



2020

MENTAL CONTAMINATION, COPING, AND PTSD SYMPTOM SEVERITY FOLLOWING SEXUAL TRAUMA

Jordyn M. Tipsword

University of Kentucky, jordyntip8@gmail.com

Author ORCID Identifier:

 <https://orcid.org/0000-0001-8902-9253>

Digital Object Identifier: <https://doi.org/10.13023/etd.2020.401>

[Right click to open a feedback form in a new tab to let us know how this document benefits you.](#)

Recommended Citation

Tipsword, Jordyn M., "MENTAL CONTAMINATION, COPING, AND PTSD SYMPTOM SEVERITY FOLLOWING SEXUAL TRAUMA" (2020). *Theses and Dissertations--Psychology*. 181.
https://uknowledge.uky.edu/psychology_etds/181

This Master's Thesis is brought to you for free and open access by the Psychology at UKnowledge. It has been accepted for inclusion in Theses and Dissertations--Psychology by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.

STUDENT AGREEMENT:

I represent that my thesis or dissertation and abstract are my original work. Proper attribution has been given to all outside sources. I understand that I am solely responsible for obtaining any needed copyright permissions. I have obtained needed written permission statement(s) from the owner(s) of each third-party copyrighted matter to be included in my work, allowing electronic distribution (if such use is not permitted by the fair use doctrine) which will be submitted to UKnowledge as Additional File.

I hereby grant to The University of Kentucky and its agents the irrevocable, non-exclusive, and royalty-free license to archive and make accessible my work in whole or in part in all forms of media, now or hereafter known. I agree that the document mentioned above may be made available immediately for worldwide access unless an embargo applies.

I retain all other ownership rights to the copyright of my work. I also retain the right to use in future works (such as articles or books) all or part of my work. I understand that I am free to register the copyright to my work.

REVIEW, APPROVAL AND ACCEPTANCE

The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Director of Graduate Studies (DGS), on behalf of the program; we verify that this is the final, approved version of the student's thesis including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Jordyn M. Tipsword, Student

Dr. Christal L. Badour, Major Professor

Dr. Mark Fillmore, Director of Graduate Studies

MENTAL CONTAMINATION, COPING, AND PTSD SYMPTOM SEVERITY
FOLLOWING SEXUAL TRAUMA

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in the
College of Arts and Sciences
at the University of Kentucky

By

Jordyn M. Tipsword

Lexington, Kentucky

Director: Dr. Christal L. Badour, Professor of Psychology

Lexington, Kentucky

2020

Copyright © Jordyn M. Tipsword 2020
<https://orcid.org/0000-0001-8902-9253>

ABSTRACT OF THESIS

MENTAL CONTAMINATION, COPING, AND PTSD SYMPTOM SEVERITY FOLLOWING SEXUAL TRAUMA

Mental contamination (MC) – an internal sense of dirtiness experienced without contact with a contaminant – has been linked to PTSD symptoms among sexual trauma survivors. However, existing work has been limited to cross-sectional or quasi-experimental designs – precluding conclusions concerning the directionality of associations among PTSD symptoms and MC – and little work has examined potential mediators of those associations. The present study utilized a prospective design to evaluate the directionality of associations between MC and PTSD symptoms and the role of avoidance and approach coping in mediating those associations. Participants included 41 women with a history of sexual trauma and current MC. Women completed baseline measures followed by fourteen days of twice-daily assessments via a mobile application. Results indicated that avoidance coping mediated the associations between baseline MC and average daily PTSD symptoms ($\beta = 0.30$, $SE = 0.14$, 95% CI [0.06 , 0.58]) and baseline PTSD symptoms and average daily MC ($\beta = 0.33$, $SE = 0.16$, 95% CI [0.08 , 0.67]). Our findings support a mutual maintenance model of PTSD symptoms and MC mediated by avoidance coping. However, additional research conducted over a more extended period is warranted to better understand how MC and PTSD symptoms mutually influence one another.

KEYWORDS: Sexual Trauma, Mental Contamination, Coping, Posttraumatic Stress Disorder, Daily Diary Assessment

Jordyn M. Tipsword
(Name of Student)

08/25/2020

Date

MENTAL CONTAMINATION, COPING, AND PTSD SYMPTOM SEVERITY
FOLLOWING SEXUAL TRAUMA

By
Jordyn M. Tipsword

Christal L. Badour, Ph.D.

Director of Thesis

Mark Fillmore, Ph.D.

Director of Graduate Studies

08/25/2020

Date

ACKNOWLEDGMENTS

First and foremost, I would like to thank my mentor and thesis chair, Dr. Christal L. Badour, for her seemingly never-ending support and encouragement throughout this project. I would like to thank C. Alex Brake for collecting the data utilized in this project and generously allowing me to use it for my analyses. I would also like to express my gratitude to my fellow STARRC lab members for their invaluable encouragement and advice throughout the development and completion of this project.

I would also like to sincerely thank my incredible family and friends for endlessly supporting me both professionally and personally. Finally, I would like to express my immense gratitude to my husband for the moral support and perspective he provided throughout this process.

TABLE OF CONTENTS

ACKNOWLEDGMENTS	iii
LIST OF TABLES	vi
LIST OF FIGURES	vii
CHAPTER 1. INTRODUCTION	1
Trauma-Related Coping.....	5
The Present Study	7
Hypotheses	8
CHAPTER 2. METHOD	10
Participants.....	10
Procedure	11
Measures	12
Pre-Enrollment and Baseline Measures	12
Sexual Trauma History.....	12
Mental Contamination following Sexual Trauma	13
Posttraumatic Stress Symptoms	14
Daily Questionnaires.....	14
Mental Contamination following Sexual Trauma.....	14
Posttraumatic Stress Symptoms	15
Trauma-Related Coping	16
Trauma-Related Avoidance Coping	16
Trauma-Related Approach Coping.....	17
Data Analytic Approach	18
Descriptive Statistics.....	18
Primary Analyses	19
CHAPTER 3. RESULTS	20
Descriptive Statistics and Zero-Order Correlations.....	20
Primary Analyses	21
CHAPTER 4. DISCUSSION.....	28
REFERENCES	41

VITA..... 51

LIST OF TABLES

Table 1. Descriptive Data and Zero-Order Correlations for Model Variables	24
Table 2. Fixed Between- and Within-Effects for Indirect Effects Model 1a: Baseline Mental Contamination Predicting Daily PTSD Symptoms	25
Table 3. Fixed Between- and Within-Effects for Indirect Effects Model 1b: Baseline PTSD Symptoms Predicting Daily Mental Contamination	26

LIST OF FIGURES

Figure 1a. Multilevel Mediation Model Predicting Daily PTSD Symptoms from Baseline Mental Contamination via Lagged Daily Avoidance and Approach Coping	27
Figure 1b. Multilevel Mediation Model Predicting Daily Mental Contamination from Baseline PTSD Symptom Severity via Lagged Daily Avoidance and Approach Coping.....	27

CHAPTER 1. INTRODUCTION

Posttraumatic stress disorder (PTSD) is a distressing psychological disorder that can emerge following a traumatic event (American Psychiatric Association [APA], 2013). Defining symptoms of PTSD include re-experiencing the traumatic event (e.g., flashbacks); avoidance of thoughts, feelings, and stimuli that might prompt reminders of the trauma; negative changes in mood and cognition as a result of the trauma (e.g., negative feelings or beliefs about the self or the cause or consequences of a traumatic event); and changes in arousal or reactivity (e.g., hypervigilance). Research consistently demonstrates that PTSD is associated with negative impacts on psychological functioning, emotional health, and physical health (e.g., Badour et al., 2017; Kessler et al., 1995; López-Martínez et al., 2018).

Recent estimates suggest that approximately 8% of individuals in the United States will develop PTSD at some point during their lifetime (Kilpatrick et al., 2013). However, prevalence of PTSD is much higher following certain types of traumatic experiences. Although lifetime prevalence of PTSD across all types of trauma has been estimated to be between 17% and 28% (Kilpatrick et al., 1987; Resnick et al., 1993), estimates of lifetime prevalence among those who have experienced sexual trauma specifically have ranged from 25% to 80% (e.g., Breslau et al., 1991; Kessler et al., 1995; Resnick et al., 1993), suggesting that those with a history of sexual trauma have the highest conditional probability of developing PTSD. Accordingly, recent research has sought to identify factors that might be linked to PTSD symptoms among those who have experienced sexual trauma.

One factor receiving increasing attention in relation to sexual trauma-linked PTSD is mental contamination. Mental contamination refers to the phenomenon of experiencing feelings of dirtiness in the absence of contact with a physical contaminant (Rachman, 1994). In contrast with contact contamination – which involves feelings of dirtiness associated with contact with an external and readily identifiable contaminant – mental contamination is conceptualized as occurring in response to internal and diffuse, or global, feelings of contamination or dirtiness (Rachman, 1994, 2004). As a result, individuals experiencing mental contamination are often unable to pinpoint the source of contamination, making it especially difficult to reduce distress associated with that experience.

Although early theoretical and empirical work focused on mental contamination in relation to obsessive-compulsive disorder (e.g., Coughtrey, Shafran, & Lee, 2012; Coughtrey, Shafran, Knibbs et al., 2012), there is a burgeoning area of inquiry aimed at examining experiences of mental contamination secondary to sexual trauma. Such research has highlighted the importance of evaluating mental contamination to better understand negative trauma-related outcomes, including PTSD (Badour, Feldner, Blumenthal et al., 2013; Badour, Feldner, Babson et al., 2013; Fergus & Bardeen, 2016; Olatunji et al., 2008). Although mental contamination has been linked to PTSD symptoms following a variety of traumatic events (Brake et al., 2019; Brake et al., 2018; Ojserkis et al., 2018), experiences involving sexual violation (e.g., unwanted sexual advances, sexual assault, etc.) have been identified as being particularly prone to elicit experiences of mental contamination and associated PTSD symptomatology. For example, Badour, Feldner, Babson, and colleagues (2013) demonstrated that PTSD

symptom severity was positively associated with feelings of dirtiness and urges to wash elicited in response to a laboratory task involving reminders of sexual, but not physical, trauma. Fairbrother and Rachman (2004) also found that approximately 70% of women reported experiencing urges to wash – a common means of attempting to alleviate feelings of dirtiness – immediately following sexual victimization. Among the women reporting any urges to wash, approximately a quarter reported that these feelings persisted for several months to over a year post-trauma. This suggests that mental contamination is not only a common experience linked to sexual trauma, but also one that can have a lasting impact.

