Secondary traumatic stress and subjective well-being among frontline workers during the COVID-19 pandemic

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ABSTRACT

The Covid-19 pandemic has deeply affected one's mental as well as physical health. The front-line healthcare workers have been adversely impacted while having to work in a high stress and trauma exposed environment. They faced emotional and physical strain and the study attempts to understand the secondary traumatic stress in times of a global emergency and its impact on their subjective well-being. The researchers of the current study contended that secondary traumatic stress was inversely related to positive affect in frontline health care workers. A positive correlation was also expected between secondary traumatic stress and negative affect. This was studied among a sample of 200 front-line healthcare workers. The results of the current study provided significant evidence to support the proposed hypothesis. A highly significant regression was found between secondary traumatic stress and negative affect.

Keywords— Secondary Traumatic Stress, Subjective Well-Being, Covid-19, Frontline Workers, Positive Affect, Negative Affect

1. INTRODUCTION

Secondary traumatic stress (STS) is the emotional duress that results when an individual hears about the first-hand trauma experiences of another. This concept was developed by trauma specialists Beth Stamm and Charles Figley in the early 1990s. They wanted to understand the reason behind service providers seeming to exhibit symptoms similar to Post Traumatic Stress Disorder (PTSD) without necessarily being exposed to direct trauma themselves. STS can occur especially in professionals who work in high-stress and trauma-exposed fields, for example, child abuse investigators, prosecutors, judges, therapists, health care professionals, animal shelter workers, among others. Civilians, those who do not work in high-trauma fields but are deeply impacted by stories they are exposed to, can also be affected.

Some situations make individuals more susceptible to STS. These include direct contact with traumatic stories of children, helping others while neglecting oneself, and personal exposure to traumatic events or to individuals who are coping with their reactions to trauma. Saakvitne and Pearlman (1996), in their book *Transforming the Pain*, have suggested that symptoms of STS should be looked at on three levels: physical, behavioral and psychological/emotional. However, there is often an overlap between these categories.

Physical symptoms may include fatigue, insomnia, headaches, sore neck, rashes and breakouts, exhaustion, among others. Behavioural symptoms may include increased irritability at work and home, increased use of alcohol and drugs, impaired appetite or binge eating, problems in personal relationships, compromised care for clients, avoid social gatherings, impaired decision-making ability, avoidance of clients and patients, among others. Some emotional/physiological signs may include difficulty sleeping, emotional exhaustion, increased anxiety, cynicism at work, guilt, feeling of hopelessness, numbing or insensitivity to emotional material, disruption of view of the world, suicidal thoughts, among others.

On the other hand, subjective well-being (SBW) is defined as "a person's cognitive and affective evaluations of his or her life" (Diener, Lucas & Oshi, 2002, p 63). The cognitive elements entail what one thinks about his or her life satisfaction in global and

domain terms, i.e., life as a whole and in specific areas like work, relationships etc. Affective elements include emotions, moods and feelings. Affect is positive when emotions, moods, and feelings are positive (joy, affection, elation), and the converse is true for when affect is negative (guilt, anger, shame). Those who experience high levels of satisfaction with their life experience more significant positive and lesser negative affect and are deemed to have high levels of SBW. When psychologists measure subjective well-being, they measure what the person thinks and feels about his/her life. There are essentially three components of SBW: life satisfaction, positive affect and negative affect. These independent factors need to be measured and studied separately.

Secondary traumatic stress and subjective well-being are related. A wealth of research has indicated the possible link between the two. STS has a negative effect on individuals' life and well-being, and high levels of this stress affect satisfaction in life, which in turn affects well-being. Thus, the overall quality and satisfaction in life stand affected with a rise in STS.

2. REVIEW OF LITERATURE
Research on secondary traumatic stress has been hampered by lack of conceptual clarity. The use of different terminology at times to refer to the same concept contributes to this confusion. Secondary trauma occurs "when the traumatic stress appears to 'infect' the entire system after first appearing in only one member" (Figley, 1995, p. 8). It is basically the stress resulting from helping or wanting to help a traumatized or suffering person" (Figley, 1995, p. 10). D. In general the symptoms of STS are very similar to PTSD. Still, the major difference is that upon hearing about the trauma one may develop STS disorder. Figley viewed STS as a normative occupational hazard for workers and mental health professionals. People with STS seem to have an energy depletion characteristic which depicts their exhaustion of providing ongoing support to the chronically affected primary victim. Figley (1995) described three content domains of symptoms: (1) reexperiencing of the primary survivor's traumatic event; (2) avoidance of reminders and/or numbing in response to reminders; and (3) persistent arousal.

