Posttraumatic nightmare content in children and its relation to posttraumatic psychopathology

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Summary. In adult populations, the more similar a posttraumatic nightmare is to a precipitating traumatic event, i.e., the replicativeness of the nightmare, the more distress one experiences, and the greater the frequency and severity of posttraumatic stress symptoms. Posttraumatic nightmare content in children and its relation to posttraumatic psychopathology remains unclear. Nightmare content and trauma-related themes within children's posttraumatic nightmares remains relatively unexplored. Trauma-exposed children (*n* = 17) aged 5-17 years-old provided a posttraumatic nightmare narrative and answered questions about the replicativeness of their posttraumatic nightmare. Nightmare content and trauma-related themes were coded. Two one-way ANOVAs examined posttraumatic nightmare replicativeness to levels of posttraumatic stress and to nightmare distress. Findings showed that in children, posttraumatic nightmare replicativeness was associated with posttraumatic stress but not nightmare distress. The most common trauma-related themes in posttraumatic nightmares were safety and power/control. Girls' nightmares more often contained pursuit and perceived threat whereas boys' nightmares more often involved aggression. Our study is the first to examine trauma-related themes and qualitative aspects of posttraumatic nightmares in children with a variety of traumas. Future studies should examine gender differences and trauma-related themes, as these may have implications for our understanding and treatment of nightmares in children.

Keywords: Nightmare content, posttraumatic nightmares, children, trauma

1. Introduction

Nightmares are distressing or frightening dreams that are recalled and which wake up the dreamer (Phelps, Forbes, & Creamer, 2008; Schreuder, Kleijn, & Rooijmans, 2000). In contrast to idiopathic nightmares which have no known cause, posttraumatic nightmares (PTNMs) develop after a traumatic experience and can be recurrent and debilitating (Davis, 2009; Davis, Byrd, Rhudy, & Wright, 2007). Nightmares disrupt sleep quality and quantity and are associated with myriad problems including poor emotion regulation, attention, executive functioning, and daytime sleepiness (Beebe, 2011). Nightmare distress refers to the distress and other dysphoric emotions or affect that are experienced upon waking from a nightmare; nightmare distress is associated with poorer well-being including anxiety, depression, and stress symptomology (e.g., Blagrove & Farmer, 2004).

PTNMs are the hallmark symptom of posttraumatic stress disorder (PTSD; Germain, 2013). However, PTNMs can occur in the absence of full-blown PTSD. In adults, the presence of PTNMs is associated with PTSD symptom severity, and with worse sleep quality following traumatic events (Davis et al., 2007; Davis, Pruiksma, Rhudy, & Byrd, 2011). In attempts to understand how PTNMs are related to PTSD severity, researchers have examined PTNM characteristics.

Davis and colleagues (2007) examined PTNM similarity to the traumatic experience and found that more concordance between nightmares and trauma was associated with more psychopathology.

The present study seeks to extend what is known about PTNMs and its association with psychopathology to a sample of children with PTNMs. We explore nightmare replicativeness using three established categories (Davis, 2009): non-replicative, trauma-similar, and trauma-replicative. Non-replicative PTNMs consist of content that is unrelated to a trauma. Negative emotionality evoked from the nightmare may not elicit trauma-related memories and when queried, adult patients do not make a connection between their nightmare and a trauma, even though non-replicative PTNMs may be symbolic of the index trauma. In trauma-similar PTNMs, the trauma is re-experienced, however one or more aspects of the trauma changes, such as the characters or setting (Davis, 2009). For example, when a survivor of a fatal motor vehicle accident experiences a trauma-similar nightmare, the nightmare may replicate aspects of the accident but content could change for details such as the type of vehicle, location of the accident, or even who died. Despite detail discrepancies, when queried, adult survivors report the PTNM as re-experiencing. Trauma-similar nightmares account for 20-40% of PTNMs and non-replicative nightmares account for 10-30% of PTNM across studies (Langston, Davis, & Swopes, 2010; Mellman, David, Bustamante, Torres, & Fins, 2001; Phelps, Forbes, Hopwood, & Creamer, 2011; Schreuder et al., 2000; Terr, 1983; Wittmann, Schredl, & Kramer, 2007; Wittmann, Zehnder, Schredl, Jenni, & Landolt, 2010). The third type, trauma-replicative, are the most common type of PTNM, accounting for at least half of nightmares (Langston et al., 2010; Mellman et al., 2001; Phelps et al., 2011; Schreuder et al., 2000; Terr, 1983;

