions in estimated levels of positive affect immediately post-exposure, with those exposed to questions about sexual victimization reporting significantly less positive affect (see Table 4). The contrast effect between slopes of the sexual and non-sexual groups was significant, with the sexual group increasing in positive affect over time at a greater rate than the non-sexual group. Both intercept and slope contrasts constituted quite small effects. The group of participants exposed to questions about sexual violation

had the highest positive affect estimate at two weeks post-exposure, but this estimate was not significantly higher than the others.

Hypothesis 2: Negative affect—Estimates of negative affect immediately post-exposure also clustered together at the low end of the scale across conditions, ranging from 1.43 to 1.49; slopes of post-exposure negative affect were all slightly positive (i.e., increased in negative affect; see Table 3) but none were statistically significant. No contrast effects between intercepts or slopes of negative affect were significant (see Table 4).

Hypotheses 3: State anxiety—Estimates of state anxiety immediately post-exposure were very similar across conditions, clustering on the very low end of the scale from 0.87 to 0.89; 24 hour post-exposure rates of change in state anxiety were extremely small (see Table 3). No effects between intercepts or slopes of state anxiety as a function of any exposure contrasts, were significant (see Table 4).

Hypothesis 4: Ethical treatment of research participants—Post-exposure estimates from the intercept-only model of participants' perceptions of ethical treatment ranged in the middle of the scale from 2.42 to 2.55 (see Table 3). We found no significant differences across the groups in estimated levels of perceptions of ethical treatment reported post-exposure as functions of any of the exposure contrasts (see Table 5).

Hypothesis 5: Emotional reactions to research—Post-exposure estimates from the intercept-only model of participants' emotional reactions to research ranged slightly above the middle of the scale from 3.27 to 3.40 (see Table 3). We found no significant differences across the groups in estimated levels of emotional reactions to research reported post-exposure as functions of any of the exposure contrasts (see Table 5).

Hypothesis 6: Perception of benefits of the research—Post-exposure estimates from the intercept-only model of participants' perceived benefits of the research ranged in the middle of the scale from 2.66 to 2.95 (see Table 3). We found a significant difference between participants exposed to stressful vs. non-stressful questions in average post-exposure levels of perceived benefits of the research, with those exposed to questions about stressful experiences reporting significantly more perceived benefits (see Table 5).

Hypothesis 7: Perceptions of drawbacks to research participation—Post-exposure estimates from the intercept-only model of perceived drawbacks to research participation ranged at the mid to high middle of the scale (i.e., 2.97 to 3.23; see Table 3). We found a significant difference between participants exposed to sexual vs. non-sexual questions in average post-exposure levels of perceived drawbacks, with those exposed to questions about sexual experiences reporting significantly fewer perceived drawbacks (see Table 5).

Discussion

To our knowledge, ours is the first study on reactions to trauma and violence-related survey research using an experimental design that examined both between-subject and within-

subject effects over time. Moreover, this is the first attempt to compare reactions to questions about events that lie on a continuum, from stressful but relatively common life events to those that are less common but also stigmatizing, potentially traumatizing, and, at the extreme end, sexually violating. We controlled for pre-existing trauma symptoms and used analytic techniques that mitigated the impact of missing data. Using planned contrasts, we found little empirical support for concerns about the potential negative impact of trauma and violence-related research on human participants.

Our most notable finding was that questions about experiencing sexual violation had a slightly negative impact on well being. Participants exposed to questions about sexual violation, compared to those exposed to all other types of questions, reported slightly decreased positive affect immediately and 24 hours after post-exposure. However, the effect diminished by two weeks post-exposure; at that point, positive affect was similar across all planned contrasts. In spite of the dampening impact on positive affect immediately and 24 hours post-exposure, those who answered questions about sexually violating events reported fewer perceptions of drawbacks compared to all other participants. This finding adds to the growing literature suggesting that even when negative effects occur, respondents may not view their experience negatively (Cook et al., 2011; Edwards et al., 2009; Edwards et al., 2012b; Newman & Kaloupek, 2004). At first these findings seem paradoxical, but Newman & Kaloupek (2004) theorize that negative impacts signal engagement with the study. For example, the decrease in positive affect may be due to questions leading a participant to re-evaluate a past experience in a different light, as women did when they considered ending relationships after participation (Edwards et al., 2014). Questions may also cause participants to recall a negative memory and consequent emotions that momentarily reduce positive affect, but did not lead to increased negative affect. Participants in the sexually violating condition may have reported fewer drawbacks (e.g., study took too long, was inconvenient, or boring) because they were engaged with the study, despite the cognitively complex and repetitive nature of questions in this condition and reporting no more benefits than the comparison group.

