

# Development of the Secondary Trauma Stress Scale for the General Population

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**Abstract:** The number of individuals susceptible to direct or indirect trauma is no longer reserved for specific occupations. Hence, this research aimed at developing and validating a scale that measures secondary trauma stress among the Indian general population. The scale contains 5 subscales namely Intrusion; Negative cognition and mood; Active avoidance and feelings of threat; Hyperarousal and Belief system. Out of the initial 150 (30 items per subscale) pool of items, 50 items (10 items each 5 subscales) were pilot tested on 102 respondents. Out of which, 30 items (6 items each subscale) were tested on 970 respondents after the first validation. In the final validation, Item-total correlation and Cronbach's alpha for each subscale were computed. In the 50-item VIKAS-STTS scale, Cronbach's alpha ranged from 0.65 to 0.88 for each subscale while in the 30-item VIKAS-STTS scale it ranged from 0.58 to 0.71. Thus, the instrument was found to be psychometrically sound for further research, diagnostic and educational purposes.

**Keywords:** PTSD, Scale development, Secondary trauma stress, Vicarious trauma, Psychometry.

## Introduction

The growing fear and uncertainties caused by Covid 19 pandemic have led rise to serious concerns about the stress caused by primary and secondary trauma. According to Dr Charles Figley, Secondary Traumatic Stress Disorder is "the natural consequent behaviours resulting from knowledge about a traumatizing event experienced by a significant other. It is the stress resulting from helping or wanting to help a traumatized or suffering person".<sup>[1]</sup> So, the sole focus of the current study was to develop and evaluate a new scale to assess secondary trauma in the Indian general population and not just the specific populations.<sup>[2,3,4,5,6,7]</sup>

### *VIKAS Secondary Trauma Scale*

VIKAS Secondary Trauma Scale (VIKAS-STTS) is a 30 items scale with 5 subareas assessing the 5 domains mentioned above. Respondents are required to indicate how frequently each item was true to them in a way that they would usually react when they hear/see/read about traumatic events using a 5-point Likert scale (1-Never, 2-Rarely, 3-Occasionally, 4-Often, 5-Very Often). The

5 subscales of VIKAS- STS are Intrusion; Feeling of threat and active avoidance; Negative cognition and mood; Hyperarousal; and Belief systems.

### *Intrusion*

Intrusion refers to unwanted or distressing thoughts or memories that trigger sleep and physical symptoms like sleep disturbances, nightmares, increased heart rate, sweating etc.

### *Feelings of threat and Active avoidance*

The feeling of threat refers to the feeling of fear of safety for oneself or their loved ones after experiencing secondary trauma. Active avoidance means conscious/ voluntary avoidance of thoughts/memories, people and/or situations that remind the individual about the indirect traumatic experience.

### *Negative cognitions and mood*

Negative cognitions and mood refer to having negative thoughts/attitudes about oneself, others or the world, self-destructive thoughts, and negative feelings such as guilt, fear, detachment, hopelessness, numbness, helplessness, exhaustion etc. after exposure to secondary trauma.

### *Hyperarousal*

Hyperarousal refers to the heightened responses that occur when the individual is reminded about the indirect traumatic experience or remembers/thinks about the traumatic experience itself. It includes various symptoms such as sleep disturbances, trouble concentrating, anxiety, irritability, anger/annoyance, panic attacks, startling reflexes and hypervigilance.

### *Belief systems*

Belief systems include the relationship to a superior being and are related to an existential perspective on life, death and the nature of reality. Beliefs include practices or rituals such as prayer or meditation and engagement with religious community members in leading journals to complete their grades.

### *Development of STS Scale*

Secondary trauma stress was operationally defined as the state of Intrusion; Negative cognition and mood; Active avoidance and feelings of threat; hyperarousal; and change in the Belief system due to indirect exposure to traumatic events. A review of the literature was done to pool the items in 5 different themes (subscales) namely Intrusion, Negative cognition and mood, Active avoidance and feelings of threat, Hyperarousal and Belief system. There were 150 items in the initial draft which was reviewed by

2 SMEs for content validation. After which the 50 items, 10 items in every 5 subscales were pilot tested on 102 Indian respondents aged 16yrs and above through an online survey using google forms. The responses were gathered in a spreadsheet and later encoded in SPSS for statistical preliminary analysis.

