

# Mental Health Problems in Sri Lankan Adolescents Exposed to the Tsunami and Other Traumatic Events

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## **KNOWLEDGE VALORISATION**

This section describes how the information derived from the studies in this dissertation that was carried out in a unique post-traumatic context can be made available for clinical and social use. We focused on addressing three main issues. First, the role of two vulnerable factors; negative cognitive appraisal and daily stressors, in the association between trauma exposure and mental health problems. Second, the relationship of basal cortisol activity, cortisol diurnal slope and the cortisol awakening response to trauma exposure and PTSD symptoms. Finally, the association of posttraumatic stress symptoms to co-occurring emotional and behavioral problems in adolescents.

### *Societal relevance*

Children and adolescents are the most vulnerable populations for both trauma exposure and post-trauma mental health problems. Epidemiological studies have revealed that about 60% of adolescents experience at least one potentially traumatic event and about 10 - 20% of them develop trauma-related psychopathologies. If the adolescent mental health problems are not identified and treated, these disorders can multiply, intensify and diversify over time and render the adolescent at increased risk for academic failure and social isolation. These can lead to later problems such as school avoidance, alcoholism, drug abuse, lifetime antisocial behavior, adolescent delinquency and even to adulthood psychiatric disorders. Therefore, from both an epidemiological perspective as well as from the burden the problems create, increase in knowledge about the risk for post-trauma mental disorders in adolescents is of relevant.

In the global context, the increase in traumatic event exposures and related mental health problems have become a growing health problem. The number and magnitude of natural disasters have considerably increased in the world (UN report on disasters 2015). Several countries in the world are at civil war, and some others are experiencing external terrorist attacks. Furthermore, motor vehicle accidents and exposure to other traumas have also increased in the world. All these incidences will make adolescents at increased risk for trauma-related mental health problems. It is the hope of this thesis that it will potentially help to estimate the need for a proper mental health service, to identify those at highest risk for mental health problems, and to design and implement appropriate mental health interventions for trauma exposed adolescents across the globe.

In the local context, the Sri Lankan population was also confronted with many traumatic events. The civil war which continued for more than thirty years, the 2004 South East Asian tsunami and unprecedented widespread floods and landslides over the last few years, to name a few major events. Adolescents in the country have reported high prevalence (87%) of trauma exposure even before the tsunami disaster. An absence of proper estimates of post-trauma mental health problems of adolescents in the country is therefore, a problem. Further, the country has no proper system in place to identify and help mental health problems of trauma victims, nor is there a proper system to address adolescents' health problems. Therefore, the information presented by this thesis may function as an eye-opener for the relevant authorities to realize the gravity of the problem. This may provide the impetus for authorities to formulate care and prevention strategies to protect the vulnerable youth from trauma exposure and mental health problems.

### ***Target group***

The results described in this dissertation are relevant for various stakeholders who are involved in post-trauma rehabilitation, particularly in managing post-trauma mental health problems of adolescents.

Clinician could also benefit from the results of this thesis by several means, since the study demonstrated that school-based screening is feasible and effective in identifying adolescents with trauma exposure and possible post-trauma mental health problems. In the second chapter, we identified that persistent negative cognitive appraisal is the best possible predictor of PTSD in adolescents. This information supports the importance of employing cognitive interventions. It will further help in identifying adolescents with PTSD who could benefit most from cognitive interventions as their treatment. In the third chapter, we identified that daily stressors are an important mediator in the trauma - mental health pathway. These indirect effects varied according to the specific mental health outcome. Trauma exposure had a larger effect on PTSD symptoms while daily stressors had a greater effect on emotional and behavioral problems (EBP) and functional impairment. These findings emphasize the importance of reducing daily stressors. It will also help clinicians to identify which type of psychologically disturbed adolescents will profit most by addressing daily stressors in the post-trauma setting. Further, we found that social support lessens symptoms of all of the above mental health problems. This confirmed the importance of improving social support by friend and family in treating post-trauma mental health problems. The

fourth chapter demonstrated that PTSD symptoms associate with EBP in adolescents. These findings will help clinicians to understand that PTSD and EBP may co-exist and the not only PTSD but also EBP may reflect prior trauma exposure in adolescents. Moreover, the results proved that PTSD and EBP together pose a heightened risk for impaired daily functioning. Therefore, to improve functional impairment of adolescents exposed to trauma, treating both PTSD symptoms and emotional and behavioral problems is essential.

