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Do Some Students Need Special Protection from Research on Sex and Trauma? New Evidence for Young Adult Resilience in “Sensitive Topics” Research

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Abstract

Institutional Review Boards have expressed concerns that certain individuals or groups, such as participants who are younger, ethnic minorities, or who have certain psychological or personality traits, may be particularly distressed when participating in “sensitive topics” research. This study examined the effects of several demographic and individual difference factors (i.e. age, sex, ethnicity, religiosity, Big Five personality traits, and baseline psychological distress levels), on reactions to participation in “sensitive topics research.” Participants were 504 undergraduates who completed an extensive battery of either trauma/sex questionnaires or cognitive tests and rated their positive and negative emotional reactions and the perceived benefits and mental costs of participating. They also compared research participation to normal life stressors. Our findings indicated that individual difference and demographic “risk factors” do not increase participant distress after participating in sex/trauma research over and above that experienced after participating in traditionally “minimal risk” cognitive tasks. Participants generally find research participation less distressing than normal life stressors and even enjoyable.

Institutional Review Boards (IRBs) often make risk/benefit decisions about research protocols “based on subjective judgments in the absence of empirical data,” a practice that is thought to “adversely affect research progress or clinical outcomes” (Newman, Willard, Sinclair, and Kaloupek, 2001, p. 309). For instance, IRBs often worry that research examining “sensitive topics” such as trauma and sex, will be extremely distressing to college students and should be considered high risk, requiring more scrutiny and safeguards than other types of behavioral research and potentially impeding sex research and education. This concern is also reflected in a number of recently published articles in the popular media positing that college students are vulnerable and should be protected from controversial or evocative content (Lukianoff & Haidt, 2015; Freeman, Herrera, Hurley, King, Luciano, et al., 2014). Researchers studying sensitive topics have noted that they encounter barriers to obtaining IRB approval for trauma or sex related research (Cook, Swartout, Goodnight, Hipp, & Bellis, 2015; Jaffe, DiLillo, Hoffman, Haikalis, & Dykstra, 2015; Yeater, Miller,

Rinehart, & Nason, 2012). However, a growing body of research now shows that participants are not emotionally distressed by such research – in fact, they find it enjoyable, interesting, and valuable, contrary to IRB assumptions (Carter-Visscher, Naugle, Bell, & Suvak, 2007; Cromer, Freyd, Binder, DePrince, & Becker-Blease, 2006; Edwards, Sylaska, & Gidycz, 2014; Jaffe et al., 2015; Jorm, Kelly, & Morgan, 2007; Labott, Johnson, Fendrich, & Feeny, 2013; Widom & Czaja, 2005; Yeater, et al., 2012).

In response to one IRB's concerns about trauma and sex research, researchers recently examined college students' reactions to participating in this research (Yeater et al., 2012). In this study, 504 college students were randomized into a trauma/sex condition, in which they completed a battery of fairly extreme trauma and sex questionnaires, or into a cognitive condition, in which they completed a battery of IQ-type cognitive tasks typically considered minimal risk by IRBs. Participants who completed trauma and sex questionnaires, relative to participants who completed cognitive tasks, reported more positive emotions, greater perceived benefits, and fewer cognitive costs, such as mental exhaustion and headaches. Although participants who completed trauma and sex questionnaires reported slightly higher negative emotions than participants who completed cognitive tasks, absolute levels of distress were quite low in both groups. Moreover, even in the trauma/sex condition, women who had been sexually victimized reported no more negative emotion than nonvictimized women. Finally, participants in both conditions rated participating in the study as less distressing than a wide variety of normal life stressors, such as waiting in line for 20 minutes at a bank or having blood drawn for a routine medical exam (Yeater, et al., 2012).

Thus, evidence to date suggests that most students do not find “sensitive topics” research very “sensitive” or distressing. However, much of the extant literature has focused primarily on whether people with a history of trauma are more distressed by “sensitive topics” research. Many IRBs remain concerned that certain individuals or groups, not just those with a history of trauma, may also be especially vulnerable to such research. For example, the IRB at one large southwestern university has often argued that sex/trauma research may be more distressing to students who are female or younger adults (e.g. 18-year-old college freshmen), ethnic minorities, more religious, or who have certain personality traits (e.g. higher neuroticism) or higher baseline levels of psychological distress (Yeater & Miller, 2014).

There is some theoretical link between demographic and individual difference variables and potential reactions to sensitive topics research. For example, both gender and ethnicity may be related to reactions to questions about sex. Ethnic minorities may be less acculturated to mainstream American norms about sexual openness (Du & Li, 2015; Meston & Ahrold, 2010) and thus more uncomfortable answering questions about sexual behavior than ethnic majority participants. There also is evidence that women react more negatively than men to sexually explicit surveys (Kuyper, de Wit, Adam, & Woertman 2012). Older research participants may also react to sensitive topics research differently than younger research participants because sexual experience and trauma rates increase with age (Lyons et al., 2015), and many IRBs assume that somewhat older adult participants are more resilient, on the principle that children and adolescents (under age 18) need special protection (Appollis, Lund, de Vries, & Mathews, 2015; Fisher, Kornetsky, & Prentice, 2007); thus, younger

adults (ages 18–20 or so) may be in a grey area between childhood and maturity, with an intermediate risk of adverse reactions.

Individual difference variables also may be theoretically related to reactions to “sensitive topics research.” General psychological distress and neuroticism are both associated with lower distress tolerance, which predict more negative reactions to any emotionally challenging experience including sex or trauma surveys (Jaffe et al., 2015; Shorey et al., 2013). Extraversion, openness, and disagreeableness have predicted more sexual thoughts (Moyano & Sierra, 2013) and sexual experiences (Berg, Rotkirch, Vaisanen, & Jokela, 2013; Schmitt & Shackelford, 2008), which in turn may be associated with differential sensitivity to sexually explicit questions. Finally, religiosity predicts sexual conservatism (Ahrold, Farmer, Trapnell, & Meston, 2011), which then may be related to discomfort in answering explicit questions about sex. While there is research that supports theoretical links between demographic and individual difference factors and negative reactions to “sensitive topics” research, there is a paucity of empirical research examining these assumptions directly. Consequently, several researchers have called for further work exploring whether demographic and individual difference factors predict adverse reactions to “sensitive topics” research participation (Cromer, et al., 2006; De Prince & Chu, 2008; Edwards, et al., 2014; Newman, Walker, & Gefland, 1999), and have suggested that such research is valuable in further educating IRBs about the risks and benefits of “sensitive topics” research participation (DePrince & Chu, 2008; Edwards et al., 2004). Also, several modules in federally required CITI Program IRB training focus on individual and group differences in likely reactions to research participation, including ‘Cultural Competence’ and ‘International Research’ (addressing possible racial, ethnic, and religious differences). However, most claims in those modules are not empirically supported. We hope to inform not only IRB decisions, but also more evidence-based IRB training.