Although considerable progress has been made in evaluating the relationship between mental contamination and PTSD following sexual trauma, several sizeable and noteworthy gaps in the literature remain. Perhaps the most notable gap is that research in this area has been entirely limited to the use of cross-sectional survey or laboratory-based experimental/quasi-experimental designs. As such, the temporal nature of the mental contamination-PTSD link is unknown. While some researchers have proposed that mental contamination may be a precursor to PTSD symptom development (e.g., Badour, Feldner, Blumenthal et al., 2013; Brake et al., 2018; Olatunji et al., 2008), others have theorized that PTSD symptoms may lead to increased mental contamination due to internalization of trauma-related disgust, as well as negative PTSD-related cognitions involving inflated responsibility and self-blame (Ojserkis et al., 2018). This discrepancy necessitates further research aimed at evaluating the direction of the mental contamination-PTSD relationship.

In addition to the need to establish the temporal ordering of the association between mental contamination and PTSD symptoms following sexual trauma, there is also a need to identify the nature of this relationship. What is clear from the extant research is that mental contamination does not necessarily occur in response to all types of traumatic exposure; as previously outlined, mental contamination is particularly likely to occur in response to certain subtypes of traumatic events, namely sexual trauma (Brake et al., 2018; Brake et al., 2019; Ojserkis et al., 2018). Furthermore, research has demonstrated that sexual trauma-related mental contamination is typically higher among those who endorse greater levels of disgust propensity (i.e., trait-like tendency to experience disgust), disgust sensitivity (i.e., trait-like tendency to be bothered by the experience of disgust), and peritraumatic disgust (i.e., disgust experienced during a traumatic event; Badour, Feldner, Blumenthal, et al., 2013; Badour et al., 2014).

Preliminary findings also suggest that distress tolerance (i.e., individual differences in the perceived ability to tolerate negative emotions) may serve as a moderator in the mental contamination-PTSD relationship. More specifically, Fergus and Bardeen (2016) found that mental contamination was only positively associated with PTSD symptoms following sexual trauma among women who also reported poor distress tolerance. Ojserkis and colleagues (2018) have also suggested that both thought-action fusion – or the belief that thinking about a given situation or outcome increases the likelihood of that outcome (Shafran et al., 1996) – and an inflated sense of responsibility for the trauma may serve as potential moderators that strengthen the association between PTSD symptoms and subsequent experiences of mental contamination.

Finally, in what appears to be the only existing study examining potential mediators in the mental contamination-PTSD relationship, Olatunji and colleagues (2008) used a cross-sectional design to demonstrate the presence of an indirect effect of mental contamination on PTSD symptoms via negative trauma-related cognitions. Such findings lend support to the theory put forth by Olatunji and colleagues that the distress associated with experiencing mental contamination may limit an individual's capacity to override negative cognitions in the aftermath of sexual trauma, which could in turn contribute to more severe PTSD symptoms.

To the best of the author's knowledge, the above efforts constitute the only attempts to explore the role of additional factors in the association between mental contamination and PTSD symptoms thus far. The present study aimed to expand upon this limited literature by examining the role of trauma-related coping in the prospective (and potentially bidirectional) association between mental contamination and PTSD symptoms following sexual trauma.

Trauma-Related Coping

Coping broadly encompasses the behavioral and cognitive methods individuals use to manage thoughts and feelings elicited by situations perceived as being overwhelming or stressful (Folkman & Lazarus, 1988; Roth & Cohen, 1986). Although various conceptions of coping exist (Tiet et al., 2006), one common distinction involves dividing specific coping strategies into two broad categories: approach and avoidance. In short, approach coping involves actively addressing or responding to a stressor (e.g., seeking support from others, actively processing the stressor; Folkman & Lazarus, 1988), whereas avoidance coping involves cognitively, emotionally, and/or physically distancing

oneself from the stressor and any related cues (e.g., substance use, distraction; Tiet et al., 2006). Importantly, trauma-related avoidance coping has been linked to a variety of maladaptive outcomes, including more severe PTSD symptoms among those with a history of sexual trauma (e.g., Ullman et al., 2007).

Previous work has also examined associations between mental contamination and coping behaviors. Perhaps the most well-established form of coping linked to mental contamination is washing behavior (e.g., Badour, Feldner, Babson et al., 2013; Elliott & Radomsky, 2009; Fairbrother et al., 2005; Fairbrother & Rachman, 2004; Herba & Rachman, 2007). Research has demonstrated that individuals with mental contamination often experience urges to wash and may attempt to reduce or alleviate feelings of dirtiness by washing or cleansing various body parts (e.g., hands, mouth); however, such behavior is frequently ineffective given the diffuse nature of mental contamination (e.g., Coughtrey, Shafran, & Lee, 2012; Fairbrother & Rachman, 2004; Waller & Boschen, 2015). As a result, individuals often report that washing specific regions of the body does little to decrease distress associated with mental contamination.

Studies investigating the relationship between mental contamination and other forms of coping behavior have primarily been conducted outside of trauma-exposed samples. For example, Zhong and Liljenquist (2006) demonstrated that unscreened undergraduates who recalled a previous immoral act – intended to elicit experiences of morality-linked mental contamination – were more likely to exhibit altruistic behavior compared to individuals who recalled immoral behavior and were permitted to cleanse themselves afterward. Although the replicability of those findings has since been questioned (see Fayard et al., 2009), such results nevertheless suggested that altruism

could perhaps serve as a means of attempting to cope with morally relevant feelings of mental contamination via reparative behavior.

More recent work has also linked experiential avoidance to experiences of mental contamination. More precisely, Jacoby and colleagues (2018) found that those who have a lower ability to tolerate unpleasant thoughts and feelings also tend to evidence more severe mental contamination symptoms. Although such work did not directly measure avoidance in the context of coping behavior, it documented a preliminary association between a tendency to avoid distressing thoughts and feelings (i.e., experiential avoidance) and mental contamination. Additionally, Brake and colleagues (2018) observed that those who experience mental contamination following trauma are more likely to engage in certain risk behaviors that have been conceptualized as serving an avoidance function in many contexts (e.g., substance use, risky sex). While such findings provide preliminary support for the notion that mental contamination may be linked to maladaptive trauma-related coping behavior, further research examining a broader range of avoidant coping behaviors is nevertheless warranted.

The Present Study

In spite of the above preliminary work evaluating the link between mental contamination and coping behavior, relatively little is presently known about the specific role of *trauma-related* coping in the ongoing association between PTSD symptoms and mental contamination following exposure to trauma. As such, the present study sought to fill critical gaps in the literature via a prospective examination of mental contamination, PTSD symptoms, and coping behavior among a sample of women with a history of sexual trauma and current experiences of mental contamination. To the best of the

author's knowledge, this study was the first to analyze these variables in conjunction by making use of both baseline and daily diary data. Accordingly, the aims of the current study were threefold. First, the present study evaluated the potential prospective bidirectional relationship between mental contamination and PTSD symptoms by testing whether baseline levels of sexual trauma-related mental contamination predicted severity of daily PTSD symptoms, as well as whether PTSD symptom severity at baseline predicted daily severity of mental contamination. Once the directionality of that relationship was established, we then examined the potential mediating role of approach and avoidance coping in that relationship.

Hypotheses

Hypotheses for the proposed study were as follows:

1. A bidirectional relationship between mental contamination and PTSD symptom severity was anticipated. More precisely, it was predicted that a) greater baseline levels of mental contamination would predict higher daily PTSD symptoms and b) more severe baseline PTSD symptoms would predict higher daily experiences of mental contamination.
2. It was expected that a) avoidance coping would positively mediate the association between baseline mental contamination and daily PTSD symptoms and b) approach coping would negatively mediate the association between baseline mental contamination and daily PTSD symptoms. Specifically, it was expected that baseline mental contamination would be positively associated with daily avoidance coping (*Path A₁*) and negatively associated with daily approach coping (*Path A₂*). It was further expected that avoidance coping at a

given assessment would in turn be associated with higher PTSD symptoms at the subsequent assessment (*Path B₁*), while approach coping would be associated with lower PTSD symptoms at the subsequent assessment (*Path B₂*).

3. It was expected that a) avoidance coping would positively mediate the association between baseline PTSD symptoms and daily mental contamination and b) approach coping would negatively mediate the association between baseline PTSD symptoms and daily mental contamination. Specifically, it was expected that baseline PTSD symptoms would be positively associated with daily avoidance coping (*Path A₁*) and negatively associated with daily approach coping (*Path A₂*). It was further expected that avoidance coping scores at a given assessment would, in turn, be associated with greater experiences of mental contamination at the subsequent assessment (*Path B₁*), whereas approach coping scores at a given assessment would be associated with fewer experiences of mental contamination at the subsequent assessment (*Path B₂*).

CHAPTER 2. METHOD

Participants

Participants included 41 women aged 18 to 57 ($M_{age} = 32.95$, $SD = 12.59$) recruited from the community as part of a larger study focused on the intersection between PTSD and mental contamination. All participants endorsed current experiences of mental contamination related to a history of sexual trauma. Sexual trauma was defined in this study as any act involving forced or coerced sexual contact, sexual contact occurring while ability to consent was impaired due to the influence of substances, or any sexual contact with an adult occurring during childhood (age 13 or younger).

The racial and ethnic composition of participants was as follows: 73.2% Caucasian, 19.5% African American, and 4.9% Multiracial; approximately 2.4% of our sample self-identified as belonging to another racial or ethnic group. Additionally, 9.8% of our sample identified as ethnically Hispanic. While the majority of women identified as heterosexual (70.7%), 4.9% of participants identified as homosexual and an additional 22.0% and 2.4% endorsed the bisexual and other options. The majority of participants (92.7%) reported having completed at least some college, while 4.9% completed high school and 2.4% did not graduate from high school. In addition, participants' employment statuses varied widely, with 36.6% of participants identifying primarily as students, 24.4% as employed full-time, 22.0% as employed part-time, 7.3% as unemployed and not actively seeking work (e.g., due to disability), and 9.8% as unemployed and actively seeking work. The most frequently reported income among the sample was < \$20,000 (46.3%); however, incomes ranged from < \$20,000 to > \$100,000.

Participants reported having experienced the following non-exclusive forms of sexual trauma: unwanted sexual contact during childhood (56.1%); unwanted sexual contact involving force or threatened force (90.2%); and unwanted sexual contact while under the influence of substances (and therefore unable to provide consent; 58.5%). Of note, 73.2% ($n = 30$) of participants reported having experienced multiple (i.e., two or more) instances of sexual trauma.