Social workers are also often called on to assist survivors of childhood abuse, domestic violence, violent crime, disasters, and war and terrorism. In the past years, it has become increasingly apparent that the psychological effects of traumatic events extend beyond those directly affected. Secondary traumatic stress (STS) is an aspect that is becoming an occupational hazard of providing direct services to traumatized populations. A study based on this investigated the prevalence of STS in a sample of social workers by examining three conditions: the frequency of individual symptoms, the frequency with which diagnostic criteria for post-traumatic stress disorder (PTSD) are met, and the severity of STS levels. The Secondary Traumatic Stress Scale (STSS) was used to conduct this study (Bride, Robinson, Yegidis, & Figley, 2004), a 17-item, self-report instrument. Results indicated that social workers that engaged in direct practice with traumatized populations had high probability of being secondarily exposed to traumatic events. These social workers are likely to experience at least some symptoms of STS. A significant minority may meet the diagnostic criteria for PTSD.

Furthermore, nurses who care for persons exposed to traumatic events over time can be susceptible to Secondary Traumatic Stress (STS) and Compassion Fatigue (CF). The symptoms of STS like intrusion, avoidance and arousal may lead to job dissatisfaction or burnout. A study was conducted based on this with 67 emergency nurses from three general community hospitals in California. Survey instruments included a demographic tool and the STS Survey (STSS). The results of this study indicate that the nurses were most likely to have Arousal symptoms (irritability reported by 54% of nurses), followed by Avoidance symptoms (avoidance of patients 52%), and Intrusion symptoms (intrusive thoughts about patients 46%). Hence a high prevalence of STS in this sample of nurses indicated that potentially large numbers of emergency nurses might be experiencing the adverse effects of STS.

There is not a wealth of literature correlating subjective well-being and its components with secondary traumatic stress. Previous studies have not researched the association between the two variables. However, research in the past has studied the correlation between secondary traumatic stress and variables such as psychological well-being, life satisfaction and stress, and convergent concepts with subjective well-being. A study conducted by Perstlin and Rothman in 2014 attempted to evaluate the impact of secondary traumatic stress on psychological well-being and life satisfaction amongst social workers belonging to Namibia in South Africa. Skilled caregivers are also psychologically overwhelmed by the high level of social engagement of abused patients. As a result, they repeatedly fail to maintain mental equilibrium and are thus at risk of experiencing secondary traumatic stress. Empathic interaction with the main trauma survivor, combined with emotional reaction and counter-transference (unconscious emotional response). A trained trauma survivor caregiver is turned into an 'auditory observer.' As a detrimental result, this can affect the caregiver's functionality. The duration of exposure to traumatic experiences over a longer span of time leads to the experiences of learned helplessness, thereby evaluating another detrimental outcome for well-being. A cross-sectional study layout with a sample group of 116 social workers was used. further, the Secondary Traumatic Stress Scale, three subscales of the Psychological Well-being Scale, the Life Scale Happiness Scale and a biographical questionnaire were administered. Results found that secondary traumatic stress (including arousal, avoidance and intrusion) was negatively linked to the intent of life and satisfaction of the health workers' lives. The findings of systemic multiple regression analyses revealed that increased levels of arousal, intrusion and avoidance (secondary traumatic stress dimensions) projected lower levels of happiness with life and environmental control, meaning in life and self-acceptance. Hope (2006) observed in her study that elevated levels of secondary traumatic stress potentially adversely affected life satisfaction. Although it still preserves the signature of secondary traumatic stress as an occupational hazard for skilled caregivers, it lowers well-being to a degree of psychopathology comparable to post-traumatic stress disorder.

Non-optimal environment conditions (working) conditions are requirements that may exceed the capabilities of coping of individuals. The imbalance between environmental needs and the organism's responsiveness is referred to as stress (McGrath, 1970). Like every other helping profession, social work requires coping with different stressors. The social worker's role is often perceived as an ideal state of providing necessary help in a difficult life situation. Barnett and Cooper (2009) report that workers in the help profession are often threatened by excessive stress and burnout. Although their internal and external resources may be overloaded,

they provide help to others. Workers in these professions are also threatened by an increased risk of the negative impact of selected psychosocial variables resulting from helping. (Um, Harrison, 1998). Helping others is accompanied by an increase in the risk of emotional stress and exhaustion. Excessive stress, burnout, and experiencing secondary trauma affect an individual's health, increasing emotional exhaustion and feelings of anxiety occur (Redeke, Mahoney, 2000). The overall quality of life affected and job satisfaction and effectiveness of the work of social workers.