Wittmann et al., 2007; Wittmann et al., 2010). However, one study (Davis et al., 2007) found a different trend, reporting a distribution of 20.5% trauma-replicative and 50% trauma-similar PTNMs, concluding that sample characteristics or trauma type could impact types of PTNMs documented. Interestingly, a longitudinal study of 25 kidnapped children, aged 5-14, showed that replicative posttraumatic nightmares were common immediately after the trauma (Terr, 1983). However, four years later, children instead reported trauma-similar or non-replicative nightmares (Terr, 1983). This finding suggests that posttraumatic nightmares may change over time, becoming less replicative.

The presence of a PTSD diagnosis may be associated with the type of PTNM experienced. Individuals with PTSD most often report trauma-replicative PTNMs compared to individuals without a PTSD diagnosis (e.g., David & Mellman, 1997; Davis et al., 2007). Adults with trauma-replicative PTNMs have more severe PTSD symptoms even in the absence of a PTSD diagnosis (Davis et al., 2007; Schreuder et al., 2000). Furthermore, individuals with trauma-replicative nightmares have greater PTSD intrusion, avoidance, and arousal symptoms as compared to those with trauma-similar or non-replicative PTNMs (Davis et al., 2007). Trauma-replicative PTNMs are the most distressing type of PTNM (Davis et al., 2007; Mellman et al., 2001), and are associated with greater overall distress, more sleep disturbances, and worse sleep quality (Davis et al., 2007). One study did find contrasting results, however. Phelps and colleagues (2011) found no correlation between trauma-replicative PTNMs and greater nightmare distress or PTSD symptoms. It is possible their finding differed given that their sample included veterans with a diagnosis of PTSD and their methodology in assessing nightmare distress differed from Davis and colleagues' (2007) study.

Little is known about the relationship of PTNM type to PTSD and nightmare distress in children. One study (Langston et al., 2010) found more PTSD symptomology in children who had PTNMs compared to those with idiopathic nightmares, however they did not delineate PTNM type. Wittmann and colleagues (2010) found trauma-replicative PTNMs to predict future PTSD symptoms, however, their study's small sample size of only eight children with PTNMs and assessment of children with only vehicular-related traumas may not be generalizable to children with other traumatic experiences.

Although there is little research on PTNMs in children, some studies have examined dreams and nightmares in child samples. In qualitative studies, dream and nightmare content differs between trauma-exposed and non-trauma-exposed children; a limitation in reviewing some studies is that authors do not make a distinction between dreams, idiopathic nightmares, and PTNMs (e.g., Punamäki, Ali, Ismahil, & Nuutinen, 2005; Valli et al., 2005; Valli, Revonsuo, Pälkäs, & Punamäki, 2006). Studies of dream content examine plot or storyline, and characters, including the dreamer (i.e., dream-self). Threatening events such as physical injury or death are more common in trauma-exposed children's dreams than in non-trauma-exposed children's dreams (Valli et al., 2006). Children who have experienced multiple traumas have more dreams involving death, destruction, anxiety, hostility, and negative emotions such as fear and anger, as compared to children who have experienced fewer traumatic events (Punamäki et al., 2005). Aggressive interactions between dream characters are more common in

trauma-exposed children than in non-trauma-exposed children (Valli et al., 2006). Dream-selves are often instrumental, active participants, as observed in a sample of typically-developing healthy children (e.g., Sándor, Szakadat, Kertesz, & Bodizs, 2015). In trauma-exposed children however, dream-selves do not take an active role in response to a threat (Valli et al., 2006). Valli and colleagues (2006) hypothesized that inaction was due to learned helplessness in real-life situations that manifested in dream content.