Procedure

Participants were recruited from the community via flyers and online advertisements. Interested individuals completed the following procedures: 1) an initial phone screen to determine eligibility for enrollment; 2) an at-home pre-visit questionnaire completed via the Qualtrics online survey platform; 3) a visit to the laboratory to complete diagnostic interviews and additional questionnaires; and 4) 14 days of twice-daily assessments completed via LifeData, a smartphone app.

All participants were familiarized with the smartphone app during the laboratory visit and were instructed to complete daily diary assessments twice daily (morning and evening) for the fourteen-day period immediately following their in-lab visits. Participants received notifications to prompt daily diary completion at each of the two daily assessment time points (9:00 AM EST and 5:00 PM EST), and reminders were sent every 30 minutes until the survey was completed. A given daily diary assessment was determined to be “skipped” if the participant did not complete the questionnaire within four hours of the assessment window opening. Participants completed a total of 974 out of 1148 possible daily diary surveys, resulting in an 84.8% response rate. The mean

number of responses per participant was 23.76 ($SD = 5.24$, range 7-28), with over 90% completing 15 or more assessments.

Participants received \$30 following the laboratory visit. In addition, participants were compensated \$1 for every completed daily diary assessment during the 14-day period, amounting to a maximum total of \$28 for that period if participants completed all daily assessments. An additional \$5 bonus payment was awarded for each instance in which participants completed four consecutive daily diary questionnaires in an attempt to maximize daily diary adherence. All compensation accumulated during the daily diary period was awarded to participants at the conclusion of the daily diary window.

All procedures were approved by the University of Kentucky Institutional Review Board (IRB) prior to recruitment and informed consent was obtained from all participants prior to the administration of any measures.

Measures

Pre-Enrollment and Baseline Measures

Sexual Trauma History. Eligibility for the study was based on a history of at least one instance of sexual trauma, as assessed using four items derived from the National Stressful Events Survey (NSES; Kilpatrick et al., 2011). The NSES was a nationwide survey conducted to determine both the prevalence of exposure to *DSM-5* Criterion A stressors and the occurrence of PTSD symptoms in response to those stressors. The four items selected for this study evaluated sexual trauma involving a) sexual contact by an adult during childhood, b) unwanted sexual experiences involving force, c) unwanted sexual experiences occurring while under the influence of a substance (e.g., alcohol), and d) penetration (including oral, anal, and vaginal penetration).

Eligibility for the study was based on receiving an affirmative response to any of the first three items.

Mental Contamination following Sexual Trauma. Participants' current experiences of sexual trauma-related mental contamination were assessed during the phone screen phase of recruitment using the Posttraumatic Experience of Mental Contamination scale (PEMC; Brake et al., 2019). The PEMC is a 20-item self-report measure modeled after the Vancouver Obsessional Compulsive Inventory – Mental Contamination scale (VOCI-MC; Radomsky et al., 2014). In contrast with the VOCI-MC, which is administered to evaluate general experiences of mental contamination, the PEMC is designed to specifically evaluate experiences of mental contamination following a traumatic event (e.g., “Since the traumatic event, I often feel dirty inside my body”; Brake et al., 2019). PEMC items were administered in reference to the index trauma reported by participants during the screening phase. For each item on the PEMC, participants were asked to indicate the extent to which they experienced the described feeling or sensation using a five-point Likert-type scale (0 = *Not at all* to 4 = *Very much*).

Individual item scores for the PEMC were summed to create an overall severity index for sexual trauma-related mental contamination, with greater overall scores indicating more severe experiences of mental contamination. Participants were considered to be experiencing current mental contamination – and were thus eligible for the study – if they presented with an overall severity score of 10 or greater on the PEMC. This cutoff score was chosen in alignment with cut scores previously reported to indicate moderate levels of mental contamination on the VOCI-MC (Coughtrey et al., 2014). Preliminary evaluations of the psychometric properties of the PEMC have provided

evidence of strong reliability and convergent validity with the VOICI-MC, with the PEMC evidencing better utility than the VOICI-MC for assessing mental contamination concerns among those experiencing current PTSD symptoms (Brake et al., 2019). Additionally, the PEMC exhibited excellent reliability in the present study ($\alpha = .92$). Current experiences of trauma-related mental contamination were confirmed during an in-person interview.

Posttraumatic Stress Symptoms. Baseline PTSD symptom severity was assessed using the past-month version of the Clinician-Administered PTSD Scale for *DSM-5* (CAPS-5; Weathers et al., 2013a). The CAPS-5 is a semi-structured clinical interview designed to assess the frequency and intensity of symptoms comprising the *DSM-5* criteria for PTSD. The CAPS-5 has demonstrated excellent psychometric properties (Weathers et al., 2018) and all participant interviews were conducted by a trained graduate researcher. Total PTSD severity scores for the CAPS-5 were calculated by summing the frequency/intensity score. Scores on CAPS-5 items were also used to determine PTSD diagnostic status based on whether or not responses satisfied each *DSM-5* criterion using the SEV2 scoring rule (Weathers et al., 2018). The CAPS-5 exhibited satisfactory internal consistency in the current study ($\alpha = .84$).

Daily Questionnaires

Mental Contamination following Sexual Trauma. Experiences of mental contamination were assessed twice daily using the State Mental Contamination Scale (SMCS; Lorona et al., 2018). The SMCS is a 15-item self-report inventory developed by modifying items from the Vancouver Obsessional Compulsive Inventory – Mental Contamination scale (VOICI-MC; Radomsky et al., 2014). Whereas the VOICI-MC

assesses trait-level variables relevant to the experience of mental contamination, the SMCS instead assesses state experiences of mental contamination by modifying original VOICI-MC items (e.g., “I often feel dirty inside my body”) to reflect current experiences of mental contamination (e.g., “I feel dirty inside my body”). Participants rated the extent to which they agree with each item using a Likert-type scale (0 = *Not at all* to 4 = *Very much*). For the present study, daily assessment instructions for the SMCS were adjusted to specifically refer to the index traumatic event identified as part of the CAPS-5 interview. The SMCS has demonstrated strong internal consistency and convergent validity in preliminary evaluations of its psychometric properties (Lorona et al., 2018) and reliability estimates for evaluating between-person differences ($R_{kf} = .99$) and within-person change ($R_C = .95$) were excellent in the present study. Total mental contamination scores were calculated at each assessment timepoint by summing individual SMCS item responses.

Posttraumatic Stress Symptoms. Assessments of daily PTSD symptoms were conducted using a modified version of the PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013b). This approach is both consistent with and supported by previous studies evaluating PTSD symptoms using daily diary assessments (Dworkin et al., 2017). The PCL-5 is a 20-item self-report inventory that evaluates past-month severity and frequency of PTSD symptoms. At each twice-daily assessment, participants were instructed to complete each item of the PCL-5 based on symptoms occurring *since the previous daily diary assessment*. Participants were also prompted to evaluate daily PTSD symptoms related to their most distressing experience of sexual trauma (as identified during the CAPS-5 clinical interview). For each item, participants indicated the extent to which each

described feeling or sensation has affected them using a Likert-style scale (0 = *Not at all*, 1 = *A little bit*, 2 = *Moderately*, 3 = *Quite a bit*, 4 = *Extremely*). Reliability estimates for evaluating between-person differences ($R_{kf} = .99$) and within-person change ($R_C = .92$) via the PCL-5 were excellent in the present study. Total PTSD symptom severity scores were calculated at each assessment timepoint by summing individual PCL-5 item responses.

Trauma-Related Coping. Trauma-related avoidance and approach coping were assessed using select items from the Brief COPE (Carver, 1997), as well as several additional items designed to assess coping-related behaviors. The Brief COPE is a 28-item measure designed to evaluate use of a wide range of coping strategies. For each item on the Brief COPE, individuals rate the extent to which they have engaged in a given coping strategy using a Likert-style scale (1 = *I haven't been doing this at all* to 4 = *I've been doing this a lot*). For the present study, instructions for the Brief COPE were modified to instruct participants to specifically indicate the extent to which they had used a given strategy since the previous daily assessment to cope with their most distressing sexual trauma experience. The Brief COPE has evidenced satisfactory psychometric properties (Carver, 1997).

Trauma-related avoidance coping. Avoidance coping behavior was assessed using five items selected from the emotional avoidant subscale of the Brief COPE (Schnider et al., 2007) in combination with two additional behavioral items derived from other sources. Selected items from the Brief COPE were obtained from the self-distraction, denial, behavioral disengagement, and self-blame subscales and were chosen based on pilot laboratory data suggesting a significant correlation with VOICI-MC mental

contamination severity. The five selected items included: “I’ve been turning to work or other activities to take my mind off things”; “I’ve been saying to myself ‘this isn’t real’”; “I’ve been giving up trying to deal with it”; “I’ve been criticizing myself”; and “I’ve been blaming myself for things that happened” (Carver, 1997).

Additional items were also included to assess avoidance coping behavior involving washing or cleansing and thought suppression as previous research has suggested that both domains are relevant to the experience of mental contamination (e.g., Coughtrey, Shafran, & Lee, 2012; Jung & Steil, 2012). The item addressing washing behavior (“I’ve been spending time washing or cleaning”) was developed by modifying one item from the Vancouver Obsessive Compulsive Inventory (VOCI; Thordarson et al., 2004), while the item included to address thought suppression (“I’ve been trying to avoid certain thoughts”) was adapted from the Thought Suppression Inventory (TSI; Rassin, 2003). Total avoidance coping scores were calculated at each assessment timepoint by summing individual item responses. Though reliability estimates for examining within-person change in avoidance coping were poor ($R_c = .65$), estimates for evaluating between-person differences in avoidance coping were excellent ($R_{kf} = .99$).

Trauma-related approach coping. Approach coping behavior was evaluated using six total items: four items from the Brief COPE, as well as two additional items from the Emotional Approach Coping measure (EAC; Stanton et al., 2000). This six-item measure was chosen since it has been used in previous research employing daily diary methods and has demonstrated strong reliability across daily diary assessments (Park et al., 2004). For each approach coping item, participants were asked to indicate how frequently they had used the described coping behavior since the previous daily diary

assessment using a Likert-style rating scale (1 = *I haven't been doing this at all* to 4 = *I've been doing this a lot*). Selected items from the Brief COPE comprised the emotional support and acceptance subscales (e.g., "I've been getting emotional support from others," "I've been learning to live with it"; Carver, 1997). In addition, two items were included from the EAC to assess both emotional expression and emotional processing. Total approach coping scores were calculated at each assessment timepoint by summing individual item responses. Reliability estimates for evaluating between-person differences in approach coping ($R_{kf} = .99$) and within-person change across the daily diary period ($R_c = .78$) were excellent and acceptable, respectively.