The research aims to analyse the percentage of helping workers who perceive increased stress and workers with burnout and compassion fatigue symptoms. The intention is to highlight selected work characteristics that lead to these negative impacts of helping and to present the characteristics of risky workers. The research sample consisted of 739 workers of the helping professions in social services (educators, nurses, social workers, psychologists and social therapists). Individuals were selected from the list of social service providers available on the Ministry of Labour, Social Affairs and Family website. Selection was done based on a random number generator and in this way, 14 workplaces were selected. They were subsequently contacted by phone and data collection was carried out after obtaining consent. Questionnaire batteries were sent out by mail.

The measurement tools of the study involved a Perceived Stress Scale (PSS-10, Perceived Stress Scale, Cohen, Kamarack, Mermelstein, 1983; Slovak version by Hricova, Raczova, Lovasova, 2018) which is a self-assessment questionnaire focused on assessing the level of perceived stress among individuals during the last month on a five-point Likert scale. The second scale involves the Professional Quality of Life scale (ProQOL, Professional Quality of Life Scale, Stamm, 2010, Slovak version by Koverova, 2017). This questionnaire focuses on the subjective assessment of the quality of life in relation to the practising of the helping profession. The third one includes Maslach's burnout questionnaire (MBI-HSS, Maslach Burnout Inventory, Maslach, Jackson, Leiter, 1996). The questionnaire focuses on the subjective evaluation of the extent of burnout in helping professions.

Results of the study show that up to 86% of helping workers perceive increased stress from helping. 23% show symptoms of emotional exhaustion, such as the first level of burnout, which has not yet developed into depersonalisation or cynicism. Moreover, 15% of them are at the risk of secondary trauma from helping others.

The COVID-19 pandemic has caused a fundamental change in European societies. Many countries in Europe and across the globe went into lockdown in mid- March 2020 to prevent the spread of the coronavirus. The outbreak caused a radical shift to individuals' daily habits that challenged their subjective well-being (SWB). Decreases in life satisfaction are likely due to exposure to daily negative emotions and hopelessness, fear, and avoidance of social interactions. A study done by Mohring et al (2020), aimed to explore how two dimensions of subjective well-being (SWB), satisfaction with work and satisfaction with family life, have changed during the COVID-19 lockdown in Germany. They examined the effects of stay-at-home policies, and shifts to remote work and short-time work for the general population and the differences for mothers, fathers, and persons without children. Although expected, COVID-19 lockdown negatively impacted SWB, with people experiencing a number of stressors that could cause low SWB, such as economic hardship, job loss, increased health risks and uncertainties, and a significant decrease in social contacts outside of the household. There were a few positive aspects of the lockdown: spending more time with family and more work autonomy while working remotely, but these could not outweigh the negative impacts.

The study had five hypotheses:
H1: The COVID-19 lockdown generally has negative effects on satisfaction with work and with family life.
H2: Short-time work leads to higher levels of job and family satisfaction for mothers and lower levels of job and family satisfaction for fathers and workers without children.
H3: Remote work leads to lower levels of job satisfaction for workers with children, while we expect no effect for workers without children.
H4: Remote work leads to higher levels of family satisfaction for workers with children and lower family satisfaction for workers without children.
H5: The negative effect of the lockdown on satisfaction with family and work is stronger for mothers than for fathers.
The data used was derived from the German Internet Panel (GIP).

The GIP is based on a random probability sample of the general population in Germany aged 16–75. In 2012 the study started after which more participants were added in 2014 and 2018. Strict statistical procedures were used for offline recruitment of panel participants were invited to take part in a voluntary online survey. The GIP launched the Mannheim Corona Study (MCS) on March 20, 2020, in response to the global lockdown (Blom et al., 2020). The content of the questionnaires somewhat changed every week. The GIP panellists were invited to take surveys every week. The sample, however, cannot be seen as ideal as younger individuals (16-29), low educated individuals, and non-German citizens were not sufficiently represented as compared to official statistics. On the other hand, household size, marital status, geographic region, and gender were highly accurate (Blom et al., 2020). Hence, the sampling and response behaviour affect the accuracy of the data.

The dependent variables (DV) in the study were:
- Satisfaction with work
- Satisfaction with family life.

The scale used was an 11-point scale with 0 being 'completely dissatisfied' and 10 being 'completely satisfied'. During the COVID-19 lockdown, the data collection was carried out from April 17 to April 24, 2020. For participants who were employed in January 2020, changes were coded into working remotely and into short-time work in April 2020. In satisfaction with family life, individuals with children will think about their relationship with them while those without children will think about their relationship with their parents or siblings, thus leading to the potential for bias.