Dissemination of so much information about trauma and post-trauma mental health problems in adolescents could influence policymakers in developing health policies for adolescents. Given that mental health problems can be treated and or prevented, adolescents should be screened for trauma exposure and related mental health problems, possibly in schools. Second, we identified that daily stressors largely contribute to increasing post-trauma mental health problems. Of these, “financial constraint” were the commonest problem and underlying reason for many other daily stressors. Social support was important here in that they lessened symptoms of post-trauma mental health problems. These findings should come to the attention of policymakers so that the proximal environmental context can be modified for improved recovery. Since daily stressors and social support can be targeted for intervention, policies should be made to improve economic opportunities and healthy interpersonal relationships. These should be integrated in educational, vocational and social support programs in the country. Therefore, decision-makers involved in health care regulations, such as Ministry of Health in Sri Lanka and Disaster Management center of Sri Lanka or similar authorities worldwide, could use the results of this thesis to support their recommendations in improving the psychological health of adolescents.

The findings in this thesis may be relevant for researchers in the field of adolescents’ trauma psychology. Researchers can employ the prevalence estimates and other findings generated from this thesis to further improve the knowledge in the field. For example, we identified the predictors of negative appraisal and confirmed the cognitive model of PTSD formulated by Ehlers and Clark (2000) in adolescents. As the next step in research, longitudinal studies can be conducted to elicit causal role of negative appraisal in the trauma-mental relationship. Similarly, longitudinal studies could be done to replicate the mediation role of daily stressors and the moderated mediation role of social support that we demonstrated in the trauma- mental health pathway.

With all these means adolescents exposed to trauma and having post-trauma mental health problems will benefit in future.

### ***Products and Instruments***

The main product of this thesis is the knowledge generated by the studies. Further, we provided much evidence on feasibility and generalizability of the screening tool we used. PTSD-RI which measured PTSD symptoms was used earlier in Sri Lanka but not validated to the local setting. This thesis provided much evidence on the instrument's reliability, but recommends further validation. The strength and difficulties questionnaire which measured EBP is already validated for local setting. This has been widely used as a brief psychiatric screening questionnaire but rarely used in the post-trauma situation. Usage of SDQ in this study provided evidence for its use in measuring the general psychological state of adolescents exposed to trauma. McDermott et al (2005) also showed that PTSD-RI and SDQ operate as complementary measures in the screening battery in the post-disaster situation. The Long-term Difficulties Questionnaire for Youth (LDQ-Y), which was developed from the LTD questionnaire for adults by this study, is a brief check-list focused on generic categories of stressors common to different cultural context. It obtains qualitative descriptions as well as quantitative information on daily stressors of adolescents. Therefore, LTD-Y can be used as a screening tool to assess daily stressors of adolescents in diverse populations. It is again recommended that this be further validated.

### ***Innovation***

This thesis adds two rather novel information to trauma psychology literature. First, we identified that characteristics of the traumatic event, lifetime trauma exposure, and current life difficulties, determined negative cognitive appraisal of trauma in adolescents. Even though, the negative cognitive appraisal was found to be pathogenic in PTSD in both young and the adults, what determines negative appraisal of trauma had not been previously clarified in the literature. Therefore, we have added predictors of negative appraisal of trauma in adolescents to the existing knowledge. Second, we demonstrated the conditional effect of social support on the indirect pathway (via daily stressors) through which trauma exacerbates mental health problems. The role of social support in buffering the effects of trauma on youth remained an underexplored area in the field. Third we demonstrated a robust influence of gender on cortisol diurnal activity, including

## *Appendix*

more specifically moderation by gender of how trauma exposure and PTSS associate with cortisol. This observation in a community sample of adolescents is rather novel, and findings also help to explain why cortisol levels were not significantly associated with trauma or psychopathology over the group of adolescents as a whole in a study. All these information presented in this thesis adds to practical current information in the field

## ***Implementation***

Findings of this thesis can be translated into practice through incorporating them in management guidelines in post-trauma mental health rehabilitation programs. However, this should be supported through ongoing research and longitudinal studies.