Data Analytic Approach

Descriptive Statistics

Means, standard deviations, and frequencies were calculated for all demographic variables and means, standard deviations, and zero-order correlations were calculated for all model variables. Additional variables were computed to evaluate whether participants had experienced multiple (two or more) instances of sexual trauma (0 = No, 1 = Yes) and to evaluate PTSD diagnostic status at baseline based on responses recorded during the CAPS-5 interview (0 = No PTSD, 1 = PTSD). Using those variables, further descriptive analyses were conducted to determine a) the proportion of participants with a history of multiple experiences involving sexual trauma, b) the types of sexual trauma endorsed by women in our sample, and c) the proportion of participants who met *DSM-5* criteria for PTSD. Timepoints for each daily diary assessment were coded by day (day 1 to 14 coded from -13.5 to 13.5) and time (0 = Morning, 1 = Evening). Finally, all continuous predictor variables were grand-mean centered (i.e., baseline PTSD symptoms, baseline

mental contamination, lagged avoidance and approach coping, lagged mental contamination, lagged PTSD symptoms, and age at index) to aid in interpretation of intercepts. Additional analyses were conducted to assess within-person variability in daily diary assessment scores for the SMCS, Brief COPE, and PCL-5. An overall mean score across all daily diary assessments (i.e., person-mean score) was calculated for each participant, and each daily diary assessment score was then plotted against that person-mean score to evaluate changes in symptoms for each variable across the 14-day diary period.

Primary Analyses

Primary analyses were conducted via two 2-1-1 multilevel mediation models using Version 2.0 of the MLmed macro for SPSS (Rockwood & Hayes, 2017). Lagged (T-1) daily mental contamination and PTSD symptom scores were computed to be included as covariates, and lagged (T-1) daily avoidance and approach coping scores were calculated to allow for temporal precedence in models predicting daily PTSD symptoms or daily mental contamination at time T.

CHAPTER 3. RESULTS

Descriptive Statistics and Zero-Order Correlations

Descriptive statistics and zero-order correlations for all model variables are presented in Table 1. Participants reported engaging in approach coping behaviors more frequently than avoidance coping behaviors, $t(40) = 2.54, p = .02$. Notably, 73.2% ($n = 30$) of women in our sample reported a history of multiple (i.e., two or more) sexually traumatic experiences. Additionally, 68.3% ($n = 28$) of participants met criteria for current PTSD.

In line with hypotheses, baseline mental contamination was positively associated with overall daily avoidance coping and daily PTSD symptom severity at the zero-order level. Contrary to hypotheses, however, mental contamination at baseline was also positively associated with daily approach coping. Furthermore, baseline mental contamination was positively associated with baseline PTSD symptom severity and daily mental contamination. As anticipated, baseline PTSD symptom severity was positively associated with daily avoidance coping and daily mental contamination. Contrary to hypotheses, however, baseline PTSD symptom severity was not significantly associated with daily approach coping. PTSD symptom severity at baseline was also positively correlated with daily PTSD symptom severity.

Between-person average scores on the PCL-5 and SMCS across the two-week daily diary period were very highly correlated ($r = .92$), leading to concern that these symptom scores — when considered in aggregate over the two week period — may not reflect separate constructs. However, a prior investigation conducted using these data demonstrated that detrended measures of short-term instability (or within-person

variability) in scores on the PCL-5 and SMCS were moderately to strongly correlated (.52 - .74; Badour et al., 2020), supporting the discriminant validity of these constructs when considering within-person variability, as we are in the current investigation.

Primary Analyses

As depicted in Figure 1a, the first model examined whether baseline mental contamination predicted higher daily PTSD symptom severity as mediated by daily avoidance and approach coping. Level two covariates in this model included baseline PTSD symptoms and age at which the index trauma occurred. Level one covariates in this model included PTSD symptom severity at the prior assessment (T-1) and assessment (number, time of day). Upper level mediation (at the level of the individual) and lower level mediation (at the level of the observation) are orthogonal paths in multilevel mediation. Given that predictors in both models (baseline mental contamination and PTSD symptoms) are level 2 predictors, mediation tests were all upper level, meaning that the mediating pathway between baseline PTSD and daily mental contamination was through between-person average avoidance and approach coping (i.e., to what degree did participants tend to engage in avoidance or approach coping?) versus through lagged within-person avoidance or approach coping (i.e., to what degree did participants report engaging in avoidance or approach coping at the previous assessment [T-1]?).

Results from our first model predicting daily PTSD symptoms from baseline mental contamination are displayed in Table 2. There was a significant total effect of baseline mental contamination on daily PTSD symptoms (*Path C*). In line with hypotheses, mental contamination at baseline was positively associated with daily

avoidance coping (*Path A₁*). Contrary to hypotheses, baseline mental contamination was also positively associated with daily approach coping (*Path A₂*). As predicted, both average (*Path B_{1Between}*) and prior assessment (*Path B_{1Within}*) avoidance coping were positively associated with daily PTSD symptoms after accounting for model covariates and additional variance associated with baseline mental contamination. However, neither average (*Path B_{2Between}*) nor prior assessment (*Path B_{2Within}*) approach coping was significantly associated with daily PTSD symptoms. As expected, average daily avoidance coping significantly positively mediated the relationship between baseline mental contamination and daily PTSD symptom severity (*Path AB_{1Between}*) and this effect was significantly greater than the non-significant indirect effect via approach coping, 95% CI [-.58 , -.003].

As depicted in Figure 1b, the second model examined whether baseline PTSD symptoms predicted higher daily mental contamination as mediated by daily approach and avoidance coping. Level two covariates in this model included baseline mental contamination and age at which the index trauma occurred. Level one covariates in this model included mental contamination at the prior assessment (T-1) and assessment (number, time of day).

Results from our second model predicting daily mental contamination from baseline PTSD symptom severity are presented in Table 3. There was a significant total effect of baseline PTSD symptoms on daily mental contamination (*Path C*). As expected, PTSD symptoms at baseline were positively associated with daily avoidance coping (*Path A₁*). Contrary to hypotheses, the association between baseline PTSD symptoms and daily approach coping failed to reach significance (*Path A₂*). As predicted, average

avoidance coping was positively associated with daily mental contamination after accounting for all covariates and any additional variance associated with baseline PTSD symptoms (*Path B_{1Between}*). However, prior assessment avoidance coping was not significantly associated with daily mental contamination after accounting for model covariates and variance associated with baseline PTSD symptoms (*Path B_{1Within}*). Additionally, neither average (*Path B_{2Between}*) nor prior assessment (*Path B_{2Within}*) approach coping was significantly associated with daily mental contamination. As anticipated, average daily avoidance coping significantly positively mediated the relationship between baseline PTSD symptom severity and daily mental contamination (*Path AB_{1Between}*) and this effect was significantly greater than the non-significant indirect effect via approach coping, 95% CI [-.68 , -.03].

Table 1
Descriptive Data and Zero-Order Correlations for Model Variables

Variable	1	2	3	4	5	6	<i>M (SD)</i>	Range
1. Baseline mental contamination (PEMC)	-	.45**	.57**	.43**	.51**	.51**	50.32 (14.67)	0 – 80
2. Baseline PTSD symptom severity (CAPS-5)	-	-	.60**	.28	.62**	.59**	32.17 (10.57)	0 – 80
3. Daily avoidance coping (Brief COPE+)	-	-	-	.47**	.87**	.75**	1.94 (0.60)	1 – 4
4. Daily approach coping (Brief COPE+)	-	-	-	-	.44**	.42**	2.22 (0.74)	1 – 4
5. Daily PTSD symptom severity (PCL-5)	-	-	-	-	-	.92**	24.10 (16.97)	0 – 80
6. Daily mental contamination (SMCS)	-	-	-	-	-	-	14.33 (15.54)	0 – 60

Note. ** $p < .01$. Means and standard deviations for daily approach coping, daily avoidance coping, daily PTSD symptom severity, and daily mental contamination reflect average person-mean scores. *CAPS-5* Clinician-Administered PTSD Scale for DSM-5, *PCL-5* PTSD Checklist for *DSM-5*, *PEMC* Posttraumatic Experience of Mental Contamination Scale, *SMCS* State Mental Contamination Scale

Table 2

Fixed Between- and Within-Effects for Indirect Effects Model 1a: Baseline Mental Contamination Predicting Daily PTSD Symptoms

Predictor → Outcome	Effect Level	Path	<i>B</i>	<i>SE</i>	<i>t</i>	95% CI
<u>Total and Direct Effects</u>						
Intercept (Daily PTSD Symptoms)	Within		22.58	1.38	16.31***	[19.76 , 25.40]
Baseline MC → Daily PTSD	Between	<i>C</i>	0.37	0.17	2.20*	[0.03 , 0.70]
Baseline MC → Daily PTSD	Between	<i>C'</i>	0.05	0.12	0.40	[-0.20 , 0.30]
Baseline MC → Daily Avoidance	Between	<i>A</i> ₁	0.01	0.01	2.42*	[0.002 , 0.03]
Baseline MC → Daily Approach	Between	<i>A</i> ₂	0.02	0.01	2.48*	[0.004 , 0.04]
Daily Avoidance → Daily PTSD	Between	<i>B</i> ₁	21.78	3.42	6.37***	[14.83 , 28.74]
	Within	<i>B</i> ₁	4.06	1.21	3.35***	[1.68 , 6.44]
Daily Approach → Daily PTSD	Between	<i>B</i> ₂	1.07	2.26	0.47	[-3.53 , 5.66]
	Within	<i>B</i> ₂	-0.53	0.72	-0.74	[-1.94 , 0.88]
Predictor → Outcome	Effect Level	Path	β	<i>SE</i>	<i>Z</i>	95% CI
<u>Indirect Effects</u>						
Baseline MC → Daily Avoidance → Daily PTSD	Between	<i>AB</i> ₁	0.30	0.14	2.24*	[0.06 , 0.58]
Baseline MC → Daily Approach → Daily PTSD	Between	<i>AB</i> ₂	0.02	0.05	0.43	[-0.08 , 0.14]

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3

Fixed Between- and Within-Effects for Indirect Effects Model 1b: Baseline PTSD Symptoms Predicting Daily Mental Contamination