First difference models (those that focus on the change in a certain outcome between one point in time and another, not considering the level of that outcome) were used in the study. Satisfaction with work and family life was analysed by understanding the changes in individual-level circumstances, like employment or where people work, as they are related to changes in individuals' satisfaction over time. To examine the general effect of the lockdown on satisfaction, the study ran a model with all respondents who participated in the survey in September 2019 and April 2020 for family satisfaction (N=2639), and all respondents employed at both time-points for work satisfaction respectively (N=1663). The study employed separate models for parents, mothers, fathers and those without children to detect differences in the effects. As robustness checks, they ran models without controlling for household income as reduced work hours lead to reduced pay which may affect work and family satisfaction. In addition, only parents of young children, that is, below the age of 12 were selected as these require intensive care and more support with home-schooling.

The data from the MSC of April 2020 was combined with the data from the GIP of September 2019, thereby focusing on within-person changes and causal relationships. The results showed an overall decrease in family satisfaction as a result of the lockdown for mothers, fathers, and those without children alike. Therefore, Hypothesis 1 on a general negative effect of the COVID-19 lockdown on satisfaction with work and family is confirmed. For parents, especially for mothers, this may be due to increased stress due to the necessity of balancing child care and schooling with work, irrespective of whether they continue to work on-site or switch to remote work. The impoverishment of social contacts may have a negative effect on those without children (Best et al., 2020).

A significant reduction in work satisfaction was reported by those without children and mothers with older children, especially if they changed to short-time work. Fathers were the only subgroup without a significant negative effect of short-time employment on work satisfaction. Their family satisfaction increased after a change to short-time work. Hypothesis 2 is contradicted.

As mothers often work part-time in Germany (Rosenfeld et al., 2004), they gain in free-time from a change to short-time work may carry less weight than the increase in uncertainty about future employment security and shortage in earnings. This may be true to mothers of older children as these require less care yet, have higher consumption than younger children (Gray and Stanton, 2010). Fathers who work full time during the lockdown had more time to spend with their families as short-time work gave them more freedom to care for their families, and therefore, be associated with higher family satisfaction (Yerkes et al., 2020). This result contradicts previous studies that show positive effects on the general SWB of fathers who have long working hours (Schröder, 2018). The main advantage of this study was to be able to associate the SWB of the same individuals during the COVID-19 lockdown and compare this with SWB from before the lockdown.

In 1995, Horley et al. conducted a study to investigate the relationship between subjective well-being (SWB) and age, and for the same two studies were conducted, one being a cross-sectional design study while the other being a longitudinal study. In past years there had been quite controversial outcomes when it came to the relationship between age and SWB. In the present study, firstly, a cross-sectional examination was conducted wherein 1321 people had agreed to participate in a study of SWB and everyday activities. All respondents completed a number of measures of SWB, which included a 1) version of the Affect Balance Scale (Bradburn, 1969) that examines happiness as a function of both positive and negative affective ratings, 2) an 11-point life satisfaction rating used by Atkinson (1982) and 3) an 11-point quality of life self-anchoring ladder with a rating of present life quality. Respondents also completed a symptomatology inventory that required frequency ratings of a number of common symptoms of ill health. Analysis of variance was calculated on each of the 3 SWB measures using seven age levels – 19 and under, 20-29, 30-39, 40-49, 50-64, 65-74, 75 and over. Multiple regression analysis was performed on a multiplicative combination of the 3 measures, interpreted as a generalized well-being rating, using demographic and health variables as predictors.

A significant age effect was revealed by analyses of variance; all measures showed some increase with age, particularly after 40 years of age. Multiple regression analysis revealed a predictable pattern of results where age was found to be a significant predictor of SWB, as was the heath symptomatology. In the second study, 298 participants were randomly selected from study 1. They were mailed a survey, and 136 of them returned it. Ninety-three participants finally were a part of the study. An 11-point life satisfaction rating and 11-point present life quality rating were the SWB measures included in this version of the assessment. Analysis of variance was used to examine the differences in these repeated measures of two age groups, younger/s older adults. Over a seven-year period from the first assessment to the second, younger respondents tended to report lower life satisfaction and lower life quality while older respondents showed the reverse for both life satisfaction and life quality. However, further research was indicated by the researchers because the older individuals in the present study who were recontacted were well situated for the final years of life in all terms, and the results of the second study were limited by both the number and nature of the participants and the time period as seven years may be too brief to examine changes in SWB.