Similarly, those exposed to questions about stressful life events, reported slightly more perceptions of perceived benefits than the control condition. Sexual assault victims rarely report their experiences (Ullman, 2010). Participants, specifically if they have not disclosed previously, may have experienced benefits if even an anonymous report on a survey validated their experience, caused no major threat to their sense of self, safety, or well being. This experience may be the same for others who anonymously reported experiences that entailed stress, stigma, and potential trauma.

Regardless of exposure condition, participants reported similar, increasing levels of negative affect over time, perhaps due to the normative experiences of a student sample. As the semester progressed, students were under increasing demands. Further, they may have encountered testing fatigue, boredom or disinterest, when other matters, academic or otherwise seemed more pressing. Surprisingly, we found no significant interactions between post-traumatic stress symptoms and experimental conditions. However, as previous studies suggest (Edwards, 2012b), current distress predicted positive and negative affect, and anxiety.

Limitations and Future Directions

This study employed a college-student sample from a university, noted for ethnic and socioeconomic diversity. Future work would benefit from samples diverse in immigration status, age, sexuality, or other dimensions that may moderate effects. Groups truly vulnerable to sexual assault should also be included, including the mentally ill, the physically or intellectually disabled, and the incarcerated; as well as participants screened for trauma histories. Our design prohibited an assessment of whether total traumatic life events moderated effects; because we exposed participants to only one category of events, a comprehensive traumatic event assessment may prove useful. We advertised our study as focusing on stressful life events and doing so may have biased our sample – either attracting or repelling students who had experiences such events.

We did not assess change over time on all of our outcomes. Future work may collect data on additional outcomes of interest and extend the measurements to 3 and 6 months post-exposure and assess outcomes three or more times post-exposure. Additional outcomes might include nuanced measures of negative effects, such as whether participants carried on with their days as planned, if participation was disruptive to their current goals, or whether participation had an impact on interpersonal interactions, academic performance, or obligations.

Attrition posed a challenge. By the two-week follow-up we lost 56% of our sample. Nearly 60% of students are Pell eligible and consequently, many work half to full-time while enrolling in 12–15 credits each semester. They may not have been available to complete follow-up data collection within the narrow, specified time frames. Alternatively, attrition may indicate a negative effect of participation, but we found no differences in attrition between conditions (i.e., the data were missing at random). Other reasons could include insufficient incentives or no need for further academic credit. We minimized the threat of attrition on statistical power, by using full information maximum likelihood estimation given data missing at random. Still, creative methods of retaining student participants over time over time are needed.

Finally, control condition questions about attitudes about birth order may not have been neutral as we expected. This condition may have elicited negative emotions (e.g., thinking about a deceased or estranged sibling), and canceled or reduced manipulation effects. However, our manipulation appears to have worked, but distinctions among conditions may not have been strong enough to produce large effect sizes. The lack of larger effects is surprising in the sexual violation condition where we asked about only the most extreme forms: rape and attempted rape.

Research Implications

Overall, our data converges with the literature on the impact of participating in sensitive research that demonstrates relatively few serious consequences (Legerski & Bunnell, 2010). Importantly, it extends the literature to examine trajectories of change in some of the most commonly studied variables (i.e., negative and positive affect, and anxiety). For example, although participants reported decreased positive affect immediately following surveys of

sexual victimization, these effects were temporary and we did not find a corresponding increase in negative affect. Our data also illustrate that participation in research on sensitive topics can have benefits. This project is one of the few to explore benefits, leaving ample opportunity to explore expanded definitions of benefits and positive outcomes such as self-efficacy, self-esteem, quality of life, and growth.