Currently, there is limited evidence that demographic factors such as age, gender, or ethnicity, or individual difference factors such as personality traits, influence reactions to trauma-related research (e.g. De Prince & Chu, 2008; Daugherty, & Lawrence, 1996; Langhinrichsen-Rohling, Arata, O’Brien, Bowers, & Klibert, 2006; Pederson, Kaysen, Lindgren, Blayney, & Simpson, 2014; Widom & Czaja, 2005), and findings so far challenge the IRB assumptions about which individuals or groups are most vulnerable. For instance, younger participants in trauma research reported more positive beliefs about the importance of research (DePrince & Chu, 2008), and had less negative reactions to participation (DePrince & Chu, 2008; Newman & Kaloupek, 2004). Also, while women and ethnic minority participants sometimes report more negative emotional reactions to research participation than men and White/Caucasian participants, they also often perceive “sensitive topics” research as more meaningful and personally beneficial (DePrince & Chu, 2008; Widom & Czaja, 2005). Finally, among male undergraduates, higher neuroticism predicted more negative emotional reactions, and higher extraversion predicted more positive emotional reactions, yet despite these effects, participants reported overall more positive than negative emotional reactions and reported low levels of distress (Daugherty & Lawrence, 1996).

While there is some evidence that demographic and individual difference variables influence reactions to “sensitive topics” research, the extant literature is sparse and has limitations. First, past work has not directly compared reactions to “sensitive topics” research versus research traditionally considered “minimal risk.” Without randomization to such a control condition, it is impossible to determine whether demographic or individual difference influences on reactions to sex/trauma research are really about the sex/trauma content, or are generic to any research participation. Also, previous research has typically assessed participant reactions using a small number of outcome measures (Daugherty & Lawrence, 1996; DePrince & Chu, 2008) and has not compared research participation as a stressor to other normal life stressors (such as waiting in line at a bank for 20 minutes) – the IRB gold standard for what constitutes “minimal risk.” Finally, prior research investigated a limited number of individual difference variables, leaving open the possibility that other personality traits or personal characteristics may influence responses to sensitive topics research.

Current Study

The current study builds upon the Yeater et al. (2012) study and addresses the limitations of previous research noted above. The earlier study focused on *average* college students’ reactions to participating in a sex/trauma condition compared to a cognitive condition (Yeater et al., 2012). Specifically, this earlier work focused on the effects of condition (for all participants) and sexual victimization history (for women only) on reactions to participating in research. While this study utilizes the same data as Yeater et al. (2012), these analyses focus on *individual differences* that might predict reactions to research. Specifically, we examined how college students’ age, sex, ethnicity, religiosity, Big Five personality traits, and baseline psychological distress levels predicted their reactions to completing trauma/sex questionnaires or cognitive tests. This study is the first to assess such a wide range of demographic and individual difference variables in relation to research participation risk. Consistent with previous research, we used several measures of reactions to research participation, including questionnaires concerning positive emotions, negative emotions, mental costs, perceived benefits, and comparisons to normal life stressors (Yeater et al., 2012).

Method

Participants

Participants were 504 undergraduate men and women recruited from the psychology subject pool at a large Southwestern university. Most participants were female (68%), their mean age was 20.5 years ($SD=4.39$), and they had completed, on average, 3.2 ($SD=3.15$) semesters of college. The study included 196 participants who self-identified as White/Caucasian (39%, “White”), 158 as Hispanic, Latino, Chicano, Mexican American, or Puerto Rican (31.4%, “Hispanic”), 58 who described their identity as a mix of White and Hispanic ethnicities (11.5%, “Hispanic/White”), 20 American Indian or Native Alaskan participants (4%), 14 Black or African American participants (2.8%), and 17 Asian or Asian American participants (3.4%). The remainder described themselves as a combination of the above categories or “Other.” Sexual orientation was reported only by the 261 participants in the

sex/trauma condition (as part of the Dating Behavior survey); 87% identified as heterosexual, 6% as bisexual, and 7% as homosexual.

All participants were included in analyses examining the effects of individual difference variables on reactions to research participation. However, given the small number of participants in some ethnic categories, for the ethnicity analyses, we included only the 70.2% of participants (N=354) who were in the two most frequently reported ethnicities: White (55.3%, N=196) and Hispanic (44.6%, N=158). One participant who did not complete the religiosity measure was excluded from the individual differences analysis and one participant who did not complete the life stressors questionnaire was excluded from analyses examining life stressors.

Measures and Procedures

This study was conducted in compliance with the university's Institutional Review Board. The full procedure was described in Yeater et al. (2012); here we focus on the key details. Participants completed paper-and-pencil questionnaires that took about two hours in total. All participants first completed measures of individual difference variables, including a demographic questionnaire (age, sex, ethnicity, semesters in college); the 60-item *NEO-FFI* measure of the Big Five personality traits [openness ($\alpha = .77$), conscientiousness ($\alpha = .85$), extraversion ($\alpha = .83$), agreeableness ($\alpha = .77$), neuroticism ($\alpha = .82$)] (McCrae & Costa, 2004); a 15-item measure of religiosity (covering church attendance, prayer, faith, etc.; $\alpha = .98$) developed by Yeater et al. (2012); and the Global Severity Index (GSI) from the 90-item *SCL-90*, which measures general psychological distress, $\alpha = .96$ (Derogatis, Lipman, & Covi, 1973). Mean values for the NEO-FFI factors, religiosity, and GSI can be found in Table 1.