In 2015, Ivana Marcinko also conducted research to study the relationship between subjective well-being and physical health. However, this study also looked at the moderating effects of autonomous motivation between these two variables. Cluster sampling was used, and four hundred and eighty-six students were included in the study and the average age of participants was twenty-two. General health was measured using the question: "Do you suffer from a chronic disease (e.g., asthma, diabetes, arthritis, etc.)?" to which the participant responds by choosing between "yes/no" answers. Besides that, the subscales of physical health were used from the Short form 36 Questionnaire (SF-36). The participants were also asked to think and write about the three most important goals they have been trying to achieve during the last six months. The scale of autonomous/controlling motives was used, which has four items that measure four regulatory styles: intrinsic, identified, introjected and external. Subjective well-being was measured using the Positive and Negative Affect Schedule (PANAS) and Single-item life satisfaction scale. The results from the Pearson Product Moment correlation showed a significant relationship between subjective well-being and physical health, although the correlation coefficient was low (r=.30). Further, in order to find whether autonomous motivation moderated the relationship between subjective well-being and physical health, a hierarchical regression analysis of variance was done. The findings revealed that autonomous

motives moderated the relationship between physical health and positive affect, which is one of the components of subjective well-being. The results showed that good physical health was found among participants with high positive affect and behaviours regulated by a high degree of autonomous motives.

The purpose of the current study is to assess the subjective well-being of frontline workers, especially those in the healthcare domain, with respect to secondary traumatic stress. Treating patients suffering from the virus every day has taken a toll on them, and this can lead to a possible deterioration of subjective well-being. Previous studies have demonstrated that medical personnel have exasperated issues while responding to severe health emergencies. The pandemic is one such emergency at a global scale that can have detrimental effects on an individual's mental health, especially those at the frontline.

3. METHODOLOGY
3.1 Aim
To understand the relation between secondary traumatic stress and subjective well-being of frontline health care workers during the Covid-19 pandemic.

The frontline workers were hardest hit with the pandemic in terms of both emotional and physical strain; the study attempts to understand the secondary traumatic stress they face in times of global emergency and how that impacts their subjective well-being. This study can later be generalized to better understand the SBW of the healthcare workers during times of crisis.

3.2 Population
The population chosen would be frontline health care workers, including doctors, surgeons, physicians, and nurses in the age range 30-60 years of age. This age range includes younger healthcare workers less susceptible to the virus and older healthcare workers who are more experienced. Furthermore, taking only one set (age range) of doctors could lead to limited generalizability of the results since we would not know about the responses of the other set.

3.3 Sampling
Purposive Sampling**:** Respondents would be selected using purposive sampling. The sample is selected based on the characteristics of the population and the objective/ purpose of the study. The experimenter chooses the sample using his own judgement so that they are the best representatives of the population.

3.4 Inclusion Criteria
Inclusion criteria refer to the characteristics prospective subjects should have in order to be included in a study. The inclusion criteria for this study were:
1. Frontline healthcare workers.
2. Actively attending to Covid-19 patients.
3. Aged 30-60 years

3.5 Exclusion Criteria
Exclusion criteria refer to the characteristics that disqualify prospective subjects from being included in a study. The exclusion criteria for this study were:
1. Not a frontline healthcare worker.
2. Below the age of 30 and above 60.

3.6 Operational definition
Variable 1 (Predictor): Secondary traumatic stress
Secondary traumatic stress is the stress derived from helping others who are suffering or who have been traumatised. Secondary traumatisation is characterised by symptoms of post-traumatic stress following indirect exposure to aversive details of trauma (Greinacher, Derezza-Greeven, Herzog, & Nikendei, 2019)

Variable 2 (Criterion): Positive Affect and Negative Affect
Positive affect is one's propensity to experience positive emotions and life challenges in a positive way. Negative affect is one's propensity to experience negative emotions and experience the world in a more negative way. Both positive and negative affect are the components of subjective well-being. In the present study, they are measured using the Positive and Negative Affect Schedule (PANAS) by Watson, Clark, and Tellegen (1988).

3.7 Hypotheses:
1. There is a negative correlation between secondary traumatic stress and positive affect in frontline health care workers during the Covid-19 pandemic.
2. There is a positive correlation between secondary traumatic stress and negative affect in frontline health care workers during the Covid-19 pandemic.

3.8 Data Collection
For the objective of the study, an online questionnaire with close-ended questions was employed to collect the data in the current research. Two sets of standardised scales (PANAS and STSS) with a list of 37 questions in total were used in order to collect individual data.