Our study generalizes best to survey research, such as large university-based studies with undergraduate pools, national surveys, and school-based surveys. An important remaining question is if methods of data collection differentially impact participant reactions. Reactions may be more pronounced or simply different in nature when participating in in-person interviews versus survey research. For example, interview-based research assists with sexual assault survivors' positive reframing of events (Campbell, Adams, Wasco, Ahrens, & Sefl, 2010). Online surveys may lead to less-pronounced effects due to their depersonalized nature; but for those in distress, online surveys may increase a sense of isolation. The impetus for the current study was to assess the effects of participating in research on sexual victimization; in doing so, we also exposed participants to questions that may pose risk, such as questions about mental health, incarceration, or infidelity. Because these other experiences with violence also entail stress, stigma, and trauma, our findings may generalize to these sensitive areas of inquiry. We caution readers to recall that we exposed participants to only 40 questions. We did not conduct a comprehensive victimization or trauma assessment. While our questions about sexual violation from the SES asked only about rape and attempted rape, we did not assess the frequency of experiences.

Clinical and Policy Implications

While our sample was not selectively recruited for negative life experiences, the majority reported having experienced at least one of the events in all contrast groups except for those answering questions about sexual violation. Even in this group, one-third reported victimization. Although further research is warranted, researchers should begin to use empirical support for statements with respect to risks and benefits of research in consent forms and debriefing materials. IRBs rightfully place great emphasis on protecting vulnerable populations from coercion or adverse events. The label "vulnerable" may be inappropriate when applied to those who have experience potentially traumatic events. No evidence suggests that survivors of violence are incapable of consenting or likely to be coerced into participation.

Further, the responsibility is to balance respect for the rights and dignity of participants, including self-determination, with protections from harm. In research with survivors of sexual violence, we must be careful not to lose sight of the issue of autonomy and self-determination. As Fontes (2004, p.144) noted, "What one sees as the most respectful stance to take in [violence against women] research depends on whether one sees the victims as resilient and able to manage anxiety-provoking inquiries or as vulnerable, fragile, and in need of special protections as vulnerable populations..." The assumption that surviving negative life experiences makes one necessarily vulnerable may reify the harm and stigma

that researchers and IRBs wish to avoid. We hope our data balance the need to protect and honor the strength and resilience of survivors.

Conclusions

Investigation into the research process is important. It is naïve to assume people are unaffected by participating in research on violence; however, we add to a growing literature suggesting it is inaccurate to assume people are necessarily negatively affected by these inquiries. Regardless, researchers have an obligation to understand how people change, why they change, and whether features of the research process can either enhance positive change or mitigate potentially harmful change.

We asked whether the impact of violence research was helpful, harmful, or neither. Our findings suggest few negative effects associated with participating in research on stressful, stigmatizing, potentially traumatic, and sexually violating events. One of the few repercussions—decreased positive affect among those who answered questions concerning sexually violating events versus those who did not—completely disappeared after two weeks. Those exposed to questions about stressful experiences reported significantly more perceived benefits of research participation compared with the control condition. In addition, those exposed to questions about sexual violating experiences reporting significantly fewer perceived drawbacks to research participation. Taken together, our results paint a brighter picture of participant experiences in research on violence than our field has come to anticipate.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

This study was funded by the National Institute of Mental Health (Grant R03MH81223). We wish to acknowledge Doyanne Darnell, Elizabeth R Anthony, Chantal Poister Tusher, Lindsey Zimmerman, and Dulamday Enkhtor for contributions to this project.

References

- Ahrens CE. Being silenced: The impact of negative social reactions on the disclosure of rape. *American Journal of Community Psychology*. 2006; 38:263–274.10.1007/s10464-006-9069-9 [PubMed: 17111229]
- Black M, Kresnow M, Simon T, Arias I, Shelly G. Telephone survey respondents' reactions to questions regarding interpersonal violence. *Violence and Victims*. 2006; 21:445–459. <http://dx.doi.org/10.1891/0886-6708.21.4.445>. [PubMed: 16897912]
- Campbell R, Adams AE, Wasco SM, Ahrens CE, Sefl T. "What has it been like for you to talk with me today?": The impact of participating in interview research on rape survivors. *Violence Against Women*. 2010; 16:60–83.10.1177/1077801209353576 [PubMed: 19949229]
- Carlson EB, Newman E, Daniels JW, Armstrong J, Roth D, Loewenstein R. Distress in response to and perceived usefulness of trauma research interviews. *Journal of Trauma and Dissociation*. 2003; 4:131–142.10.1300/J229v04n02_08
- Cohen, J. *Statistical power analysis for the behavioral sciences*. 2. Hillsdale, NJ: Erlbaum; 1988.
- Coleman FL. Stalking behavior and the cycle of domestic violence. *Journal of Interpersonal Violence*. 1997; 12:420–433.10.1177/088626097012003007