Dream content varies by gender in studies of trauma-exposed children. In one study, boys had more agency in their dreams than did girls, and the boys' dreams featured aggression and hostility, whereas the girls' dreams had anxiety (Punamäki et al., 2005). Threatening events were more severe and dangerous in boys' dreams and boys were more likely to die in their dreams than were girls (Valli et al., 2005). Another study found that boys' nightmares featured greater intensity of emotionally-laden content as compared to girls (Helminen & Punamäki, 2008). It is important to note that these studies (i.e., Helminen & Punamäki, 2008; Punamäki et al., 2005; Valli et al., 2005) sampled children with war-based traumas and may not generalize to children who experienced other types of trauma.

Trauma-Related Themes

Trauma themes, which are maladaptive schemas related to the index trauma: safety, trust, power or control, esteem, and intimacy, may be present in PTNMs (Davis, 2009). PTSD treatments that address maladaptive trauma schemas alleviate PTSD symptoms (Resick & Schnicke, 1992). Studies applying maladaptive schema restructuring to PTNM rescription have found schema-specific rescripting alleviates PTNMs and associated distress (Davis, De Arellano, Falsetti, & Resnick, 2003; Davis & Wright, 2005; Davis & Wright, 2007). PTNM rescripting therapy has been conducted with children (Fernandez et al., 2013), however researchers have not yet examined children's PTNM content to explore the relationship between themes and PTSD or nightmare distress.

Current Study

We examined PTNM content in a sample of children presenting for PTNM treatment, in order to document trauma-related themes in PTNMs and their relation to nightmare distress and PTSD symptomology. We examined PTNM characteristics including threatening events, interactions among nightmare characters, the role of the dream-self, and the resolution of the PTNM. We hypothesized that PTNM replicativeness would be associated with greater nightmare distress and PTSD symptoms overall.

2. Method

2.1. Participants

Seventeen children (n = 9 female; n = 8 male) who had experienced trauma, and who were seeking treatment for trauma-related nightmares, participated. A PTSD diagnosis was not required. For inclusion, children must have experienced PTNMs once a week for at least four weeks. *Mean* age = 12.62 years (SD = 4.24 years, range = 5-17 years old). The sample was 47.1% Caucasian, 29.4% multiracial, 11.8%, Native American, 5.9% African-American, and

5.9% Hispanic. The sample experienced M = 4.12 traumas (SD = 2.69, range = 1-9). The trauma most frequently endorsed as the index trauma was "other" (29.4%), followed by death of a close family member/friend (17.6%), community violence (11.8%), being involved in a serious accident (11.8%), being in a natural disaster (5.8%), seeing a dead body (5.8%), sexual assault (5.8%), and having a painful or scary medical treatment (5.8%). Index traumas occurred M = 3.2 years (SD = 2.88, range = .33-11.5) prior to study participation. PTSD was assessed based on the version of the UCLA PTSD Reaction Index. At the start of the study, we used DSM-IV version and three out of four participants assessed were above the clinical cut off for PTSD (M = 38.75; SD = 20.71); of the 13 assessed with the DSM-5 version, 54% (n = 7) met criteria for PTSD (M = 38.46; SD = 18.10).

2.2. Measures

University of California Los Angeles (UCLA) PTSD Reaction Index for Children and Adolescents for Diagnostic and Statistical Manual of Mental Disorders (DSM) Fourth Edition (DSM-IV; Steinberg, Brymer, Decker, & Pynoos, 2004); **Fifth Edition** (DSM-5; Pynoos & Steinberg, 2013). The UCLA PTSD Reaction Index DSM-IV and DSM-5 versions are semi-structured clinician-administered interviews that assess children's trauma history and posttraumatic symptoms. Children indicate their worst trauma and their age when it occurred. PTSD symptoms over the previous month were queried on a 5-point scale and summed for a full-scale score. Higher scores indicated greater symptomology. The DSM-5 was used once available. The DSM-IV version has good to excellent internal consistency (α = .88-.91; Elhai et al., 2013; Steinberg et al., 2013). Cut-off scores of 38 for DSM-IV (Steinberg et al., 2004) and 35 for DSM-5 (P. Finley, written communication, July 2017) are indicative of possible PTSD. The current sample reliability was excellent for DSM-IV (Cronbach's α = .96; n = 4) and DSM-5 (Cronbach's α = .94; n = 13). To combine the sample across versions, full-scale scores were converted to Z-scores.