There also were several condition-specific questionnaires; participants were assigned randomly to either a "cognitive" condition (N = 241) or a "trauma/sex" condition (N = 263). The cognitive condition included the following standard but challenging IQ-type cognitive tests often considered minimal risk by IRBs: (1) the *Shipley Institute of Living Scale* Vocabulary and Abstract Thinking subtests (Shipley, 1940); (2) an 18-item version of *Raven's Progressive Matrices* (Raven, Raven, & Court, 1998); and (3) a 25-item version of the *Miller Analogies Test* (Miller, 1960).

All participants in the trauma / sex condition completed the following surveys on topics such as sexual behavior, sexual attitudes, and traumatic experiences: (1) the *Dating Behavior Survey* (Yeater, Viken, McFall, & Wagner, 2006), a measure of dating and social behaviors; (2) the *Heterosocial Perception Survey* (McDonel & McFall, 1991) and (3) *Rape Myth Acceptance Scale* (Burt, 1980), which measure the degree to which respondents believe sexual aggression is justified; (4) the *Sociosexuality Scale* (Bailey, Kirk, Zhu, Dunne & Martin, 2000), a measure of attitudes towards casual sex; (5) the *Sexual Awareness Questionnaire* (Snell, Fisher, & Miller, 1991), a measure of sexual assertiveness and sexual awareness; (6) the *Trauma Symptom Checklist* (Elliot & Briere, 1992) and (7) *Posttraumatic Stress Disorder Checklist* (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996), which measure post-traumatic symptoms such as nightmares; and (8) the *Childhood Sexual Experiences Questionnaire* (Finkelhor, 1979) and the *Childhood Trauma Questionnaire*

(Bernstein & Fink, 1998), which assess traumatic childhood experiences such as sexual, physical, and emotional abuse.

We chose these surveys not because we were interested in participants' responses to them, but because they were the most potentially distressing scales that we could find that are commonly used in sex research or trauma research. Between them, these scales ask about topics such as hooking up, practicing unsafe sex, childhood sexual abuse, and sexual assault. By combining all of these into one sex/trauma condition lasting almost two hours, we intended to create about as much stress about "sensitive topics" as a survey could create – and as much as the IRB would approve.

Additionally, women in the trauma/sex condition completed questionnaires about their bodies (e.g. current vs. ideal weight, bra size), and ovulatory cycles (e.g. days since last menstrual period began, use of hormonal contraception), and the female version of the *Sexual Experiences Survey* (Koss, Gidycz, & Wisniewski, 1987), which measures sexual victimization since the age of 14. Men in the trauma/sex condition completed a series of questions about their bodies (e.g. current vs. ideal weight; penis size) and masturbation (e.g. days since last masturbation, use of sexual lubricant), and the male version of the *Sexual Experiences Survey* (Koss et al., 1987), which measures acts of sexual aggression towards women since the age of 14.

Male and female body questionnaires differed only for sexually dimorphic traits that participants might feel sensitive about (e.g. bra size vs. penis size). We expected that women would feel about as embarrassed answering questions about menstruation and Pill use as men would feel answering questions about masturbation and lubricant use. However, because men do not menstruate, and women do not masturbate as much as men (Herbenick et al., 2010), we could not create perfectly analogous scales. More details about the measures in the cognitive and trauma/sex condition can be obtained from Yeater et al. (2012), or by contacting the first author.

Finally, all participants' reactions to the study were assessed using four key outcomes from a post-study reaction questionnaire developed in Yeater et al. (2012), with scales focused on key IRB concerns: (a) *negative emotions* (21 items): e.g. "This study made me feel like crying," and "This study made me feel emotionally unstable," ($\alpha = .94$); (b) *perceived benefits* (10 items): e.g. "This study gave me insights into myself," and "I wish I had never signed up for this study" (reverse-scored), ($\alpha = .77$); (c) *positive emotions* (6 items): e.g. "This study helped me to feel better about myself," and "This study made me proud of what I have survived," ($\alpha = .81$); and (d) *mental costs* (5 items): e.g. "This study was mentally exhausting," and "This study gave me a headache," ($\alpha = .69$). Participants rated their agreement with each item on a seven point Likert scale (1= I strongly disagree, 4=I feel neutral, 7= I strongly agree), with higher scores on these scales indicating higher levels of each reaction to participation in research.

Some items on the post-study questionnaire were selected from previous research examining reactions to trauma research (Griffin, Resick, Waldrop, & Mechanic, 2003; Walker, Newman, Koss, & Bernstein, 1997), but most were created by Yeater and colleagues (2012).

This measure was created specifically for this research because the authors wanted items with obvious relevance to IRBs' concerns, explicitly framed in terms of study outcomes, risks, and reactions. While there are existing scales concerning general emotional reactions, none of them explicitly address reactions to research study participation, so their interpretation is more ambiguous and less applicable to IRBs assessing risks of participating in stress/trauma research. The creation of new measures to assess study-related distress is quite common in research examining the effects of participation in trauma research (Jaffe et al., 2015). The items from the post-study reaction questionnaire can be obtained in the supplementary material.

We also included a 15-item Normal Life Stressors Scale, ($\alpha = .88$) developed by Yeater et al. (2012), in which participants rated how stressful it would be to experience various ordinary life stressors, compared to participating in the study. Items from the Normal Life Stressors Scale can be found in Table 2. Participants rated each experience on a seven point Likert scale (1= "This study was much worse", 4= "Both equally bad", 7= "That experience would be much worse"). Lower scores on the normal life stressors scale imply that this research study was more distressing than normal life; higher scores imply that normal life is more distressing than this research study. This scale also was created specifically for use in this study because the authors wanted a scale with clear relevance to IRB criteria for 'minimal risk' which entails explicit comparison to normal life stressors, and no existing scale asks for such a comparison so clearly.