Predictor → Outcome	Effect Level	Path	<i>B</i>	<i>SE</i>	<i>t</i>	95% CI
<u>Total and Direct Effects</u>						
Intercept (Daily Mental Contamination)	Within		13.48	1.69	7.97***	[10.04 , 16.93]
Baseline PTSD → Daily MC	Between	<i>C</i>	0.67	0.23	2.96**	[0.21 , 1.14]
Baseline PTSD → Daily MC	Between	<i>C'</i>	0.37	0.21	1.76	[-0.06 , 0.81]
Baseline PTSD → Daily Avoidance	Between	<i>A</i> ₁	0.02	0.01	2.75**	[0.01 , 0.04]
Baseline PTSD → Daily Approach	Between	<i>A</i> ₂	0.01	0.01	0.99	[-0.01 , 0.04]
Daily Avoidance → Daily MC	Between	<i>B</i> ₁	14.34	4.16	3.44**	[5.86 , 22.82]
Daily Approach → Daily MC	Within	<i>B</i> ₁	1.20	0.87	1.38	[-0.51 , 2.90]
	Between	<i>B</i> ₂	0.83	2.76	0.30	[-4.79 , 6.45]
	Within	<i>B</i> ₂	-0.26	0.55	-0.46	[-1.34 , 0.83]
Predictor → Outcome	Effect Level	Path	β	<i>SE</i>	<i>Z</i>	95% CI
<u>Indirect Effects</u>						
Baseline PTSD Symptoms → Daily Avoidance → Daily MC	Between	<i>AB</i> ₁	0.33	0.16	2.10*	[0.08 , 0.67]
Baseline PTSD Symptoms → Daily Approach → Daily MC	Between	<i>AB</i> ₂	0.01	0.05	0.21	[-0.09 , 0.13]

Note. **p* < .05, ***p* < .01, ****p* < .001.

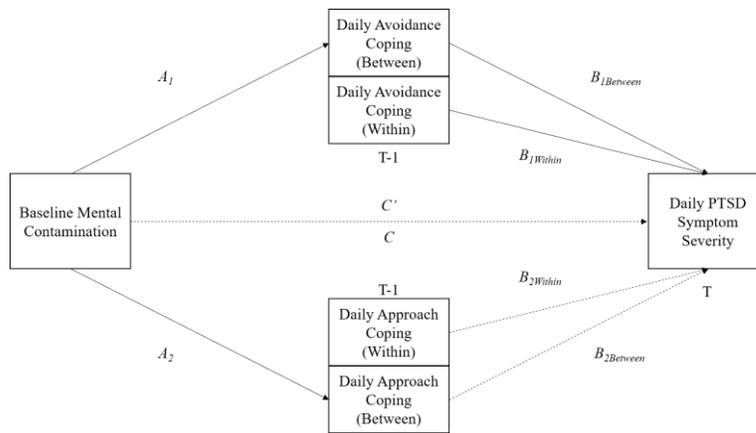


Figure 1a. Multilevel mediation model predicting daily PTSD symptoms from baseline mental contamination via lagged daily avoidance and approach coping.

Note. T and T-1 represent the lagged nature of within components of coping (mediator) variables relative to the assessment of daily PTSD symptoms (outcome variable).

Mediation tests only occur via between components of coping variables.

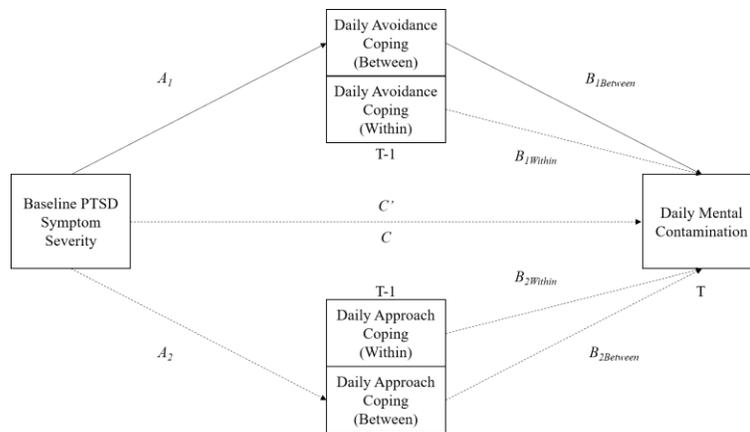


Figure 1b. Multilevel mediation model predicting daily mental contamination from baseline PTSD symptom severity via lagged daily avoidance and approach coping.

Note. T and T-1 represent the lagged nature of within components of coping (mediator) variables relative to the assessment of daily mental contamination (outcome variable).

Mediation tests only occur via between components of coping variables.

CHAPTER 4. DISCUSSION

The current study was the first to evaluate the prospective bidirectional association between sexual trauma-related mental contamination and PTSD symptoms via a daily diary design. Previous work in this domain has focused primarily on examining these associations using cross-sectional designs (e.g., Brake et al., 2018; Ojserkis et al., 2018), limiting conclusions about how trauma-related mental contamination and PTSD symptoms relate to one another over time. Consistent with hypotheses, a significant bidirectional association emerged wherein higher baseline mental contamination prospectively predicted higher daily PTSD symptoms and higher baseline PTSD symptoms prospectively predicted higher daily mental contamination. These associations remained significant after controlling for factors associated with assessment (assessment number, time of day); age at which the index traumatic event occurred; baseline PTSD symptoms or mental contamination; and prior assessment PTSD symptoms or mental contamination. Together, these findings clarify the directionality of associations between trauma-related mental contamination and PTSD symptoms and converge to suggest that mental contamination and PTSD symptoms may serve to mutually maintain one another over time.

One explanation for these findings may be that because both PTSD symptoms and trauma-related mental contamination are linked to sexually traumatic experiences, both may thus be triggered by similar trauma-related stimuli (e.g., encountering situations that elicit reminders of the trauma). Though individuals experiencing sexual trauma-related mental contamination commonly endorse beliefs related to feeling internally or inherently contaminated (e.g., “Because of what happened to me, I am contaminated”), it stands to

reason that contamination-specific beliefs or thoughts may also contribute to the more global negative thoughts about the self (e.g., “Because I am contaminated, I am worthless”) and difficulties surrounding physical and/or emotional intimacy with others that frequently characterize PTSD symptoms. Similarly, specific PTSD symptoms (e.g., intrusive or distressing memories of the trauma) may also contribute to ongoing experiences of trauma-related mental contamination over time by making salient specific aspects of the trauma that underlie those experiences of contamination. For example, an individual experiencing repeated or distressing memories of the traumatic event as part of his or her PTSD symptoms may continue to experience trauma-related mental contamination, in part, because those memories remind them of aspects of the trauma that are particularly relevant to their experiences of contamination (e.g., contact with bodily fluids). Although this framework would benefit from future work aiming to more precisely identify when and how PTSD symptoms and mental contamination emerge following sexual trauma, the bidirectional association observed between trauma-related mental contamination and PTSD symptoms in the present study converges with the above theoretical framework to provide compelling preliminary evidence for a mutual maintenance model.

Pending confirmation of prospective associations between mental contamination and PTSD symptoms (uni- or bidirectional), a second aim of this study was to examine whether daily avoidance and approach coping over the two-week daily diary period mediated associations between mental contamination and PTSD (i.e., served as possible mechanisms underlying a mutual maintenance model). Specifically, it was hypothesized that avoidance coping would positively mediate associations between mental

contamination and PTSD symptoms, whereas approach coping would serve as a negative mediator. Results revealed partial support for our hypotheses.

Women in our sample who reported higher PTSD symptoms at baseline subsequently tended to report more avoidance coping over the two-week daily diary period. Women who reported higher mental contamination at baseline tended to report higher levels of both avoidance and approach coping over the two-week daily diary period. Those who tended to report higher avoidance or approach coping during the daily diary period also tended to report higher PTSD symptoms and mental contamination over the same period. Notably, though, only average daily avoidance coping significantly positively mediated associations between both baseline mental contamination and daily PTSD symptoms (Model 1a) and baseline PTSD symptoms and daily mental contamination (Model 1b). These findings align with previous work documenting positive associations between mental contamination and avoidance-related constructs (e.g., experiential avoidance, washing/cleansing behavior; Badour, Feldner, Babson et al., 2013; Fairbrother & Rachman, 2004; Jacoby et al., 2018) and research documenting associations between PTSD symptoms and avoidance coping among women with a history of sexual trauma (e.g., Ullman et al., 2007). Importantly, these results also extend prior cross-sectional work by suggesting that avoidance coping may be one mechanism through which trauma-related mental contamination and PTSD symptoms are linked to one another over time.

Avoidance coping likely functions as a means of reducing acute distress associated with either PTSD symptoms or mental contamination following sexual trauma. Previous work examining avoidance and PTSD symptoms suggests that avoidance coping

may be strongly negatively reinforcing – and may thus be more likely to be implemented in the future – as it reduces the immediate distress associated with PTSD symptoms. In the same way, individuals experiencing sexual trauma-related mental contamination may engage in avoidance behaviors as a means of reducing or escaping distress associated with mental contamination (e.g., feelings of dirtiness/disgust/shame, perceptions of the self as being contaminated). Such avoidance strategies would likely lead to short-term reductions in contamination-related distress, thus increasing the likelihood of being employed in response to experiences of mental contamination in the future.

Paradoxically, avoidance behaviors aimed at reducing either PTSD symptoms or mental contamination actually appear to maintain these negative trauma-related outcomes as avoidance prevents or delays actions that an individual might otherwise take to actively address sexually traumatic experiences and trauma-related sequelae (Ullman et al., 2007).

Over a more prolonged period of time, avoidance coping may also serve to exacerbate existing PTSD symptoms or mental contamination. For example, an individual may initially engage in avoidance coping to manage experiences associated with mental contamination but may subsequently utilize those same avoidance strategies to escape other potentially distressing experiences as their avoidance is reinforced (e.g., processing specific aspects of the trauma, spending time with family and friends who may ask about the trauma). Under such a framework, the use of avoidance coping may then lead to an exacerbation in both mental contamination and broader symptoms of PTSD as avoidance can contribute to increased dysfunction in its own right (e.g., social isolation, relationship problems, work dysfunction). Similarly, an individual may initially engage in avoidance behaviors to manage specific PTSD symptoms (e.g., intrusive

memories of the trauma, negative thoughts or emotions) but may, in turn, experience more severe symptoms of trauma-related mental contamination if those avoidance behaviors are subsequently utilized in response to additional stimuli or experiences that are especially likely to elicit mental contamination (e.g., physical contact or intimacy with others).