3.9 Materials
Google Form

Phone/Laptop
Secondary Traumatic Stress Scale
Positive and Negative Affect Scale

3.10 Procedure

The two variables on the basis of which the research would be conducted were decided. Keeping the current situation in mind, the two variables chosen were secondary traumatic stress in frontline health care workers and positive and negative affect. The scales that would be used in the research was the Secondary Traumatic Stress Scale by Bride et al. (2004) and the Positive and Negative Affect Schedule by Watson et al. (1988). Subsequently, consent concerning the administration of the scales was sought by the respective authors of the scales. A Google form, in accordance with the two scales used in this study, was created. The form was made of six sections consisting of questions regarding SWB and STSS in frontline healthcare workers. The respondents were sent the form either via email or message. As soon as the respondents fill the form, the responses get recorded in the database. The raw data was sorted, and scales were scored. Following the scoring of all three scales, the mean and standard deviation were calculated in excel with the process of winsorisation to discard spurious outliers. Using SPSS, the correlation was calculated between secondary trauma and positive and negative affect and linear regression was done to study the causation of negative affect and secondary trauma. The SPSS output was then analysed, and a conclusion was drawn on the basis of the results.

3.11 Treatment of Data

Once the responses were received, the cumulative data were analysed using Pearson's correlation coefficient on SPSS to conclude whether there was a positive correlation between the two variables, i.e., Secondary trauma and negative affect and a negative correlation between secondary traumatic stress and positive affect. The Pearson correlation coefficient is used to measure the strength of a linear association between two variables, where the value $r = 1$ means a perfect positive correlation and the value $r = -1$ means a perfect negative correlation. A correlation of (+/-) 0.7 above would indicate a strong correlation. If a correlation coefficient of (+/-)0.70 was obtained, a linear regression was performed to indicate causation.

3.12 Tools

The current research employed two scales to measure and correlate responses of the frontline workers.

3.13 Scale for Secondary Trauma

The Secondary Traumatic Stress Scale (STSS; Bride et al., 2004), was developed to measure the symptoms of secondary traumatic stress.
The STSS measures reactions of people - traumatic stress through their work with clients by addressing the three factors of intrusion, avoidance, and arousal.

The STSS is a 17-item self-report measure administered in pencil and paper format. Instructions for the STSS indicated that respondents should endorse how frequently an item was true for them in the past seven days. Responses ranged from 1 to 5 in Likert form with 1 = never and 5 = very often. Of the 17 items, some are not stressor specific (items 1, 4, 5, 7, 8, 9, 11, 15, 16), but are general negative emotions and effects associated with traumatic stress (e.g., "I felt numb"; "I had trouble sleeping"). Other items (items: 2, 3, 6, 10, 12, 13, 14, 17) were specifically developed and worded using client exposure as the identified stressor (e.g., "My heart started pounding when I thought about my work with clients"; "Reminders of my work with clients upset me").

The STSS has three subscales: Intrusion (items: 2, 3, 6, 10, 13), Avoidance (items: 1, 5, 7, 9, 12, 14, 17), and Arousal (items: 4, 8, 11, 15, 16).

Scoring is obtained by summing the endorsed frequency for each sub-scale as well as the total STS scale. There is no reverse scoring. Psychometric data for the original STSS indicated very good internal consistency reliability with coefficient alpha levels of .93 for the total STS scale, means, standard deviations, and alpha levels for the STSS and its subscales were as follows: Full STSS ($M = 29.49$, $SD = 10.76$, $\alpha = .93$), Intrusion ($M = 8.11$, $SD = 3.03$, $\alpha = .80$), Avoidance ($M = 12.49$, $SD = 5.00$, $\alpha = .87$), and Arousal ($M = 8.89$, $SD = 3.57$, $\alpha = .83$).

The claims of convergent validity would be supported if scores on the STSS and its subscales correlated with respondent ratings of (a) the extent to which their client population is traumatized (extent) ($M = 3.19$, $SD = .87$), (b) the frequency with which their work with clients addresses traumatic stress (frequency) ($M = 3.49$, $SD = .93$), (c) the severity of depression symptoms experienced by the respondent in the past week (depression) ($M = 1.74$, $SD = .79$), and (d) the severity of anxiety symptoms experienced in the past week (anxiety) ($M = .88$, $SD = .85$). Furthermore, claims of discriminant validity would be supported if scores on the STSS were unrelated to the demographic variables of age, ethnicity, and income.

3.14 Sub-scales

An intrusion subscale was created to measure the intrusive symptoms the participants reported. The intrusion subscale was created by combining the scores of the following statements; My heart started pounding when I thought about my work with clients (2); It seemed as if I was reliving the trauma(s) experienced by my client(s) (3); Reminders of my work with clients upset me (6); I thought about my work with clients when I didn't intend to (10); I had disturbing dreams about my work with clients (13).

An avoidance subscale was created to measure the avoidance symptoms the participants reported and the reliability of the subscale. The avoidance subscale was created by combining the scores of the following statements; I felt emotionally numb (1); I felt discouraged about the future (5); I had little interest in being around others (7); I was less active than usual (9); I avoided people,

places, or things that remind me of my work with clients (12); I wanted to avoid working with some clients (14); I noticed gaps in my memory about client responses (17).