Trauma-related nightmare survey – child (TRNS-C; Langston & Davis, 2008). The TRNS-C was adapted from the Trauma-Related Nightmare Survey (Davis, Wright, & Borntrager, 2001) and queried how alike PTNMs were to an index trauma (i.e., trauma-replicative, trauma-similar, non-replicative).

Nightmare distress questionnaire – child version (NDQ-C; Fernandez et al., 2013). The NDQ-C adapted the NDQ (Belicki, 1992) for child reading level. Thirteen self-report items query nightmare distress and sleep-related impairment following nightmares. Responses are rated on a 5-point scale and summed; possible scores range 13-65. Higher scores indicate greater nightmare distress, and scores greater than 21 suggest clinical significance (Fernandez et al., 2013). No psychometric data is available for the child version. The current sample Cronbach's α = .84.

PTNM Characteristics. PTNMs characteristics were transcribed and coded from nightmare narratives. Nightmares were told in a structured therapy session; they were recorded and transcribed for later study. The structured treatment known as Exposure, Relaxation, & Rescripting Therapy-Child (ERRT-C) (Fernandez et al., 2013) prompted children to recount their index nightmare with as much detail as possible. PTNMs were coded for: 1) threatening events, 2) interactions between characters, 3) dream-self's role, and 4) resolution. Threatening events included direct physi-

cal aggression, verbal or psychological aggression, serious injury or death, sexual violence, and pursuit or perceived threat. Interactions between characters were categorized as aggressive/threatening or friendly/prosocial. The dream-self role was coded as active if they responded proactively, inactive, if they froze or did nothing, and avoidant, if they ran away or hid. Resolution was coded as positive, if a desirable outcome, negative, if undesirable, or interrupted, if it did not come to a conclusion.

PTNM Themes. Children and two trained coders (one doctoral student and one undergraduate student) independently identified salient trauma-related themes in the PTNM. Children learned about five trauma-related themes (safety, trust, power/control, esteem, and intimacy) during therapy, and were queried about the theme in treatment. Self-reported themes were coded from transcribed therapy sessions.

2.3. Procedure

This study was part of a larger project examining the efficacy of a five-week cognitive behavioral treatment for PTNM (Cromer et al., 2018). The University Institutional Review Board approved all procedures. Children were included if they were between 5-17 years-old and experienced a trauma prior to nightmare onset. Nightmares were collected during session four of therapy. Assessments were completed by trained graduate students under the supervision of a licensed psychologist. Fifteen PTNM narratives were coded. One PTNM was lost due to error and one participant did not generate a PTNM narrative in therapy. Sixteen participants identified the replicativeness of their PTNM; one child did not answer the query.
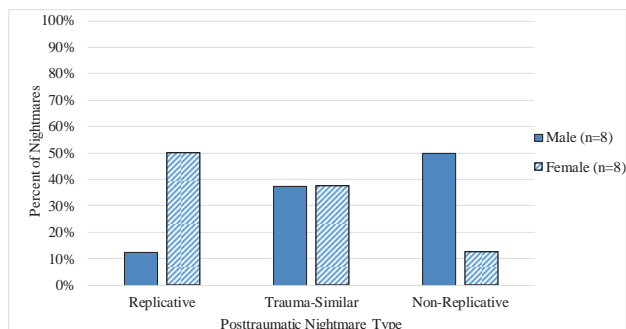
Coding. The coding manual was created for the current study and integrated components from three previous studies for qualitative information (Sándor et al., 2015; Valli et al., 2006) and for themes (McCann, Sakheim, & Abrahamson, 1988). Coders were trained by: reading relevant literature selected by principal investigator (PI), reviewing the coding manual with the PI, and applying the coding system to mock nightmares until reliability with the PI's coding was 100%. Once coding commenced, coders were blind to each others' coding decisions and to participant characteristics including reported trauma, PTSD symptoms, child-identified trauma-related theme, age, and gender. The PI met with the two trained coders weekly to review coding and discrepancies were resolved by the student PI and faculty supervisor. Inter-coder reliability for trauma-related themes was 86%.