- Cook SL, Darnell D, Anthony ER, Tusher CP, Zimmerman L, Enkhtor D, Hipp TN. Investigating the effects of trauma-related research on well being. *Accountability in Research*. 2011; 18:297–322.10.1080/08989621.2011.584772 [PubMed: 21916739]
- Crandall CS, Preisler JJ, Aussprung J. Measuring life event stress in the lives of college students: The Undergraduate Stress Questionnaire (USQ). *Journal of Behavioral Medicine*. 1992; 15:627–662.10.1007/BF00844860 [PubMed: 1484384]
- Cromer LD, Freyd JJ, Binder AK, DePrince AP, Becker-Blease K. What's the risk in asking? Participant reaction to trauma history questions compared with reaction to other personal questions. *Ethics & Behavior*. 2006; 16:347–362.10.1207/s15327019eb1604_5
- DePrince AP, Freyd JJ. Costs and benefits of being asked about trauma history. *Journal of Trauma Practice*. 2004; 3:23–35.10.1300/J189v03n04
- Edwards KM, Gidycz CA, Desai AD. Men's reactions to participating in interpersonal violence research. *Journal of Interpersonal Violence*. 2012a; 27:3683–3700.10.1177/0886260512447576 [PubMed: 22809816]
- Edwards KM, Kearns MC, Calhoun KS, Gidycz CA. College women's reactions to sexual assault research participation: Is it distressing? *Psychology of Women Quarterly*. 2009; 33:225–234.10.1111/j.1471-6402.2009.01492.x
- Edwards KM, Probst DR, Tansill EC, Gidycz CA. Women's reactions to interpersonal violence research: A longitudinal study. *Journal of Interpersonal Violence*. 2012b; 28:254–272.10.1177/0886260512454721 [PubMed: 22935950]
- Edwards KM, Sylaska KM, Gidycz CA. Women's reactions to participating in dating violence research: A mixed methodological study. *Psychology of Violence*. 2014; 4:224–239.10.1037/a0034339
- Elliott DM, Briere J. Sexual abuse trauma among professional women: Validating the Trauma Symptom Checklist-40 (TSC-40). *Child Abuse & Neglect*. 1992; 16:391–398.10.1016/0145-2134(92)90048-V [PubMed: 1617473]
- Ferrier-Auerbach A, Erbes C, Polusny M. Does trauma survey research cause more distress than other types of survey research? *Journal of Traumatic Stress*. 2009; 22:320–323.10.1002/jts [PubMed: 19618383]
- Fontes LA. Ethics in violence against women research: The sensitive, the dangerous, and the overlooked. *Ethics & Behavior*. 2004; 14:141–74.10.1207/s15327019eb1402_4 [PubMed: 15835038]
- Herek GM, Gillis JR, Cogan JC. Psychological sequelae of hate crime victimization among lesbian, gay, and bisexual adults. *Journal of Consulting and Clinical Psychology*. 1999; 67:945–951.10.1037/0022-006X.67.6.945 [PubMed: 10596515]
- Herrera NC, Zajonc RB, Wierzkowska G, Cichomski B. Beliefs about birth rank and their reflection in reality. *Journal of Personality and Social Psychology*. 2003; 85:142–150.10.1037/0022-3514.85.1.142 [PubMed: 12872890]
- Holmes TH, Rahe RA. The Social Readjustment Rating Scale. *Journal of Psychosomatic Research*. 1967; 11:213–218.10.1016/0022-3999(67)90010-4 [PubMed: 6059863]
- Johnson, J.; McCutcheon, S. Assessing life stress in older children and adolescents: Preliminary findings with the Life Events Checklist. In: Sarason, I.; Spielberger, C., editors. *Stress and Anxiety*. Vol. 7. Washington, D.C: Hemisphere; 1980. p. 111-125.
- King LA. The health benefits of writing about life goals. *Personality and Social Psychology Bulletin*. 2009; 27:798–807.10.1177/0146167201277003
- Koss MP, Abbey A, Campbell R, Cook S, Norris J, Testa M, White J. Revising the SES: A collaborative process to improve assessment of sexual aggression and victimization. *Psychology of Women Quarterly*. 2007; 31:357–370.10.1111/j.1471-6402.2007.00385.x
- Kubany ES, Leisen MB, Kaplan AS, Watson SB, Haynes SN, Owens JA, Burns K. Development and preliminary validation of a brief broad-spectrum measure of trauma exposure: The Traumatic Life Events Questionnaire. *Psychological Assessment*. 2000; 12:210–224.10.1037/1040-3590.12.2.210 [PubMed: 10887767]
- Legerski JP, Bunnell SL. The risks, benefits, and ethics of trauma-focused research participation. *Ethics & Behavior*. 2010; 20:429–442.10.1080/10508422.2010.521443