Data Analytic Plan

The outcomes in the current study were study-related negative emotions, positive emotions, perceived benefits, and mental costs; and comparisons of research participation to normal life stressors. To examine the influence of the demographic and individual difference variables on research participation reactions, we conducted two regression analyses for each of the dependent variables. The predictor variables were sorted into two groups – demographic variables [age, sex (male or female)] and ethnicity (White or Hispanic), and individual difference variables (religiosity, baseline psychological distress, and the Big Five personality traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism). Both sets of analyses also included the two-way interactions between condition and each of the other predictors. Follow-up tests of simple slopes were conducted for significant interactions to determine whether simple slopes were statistically different from zero (Aiken & West, 1991). In the individual difference factors model, we had a power of .89 to predict a small effect ($f^2 = .02$) for each individual factor. In the demographic factor model, we had a power of .76 to predict a small effect ($f^2 = .02$) for each individual factor.

Results

Effects of Individual Difference Variables on Reactions to Participation

Findings from the individual difference analyses can be found in Table 3. The individual differences model accounted for 14.8% of the variance in negative emotion, $F(15, 502) = 6.79, p < .001$. Religiosity, psychological distress, openness, conscientiousness, and extraversion all failed to significantly predict negative emotion. Participants higher in

neuroticism reported more negative emotion, relative to those lower in neuroticism. However, participants who were two standard deviations above the mean of neuroticism had a mean negative emotion score of approximately 2.4, indicating a low level of distress. Condition also significantly predicted negative emotion. Participants in the cognitive condition had a mean negative emotion score of 1.64, while participants in the trauma/sex condition had a mean negative emotion score of 1.99, indicating low levels of negative emotion for both conditions.

The individual difference model accounted for 28.8% of the variance in mental costs, $F(15, 502) = 14.54, p < .001$. Religiosity, psychological distress, openness, conscientiousness, and extraversion all failed to significantly predict negative emotion. Participants higher in neuroticism reported higher mental costs, relative to those lower in neuroticism. However, participants who were two standard deviations above the mean of neuroticism had a mean rating of approximately 3.7 for mental costs, indicating low mental costs of participation. There also was a significant effect of condition on mental costs. Participants in the trauma/sex condition, relative to those in the cognitive condition, reported fewer mental costs. Participants in the cognitive condition had a mean score of 3.68, while participants in the trauma/sex condition had a mean score of 2.53, indicating that both groups reported relatively low mental costs for participating.

The individual differences model accounted for 9.4% of the variance in perceived benefits, $F(15, 502) = 4.84, p < .001$. Religiosity, psychological distress, openness, conscientiousness, and neuroticism all failed to significantly predict perceived benefits. Participants higher in agreeableness reported more perceived benefits to research participation, relative to participants lower in agreeableness. However, even participants who were two standard deviations below average on agreeableness had a mean rating of approximately 4.7 for perceived benefits, indicating that they believed there were some benefits to the research. There also was a significant interaction between condition and extraversion. In the cognitive condition, the effect of extraversion approached significance, $\beta = -.13, t(502) = -1.96, p = .051$, with participants higher in extraversion reporting fewer perceived benefits, relative to those lower in extraversion. There was no significant effect of extraversion in the trauma/sex condition, $\beta = .086, t(502) = 1.33, p = .185$. There also was a main effect of condition on perceived benefits, with participants in the trauma/sex condition, relative to those in the cognitive condition, reporting more perceived benefits. Participants in the trauma/sex condition had a mean score of 5.19, while participants in the cognitive condition had a mean score of 4.75, indicating that both groups perceived benefits from research participation.

The individual differences model accounted for 3.9% of the variance in comparisons of research to normal life stressors, $F(15, 501) = 2.36, p = .003$. None of the Big Five personality factors significantly predicted comparisons of research to normal life stressors. There was a significant interaction between condition and religiosity. In the cognitive condition, participants higher in religiosity, relative to participants lower in religiosity, were more likely to describe research participation as better than normal life stressors, $\beta = .15, t(502) = 2.37, p = .018$. However, as seen in Figure 1, even participants two standard deviations below the mean on religiosity rated research as better than normal life stressors.

There was no significant relationship between religiosity and comparisons of research to normal life stressors in the trauma/sex condition, $\beta = -.04$, $t(502) = -.54$, $p = .589$.

There also was a significant interaction between psychological distress and condition. In the trauma/sex condition, participants higher in distress, relative to participants lower in distress, were less likely to describe research participation as better than normal life stressors, $\beta = -.23$, $t(502) = -2.99$, $p = .003$. However, as seen in Figure 2, even participants two standard deviations above the mean on psychological distress in the trauma/sex condition rated participation in research as significantly better than normal life stressors. There was no relationship between psychological distress and comparisons of research participation to normal life stressors in the cognitive condition, $\beta = .04$, $t(502) = .50$, $p = .618$.

Finally, the individual differences model accounted for 2.4% of the variance in positive emotion, $F(15, 502) = 1.83$, $p = .028$. Religiosity, psychological distress, openness, conscientiousness, agreeableness, and neuroticism all failed to significantly predict positive emotion. There was a significant interaction between extraversion and condition, but follow-up tests of simple slopes indicated that extraversion did not significantly predict positive emotion in either the trauma/sex condition, $\beta = .11$, $t(502) = 1.58$, $p = .115$ or in the cognitive condition, $\beta = -.11$, $t(502) = -1.56$, $p = .120$.

Effect of Demographic Variables on Reactions to Participation

Findings from the demographic variable analyses can be found in Table 4. Four of the models were statistically significant. First, the demographic variables model accounted for 2.1% of the variance in positive emotion, $F(7, 353) = 2.10$, $p = .043$. Neither age nor sex significantly predicted positive emotion. There was a significant interaction between Hispanic ethnicity and condition; in the trauma/sex condition, Hispanic participants reported more positive emotion than White participants, $\beta = .436$, $t(353) = 2.60$, $p = .010$. There was no significant relationship between Hispanic ethnicity and positive emotion in the cognitive condition $\beta = -.15$, $t(353) = -.834$, $p = .405$. The relationship between ethnicity and positive emotion for each condition can be seen in Figure 3.

Second, the demographic variables model accounted for 24.2% of the variance in mental costs, $F(7, 353) = 17.13$, $p < .001$. None of the demographic factors significantly predicted mental costs. The only significant effect was for condition. As in the individual differences variable model, participants in the cognitive condition, relative to the trauma/sex condition, reported more mental costs to participating in research, but overall, both groups reported few mental costs.