Although the present findings are best equipped to provide support for a mutual maintenance model given the short timeframe assessed, they nevertheless raise important questions as to whether avoidance strategies may contribute to the mutual exacerbation of PTSD symptoms and trauma-related mental contamination over time. Thus, additional research examining associations among mental contamination, avoidance coping, and PTSD symptoms over a more prolonged period of time is warranted. Although we did not observe systematic changes in either PTSD symptoms or mental contamination over the two-week daily diary period, it is possible that changes might emerge if symptoms were evaluated longer. Thus, an investigation examining PTSD symptoms and experiences of mental contamination over a more extended amount of time would aid in identifying whether PTSD symptoms are associated with more severe mental contamination (and vice versa) in the long term. A more traditional longitudinal design would also reveal whether participants are increasing the frequency of avoidance coping – or implementing avoidance behaviors to address additional distressing experiences – and would therefore clarify whether avoidance coping functions to maintain or exacerbate PTSD symptoms and trauma-related mental contamination over time. Additionally, it would likely prove beneficial to examine avoidance coping, PTSD symptoms, and mental contamination among a sample of women who have experienced recent sexual trauma to evaluate links

between avoidance coping and symptom trajectories for both PTSD and mental contamination over time.

The mixed findings concerning the role of approach coping in the association between PTSD symptoms and mental contamination in this study also warrant consideration. First, the findings that a) baseline mental contamination prospectively predicted higher average daily approach coping and b) participants who tended to report higher daily mental contamination also tended to report more approach coping were unexpected given previous work suggesting that mental contamination is negatively correlated with specific constructs relevant to approach coping (e.g., help-seeking attitudes; Brake et al., 2018). Similarly, the finding that participants who tended to report higher daily PTSD symptoms also tended to report more approach coping during the same period was surprising in light of evidence that increased approach coping is linked to decreased PTSD symptoms, albeit among treatment-seeking samples (Boden et al., 2012; Haglund et al., 2007). However, it may be that women experiencing more severe symptoms of PTSD and/or mental contamination in our sample engaged in multiple coping efforts (both avoidance- and approach-oriented) in an effort to manage greater distress. Indeed, extant work on coping behaviors lends support to the notion that individuals often utilize many methods of coping – both adaptive and maladaptive – when attempting to manage distress associated with significant stressors (Folkman & Lazarus, 1988; Roth & Cohen, 1986; Thompson et al., 2010), and research has similarly documented both adaptive and maladaptive methods of trauma-related coping among individuals with a history of sexual trauma (Ullman et al., 2014).

Though some positive associations were observed between approach coping and both PTSD symptoms and mental contamination, neither typical levels of approach coping nor prior assessment approach coping predicted daily PTSD symptom severity or severity of daily mental contamination. The lack of significant associations at the daily level suggests at least three possibilities. First, the approach coping behaviors reported by participants in this study may have been implemented to address general distress or other trauma-related outcomes, rather than PTSD symptoms or mental contamination. Second, as we did not assess participants' perception of the effectiveness of their coping attempts, it is possible that their approach coping efforts were not effective at mitigating symptoms of either PTSD or mental contamination and thus did not significantly predict later symptoms. Third, it is also possible that approach coping was not a significant predictor of either PTSD symptoms or mental contamination once avoidance coping and other theoretically-relevant covariates were added to the model because the relative importance of avoidance coping for predicting short-term changes in PTSD symptoms or mental contamination substantially outweighs the contribution of approach coping. Under this framework, approach coping might be associated with less severe PTSD symptoms and/or mental contamination if evaluated over a more extended period of time, wherein the immediate distress being addressed via avoidance strategies diminishes and individuals are able to re-engage with aspects of their life that were previously avoided (e.g., spending time with loved ones, processing outcomes of the traumatic experience). Such a model – wherein avoidance coping more strongly predicts short-term outcomes and approach coping emerges as a significant predictor of more long-term outcomes – may also explain some of the inconsistent findings observed in both the present study and

in previous research examining associations among PTSD symptoms and approach coping behaviors. However, the relative importance of approach and avoidance coping in predicting both short-term and long-term PTSD symptoms and mental contamination would be best evaluated by assessing coping behaviors, PTSD symptoms, and mental contamination over a more prolonged period of time using a more traditional longitudinal panel design (e.g., measurements spaced across multiple months or years) or a measurement burst design (e.g., combined intensive repeated measurement “bursts” spaced out over months or years).

Relatedly, baseline PTSD symptoms did not prospectively predict average daily approach coping. This pattern of results is in line with the limited and mixed nature of previous research examining associations between approach coping and PTSD symptoms. Though some existing cross-sectional work has observed significant negative zero-order associations between specific forms of approach coping and PTSD symptoms (Hassija et al., 2012), the longitudinal work examining associations between approach coping and PTSD symptoms has been inconsistent (Boden et al., 2012; Tiet et al., 2006). The inconsistencies observed in both the present study and previous longitudinal work highlight the need for additional work examining the short-term and long-term associations between approach coping and PTSD symptoms independently of and alongside avoidance coping behaviors. Taken together, results of the present study converge with prior work to suggest that approach coping is likely less directly relevant in understanding PTSD symptoms than avoidance coping. Such a conclusion concurs with existing work that has traditionally focused more exclusively on avoidance coping in evaluating PTSD-related outcomes, considering it to be a more critical factor in

contributing to these outcomes than more adaptive or approach-oriented coping strategies (e.g., Tiet et al., 2006; Ullman et al., 2007, 2014).

In evaluating the broader implications of the present findings, it is also worth noting that although baseline PTSD symptoms did not significantly predict daily approach coping, baseline mental contamination significantly positively predicted average daily approach coping. Thus, our results suggest that more severe mental contamination may be linked to greater approach coping whereas more severe PTSD symptoms may not. Though this pattern of results was not anticipated, several potential explanations warrant discussion. First, it may be that symptoms associated with mental contamination (e.g., global feelings of dirtiness, thoughts about the self as being contaminated) may be more easily identified as representing a departure from one's typical thoughts and behaviors, whereas specific PTSD symptoms (e.g., hypervigilance, negative emotional states) may be less readily identified as potentially problematic as such symptoms may instead be misattributed to more general day-to-day distress or anxiety symptoms. Alternatively, it may be that experiences linked to mental contamination are often narrower in scope than PTSD symptoms and may thus be perceived as more readily or easily targeted via approach coping. Whereas PTSD symptoms involve a broad range of cognitive, affective, and physiological reactions, mental contamination is characterized by a narrower set of largely related symptoms and experiences (e.g., feelings of dirtiness, thoughts about the self as being contaminated). As such, it may be the case that individuals experiencing more severe mental contamination are more likely to utilize approach coping techniques because the symptoms associated with mental contamination are more similar to one another than PTSD symptoms are,

making them easier to collectively (and actively) cope with than the more varied symptoms associated with PTSD.

Although our findings provide important insight into the prospective associations among PTSD symptoms, coping behaviors, and experiences of mental contamination following sexual trauma, our study is not without limitations. First, our analyses were limited to examining effects associated with person-mean coping behaviors (i.e., between effects), precluding conclusions concerning the role of daily variations in coping behaviors in mediating the bidirectional associations between mental contamination and PTSD symptoms. As such, future research should aim to evaluate the potential role of within-person variation in approach and avoidance coping in mediating these associations. Additionally, it is worth noting that although coping behaviors were evaluated twice daily, participants did not provide information contextualizing their coping behaviors. More precisely, our assessment of daily approach and avoidance coping behaviors did not evaluate the extent to which those behaviors were linked to either experiences of mental contamination or PTSD symptoms. As participants' motives for engaging in those coping behaviors remain unclear, it is possible that the observed associations between trauma-related mental contamination, PTSD symptoms, and coping behaviors may be due, in part, to participants engaging in avoidance or approach coping to address general trauma-related distress and/or other negative trauma-related outcomes (e.g., negative trauma-related attitudes or beliefs).

It is also critical to note that situational or contextual factors may contribute to the adaptiveness (or maladaptiveness) of a given coping style. Thus, both approach and avoidance coping strategies may represent either adaptive or maladaptive means of

coping depending on the circumstances within which an individual is employing them (Aldao, 2013). For example, an individual experiencing distressing negative thoughts related to a traumatic event may attempt to suppress or avoid those thoughts during the workday. In such a situation, avoidance coping – though traditionally conceptualized as maladaptive – may actually prove adaptive if it allows that individual to maximize productivity or limit the negative impact of their negative thoughts on their daily performance at work. Similarly, although approach coping is often considered to be an adaptive means of managing trauma-related stress (e.g., Hassija et al., 2012; Tiet et al., 2006), approach coping behaviors may prove maladaptive or inappropriate in some situations – for example, if an individual were to discuss their traumatic experience or negative consequences of that experience with an acquaintance or someone whom they do not know well. Furthermore, recent research suggests that the use of specific coping strategies is not necessarily associated with the effectiveness of those strategies – that is, that individuals may not always be implementing specific coping strategies in ways that effectively reduce distress or symptom burden (Kalokerinos et al., 2019). As such, future research may benefit from more precisely considering both motives for coping and the effectiveness of coping strategies in reducing unwanted symptoms or experiences.

Our findings are also limited by the relatively high correlation between daily PTSD and daily mental contamination scores among our sample. Although detrended measures of short-term instability in daily PTSD (PCL-5) and daily mental contamination (SMCS) scores supported the discriminant validity of the two constructs in the present study, future work using the PCL-5 and SMCS as part of daily diary assessments should refine these measures to maximize discriminant validity upon repeated administration.

Furthermore, it is worth noting that the reliability estimate for evaluating within-person change in daily avoidance coping scores was poor in the present study. Although between-person differences in daily avoidance coping were of primary interest and the reliability estimate for evaluating between-person differences in avoidance coping was excellent, the poor reliability estimate for evaluating systematic change in daily avoidance coping suggests that additional work is warranted to both validate daily measures of avoidance coping and determine whether avoidance coping behaviors represent a unidimensional construct. Finally, the sample in the present study was restricted to women with a history of sexual trauma, limiting the extent to which our findings may generalize to other groups not included in our sample (e.g., men, individuals who have experienced other forms of traumatic events).

