

Evidence-Based Practice Group Answers to Clinical Questions

Restless Legs Syndrome (RLS) and Posttraumatic Stress Disorder (PTSD)

A Rapid Systematic Review

By

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October 2019

About this report

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Published: October 2019

About the Evidence-Based Practice Group

The Evidence-Based Practice Group was established to address the many medical and policy issues that WorkSafeBC officers deal with on a regular basis. Members apply established techniques of critical appraisal and evidence-based review of topics solicited from both WorkSafeBC staff and other interested parties such as surgeons, medical specialists, and rehabilitation providers.

Suggested Citation

WorkSafeBC Evidence-Based Practice Group, Martin CW. Restless Legs Syndrome (RLS) and Posttraumatic Stress Disorder (PTSD). Richmond, BC: WorkSafeBC Evidence-Based Practice Group; October 2019.

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Objective

A rapid systematic review was undertaken to investigate existence of any causal association between Restless Legs Syndrome (RLS) and Posttraumatic Stress Disorder (PTSD).

Background

Restless Legs Syndrome (RLS), also known as Willis-Ekbom Disease,¹ is a sensorimotor disorder which triggers “an irresistible urge to move the legs, arms, or, less commonly, other body parts, usually accompanied by paresthesias” and sometimes with pain. The symptoms may increase with stress.² Rapid progression and aggravating factors may become more common when RLS starts later in life.³ It primarily disturbs sleep (e.g., reduced sleep time, sleep fragmentation), but may also lead to overall disturbance and reduced quality-of-life; as well as depression, generalized anxiety disorder, panic disorder, and posttraumatic stress disorder.³ In the International Classification of Diseases (ICD-10), RLS is listed under the section of Diseases of the Nervous System as part of ‘other specified extrapyramidal and movement disorders.’⁴ In the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) RLS is covered under the Sleep/Wake Disorders as one standalone entry.³

The prevalence estimates for RLS range from 0.1 to 29%⁵⁻⁷ and generally higher in females and in older people.^{5,6} Ohayon et al. explain the high variance in prevalence of RLS in adult populations with the diverse RLS definitions used in studies. They point to a prevalence range of 9.4% to 15% when a single symptom is used to define RLS, 3.9% to 14.3% when a set of symptoms meeting minimal IRLSSG diagnostic criteria, 2.2% to 7.9% when a specific frequency and/or severity is also taken into account, and 1.9% and 4.6% with addition of a differential diagnosis.⁶ Some disorders with an implied link to RLS are migraine, depression, anxiety, PTSD, cardiovascular disorders, chronic pain and decreased cognitive functioning.⁷⁻⁹

Since symptoms peak during inactivity or at reclining positions deprived ability to fall asleep or repeated nocturnal awakenings become characteristics of RLS patients.² Hence, RLS is commonly cited under sleep disorders in the literature; especially under sleep fragmentation, as one of the triggers of sleepwalking in the adult populations.¹⁰

Methods

- Systematic literature search was conducted on October 7, 2019.
- Searching was conducted on commercial medical databases, including Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, MEDLINE(R), and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily that were available through the OvidSP interface. In addition, CINAHL and PsycInfo Databases were searched through EBSCOhost interface.
- Searching was conducted by employing different keywords and combining them with the Boolean operators, OR and AND, as appropriate.

[(PTSD) OR (Posttraumatic Stress Disorder)]

AND

[(RLS) OR (Restless Legs Syndrome)]

- We limited the searches to the publications from the last 10 years and written in English.
- In total, 25 citations were identified.
- Upon screening the titles and abstracts, and eliminating the duplicates, three articles were chosen to be retrieved in full text. ^{8, 11, 12}
- Additionally, with hand searches of the collected article references one older article was identified. ⁷
- Level of evidence (Appendix 1) was assigned to each study according to the EBPg - WorkSafeBC level of evidence.

Results

- Cho et al.⁸ studied the prevalence of restless legs syndrome (RLS), its impact on quality of life and its association with DSM-IV Psychiatric Disorders in South Korea. They found that “lifetime prevalence of any DSM-IV psychiatric disorder was 40.3% among participants with RLS and was higher than in participants without RLS (27.7%)”. Posttraumatic stress disorder amongst other anxiety disorders presented a higher prevalence in the RLS patients. The adjusted Odds Ratio (OR) for PTSD was 3.76, suggesting a strong relationship between PTSD and RLS; however no inference about the direction of this relationship was possible due to the cross-sectional nature of the study. *(Level of evidence 4. Appendix 1)*
- Another cross-sectional study by Baird et al.¹¹ compared trauma-exposed Australian Vietnam veterans with and without PTSD (total n=214, 108 with PTSD) in terms of sleep disturbances they experienced. The authors found “higher rates of restless legs (45% versus 25%; $P < .01$), nightmares (91% versus 29%; $P < .01$), nocturnal screaming (73% versus 18%; $P < .01$), sleep terrors (61% versus 13%; $P < .01$) and dream enactment (78% versus 11.8%; $P < .01$)” in the group with PTSD. Once again, due to the cross-sectional study design causal inference was not possible. *(Level of evidence 4. Appendix 1)*
- Mayer et al.¹² conducted a cross-sectional study with 96 obese veterans and found that sleep difficulties were common. This included 53% of the participants reporting restless legs syndrome (RLS). In this same study sample 47% of the participants reported clinically significant symptoms of PTSD. However, given the cross-sectional nature of this study no causal inferences were possible between veteran obesity and either RLS or PTSD. *(Level of evidence 4. Appendix 1)*
- In their population based cross-sectional study, Sevim et al.⁷ found that anxiety and depression were significantly higher in patients with RLS compared to their control group (age and gender matched RLS negative individuals from the same health centre district). They also observed a correlation between the severity of RLS and of depression and anxiety symptoms. Hence, they concluded that a psychiatric assessment for RLS patients to help with potential comorbid mental disorders would be useful. *(Level of evidence 4. Appendix 1)*

Summary

- At present, we have not been able to identify any studies which explored RLS and PTSD relationship beyond a cross-sectional design.
- Hence, there is not sufficient evidence from the current literature to make causal inferences for RLS and PTSD relationship in any direction.
- In the 'Functional Consequences of Restless Legs Syndrome' part of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) it is stated that "The most common consequences of RLS are sleep disturbance, including reduced sleep time, sleep fragmentation, and overall disturbance; depression, generalized anxiety disorder, panic disorder, and posttraumatic stress disorder; and quality-of-life impairments" implying RLS to have a role in development of PTSD.

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Appendix 1

WorkSafeBC - Evidence-Based Practice Group Levels of Evidence (adapted from 1,2,3,4)

1	Evidence from at least 1 properly randomized controlled trial (RCT) or systematic review of RCTs.
2	Evidence from well-designed controlled trials without randomization or systematic reviews of observational studies.
3	Evidence from well-designed cohort or case-control analytic studies, preferably from more than 1 centre or research group.
4	Evidence from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments could also be included here.
5	Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees.

References

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