Third, the demographic variables model accounted for 3.6% of the variance in comparisons of research to normal life stressors, $F(7, 352) = 2.90$, $p = .006$. Neither age nor ethnicity predicted comparisons of research to normal life stressors. While both men ($M = 5.66$) and women ($M = 6.05$) described research participation as better than normal life stressors on average, women's ratings of research participation as better than normal life stressors were stronger than men's ratings.

Finally, the demographic variables model significantly predicted perceived benefits accounting for 6.6% of the variance, $F(7, 353) = 4.57, p < .001$. However, none of the demographic factors predicted perceived benefits; the only significant predictor was condition. As in the individual differences model, participants in the trauma/sex condition, relative to the cognitive condition, reported more perceived benefits to research participation. Overall, both groups reported benefits to research participation. The effect of demographic variables on negative emotion was not statistically significant, $F(7, 353) = 1.77, p = .092$.

Discussion

Many IRBs have worried that people from certain demographic groups (e.g. women, younger adults, ethnic minorities) and people with certain psychological traits (e.g. high levels of baseline psychological distress, high neuroticism) might be especially vulnerable to “sensitive topics” research, and, as a consequence, deserve special protection. It is reasonable to assume that, as a precautionary measure, many IRBs have asked researchers to screen out such allegedly vulnerable people or tone down their research questions, or have imposed other risk-minimization demands on protocols, potentially impeding sex and trauma research. However, the precautionary principle only makes sense until there are good data about objective risks. We have shown that individual differences “risk factors” that may raise IRB concerns do not in fact increase participant distress to sex/trauma research over and above distress to traditionally “minimal risk” cognitive tasks. In fact, neither condition provoked much distress. For example, higher levels of neuroticism predicted more negative emotion and mental costs to participating in both cognitive and trauma/sex research, suggesting it was not the “sensitive” content of the trauma/sex research that influenced participants’ responses. In fact, students higher in neuroticism are simply less relaxed and easy-going when participating in any research – as they are when engaging in many life activities. Notably, those participants who were particularly high in neuroticism still reported low absolute levels of negative emotion and mental costs, suggesting that, on average, even these participants were not actually “distressed” by participation. Similarly, while participants lower in agreeableness reported fewer benefits to research, this effect was not specific to trauma/sex research, and even participants who were quite low in agreeableness reported experiencing benefits from participating.

There was only one instance in which the influence of individual difference factors on reactions to research was specific to the trauma/sex condition. In the trauma/sex condition, participants with more psychological distress were less likely to describe research participation as better than normal life stressors, while there was no effect of psychological distress in the cognitive condition. Again, it is important to note that while these findings were statistically significant, participants quite high in psychological distress still rated, on average, their participation in trauma/sex research as preferable to normal life stressors, such as getting a cavity filled or forgetting Mother’s Day.

Demographic factors accounted for very little variance in reactions to research, and there were only two statistically significant demographic factors. Men, relative to women, were less likely to rate their experience as better than normal life stressors, regardless of the type

of research in which they participated. Notably, however, both men and women generally described research participation as overall better than normal life stressors. Interestingly, counter to IRB concerns, we found that Hispanic participants reported more positive emotions in response to participating in trauma/sex research than White participants. There was no effect of ethnicity on positive emotions in the cognitive condition. This finding is consistent with previous research (DePrince & Chu, 2008; Widom & Czaja, 2005), and suggests that ethnic minority participants may not be more vulnerable to distress, but in fact, may have more positive reactions to some research participation than White participants.

Finally, results indicate that, even after controlling for personality, psychological, and demographic factors, type of research influenced participants' reactions (Yeater et al., 2012). We confirmed several of the condition effects from Yeater et al. (2012), finding that participants in the trauma and sex condition, relative to participants in the cognitive condition, reported more perceived benefits and fewer mental costs (in the individual differences and demographic models), and more negative emotions (in the individual differences model). We confirmed also the previous finding that both trauma and cognitive research is less distressing than everyday stressors, which is commonly consistent with the IRB's definition of minimal risk research (Yeater et al., 2012).

This study had some limitations that could be addressed in further research. First, the sample was drawn from a psychology subject pool at one Southwestern university. Students in psychology subject pools volunteer to participate in research and may not be representative of the undergraduates at any given university, or of young adults in general. However, a large proportion of IRB-approved behavioral sciences research in American universities is carried out on psychology subject pools, and our main goal was to address IRB concerns about typical behavioral sciences studies of sex or trauma using typical methods of recruiting participants.

A second limitation is that the university where this research was conducted is not perfectly representative of American universities in general. It is similar to other state flagship universities in several ways (e.g. size and mean high school GPA), but it is more ethnically diverse than many universities, with a somewhat larger proportion of Hispanic students and somewhat lower percentage of Black students than the national college average (National Center for Education Statistics, 2013). Thus, findings from this study may not generalize to participants in research at other universities.