- Maclan PS, Pearlman LA. Development and use of the TSI Life Event Questionnaire. *Treating Abuse Today: The International News Journal of Abuse, Survivorship, and Therapy*. 1992; 2:9–11.
- Metzger RL. A reliability and validity study of the State-Trait Anxiety Inventory. *Journal of Clinical Psychology*. 1976; 32:276–278.10.1002/1097-4679(197604)32:2<276::AID-JCLP2270320215>3.0.CO;2-G
- Newman E, Kaloupek D. Overview of research addressing ethical dimensions of participation in traumatic stress studies: Autonomy and beneficence. *Journal of Traumatic Stress*. 2009; 22:595–602.10.1002/jts [PubMed: 19885873]
- Newman E, Kaloupek DG. The risks and benefits of participating in trauma-focused research studies. *Journal of Traumatic Stress*. 2004; 17:383–94.10.1023/B:JOTS.0000048951.02568.3a [PubMed: 15633917]
- Newman E, Walker EA, Gefland A. Assessing the ethical costs and benefits of trauma-focused research. *General Hospital Psychiatry*. 1999; 21:187–196.10.1016/S0163-8343(99)00011-0 [PubMed: 10378112]
- Newman E, Willard T, Sinclair R, Kaloupek D. Empirically supported ethical research practice: The costs and benefits of research from the participants' view. *Accountability in Research*. 2001; 8:309–329.10.1080/08989620108573983 [PubMed: 12481796]
- Orme JG, Reis J, Herz EJ. Factorial and discriminant validity of the center for epidemiological studies depression (CES-D) scale. *Journal of clinical psychology*. 1986; 42:28–33.10.1002/1097-4679(198601)42:1<28::AID-JCLP2270420104>3.0.CO;2-T [PubMed: 3950011]
- Paez D, Velasco C, Gonzales JL. Expressive writing and the role of Alexythymia as a dispositional deficit in self-disclosure and psychological health. *Journal of Personality and Social Psychology*. 1999; 77:630–641.10.1037/0022-3514.77.3.630 [PubMed: 10510512]
- Park CL, Bloomberg CJ. Disclosing trauma through writing: Testing the meaning-making hypothesis. *Cognitive Therapy and Research*. 2002; 26:597–616. <http://link.springer.com/article/10.1023/A:1020353109229>.
- Pennebaker JW, Hughes CF, O'Heeron RC. The psychophysiology of confession: Linking inhibitory and psychosomatic processes. *Journal of Personality and Social Psychology*. 1987; 52:781–793.10.1037/0022-3514.52.4.781 [PubMed: 3572739]
- Petrie KJ, Booth RJ, Pennebaker JW, Davison KP, Thomas MG. Disclosure of trauma and immune response to a hepatitis B vaccination program. *Journal of Consulting and Clinical Psychology*. 1995; 63:787–792.10.1037/0022-006X.63.5.787 [PubMed: 7593871]
- Riger S, Gordon MT. The fear of rape: A study in social control. *Journal of Social Issues*. 1981; 37:71–92.10.1111/j.1540-4560.1981.tb01071.x
- Ruzek JI, Zatzick DF. Ethical considerations in research participation among acutely injured trauma survivors: An empirical investigation. *General Hospital Psychiatry*. 2000; 22:27–36.10.1016/S0163-8343(99)00041-9 [PubMed: 10715501]
- Singer, JD.; Willet, JB. *Applied longitudinal data analysis: Modeling change and event occurrence*. New York, NY: Oxford University Press; 2003.
- Spielberger, CD. *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press; 1983.
- Ullman, SE. *Talking about sexual assault: Society's response to survivors*. Washington, D.C: American Psychological Association; 2010.
- Waelde LC, Silvern L, Hodges WF. Stressful life events: Moderators of the relationship of gender and gender roles to self-reported depression and suicidality among college students. *Sex Roles*. 1994; 30:1–22.10.1007/BF01420737
- Walker EA, Newman E, Koss M, Bernstein D. Does the study of victimization revictimize the victims? *General Hospital Psychiatry*. 1997; 19:403–410.10.1016/S0163-8343(97)00061-3 [PubMed: 9438184]
- Watson, D.; Clark, LA. *The PANAS-X: Manual for the Positive and Negative Affect Schedule – Expanded Form*. Iowa City: University of Iowa; 1994.
- Wothke, W. Longitudinal and multigroup modeling with missing data. In: Little, TD.; Schnabel, KU.; Baumert, J., editors. *Modeling longitudinal and multilevel data: Practical issues, applied*