In spite of its limitations, our study provides preliminary support for a prospective bidirectional association between PTSD symptoms and experiences of mental contamination, wherein trauma-related mental contamination and PTSD symptoms appear to mutually maintain one another via avoidance coping. Such a finding reconciles conflicting conceptualizations of the temporal ordering of mental contamination and PTSD symptoms among individuals with a history of sexual trauma by illuminating the bidirectional nature of their associations with one another over time. Furthermore, our study is the first to demonstrate that avoidance coping appears to mediate the bidirectional association between trauma-related mental contamination and PTSD symptoms. Thus, results of the present study provide important insights into the processes by which trauma-related mental contamination and PTSD symptoms may influence one another over time and further suggest that more closely examining coping behaviors may

aid in clarifying potential mechanisms underlying the associations between sexual trauma-related mental contamination and PTSD symptoms.

REFERENCES

- Aldao, A. (2013). The future of emotion regulation research: Capturing context. *Perspectives on Psychological Science, 8*(2), 155-172.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.).
- Badour, C. L., Brake, C. A., Tipsword, J. M., Jones, A. C., Hood, C. O., Alvarran, S., & McCann, J. (2020). Overlap between posttraumatic stress and obsessive-compulsive symptoms among women with sexual trauma-related mental contamination. *Manuscript in progress*.
- Badour, C. L., Feldner, M. T., Babson, K. A., Blumenthal, H., & Dutton, C. E. (2013). Disgust, mental contamination, and posttraumatic stress: Unique relations following sexual versus non-sexual assault. *Journal of Anxiety Disorders, 27*, 155-162. <https://doi.org/10.1016/j.janxdis.2012.11.002>
- Badour, C. L., Feldner, M. T., Blumenthal, H., & Bujarski, S. J. (2013). Examination of increased mental contamination as a potential mechanism in the association between disgust sensitivity and sexual assault-related posttraumatic stress. *Cognitive Therapy and Research, 37*, 697-703. <https://doi.org/10.1007/s10608-013-9529-0>
- Badour, C. L., Ojserkis, R., McKay, D., & Feldner, M. T. (2014). Disgust as a unique affective predictor of mental contamination following sexual trauma. *Journal of Anxiety Disorders, 28*, 704-711. <https://doi.org/10.1016/j.janxdis.2014.07.007>
- Badour, C. L., Resnick, H. S., & Kilpatrick, D. G. (2017). Associations between specific negative emotions and *DSM-5* PTSD among a national sample of interpersonal

trauma survivors. *Journal of Interpersonal Violence*, 32(11), 1620-1641.

<https://doi.org/10.1177/0886260515589930>

Boden, M. T., Bonn-Miller, M. O., Vujanovic, A. A., & Drescher, K. D. (2012). A prospective investigation of changes in avoidant and active coping and posttraumatic stress disorder symptoms among military veteran. *Journal of Psychopathology and Behavioral Assessment*, 34, 433–439.

<https://doi.org/10.1007/s10862-012-9293-6>

Brake, C. A., Adams, T. G., Hood, C. O., & Badour, C. L. (2019). Posttraumatic mental contamination and the interpersonal psychological theory of suicide: Effects via DSM-5 PTSD symptom clusters. *Cognitive Therapy and Research*, 43, 259-271.

<https://doi.org/10.1007/s10608-018-9959-9>

Brake, C. A., Jones, A. C., Wakefield, J. R., & Badour, C. L. (2018). Mental contamination and trauma: Understanding posttraumatic stress, risky behaviors, and help-seeking attitudes. *Journal of Obsessive-Compulsive and Related Disorders*, 17, 31-38. <https://doi.org/10.1016/j.jocrd.2017.08.010>

Breslau, N., Davis, G. C., Andreski, P., & Peterson, E. (1991). Traumatic events and posttraumatic stress disorder in an urban population of young adults. *Archives of General Psychiatry*, 48, 216-222.

<https://doi.org/10.1001/archpsyc.1991.01810270028003>

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the Brief COPE. *International Journal of Behavioral Medicine*, 4(1), 92-100.

https://doi.org/10.1207/s15327558ijbm0401_6

- Coughtrey, A. E., Shafran, R., & Lee, M. (2012). It's the feeling inside my head: A qualitative analysis of mental contamination in obsessive-compulsive disorder. *Behavioural and Cognitive Psychotherapy, 40*, 163-173.
<https://doi.org/10.1017/S1352465811000658>
- Coughtrey, A. E., Shafran, R., Knibbs, D., & Rachman, S. J. (2012). Mental contamination in obsessive-compulsive disorder. *Journal of Obsessive-Compulsive and Related Disorders, 1*, 244-250.
<https://doi.org/10.1016/j.jocrd.2012.07.006>
- Coughtrey, A. E., Shafran, R., & Rachman, S. J. (2014a). The spontaneous decay and persistence of mental contamination: An experimental analysis. *Journal of Behavior Therapy and Experimental Psychiatry, 45*, 90–96.
<https://doi.org/10.1016/j.jbtep.2013.09.001>
- Dworkin, E. R., Ullman, S. E., Stappenbeck, C., Brill, C. D., & Kaysen, D. (2017). Proximal relationships between social support and PTSD symptom severity: A daily diary study of sexual assault survivors. *Depression and Anxiety, 35*, 1-7.
<https://doi.org/10.1002/da.22679>
- Elliott, C. M., & Radomsky, A. S. (2009). Analyses of mental contamination: Part I, experimental manipulations of morality. *Behaviour Research and Therapy, 47*, 995-1003. <https://doi.org/10.1016/j.brat.2009.03.004>
- Fairbrother, N., Newth, S. J., & Rachman, S. (2005). Mental pollution: Feelings of dirtiness without physical contact. *Behaviour Research and Therapy, 43*, 121-130.
<https://doi.org/10.1016/j.brat.2003.12.005>

- Fairbrother, N., & Rachman, S. (2004). Feelings of mental pollution subsequent to sexual assault. *Behaviour Research and Therapy*, 42, 173-189.
[https://doi.org/10.1016/S0005-7967\(03\)00108-6](https://doi.org/10.1016/S0005-7967(03)00108-6)
- Fayard, J. V., Bassi, A. K., Bernstein, D. M., & Roberts, B. W. (2009). Is cleanliness next to godliness? Dispelling old wives' tales: Failure to replicate Zhong and Liljenquist (2006). *Journal of Articles in Support of the Null Hypothesis*, 6, 21-29.
- Fergus, T. A., & Bardeen, J. R. (2016). Main and interactive effects of mental contamination and tolerance of negative emotions in relation to posttraumatic stress symptoms following sexual trauma. *Journal of Psychopathology and Behavioral Assessment*, 38, 274-283. <https://doi.org/10.1007/s10862-015-9511-0>
- Folkman, S., & Lazarus, R. S. (1988). The relationship between coping and emotion: Implications for theory and research. *Social Science & Medicine*, 26(3), 309-317.
[https://doi.org/10.1016/0277-9536\(88\)90395-4](https://doi.org/10.1016/0277-9536(88)90395-4)
- Haglund, M., Cooper, N., Southwick, S., & Charney, D. (2007). 6 keys to resilience for PTSD and everyday stress. *Current Psychiatry*, 6(4), 23-30.
- Hassija, C. M., Luterek, J. A., Naragon-Gainey, K., Moore, S. A., & Simpson, T. (2012). Impact of emotional approach coping and hope on PTSD and depression symptoms in a trauma exposed sample of veterans receiving outpatient VA mental health care services. *Anxiety, Stress, & Coping*, 25(5), 559-573.
<https://doi.org/10.1080/10615806.2011.621948>
- Herba, J. K., & Rachman, S. (2007). Vulnerability to mental contamination. *Behaviour Research and Therapy*, 45, 2804-2812. <https://doi.org/10.1016/j.brat.2007.07.010>

- Jacoby, R. J., Blakey, S. M., Reuman, L., & Abramowitz, J. S. (2018). Mental contamination obsessions: An examination across the obsessive-compulsive symptom dimensions. *Journal of Obsessive-Compulsive and Related Disorders*, *17*, 9-15. <https://doi.org/10.1016/j.jocrd.2017.08.005>
- Jung, K., & Steil, R. (2012). The feeling of being contaminated in adult survivors of childhood sexual abuse and its treatment via a two-session program of cognitive restructuring and imagery modification: A case study. *Behavior Modification*, *36*(1), 67–86. <https://doi.org/10.1177/0145445511421436>
- Kalokerinos, E. K., Erbas, Y., Ceulemans, E., & Kuppens, P. (2019). Differentiate to regulate: Low negative emotion differentiation is associated with ineffective use but not selection of emotion-regulation strategies. *Psychological Science*, *30*(6), 863-879.
- Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*, *52*, 1048-1060. <https://doi.org/10.1001/archpsyc.1995.03950240066012>
- Kilpatrick, D. G., Resnick, H. S., Baber, B., Guille, C., & Gros, K. (2011). The National Stressful Events Web Survey (NSES-W). Charleston, SC: Medical University of South Carolina.
- Kilpatrick, D. G., Resnick, H. S., Milanak, M. E., Miller, M. W., Keyes, K. M., & Friedman, M. J. (2013). National estimates of exposure to traumatic events and PTSD prevalence using *DSM-IV* and *DSM-5* criteria. *Journal of Traumatic Stress*, *26*, 537-547. <https://doi.org/10.1002/jts.21848>

- Kilpatrick, D. G., Saunders, B. E., Veronen, L. J., Best, C. L., & Von, J. M. (1987). Criminal victimization: Lifetime prevalence, reporting to police, and psychological impact. *Crime & Delinquency*, *33*, 479-489.
<https://doi.org/10.1177/0011128787033004005>
- López-Martínez, A. E., Serrano-Ibáñez, E. R., Ruiz-Párraga, G. T., Gómez-Pérez, L., Ramírez-Maestre, C., & Esteve, R. (2018). Physical health consequences of interpersonal trauma: A systematic review of the role of psychological variables. *Trauma, Violence, & Abuse*, *19*(3), 305-322.
<https://doi.org/10.1177/1524838016659488>
- Lorona, R. T., Rowatt, W. C., & Fergus, T. A. (2018). Assessing state mental contamination: Development and preliminary validation of the State Mental Contamination Scale. *Journal of Personality Assessment*, *100*, 281-291.
<https://doi.org/10.1080/00223891.2017.1303774>
- Ojserkis, R., McKay, D., & Lebeaut, A. (2018). Associations between mental contamination, disgust, and obsessive-compulsive symptoms in the context of trauma. *Journal of Obsessive-Compulsive and Related Disorders*, *17*, 23-30.
<https://doi.org/10.1016/j.jocrd.2017.09.002>
- Olatunji, B. O., Elwood, L. S., Williams, N. L., & Lohr, J. M. (2008). Mental pollution and PTSD symptoms in victims of sexual assault: A preliminary examination of the mediating role of trauma-related cognitions. *Journal of Cognitive Psychotherapy: An International Quarterly*, *22*, 37-47.
<https://doi.org/10.1891/0889.8391.22.1.37>