Overall, our research suggests that undergraduate students are remarkably resilient when participating in "sensitive topics" research – not only in the aggregate, but also across a range of demographic and psychological individual differences. While IRBs have suggested that certain groups or individuals must be especially vulnerable to harm (Widom & Czaja, 2005), it appears IRBs have over-estimated student vulnerability and research risk. Since a young age, most undergraduates today have been routinely exposed through media to sex, violence, trauma, and "sensitive topics," and, despite concerns about the vulnerability of college students in the media and at IRBs, our research suggests they do not find "sensitive topics" research distressing.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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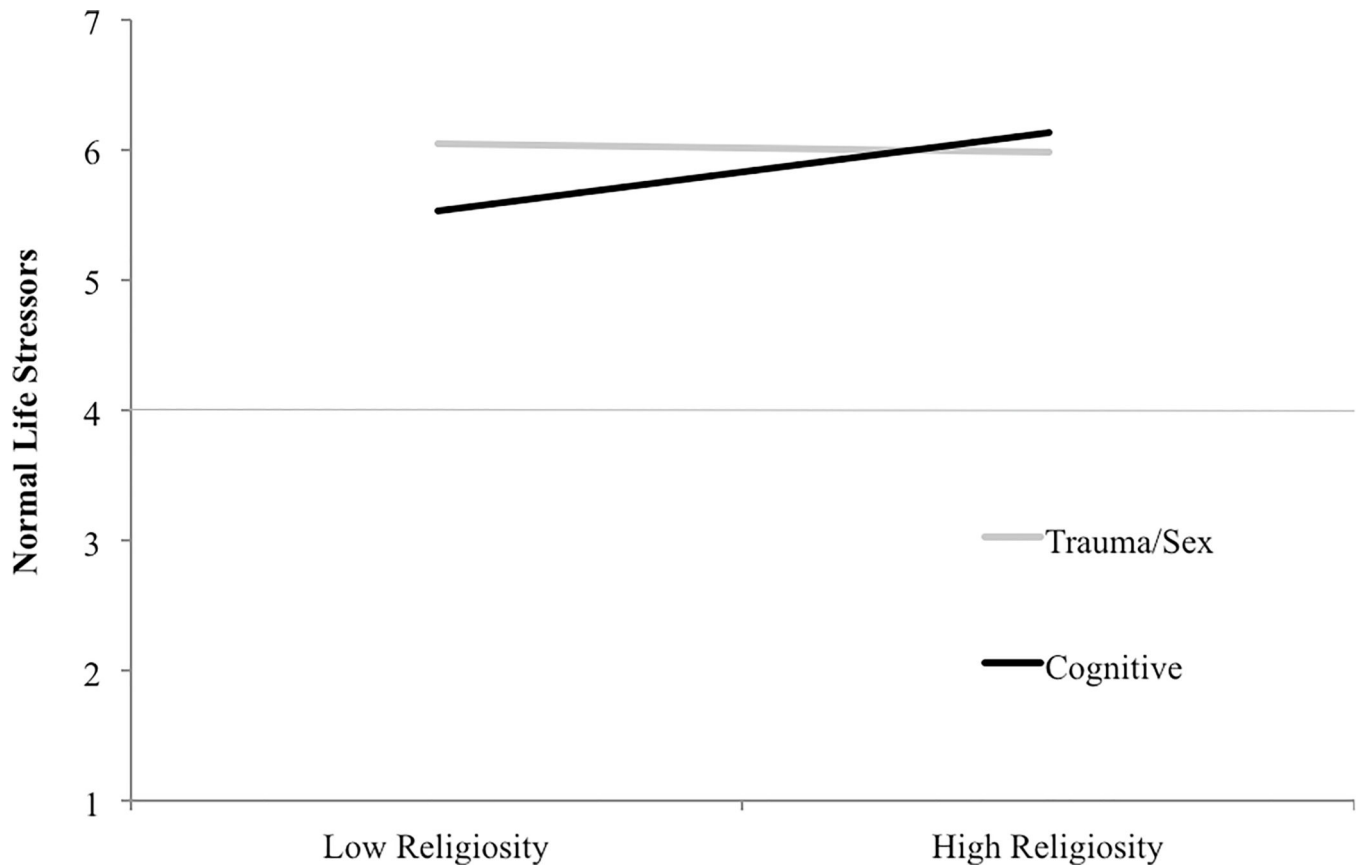


Figure 1.

The effects of religiosity on comparisons of research participation to normal life stressors. High religiosity indicates two standard deviations above average on religiosity, while low religiosity indicates two standard deviations below the average on religiosity. A rating of one on the Y axis indicates that research participation was much worse than normal life stressors, a rating of four indicates that research participation was the same as normal life stressors, and a rating of seven indicates that normal life stressors were much worse than research participation.