Normality and Outliers testing along with item analysis were done in SPSS. Along with item-total statistics, reliability was analyzed for each subscale to find item performance within each subscale. Each item was then evaluated for corrected item-total correlation and Split half- Spearman brown coefficient and Cronbach's alpha if the item were deleted reliability testing. In construct validity testing, the Pearson correlation between the parallel form of STS by bride et.al was established. After the quantitative item analysis, items were qualitatively analysed for their clarity, lack of jargon, length, and content validity. Only 30 items (6 items each 5 subscales) remained after the item analysis. The 30-item VIKAS-STTS scale was then administered to 970 respondents for establishing psychometric measures and the development of norms.

Thus, the purpose of this study was to develop and investigate the psychometric properties of VIKAS-STTS in terms of reliability, validity, and norms. In this process, the subscales will be examined for internal consistency and correlation with another scale that measures the related variable STS.

## **Method**

### ***Sample & Procedure***

Literate individuals aged 12-84 years living in urban India were randomly selected and sent a google form link containing the 30-item VIKAS-STTS scale. Demographic details and Informed Consent were also collected along. Out of the 970 participants, 53.09% were females (N=515) and 46.9% were males (N=455). According to the age criteria established for age norms, there were 74 adolescents (12-19yrs), 649 young adults (20-29yrs), 125 adults (30-44yrs), 113 middle-aged adults (45-64yrs) and 17 older adults (65-85yrs). The mean age of the study participants was 28.22 (SD= 11.19).

### ***Instrumentation***

VIKAS-STTS is a 30-item, pencil-paper, self-reporting instrument developed to measure the frequency of symptoms of Intrusion, Negative cognition and mood, Active avoidance and feelings of threat, hyperarousal and changes in the Belief system which are indicative of the effects of secondary traumatic stress. Respondents were instructed, "Please fill in the demographic details (name, age, gender, education, occupation and marital/ relationship status). and read each item carefully. Indicate how frequently the item was true for you in the past 7 days and provide your responses by indicating tick marks in one of the 5 respective boxes. There are no right or wrong answers. Make sure to respond to all the statements."

The scale is in Likert response format ranging from 1(never) to 5(very often). The scores allotted for each of these responses given by the respondents in each statement are- very often=5, often=4, occasionally=3, rarely=2 and never=1. The VIKAS- STS is comprised of 5 subscales: Intrusion (items 1 to 6), Feeling of threat and active avoidance (items 7 to 12), Negative cognition and mood (items 13 to 18), Hyperarousal (items 19 to 24) and Belief System( items 25 to 30). Scores for the full STSS (all items) and each subscale are obtained by summing the items assigned to each.

## Results

### *Reliability*

After testing for normality and Outliers, Item analysis and item-total statistics (See Table1) were conducted using SPSS. To examine the extent to which the items are homogenously reflecting a common underlying construct, internal consistency as a measure of reliability was computed [8]. Split half reliability was used to measure the internal consistency of the scores of the whole scale. In the preliminary analysis of the VIKAS-STS 50-item scale, the Spearman-Brown coefficient was found to be 0.827 which is more than 0.80, hence it was accepted. Similarly, coefficient alpha levels for the 50-item VIKAS-STS subscales were as follows: Intrusion ( $\alpha = .88$ ), Feeling of threat and active avoidance ( $\alpha = .82$ ), Negative cognition and mood ( $\alpha = .87$ ), Hyperarousal ( $\alpha = .84$ ) and Belief System ( $\alpha = .65$ ). Alpha values between .80 and .90 are considered good [9]. In the final analysis of the VIKAS-STS 30-item scale, the Spearman-Brown coefficient was found to be 0.88 which is more than 0.80, hence it was accepted. Similarly, coefficient alpha levels for the 30- item VIKAS-STS subscales were as follows: Intrusion ( $\alpha = .73$ ), Feeling of threat and active avoidance ( $\alpha = .58$ ), Negative cognition and mood ( $\alpha = .69$ ), Hyperarousal ( $\alpha = .73$ ) and Belief System ( $\alpha = .71$ ) (See Table 2).