- Park, C. L., Armeli, S., & Tennen, H. (2004). Appraisal-coping goodness of fit: A daily internet study. *Personality and Social Psychology Bulletin*, *30*(5), 558–569.
<https://doi.org/10.1177/0146167203262855>
- Rachman, S. (1994). Pollution of the mind. *Behaviour Research and Therapy*, *32*(3), 311-314. [https://doi.org/10.1016/0005-7967\(94\)90127-9](https://doi.org/10.1016/0005-7967(94)90127-9)
- Rachman, S. (2004). Fear of contamination. *Behaviour Research and Therapy*, *42*, 1227-1255. <https://doi.org/10.1016/j.brat.2003.10.009>
- Radomsky, A. S., Rachman, S., Shafran, R., Coughtrey, A. E., & Barber, K. C. (2014). The nature and assessment of mental contamination: A psychometric analysis. *Journal of Obsessive-Compulsive and Related Disorders*, *3*, 181–187.
<https://doi.org/10.1016/j.jocrd.2013.08.003>
- Rassin, E. (2003). The White Bear Suppression Inventory (WBSI) focuses on failing suppression attempts. *European Journal of Personality*, *17*(4), 285–298.
<https://doi.org/10.1002/per.478>
- Resnick, H. S., Kilpatrick, D. G., Dansky, B. S., Saunders, B. E., & Best, C. L. (1993). Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. *Journal of Consulting and Clinical Psychology*, *61*(6), 984-991. <https://doi.org/10.1037//0022-006x.61.6.984>
- Rockwood, N. J., & Hayes, A. F. (2017, May). *MLmed: An SPSS macro for multilevel mediation and conditional process analysis*. Poster presented at the annual meeting of the Association of Psychological Science (APS), Boston, MA.
- Roth, S., & Cohen, L. J. (1986). Approach, avoidance, and coping with stress. *American Psychologist*, *41*(7), 813-819. <https://doi.org/10.1037/0003-066X.41.7.813>

- Schnider, K. R., Elhai, J. D., & Gray, M. J. (2007). Coping style use predicts posttraumatic stress and complicated grief symptom severity among college students reporting a traumatic loss. *Journal of Counseling Psychology, 54*(3), 344–350. <https://doi.org/10.1037/00220167.54.3.344>
- Shafran, R., Thordarson, D. S., & Rachman, S. J. (1996). Thought-action fusion in obsessive-compulsive disorder. *Journal of Anxiety Disorders, 10*, 379-391.
- Stanton, A. L., Kirk, S. B., Cameron, C. L., & Danoff-Burg, S. (2000). Coping through emotional approach: Scale construction and validation. *Journal of Personality and Social Psychology, 78*(6), 1150–1169. <https://doi.org/10.1037/0022-3514.78.6.1150>
- Thompson, R. J., Mata, J., Jaeggi, S. M., Buschkuhl, M., Jonides, J., & Gotlib, I. H. (2010). Maladaptive coping, adaptive coping, and depressive symptoms: Variations across age and depressive state. *Behaviour Research and Therapy, 48*(6), 459-466. <https://doi.org/10.1016/j.brat.2010.01.007>
- Thordarson, D. S., Radomsky, A. S., Rachman, S., Shafran, R., Sawchuk, C. N., & Hakstian, A. R. (2004). The Vancouver Obsessional Compulsive Inventory (VOCI). *Behaviour Research and Therapy, 42*(11), 1289–1314.
- Tiet, Q. Q., Rosen, C., Cavella, S., Moos, R. H., Finney, J. W., & Yesavage, J. (2006). Coping, symptoms, and functioning outcomes of patients with posttraumatic stress disorder. *Journal of Traumatic Stress, 19*(6), 799-811. <https://doi.org/10.1002/jts.20185>
- Ullman, S. E., Peter-Hagene, L. C., & Relyea, M. (2014). Coping, emotion regulation, and self-blame as mediators of sexual abuse and psychological symptoms in adult

sexual assault. *Journal of Child Sexual Abuse*, 23, 74-93.

<https://doi.org/10.1080/10538712.2014.864747>

Ullman, S. E., Townsend, S. M., Filipas, H. H., & Starzynski, L. L. (2007). Structural models of the relationship of assault severity, social support, avoidance coping, self-blame, and PTSD among sexual assault survivors. *Psychology of Women Quarterly*, 31, 23-37.

Waller, K., & Boschen, M. J. (2015). Evoking and reducing mental contamination in female perpetrators of an imagined non-consensual kiss. *Journal of Behavior Therapy and Experimental Psychiatry*, 49, 195-202.

<https://doi.org/10.1016/j.jbtep.2014.07.009>

Weathers, F. W., Blake, D. D., Schnurr, P. P., Kaloupek, D. G., Marx, B. P., & Keane, T. M. (2013). *The Clinician-Administered PTSD Scale for DSM-5 (CAPS-5)*.

[Assessment] Available from <https://www.ptsd.va.gov>

Weathers, F. W., Bovin, M. J., Lee, D. J., Sloan, D. M., Schnurr, P. P., Kaloupek, D. G., Keane, T. M., & Marx, B. P. (2018). The Clinician-Administered PTSD Scale for DSM-5 (CAPS-5): Development and initial psychometric evaluation in military veterans. *Psychological Assessment*, 30, 383-395.

<https://doi.org/10.1037/pas0000486>

Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B.P., & Schnurr, P.P. (2013). *The PTSD Checklist for DSM-5 (PCL-5)*. [Assessment] Available from

<https://www.ptsd.va.gov>

Zhong, C.-B. & Liljenquist, K. (2006). Washing away your sins: Threatened morality and physical cleansing. *Science*, 313, 1451-1452.

<https://doi.org/10.1126/science.1130726>

CURRICULUM VITAE

Jordyn M. Tipsword, B.A.

EDUCATION

Bachelor of Arts, Psychology May 2019
Bachelor of Arts, Spanish
Minor: Criminology
University of Kentucky, Lexington, KY
Summa Cum Laude
Departmental Honors in Psychology and Spanish

HONORS AND AWARDS

Mary Byron Research Assistantship August 2020-May 2021
Office for Policy Studies on Violence Against Women,
University of Kentucky
Total Support: \$20,800 plus out-of-state tuition

Psychology Summer Research Assistantship Award May 2020-July 2020
Department of Psychology, University of Kentucky

Psychology Graduate Fellowship Award August 2019-May 2020
Department of Psychology, University of Kentucky

W. L. Matthews Jr. Fellowship (declined) March 2019
The Graduate School, University of Kentucky

University of Kentucky Summer Research and Creativity Fellowship Grant Summer 2017
Project Title: *The Impact of Fear of Diversity on Perceptions of Immigrants*

University of Kentucky Dean's List Fall 2015-Spring 2019
College of Arts & Sciences

Patterson Scholarship, University of Kentucky Fall 2015-Spring 2019

National Merit Scholar 2015

PROFESSIONAL POSITIONS

Graduate Research Assistant August 2019-Present
Stress, Trauma, and Recovery Research Collaborative (STARRC)
University of Kentucky Department of Psychology
Supervisor: Christal L. Badour, Ph.D.

- Senior Honors Thesis Candidate** August 2018-May 2019
University of Kentucky Department of Psychology
 Supervisors: Jazmin L. Brown-Iannuzzi, Ph.D.
 & Christal L. Badour, Ph.D.
 Project Title: *Trauma-Related Shame, Coping Style, and PTSD Severity*
- Senior Undergraduate Research Assistant** May 2018-May 2019
Social Hierarchies and Behavior Lab
 University of Kentucky Department of Psychology
 Supervisor: Jazmin L. Brown-Iannuzzi, Ph.D.
 Project Title: *Examining Attitudes toward Male and Female Job Applicants in Roles Requiring Warmth and Competence*
- Undergraduate Research Fellow – Summer Research and Creativity Grant** Summer 2017
University of Kentucky Office of Undergraduate Research
 Supervisor: Jazmin L. Brown-Iannuzzi, Ph.D.
 Project Title: *The Impact of Fear of Diversity on Perceptions of Immigrants*
- Senior Undergraduate Research Assistant** October 2016-May 2017
Social Hierarchies and Behavior Lab
 University of Kentucky Department of Psychology
 Supervisor: Jazmin L. Brown-Iannuzzi, Ph.D.
 Project Title: *Examining Mental Representations of Immigrants and Americans and Attitudes toward Immigration Policies*
- Undergraduate Research Assistant** August 2016-May 2019
Social Hierarchies and Behavior Lab
 University of Kentucky Department of Psychology
 Supervisor: Jazmin L. Brown-Iannuzzi, Ph.D.

PEER-REVIEWED PUBLICATIONS

- Tipsword, J. M.**, Brown-Iannuzzi, J. L., Jones, A. C., Flores, J., & Badour, C. L. (Under review). Avoidance coping partially accounts for the relationship between trauma-related shame and PTSD symptoms following interpersonal trauma.
- Badour, C. L., Brake, C. A., Jones, A. C., Hood, C. O., Flores, J., & **Tipsword, J. M.** (Under review). Experimental manipulation of emotion regulation skills and impulsivity in co-occurring PTSD and substance use disorders: Potential for targeting shared maintenance factors.

Brake, C. A., **Tipsword, J. M.**, & Badour, C. L. (Under review). Mental contamination, disgust, and other negative emotions among survivors of sexual trauma: Results from a daily monitoring study.

Badour, C. L., **Tipsword, J. M.**, Brake, C. A., Jones, A. C., Hood, C. O., Alvarran, S., & McCann, J. (2020). Overlap between posttraumatic stress and obsessive-compulsive symptoms among women with sexual trauma-related mental contamination. *Manuscript in preparation*.

BOOK CHAPTERS

Forte, J., Badour, C. L., Brake, C. A., **Tipsword, J. M.**, & Adams, T. G. (Under review). Stress, trauma and obsessive-compulsive and related disorders. In D. McKay, E. A. Storch, & J. Abramowitz (Eds.), *Complexities in obsessive compulsive and related disorders: Advances in conceptualization & treatment*. New York, NY: Oxford University Press.