An arousal subscale was created to measure the arousal symptoms that participants reported and the reliability of the scale. The arousal scale was created by combining the following questions; I had trouble sleeping (4); I felt jumpy (8); I had trouble concentrating (11); I was easily annoyed (15); I expected something bad to happen (16).

Scale for Subjective Well-being: Positive and Negative Affect Scale (PANAS):
The Positive and Negative Affect Schedule (PANAS) which was developed by Watson, Clark, and Tellegen (1988) is one among the most widely used scales to measure mood or emotion in various contexts such as the present day, the past day, the past week, perhaps the past year, or even generally. It consists of 20 items, with 10 items measuring positive affect (e.g., excited, inspired) and 10 items measuring negative affect (e.g., upset, afraid). Each item is rated on a five-point Likert Scale, ranging from 1 = Very Slightly or Not at all to 5 = Extremely, to measure the extent to which the effect has been experienced in a specified time frame. Thus, the scale can be used to measure state affect, dispositional or trait affect, emotional fluctuations throughout a specific period of time, or emotional responses to events.

The PANAS displays a very good internal reliability that is consistent with scores ranging from 0.86 to 0.90 for PA and 0.84 to 0.87 for NA. (Magyar-Moe, 2009). This level of consistency is found no matter what time instruction is utilised. Test reliability was found to be good over a timeframe of 8 weeks. The reliability of the test seems to be a little higher as the time frame lengthens and when used with instructions such as right now or over the past week. Convergent validity was found between the Positive Affect subscale of the PANAS and measures of social activity and diurnal variation in mood. Discriminant validity was found between the Positive Affect subscale and measures of stress, aversive events, dysfunction, depression, and general distress. The opposite was true for the Negative Affect subscales. Convergent validity was established between Negative Affect and measures of stress, aversive events, depression, and general distress and dysfunction, and discriminant validity with measures of social activity and diurnal variation in mood (Watson et al., 1988).

The scale, like any other, has its limitations. Since it's a self-report questionnaire, people can understate or overstate their mood, making it difficult to assess it accurately. It doesn't encompass higher order mood states. In addition, PANAS had a limited sample size. Some studies claim that the PANAS is too long or that its items are redundant. Even though there is evidence of good psychometric properties of the PANAS, Watson et al. observed that both PA and NA were independent. In one study, Caucasians displayed either a negative or zero correlation between PA and NA. In contrast, in a Japanese version conducted by Lim et al. (2010), a positive correlation was found between the two. On the basis of this, it can be assumed that possible correlations between PA and NA may vary depending on cultural diversity.

4. RESULTS
The aim of the current study was to assess the correlation between secondary traumatic stress and the subjective well-being of frontline health care workers during the covid pandemic. In order to do so, the Secondary Trauma Stress Scale and Positive Affect Negative Affect Schedule was administered through an online mode, on Google Forms. The sample consisted of 220 frontline healthcare workers. However, based on the inclusion and exclusion criteria, 20 responses were discarded, making the final sample size 200. After collecting the data, the mean and standard deviation were calculated for the responses of secondary traumatic stress, positive affect, and negative affect. Winsorizing or winsorisation is the transformation of statistics by limiting extreme values in the statistical data to reduce the effect of possibly spurious outliers. This method was used to control for outliers. Response data of all three scales were analysed to ensure that there were no outliers. If outliers were present, depending on whether the said outlier was found to be deviant in a direction above or below the mean, they were replaced. Certain numbers of outliers were found in the data that were then replaced with the second-highest value in the data, which was not an outlier. In negative effect, the value 45 was above +3 standard deviation, so it was replaced by the next higher value, which was 43. In secondary trauma stress, 69, 73 and 73 were found above +3 standard deviation, and so they were replaced with the next highest value, which was 65.

Table 1, Table 2, and Table 3, depicts the descriptive statistics of the responses of all the scales. Table 1 indicates the statistics of secondary traumatic stress, where the mean score was 34.70, with a standard deviation of 11.60. Table 2 depicts the mean score of positive affect, which was 39.08 (SD= 7.325). As can be seen in Table 3 for negative affect, the mean score was 19.05 (SD=7.79). In order to find the correlation between secondary traumatic stress and positive affect and negative affect, the Pearson Product Moment Correlation was computed on SPSS (Statistical Package for the Social Sciences). Table 4 shows the correlation between secondary traumatic stress and positive affect. As can be seen from the table, a moderate negative correlation was obtained between secondary traumatic stress and positive affect (r= -0.431, p < 0.01). This implied that the positive effect decreased as secondary traumatic stress increased. Thus, the data was in line with the expectation of the current study. Table 5 indicates the correlation between secondary traumatic stress and negative affect. As depicted, a significant positive correlation exists between secondary traumatic stress and negative affect (r= 0.748, p<0.01). This implied that negative affect increased as secondary traumatic stress increased. Thus, the data was in line with the hypothesis of the current study. The data for both the variables were in line with the hypotheses suggesting the null hypothesis can be rejected.