3. Results

PTNM Replicativeness. A chi-square goodness-of-fit test indicated there was not a statistically significant difference in prevalence of PTNM types, 31.3% were trauma-replicative, 37.5% were trauma-similar, and 31.3% were non-replicative; χ^2(2, N = 16) = .125, p = .94. See Figure 1 for the distribution of PTNM by gender. Gender was not included in the chi-square analyses because cell sizes were too small, however, visual inspection suggests that trauma-replicative PTNMs were more common in girls and non-replicative PTNMs were more common in boys.

PTNM replicativeness and PTSD symptomology. We hypothesized trauma-replicative nightmares would be associated with the greatest PTSD symptomology, followed by trauma-similar nightmares, then non-replicative nightmares. There was a statistically significant difference

Figure 1. Percent of boys' and girls' posttraumatic nightmare types (Trauma-replicative, *n* = 5; Trauma-similar, *n* = 6; Non-replicative, *n* = 5).

Figure 2. Nightmare Distress Questionnaire (NDQ) scores by posttraumatic nightmare type. Trauma-replicative: *M*=42.28 (*SD*=3.87); Trauma-similar: *M*=38.0 (*SD*=3.53); Non-replicative: *M*=44.0 (*SD*=3.87). NDQ scores range from 13-65.

in PTSD symptoms by nightmare type, $F(2, 13) = 4.75$, $p = .028$, $\eta_p^2 = .422$ (95% CI: .00, .63). Fisher's least significant differences post-hoc comparisons indicated that replicative PTNMs ($M_z = .34$, $SD = .64$, $p = .02$), and trauma-similar PTNMs ($M_z = .32$, $SD = .81$, $p = .02$) were not different from each other, however they were both associated with more PTSD symptomology than were non-replicative PTNMs ($M_z = -.96$, $SD = .85$).

PTNM replicativeness and nightmare distress. The hypothesis that trauma-replicative nightmares would be associated with the greatest nightmare distress, followed by trauma-similar nightmares, and then non-replicative nightmares was not supported, $F(2, 13) = .712$, $p = .51$, $\eta_p^2 = .099$ (95% CI: .00, .35). See Figure 2 for means and standard deviations. Sixteen of seventeen participants' nightmare distress scores were above clinical significance (NDQ >21), regardless of nightmare type.

Characteristics of PTNMs. Qualitative categories are descriptive only. When participants were queried as to whether PTNMs occurred repeatedly, 17.6% (*n* = 3) reported having one nightmare occur repeatedly, 11.8% (*n* = 2) reported having 1-2 different nightmares occur repeatedly, 29.4% (*n* = 5) reported having 3-4 different nightmares occur repeatedly, 11.8% (*n* = 2) reported having 5-6 different nightmares occur repeatedly, and 29.4% (*n* = 5) reported having more than 7 different nightmares occur repeatedly.

All nightmares had at least one threatening event. Four participants (26%; *n* = 3 females), had more than one threat-

Figure 3. Types of threatening events in boys' versus girls' posttraumatic nightmares. *Data is not independent of one another. For example, 4 participants (n = 3 females) endorsed more than one threatening event).
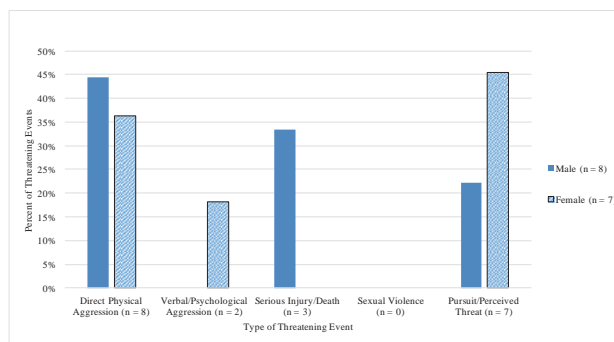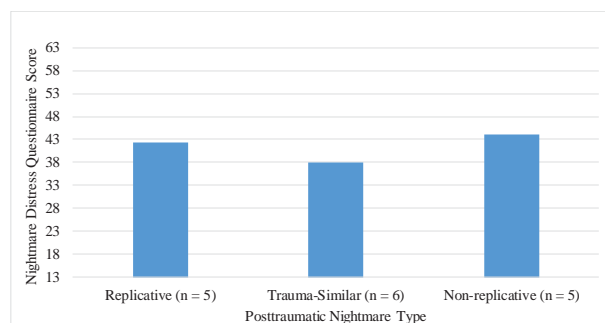

ening event. Direct physical aggression (e.g., "The clown has a knife and is stabbing my mom") and pursuit or perceived threats (e.g., "I become really frantic trying to look for a way out as the footsteps become louder and louder…whoever is chasing me is right behind me") were the most common types of threatening events. Girls' threatening events were mostly pursuit or perceived threat, whereas boys' were physical aggression (Figure 3).