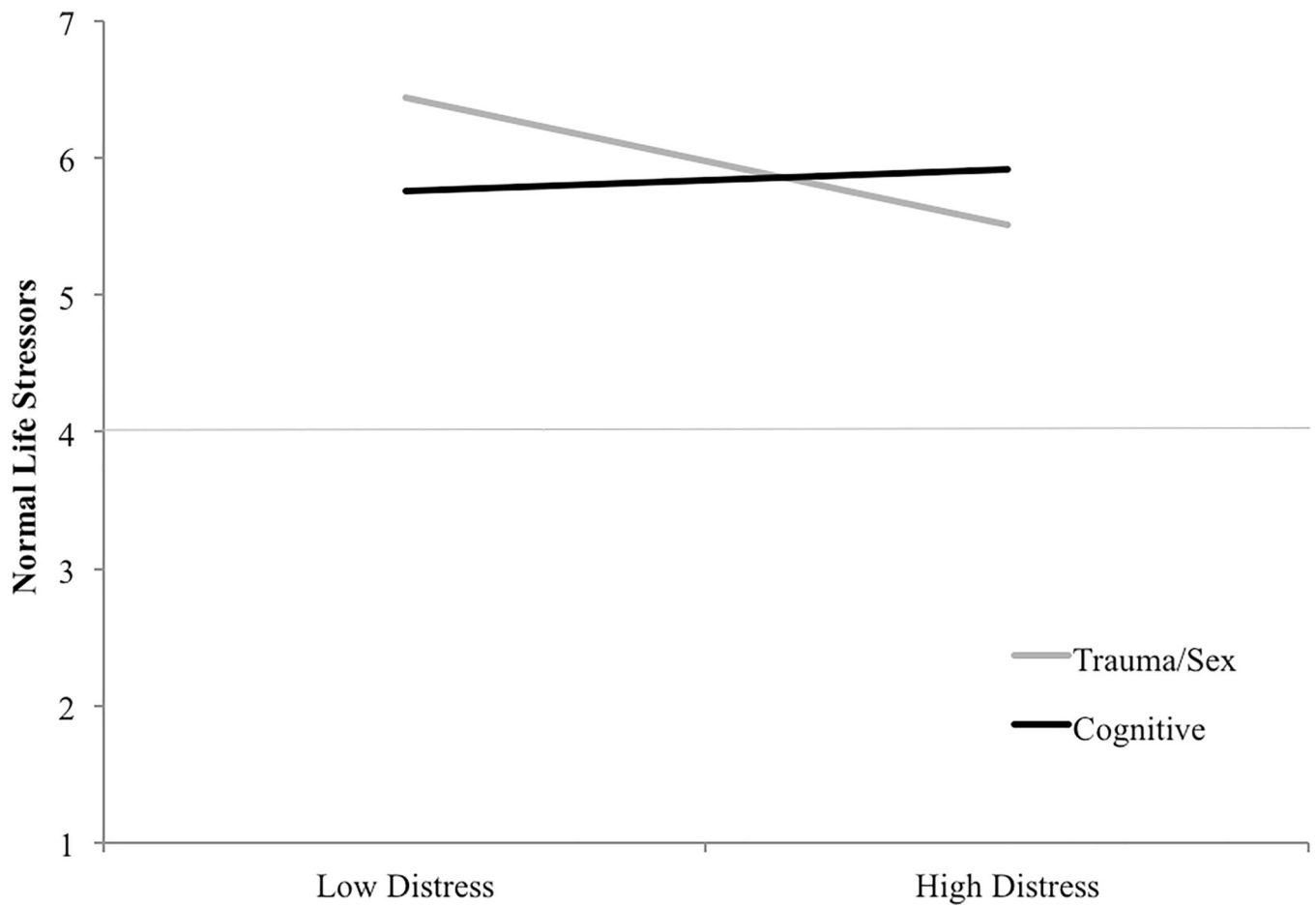


Figure 2.

The effects of psychological distress on comparisons of research participation to normal life stressors. High psychological distress indicates two standard deviations above average on psychological distress, while low psychological distress indicates two standard deviations below the average on psychological distress. A rating of 1 on the y-axis indicates that research participation was much worse than normal life stressors, a rating of 4 indicates that research participation was the same as normal life stressors, and a rating of 7 indicates that normal life stressors were much worse than research participation.

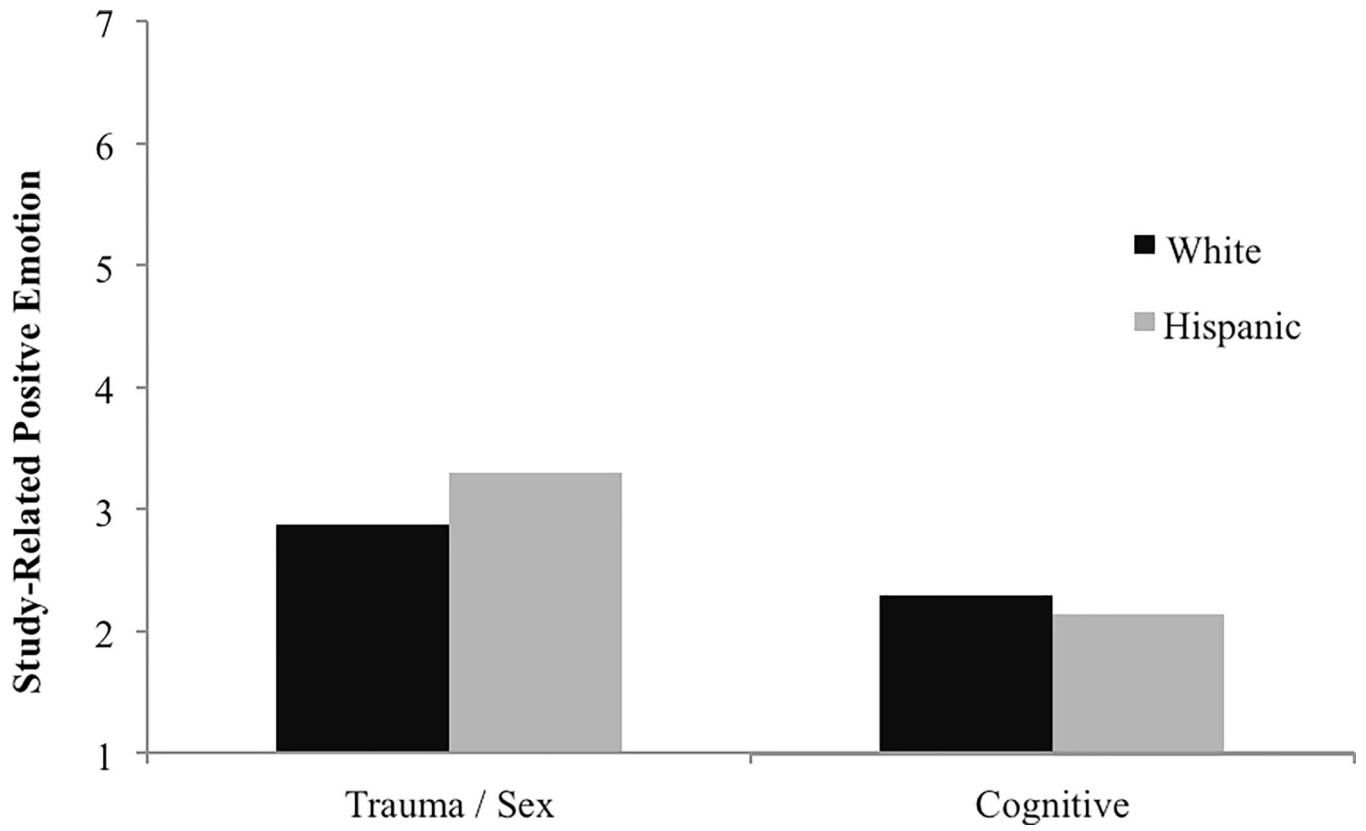


Figure 3. The effects of ethnicity on study-related positive emotion. A rating of one on the Y axis indicates low levels of positive emotion and a rating of seven indicates high levels of positive emotion.

Table 1.

Summary of Individual Differences by Condition

	Trauma/Sex Condition <i>M (SD)</i>	Cognitive Condition <i>M (SD)</i>
Openness	5.07 (.87)	5.13 (.86)
Conscientiousness	5.10 (.95)	5.02 (.91)
Extraversion	5.15 (.89)	5.01 (.94)
Agreeableness	4.81 (.89)	4.87 (.89)
Neuroticism	3.98 (1.08)	3.95 (1.04)
Religiosity	3.77 (1.87)	4.15 (1.97)
Distress (GSI)	.75 (.52)	.74 (.50)

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Table 2.

