

## Introduction

- Sleep paralysis (SP) is a period of involuntary immobility that occurs during changes in wakefulness and can be accompanied by terrifying hallucinations (Cheyne, 2002).
- Hallucinatory episodes have been grouped into three major categories (Cheyne et al., 2004):
  - **Vestibular motor:** Feelings of floating, flying, and more euphoric sensations than fear
  - **Intruder:** Accompanied by auditory hallucinations of footsteps, whispers, and somatic sensations (e.g., being grabbed)
  - **Incubus:** Perceived body contact by a visually hallucinated creature, includes feelings of suffocation, strangulation, and pain
- Hallucinations accompanying SP may be confounded with memories of Childhood Sexual Assault (CSA; McNally et al., 2005)
- An individual imagining an intruder in the bedroom, feeling painful physical sensations, and waking in a state of anger and fear may assume it was a recollection of a repressed CSA memory
- The purpose of this study was to extend a study conducted by McNally and Clancy (2005) and evaluate whether individuals may misinterpret SP as surfacing memories of CSA

## Method

- Participants included 262 University of Regina student volunteers and Regina community members
  - 191 women (Mean age = 22.25; SD = 6.57)
  - 71 men (Mean age = 22.24; SD = 6.28)
- Demographics were supplemented with:
  - The Waterloo Unusual Sleep Experiences Questionnaire-VIIIa (WQ; Cheyne, 2002)
  - PTSD Check List - Civilian Version (PCL-C; Weathers et al., 1993)
  - The Center for Epidemiologic Studies of Depression Scale (CESD; Radloff, 1977)
  - The Religious Commitment Inventory - 10 (RCI-10; Worthington et al., 2003)
  - Dissociative Experiences Scale (DES; Bernstein et al., 1986)
  - Tellegen Absorption Scale (TAS; Tellegen et al., 1974)
  - Participants were grouped (see Table 1) based on CSA trauma history and SP experiences (type and frequency)
- CSA groups included No CSA (no indications of trauma, no reports of CSA), unconfirmed CSA (indications of trauma, but no confirmed CSA), and confirmed CSA. The type (i.e., anger, sadness, pain, bliss, fear), frequency, and intensity of emotional experiences were also reported (see Table 2)

## Results

- Most participants reported experiencing SP at least once (64%); 24% were found to be adult survivors of CSA.
- A Pearson  $\chi^2$  comparing CSA groups and frequency of SP episodes (Table 1) revealed a significant main effect for the following SP indices
  - Vestibular motor,  $\chi^2(6) = 240.73, p < .01, V = .68$
  - Intruder,  $\chi^2(6) = 249.77, p < .01, V = .69$
  - Incubus,  $\chi^2(6) = 250.84, p < .01, V = .69$
- An ANOVA further evaluated differences between each of the CSA groups using the indices of each SP category and the intensity of five emotions typically aroused during an episode of SP (Table 2).
- Scheffe post-hoc analyses revealed the confirmed CSA group scored significantly higher than the no CSA group on the following emotions (Table 2)
  - Anger ( $M_D = 6.412, SE = 1.13, p < .01$ )
  - Sadness ( $M_D = 4.33, SE = 1.07, p < .01$ )
  - Pain ( $M_D = 3.11, SE = .84, p < .01$ )
  - Fear ( $M_D = 7.35, SE = 1.66, p < .01$ )

## Discussion

- Survivors of CSA were more likely to experience SP episodes than individuals with no history of CSA. CSA survivors reported incubus episodes as most frequent, followed by intruder, and vestibular motor.
- Individuals who reported CSA (confirmed or not) and SP experiences were more likely to associate these experiences with anger, sadness, pain, and fear, than those who reported no history of CSA.
- These findings support McNally and Clancy's (2005) proposition that individuals reporting a history of CSA are likely to experience episodes of fear-inducing SP. For CSA survivors, SP is generally a negative experience, in which sufferers are left in a state of anger, sadness, pain and fear.
- This research adds to the growing body of evidence that suggests a link between CSA survivors and SP episodes; SP may be a form of traumatic re-experiencing. High levels of intruder or incubus SP experiences, as well as traumatic symptoms, may suggest a history of CSA.

Table 1. Sleep Paralysis, CSA Groups, and Pearson Chi-squares

	Never	Occasionally	Frequently/ Always	Total	$\chi^2$	df	Cramer's V
<b>Vestibular Motor</b>					240.7	6	.68
No CSA	104 (52%)	85 (43%)	10 (5%)	199			
Unconfirmed	8 (47%)	8 (47%)	1 (6%)	17			
Confirmed	17 (36%)	28 (60%)	2 (4%)	47			
Total	129	121	13				
<b>Intruder</b>					249.8	6	.69
No CSA	125 (63%)	61 (31%)	13 (6%)	199			
Unconfirmed	8 (47%)	6 (35%)	3 (18%)	17			
Confirmed	13 (28%)	25 (53%)	9 (19%)	47			
Total	146	92	25				
<b>Incubus</b>					250.8	6	.69
No CSA	130 (65%)	58 (29%)	11 (6%)	199			
Unconfirmed	8 (47%)	8 (47%)	1 (6%)	17			
Confirmed	20 (43%)	17 (36%)	10 (5%)	47			
Total	158	83	22				

Table 2. Comparing Sleep Paralysis and Emotional Indices Across CSA Groups

	Means			F	Univariates	
	No CSA	Unconfirmed	Confirmed		p	eta <sup>2</sup>
<b>Vestibular Motor</b>	0.27	1.21	0.71	1.65	0.19	.01
<b>Intruder</b>	0.27	1.24	0.96	12.45	< .01	.08
<b>Incubus</b>	0.23	3.00	1.05	13.32	< .01	.09
Anger	0.39	0.72	1.64	16.16	< .01	.12
Sadness	0.40	1.55	1.39	8.47	< .01	.06
Pain	0.26	1.66	1.27	8.77	< .01	.07
Bliss	0.34	1.04	1.00	0.82	0.44	.01
Fear	0.70	3.33	1.64	10.80	<.01	.08

\* Significant at the two-tailed level.