Eighty percent of all nightmares had aggressive interactions; by gender: 85.7% for girls and 50% for boys. Most aggressive interactions involved the dream-self as a victim (e.g., "The bad vampire is choking me"), or a witness to an aggressive interaction (e.g., "The police comes up right behind the guy and shoots him"). One child dreamed of initiating an aggressive interaction, however, it was an act of self-defense. Girls more often dreamed of being a victim of an aggressive interaction, whereas boys more often dreamed of witnessing an aggressive interaction between other characters (Figure 4).

Girls more often dreamed of taking an active role in their nightmare (e.g., "I go get my family. There's somebody at the door trying to kill me") whereas boys more often dreamed of taking an inactive role. Inactive roles were either the dream-self freezing or being rendered incapable (e.g., "I am tied to a chair"). No avoidance (e.g., hiding) was evident in the nightmares (Figure 5).

Figure 4. Percent of girls versus boys dreaming of being involved in aggressive interactions by role. *Data is not independent of one another. For example, three participants endorsed more than one aggressive interaction while five participants did not report aggressive interactions in their PTNM.
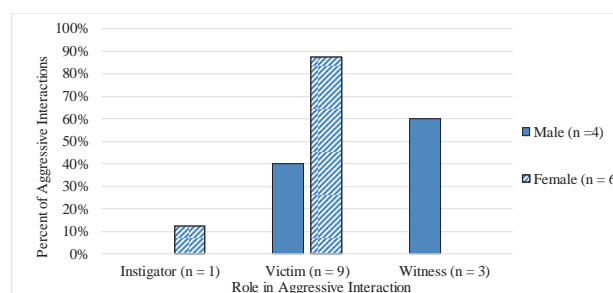
Figure 5. Types of roles taken by gender in response to a threatening event within posttraumatic nightmares.
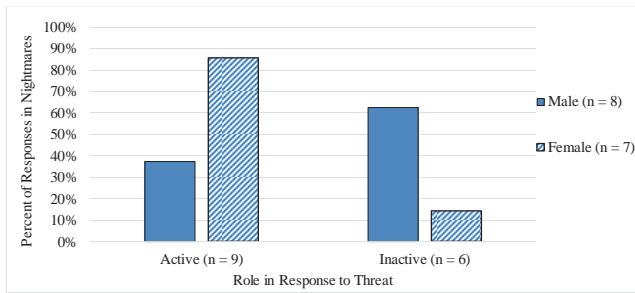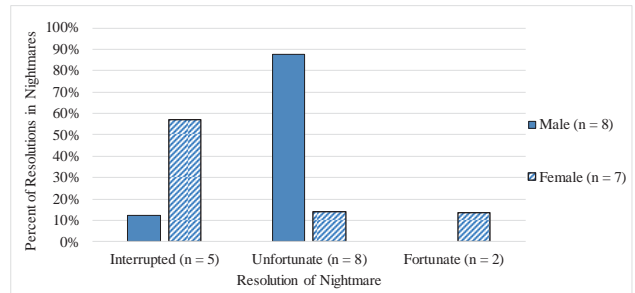

*Figure 6*. Types of posttraumatic nightmare resolutions by gender.

The majority of nightmares were resolved through negative outcomes (e.g., watching a friend die, forced to remain with an abusive family member); the next most common was interrupted outcomes. Two children had nightmares that ended positively (e.g., escape). Boys' nightmares most often resolved through unfortunate negative outcomes whereas the majority of girls' nightmares were interrupted (Figure 6).