approaches, and specific examples. Mahwah, NJ: Lawrence Erlbaum Associates Publishers; 2000. p. 219-240.p. 269-281.

Yeater E, Miller G, Rinehart J, Nason E. Trauma and sex surveys meet minimal risk standards: Implications for institutional review boards. *Psychological Science*. 2012; 23:780–787.10.1177/0956797611435131 [PubMed: 22623507]

Zlotnick C, Shea MT, Begin A, Pearlstein T, Simpson E, Costello E. The validation of the Trauma Symptom Checklist-40 (TSC-40) in a sample of inpatients. *Child Abuse & Neglect*. 1996; 20:503–510.10.1016/0145-2134(96)00032-4 [PubMed: 8800525]

Table 1
Planned contrast groupings created from original experimental conditions and sample sizes

Contrast	Groupings	
Stressful vs. non-stressful e.g., I experienced a change in health of a family member vs. How agreeable do you perceive first form individuals?	Stressful (<i>n</i> = 465) 2) stressful 3) stressful and stigmatizing 4) stressful and potentially traumatic 5) stressful, stigmatizing, and potentially traumatic 6) sexually violating	Non-stressful (<i>n</i> = 94) 1) control
Stigmatizing vs. non-stigmatizing e.g., Has your parent been arrested vs. I experienced the death of a close friend	Stigmatizing (<i>n</i> = 279) 3) stressful and stigmatizing 5) stressful, stigmatizing, and potentially traumatic 6) sexually violating	Non-stigmatizing (<i>n</i> = 280) 1) control 2) stressful 4) stressful and potentially traumatic
Traumatic vs. non-traumatic e.g., Have you been robbed with a weapon vs. have you started or completed school?	Traumatic (<i>n</i> = 279) 4) stressful and potentially traumatic 5) stressful, stigmatizing, and potentially traumatic 6) sexually violating	Non-traumatic (<i>n</i> = 280) 1) control 2) stressful 3) stressful and stigmatizing
Sexual vs. non-sexual e.g., Has someone put their penis in your vagina without your consent by using force vs. Have you seen strangers die of an accident?	Sexual (<i>n</i> = 92) 6) sexually violating	Non-sexual (<i>n</i> = 467) 1) control 2) stressful 3) stressful and stigmatizing 4) stressful and potentially traumatizing 5) stressful, stigmatizing, and potentially traumatic

Table 2
Constructs, instruments, variables and psychometric information on study outcome variables