### *Validity*

In construct validity testing, the Pearson correlation between the parallel form of STS by bride et.al was established. The STS by bride et.al scale only has three subscales namely Intrusion, Avoidance and Hyperarousal while VIKAS-STS has two additional subscales. The Pearson correlation coefficient was 0.754 which should be interpreted accordingly and can be accepted as it is higher than 0.70. <sup>[10]</sup>

### *Norms*

Norms were established on 4 age categories namely Adolescents (12-19 years), Young adults (20-19 years), Adults (30-44 years) and Middle-aged adults ( 45-64 years). For Young adults, Adults and Middle-aged adults age groups, even gender norms were established as significant differences in the scores of subscales were observed between males and females indicating the differences in the manifestation of STS in both genders. The scores were interpreted into the following categories of STS: Very Low, Low, Moderate, High and Very High Secondary Trauma Stress.

### Conclusion

The VIKAS-STTS scale is developed especially for the general population and has a great application value in various areas ranging from therapeutical settings to high-risk trauma-exposed occupational settings. Some of the items in this test also coincide with the symptoms of depression, anxiety, burnout, PTSD, etc. for which further studies need to be conducted to differentiate STS from other conceptual domains. Similarly, separate scoring and interpretation can be formulated based on these distinctions from literature reviews. [11, 12,13,14,15,16] Even though the language of the scale can become a limitation when considering the linguistic differences in the sample from which the norms are developed, the wide age range applicability adds to its merit. This scale can further be developed for children below 16 years.

### Appendix

**TABLE 1:** Item total statistics on the final data (n=970) for the 5 sub-areas: Intrusion (I); Feeling of threat and active avoidance (F) Negative cognition and mood (N); Hyperarousal (H); and Belief systems (B).

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
<b>I1</b>	14.74	18.70	0.445	0.210	0.712
<b>I2</b>	14.70	18.25	0.561	0.348	0.677
<b>I3</b>	14.32	19.18	0.484	0.252	0.699
<b>I4</b>	14.75	18.98	0.467	0.219	0.704
<b>I5</b>	14.58	20.96	0.343	0.125	0.736
<b>I6</b>	14.73	18.58	0.558	0.344	0.679
<b>F1</b>	16.26	13.33	0.381	0.174	0.516
<b>F2</b>	16.35	13.24	0.358	0.163	0.525
<b>F3</b>	15.65	14.49	0.263	0.077	0.566
<b>F4</b>	16.28	13.97	0.299	0.092	0.551
<b>F5</b>	16.42	13.77	0.329	0.114	0.538
<b>F6</b>	15.79	14.16	0.302	0.102	0.550
<b>N1</b>	14.79	15.48	0.520	0.319	0.627
<b>N2</b>	14.64	18.15	0.317	0.128	0.690
<b>N3</b>	14.57	16.36	.0436	0.208	0.656

<b>N4</b>	14.78	16.24	0.455	0.216	0.649
<b>N5</b>	14.72	15.10	0.537	0.330	0.620
<b>N6</b>	14.64	17.75	0.304	0.124	0.696
<b>H1</b>	15.14	17.81	0.504	0.284	0.690
<b>H2</b>	15.21	18.10	0.484	0.259	0.696
<b>H3</b>	14.95	17.68	0.521	0.290	0.685
<b>H4</b>	15.15	17.60	0.560	0.335	0.674
<b>H5</b>	14.66	21.24	0.234	0.063	0.759
<b>H6</b>	15.03	17.85	0.533	0.309	0.682
<b>B1</b>	12.99	18.51	0.495	0.257	0.661
<b>B2</b>	13.27	18.71	0.495	0.280	0.661
<b>B3</b>	13.15	18.52	0.538	0.297	0.649
<b>B4</b>	13.10	18.48	0.495	0.260	0.660
<b>B5</b>	12.67	20.90	0.246	0.077	0.737
<b>B6</b>	13.37	19.05	0.435	0.221	0.679

**TABLE 2:** Reliability scores of the scale in the final study (n=970) for the 5 sub-areas: Intrusion; Feeling of threat and active avoidance; Negative cognition and mood; Hyperarousal; and Belief systems.

<b>Subscale</b>	<b>Cronbach's Alpha</b>	<b>Cronbach's Alpha Based on Standardized Items</b>	<b>N of Items</b>
<b>Intrusion</b>	.739	.739	6
<b>Feelings of threat and active avoidance</b>	.586	.586	6
<b>Negative Cognition &amp; Mood</b>	.698	.694	6
<b>Hyperarousal</b>	.736	.733	6
<b>Belief System</b>	.714	.718	6

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