Trauma-Related Themes. The majority of children identified only one trauma-related theme (53.8%). Both coders and children identified safety as the most salient trauma-related theme, followed by power/control, and intimacy (Figures 7, 8). Safety was the most common theme for both trauma-replicative and trauma-similar nightmares. Safety and power/control were equally represented in non-replicative nightmares.

Independent samples *t*-tests were used to compare coder-identified trauma themes to PTSD symptomology and nightmare distress. Children whose primary PTNM theme was safety (M_{PTSD} = .17, *SD* = .68) compared to those whose primary theme was power/control (M_{PTSD} = .12, *SD* = 1.12) did not vary in level of PTSD symptoms, $t(12)$ = .11, *p* = .92 95% CI [-.99, 1.10], Cohen's *d* = .06, which is a small effect size. Nightmare distress varied by trauma themes. The theme of power/control was associated with greater nightmare distress ($M_{NMdistress}$ = 51.0, *SD* = 7.62) than was safety ($M_{NMdistress}$ = 36.74, *SD* = 8.99), $t(12)$ = -2.78, *p* = .02 (95% CI: -25.44, -3.08), Cohen's *d* =1.64, which is a large effect size.

Figure 7. Proportion of all themes identified by children in their PTNMs. Data is not independent. Percentages were calculated using the total number of themes identified by children (*n* = 24).
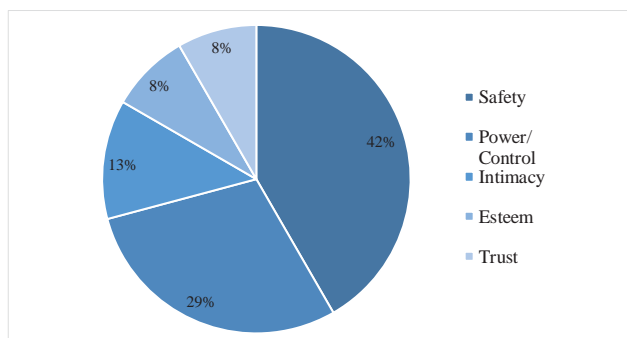
4. Discussion

The current study sought to add to the literature about trauma-related nightmares in children; qualitative characteristics of children's PTNMs and trauma-related thematic content within PTNMs are not well understood. We also sought to examine nightmare replicativeness and its association to nightmare distress and PTSD symptoms.

In the adult literature, trauma-replicative PTNMs are more common than non-replicative and trauma-similar PTNMs (e.g., Mellman et al., 2001; Phelps et al., 2011; Schreuder et al., 2000) and they are associated with more pathology and nightmare distress (e.g., Davis et al., 2007; Mellman et al., 2001; Schreuder et al., 2000). In the current child sample, all three types of PTNMs were equally prevalent, although girls reported more trauma-replicative nightmares than did boys, and boys reported more non-replicative nightmares than did girls. Similar to the adult literature, in this sample of children, trauma-replicative and trauma-similar PTNMs were associated with greater PTSD symptoms than were non-replicative PTNMs. However, there was no difference in PTSD levels between the children with trauma-replicative and trauma-similar PTNMs. Our results with children replicated findings in adult samples; there was an association of trauma-replicative and trauma-similar PTNMs with PTSD symptoms. This replication suggests that there may be a relationship between replicativeness and PTSD symptomology that could persist across development. Contrary to predictions, there was no difference in nightmare distress between the three categories of PTNMs. However, across the three PTNM categories, nightmare distress was above

Figure 8. Coder identification of two most salient trauma themes in each PTNM (*n* = 15).
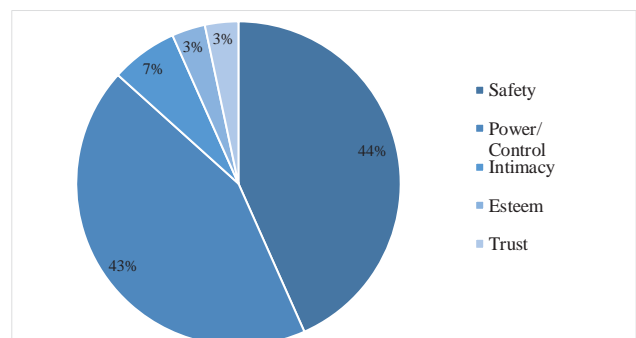
the clinical cut-off for sixteen of seventeen participants, therefore there could be a ceiling effect for nightmare distress. The high nightmare distress scores are not surprising given that participants were presenting for treatment for nightmares, and also given that previous research using the same nightmare distress measure saw high levels of PTNM distress across PTNM types (Phelps et al., 2011). Studies utilizing other methodology to assess for nightmare distress (e.g., TRNS) found greater nightmare distress for individuals with trauma-replicative PTNMs (Davis et al., 2007). It is possible varying methodology or sample characteristics (e.g., size, trauma type) accounts for these differences.