Construct	Instrument	Variable	Number of items	Response scale	Interpretation	Alphas		
						Baseline	Immediate	24 hours
	Positive and Negative Affect Scales (PANAS-X; Watson & Clark, 1994)	positive affect	10	1 = very slightly or not at all, 2 = a little, 3 = moderately, 4 = quite a bit, 5 = extremely	Respondents indicated the extent they felt each emotion "at this moment". Higher scale mean scores indicated greater positive or negative affect than lower scores.	0.86	0.86	0.85
		negative affect	10			0.9	0.91	0.91
Well-being	State Trait Anxiety Inventory (STAI; Spielberger, 1983)	anxiety	20	1 = not at all to 4 = very much so	Participants rated whether each statement represented their current feelings. Higher scale mean scores indicate greater anxiety	0.93	0.94	0.94
								0.84
	The Traumatic Stress Checklist (TSC; Elliott & Briere, 1992)	trauma	40	0 = never to 3 = often	Respondents report the frequency they experience each symptom. Higher scale mean scores indicate more traumatic impact	0.93	N/A	0.94
								0.93
Reaction to research participation	RRPQ Newman, Willard, Sinclair, & Kaloupek, 2001 (Revised)	ethical treatment	12 (original items 1–4, 17–23, and I felt calm after participating)	1 = Strongly Disagree to 5 = Strongly Agree	Participants rated whether each statement reflected their experience. Low scale mean scores reflect less of the construct than high scores.	N/A	0.98	N/A
		emotional reactions	6 (original items 9–12 and I found the experience to be stressful and Participating upset me more than I expected)			N/A	0.92	N/A
		benefits	4 (original items 5–8)			N/A	0.87	N/A
		drawbacks	3 (original items 13–15)			N/A	0.77	N/A
								0.71

Table 3

Multilevel Model Estimates and Standard Errors

Growth Models												
1. Positive Affect				2. Negative Affect				3. State Anxiety				
Intercept		Slope		Intercept		Slope		Intercept		Slope		
B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	SE
Stress	2.52	0.03	<0.01	<0.01	1.43	0.02	0.01	<0.01	0.88	0.02	<0.01	<0.01
Stigma	2.49	0.04	0.01	<0.01	1.43	0.03	0.01	<0.01	0.88	0.02	<0.01	<0.01
Trauma	2.51	0.04	<0.01	<0.01	1.43	0.03	0.01	<0.01	0.87	0.02	<0.01	<0.01
Sexual	2.41	0.06	0.01	0.01	1.47	0.04	0.01	<0.01	0.88	0.03	<0.01	0.01
Control	2.48	0.06	0.01	0.01	1.49	0.04	0.01	0.01	0.89	0.03	<0.01	0.01

Intercept-only Models												
4. Ethical Treatment			5. Emotional Reactions			6. Perceived Benefits			7. Perceived Drawbacks			
B	SE		B	SE		B	SE		B	SE		SE
Stress	2.47	0.09	3.32	0.08	0.08	2.91	0.06	0.06	3.23	0.06		
Stigma	2.53	0.10	3.29	0.09	0.09	2.92	0.07	0.07	3.20	0.08		
Trauma	2.50	0.10	3.32	0.09	0.09	2.93	0.07	0.07	3.20	0.07		
Sexual	2.55	0.16	3.27	0.14	0.14	2.95	0.11	0.11	2.97	0.12		
Control	2.42	0.16	3.40	0.15	0.15	2.66	0.11	0.11	3.20	0.12		