Individual difference variable model regression coefficients

Predictor	Study-Related Negative Emotion			Study-Related Positive Emotion			Mental Costs of Research Participation			Perceived Benefits of Research Participation			Comparison of Life Stressors to Research Participation		
	b	95% CI	p	b	95% CI	p	b	95% CI	p	b	95% CI	p	b	95% CI	p
Condition ^a	.34	.20, .49	<.001	.19	-.01, .38	.064	-1.16	-1.34, -.98	<.001	.45	.29, .60	<.001	.15	-.01, .31	.071
Religiosity	.03	-.02, .09	.234	.04	-.04, .11	.323	.02	-.05, .09	.555	.02	-.04, .08	.490	.07	.01, .14	.018
Baseline Distress	<.01	-.01, .02	.798	.01	-.01, .03	.439	<.01	-.02, .02	.737	.01	<-.01, .03	.080	<.01	-.01, .02	.618
O ^b	.02	-.10, .15	.704	.12	-.05, .28	.180	.05	-.11, .20	.564	.10	-.04, .23	.147	.03	-.10, .17	.627
C ^c	-.07	-.19, .06	.293	.08	-.09, .24	.365	-.13	-.28, .03	.109	.07	-.06, .20	.286	.05	-.09, .19	.484
E ^d	-.03	-.16, .09	.581	-.13	-.29, .03	.120	.05	-.10, .20	.535	-.13	-.26, .00	.051	-.01	-.15, .12	.842
A ^e	-.05	-.17, .08	.482	-.02	-.19, .15	.788	.11	-.05, .26	.188	.15	.01, .28	.033	.11	-.03, .25	.123
N ^f	.23	.09, .36	.001	<.01	-.18, .18	.983	.29	.12, .46	.001	-.05	-.19, .10	.513	.09	-.06, .23	.259
Religious x Condition	.03	-.05, .11	.504	<.01	-.10, .11	.960	.03	-.07, .13	.542	-.07	-.15, .02	.107	-.09	-.18, <-.01	.041
Distress x Condition	.01	-.01, .03	.252	.02	-.01, .04	.254	.01	-.02, .03	.536	.01	-.02, .03	.628	-.03	-.05, <-.01	.017
O x Condition	-.13	-.31, .04	.134	-.05	-.29, .19	.708	-.14	-.36, .08	.205	-.02	-.21, .16	.810	.04	-.15, .23	.675
C x Condition	-.06	-.23, .11	.465	.02	-.21, .24	.891	-.05	-.26, .16	.624	.04	-.14, .22	.649	-.03	-.22, .15	.738
E x condition	.09	-.08, .26	.308	.26	.03, .49	.027	-.04	-.26, .17	.702	.22	.03, .40	.020	-.03	-.22, .16	.729
A x Condition	-.01	-.18, .16	.913	-.16	-.39, .08	.186	-.22	-.43, .00	.050	-.09	-.27, .10	.353	-.11	-.31, .08	.243
N x Condition	-.05	-.23, .13	.601	-.06	-.30, .18	.645	-.21	-.43, .02	.072	.10	-.09, .29	.305	.17	-.03, .37	.097
Adjusted R ²	.148			.024			.288			.094					

Notes

^aCognitive condition = 0, Trauma/Sex condition = 1.

^bO is openness.

^cC is conscientiousness.

^dE is extraversion.

^eA is agreeableness.

N is neuroticism. Items on the negative emotion, positive emotion, mental costs, and perceived benefits scales were rated on a seven point Likert scale (1= I strongly disagree, 4=I feel neutral, 7= I strongly agree), with higher scores on these scales indicating higher levels of each reaction to participation in research. Items on the Normal Life Stressors Scale were rated on a seven point Likert scale (1 = "This study was much worse than the event described," 4 = "This study was about equally bad as the event described," 7 = The event described would be much worse than this study;"). Lower scores on the normal life stressors scale imply that this research study was more distressing than normal life; higher scores imply that normal life is more distressing than this research study.

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Table 3.

Demographic variables model regression coefficients

Predictor	Study-Related Negative Emotion			Study-Related Positive Emotion			Mental Costs of Research Participation			Perceived Benefits of Research Participation			Comparison of Life Stressors to Research Participation		
	b	95% CI	p	b	95% CI	p	b	95% CI	p	b	95% CI	p	b	95% CI	p
Condition ^a	.24	-.47, .94	.508	.58	-.40, 1.55	.244	-1.64	-2.54, -.73	<.001	.84	.07, 1.62	.033	.23	-.59, 1.04	.587
Age	-.02	-.04, .01	.274	.02	-.02, .06	.239	-.02	-.05, .02	.309	<-.01	-.03, .03	.888	<.01	-.03, .03	.884
Sex ^b	-.08	-.36, .20	.581	.10	-.28, .49	.599	-.31	-.66, .05	.091	-.03	-.33, .28	.874	-.46	-.77, -.15	.003
Hispanic ^c	-.10	-.36, .15	.432	-.15	-.50, .20	.405	-.21	-.54, .12	.209	-.17	-.45, .11	.237	-.15	-.43, .13	.305
Age x Condition	<.01	-.04, .04	.907	-.03	-.09, .02	.249	.02	-.03, .07	.426	-.02	-.07, .02	.301	-.01	-.05, .04	.833
Sex x Condition	-.04	-.42, .33	.826	-.17	-.68, .35	.531	.24	-.24, .72	.332	-.28	-.70, .13	.176	.11	-.30, .52	.606
Hispanic x Condition	-.01	-.36, .34	.971	.59	.10, 1.07	.018	.10	-.35, .55	.666	.23	-.16, .61	.242	.07	-.31, .46	.715
Adjusted R ²	.015			.021			.242			.066			.036		

Notes

^aCognitive condition = 0, Trauma/Sex condition = 1

^bFemale = 0, Male = 1

^cWhite = 0, Hispanic = 1. Items on the negative emotion, positive emotion, mental costs, and perceived benefits scales were rated on a seven point Likert scale (1= I strongly disagree, 4= I feel neutral, 7= I strongly agree), with higher scores on these scales indicating higher levels of each reaction to participation in research. Items on the Normal Life Stressors Scale were rated on a seven point Likert scale (1 = "This study was much worse than the event described," 4 = "This study was about equally bad as the event described," 7 = "The event described would be much worse than this study."). Lower scores on the normal life stressors scale imply that this research study was more distressing than normal life; higher scores imply that normal life is more distressing than this research study