A unique contribution of the current study was that we examined qualitative content of PTNMs based on earlier work (Sándor et al., 2015; Valli et al., 2005; 2006): threatening events, interactions between characters, role of self, and resolution. All participants' nightmares contained a threatening event, which was expected given that Valli and colleagues (2006) found that real-life trauma exposure predicted threat content in nightmares. When we examined content by gender, we found that girls' PTNMs more often contained pursuit and perceived threat, whereas boys' PTNMs more often involved physical aggression. This finding was consistent with previous literature (Valli et al., 2005) and may be reflective of gender differences in real life experiences (Card, Stucky, Sawalani, & Little, 2008). Girls often dreamed of taking an active role in response to a threatening event within their nightmare compared to boys, who took an inactive role; however, when girls were active, they typically were active in acquiring help rather than being instrumental in directly eliminating or stopping a threat. The current study coded dream-self activity based solely on overt and explicit roles and trauma themes were based on a cognitive behavioral orientation. As an anonymous reviewer pointed out, psychoanalytic coding systems (e.g., Varvin et al., 2012) might consider the latent desires of dream characters. For instance, a dynamic coding system might consider latent desires for the participant who dreamed of being tied to a chair while a perpetrator harmed his family, asking perhaps if the dream-self would have responded given the opportunity. It has been suggested that inactive dream-selves may be a result of learned helplessness in real-life manifesting in dream content (Valli et al., 2006).

The majority of nightmares were resolved negatively, most commonly through an unfortunate outcome in which another nightmare character or external force caused the negative outcome, rather than the dream-self's own actions. Nonetheless, 13.3% (n = 2) of nightmares were resolved positively. Previous research has found that positive images and more intense imagery within PTNMs are associated with fewer PTSD symptoms (Helminen & Punamäki, 2008). The same study also found that boys reported greater positive images and more intense imagery (Helminen & Punamäki, 2008). PTNM plot content and resolution may be relevant aspects for future study, particularly in the context of gender and PTSD symptoms.

This was the first study to consider trauma-related themes in children's PTNMs. Safety and power/control trauma-related themes were the most common. Safety and power/control themes were ubiquitous regardless of PTNM type. Furthermore, power/control was related to greater nightmare distress. Promoting feelings of safety and prioritizing safety skill development, as is done in trauma-focused therapy (e.g., Cohen, Mannarino, & Deblinger, 2012), as well as

promoting self-efficacy and control during PTNM treatment, may help to attenuate PTNM pathology.

This study's sample size was small and participants were treatment-seeking for PTNMs; therefore findings should be interpreted with caution and should be replicated before broadly generalized. This study collected PTNM narratives in a therapy research setting; the length of time between the occurrence of the PTNM and data collection varied across participants. It is possible that the lack of control of time following an index trauma could have impacted children's PTNM recall. The current study was a secondary data analysis of a larger research project that rescripted the most distressing PTNM. Data about the full scope of all of participants' nightmares was not available. Nonetheless, this study provides new information and extends understanding of PTNMs in children. Additionally, the emergence of gender differences among PTNM content suggests that future studies should examine gender in seeking to understand children's PTNMs and responses to trauma. To date, characterization of PTNM content in children has focused on children with war-related traumas (e.g., Punamäki et al., 2005; Valli et al., 2005; 2006). A strength of this study is that it examined PTNM content in children with a variety of traumas. Different trauma types may impact our findings, particularly given that previous research has found that trauma types may impact PTNM type (e.g., Davis et al., 2007), however, it may also increase the generalizability of findings.

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