Table 4

Contrasts of Growth Model Intercepts and Slopes

Positive Affect	Intercepts				Slopes			
	<i>B</i>	<i>SE</i>	<i>df</i>	<i>d</i> (CI ^{95%})	<i>B</i>	<i>SE</i>	<i>df</i>	<i>d</i> (CI ^{95%})
Stress vs. no stress	0.04	0.06	538	0.05 (−0.08, 0.17)	−0.01	0.01	268	−0.01 (−0.03, 0.01)
Trauma vs. no trauma	0.01	0.04	539	0.01 (−0.09, 0.1)	0.01	0.01	269	0.01 (0, 0.02)
Sexual vs. non-sexual	−0.13*	0.06	525	−0.14 (−0.26, −0.01)	0.02*	0.01	269	0.02 (0, 0.03)
Stigma vs. no stigma	−0.04	0.04	537	−0.05 (−0.14, 0.05)	0.01	0.01	269	0.01 (0, 0.02)
Negative Affect								
	Intercepts				Slopes			
	<i>B</i>	<i>SE</i>	<i>df</i>	<i>d</i> (CI ^{95%})	<i>B</i>	<i>SE</i>	<i>df</i>	<i>d</i> (CI ^{95%})
Stress vs. no stress	−0.06	0.04	542	−0.11 (−0.26, 0.04)	<0.01	0.01	271	0 (−0.02, 0.03)
Trauma vs. no trauma	−0.03	0.03	543	−0.06 (−0.17, 0.05)	<0.01	0.01	272	−0.01 (−0.02, 0.01)
Sexual vs. non-sexual	0.02	0.04	530	0.04 (−0.1, 0.19)	<0.01	0.01	272	0 (−0.03, 0.02)
Stigma vs. no stigma	−0.03	0.03	541	−0.05 (−0.16, 0.06)	<0.01	0.01	272	0 (−0.02, 0.02)
Anxiety								
	Intercepts				Slopes			
	<i>B</i>	<i>SE</i>	<i>df</i>	<i>d</i> (CI ^{95%})	<i>B</i>	<i>SE</i>	<i>df</i>	<i>d</i> (CI ^{95%})
Stress vs. no stress	−0.01	0.03	535	−0.02 (−0.12, 0.09)	<0.01	0.01	276	0 (−0.02, 0.02)
Trauma vs. no trauma	−0.03	0.03	533	−0.05 (−0.13, 0.03)	<0.01	<0.01	277	−0.01 (−0.02, 0.01)
Sexual vs. non-sexual	<0.01	0.03	520	0 (−0.1, 0.11)	<0.01	0.01	278	−0.01 (−0.03, 0.01)
Stigma vs. no stigma	−0.01	0.03	534	−0.02 (−0.1, 0.06)	<0.01	<0.01	278	0 (−0.02, 0.01)

Note:

* $p < .05$

Table 5

Contrasts of Intercept-only Intercepts.

Ethical Treatment of Research Participants				
	<i>B</i>	<i>SE</i>	<i>df</i>	<i>d</i> (CI ^{95%})
Stress vs. no stress	0.05	0.17	520	0.03 (−0.19, 0.26)
Trauma vs. no trauma	0.07	0.12	521	0.05 (−0.12, 0.21)
Sexual vs. non-sexual	0.10	0.16	522	0.07 (−0.15, 0.29)
Stigma vs. no stigma	0.13	0.12	521	0.09 (−0.07, 0.25)
Emotional Reactions to Research Participation				
	<i>B</i>	<i>SE</i>	<i>df</i>	<i>d</i> (CI ^{95%})
Stress vs. no stress	−0.08	0.15	520	−0.06 (−0.27, 0.16)
Trauma vs. no trauma	−0.02	0.11	523	−0.02 (−0.17, 0.14)
Sexual vs. non-sexual	−0.07	0.15	524	−0.05 (−0.27, 0.16)
Stigma vs. no stigma	−0.07	0.11	523	−0.06 (−0.21, 0.1)
Benefits of Research Participation				
	<i>B</i>	<i>SE</i>	<i>df</i>	<i>d</i> (CI ^{95%})
Stress vs. no stress	0.25*	0.11	506	0.26 (0.03, 0.48)
Trauma vs. no trauma	0.11	0.08	510	0.11 (−0.05, 0.28)
Sexual vs. non-sexual	0.10	0.11	513	0.1 (−0.12, 0.32)
Stigma vs. no stigma	0.11	0.08	511	0.11 (−0.06, 0.28)
Drawbacks to Research Participation				
	<i>B</i>	<i>SE</i>	<i>df</i>	<i>d</i> (CI ^{95%})
Stress vs. no stress	0.02	0.12	498	0.02 (−0.2, 0.24)
Trauma vs. no trauma	−0.04	0.09	505	−0.03 (−0.2, 0.13)
Sexual vs. non-sexual	−0.30*	0.12	508	−0.28 (−0.49, −0.06)
Stigma vs. no stigma	−0.05	0.09	505	−0.05 (−0.21, 0.12)

Note:

* $p < .05$.