Since a strong significant correlation between secondary traumatic stress and negative affect was observed, the researchers wanted to further investigate if secondary traumatic stress predicts negative affect. In order to do so, a regression analysis was computed on SPSS. Table 7 shows the values obtained in regression. A highly significant regression was found between secondary traumatic stress and negative affect with a beta value of 0.748 (B= 0.748, p<0.001). This means that the predictor, that is, secondary traumatic

stress, contributes 70% to the change in the criterion, that is, the negative affect. Thus, it can be concluded that changes in secondary traumatic stress (predictor) will lead to or cause a change in negative affect (criterion).

5. DISCUSSION

In the current study, the relationship between two variables, secondary trauma and positive and negative affect, was studied. It was hypothesised there would exist a negative correlation between positive affect and secondary traumatic stress in frontline workers and a positive correlation between negative affect and secondary traumatic stress in frontline workers. The results were in line with the hypothesis. A correlation coefficient of -0.431 indicated a moderate negative correlation between positive affect and secondary trauma in frontline healthcare workers. On the other hand, a strong positive correlation was seen between negative affect and secondary traumatic stress in frontline healthcare workers, with the correlation coefficient being 0.748, thus proving the data to be in line with the hypothesis. The current study had a sample size of 200 respondents. Due to the small sample size, the variability of the responses was higher. However, as the data received is in the same direction as hypothesised, the results are proven to be significant. Negative affect and secondary trauma are highly correlated, and the results of regression analysis reveal it is significant at 0.01 level, suggesting that negative affect and emotions are caused by exposure to secondary traumatic stress.

The results of the current study can be corroborated with previous research as well. Secondary trauma can be incurred when an individual is exposed to people who have been traumatised themselves, disturbing descriptions of traumatic events by a survivor. Symptoms of secondary trauma are similar to those of PTSD (e.g. intrusive reexperiencing of the traumatic material, avoidance of trauma triggers/emotions, negative changes in beliefs and feelings and hyperarousal). Secondary trauma has been researched in first responders, nurses, physicians and doctors in the medical set-up.

Since it has only been a year since the beginning of the pandemic, there are no theories that directly link secondary traumatic stress in frontline healthcare workers and positive and negative affect. The conservation of resources (Hobfoll, 1998) theory can help explain the results obtained. This theory provides a comprehensive framework for understanding the impact of assessment on emotions and performance by focusing on the resources of individuals and groups (Buchwald, 2003). Resource loss is a crucial determinant of stress, according to this theory. Resource loss predicts psychological distress in the context of interpersonal disasters such as trauma exposure (Hobfoll, Hall, and Canetti, 2012). It has also been shown to predict psychological distress following more isolated incidents of extreme violence, even after controlling for other variables such as prior trauma exposure (e.g., Hobfoll, Tracy, and Galea, 2006). It is also an important determinant of occupational burnout (Hobfoll and Shirom, 2000; Shirom et al.,2013). Resources are characterised by their external or internal locus relative to the individual. For example, vigour, hope, and self-efficacy are located within the individual and are key as they provide the energy and motivation to seek and maintain external resources such as stable employment and supportive relationships. In the current study, it was observed that the medical personnel showed a significant amount of negative affect in response to being exposed to the traumatic and stressful situations in dealing with covid-19. Doctors and healthcare professionals responding to a public health crisis—trying to defend individuals, households, and populations in adverse circumstances with low resources and a lack of personal protective equipment (PPE) and other equipment, became unanticipated targets in the fight against COVID. Previous studies have demonstrated that medical personnel have exasperated issues while responding to severe health emergencies, the pandemic is one such emergency at a global scale wherein internal and external resources were unavailable to deal with the highly anxiety-ridden situation, which can have detrimental effects on an individual's mental health, especially those at the frontline. It was also seen that positive affect had a negative correlation with secondary traumatic stress, which can be understood because the experience of secondary trauma is a difficult one, and it can lead to fatigue and burnout, leading to diminished positive affect. The diathesis-stress model explains the relationship between stressful job conditions and individual strain. These strains can be mental, physical and emotional. Thus, having an extremely traumatic job condition can lead the person to experience less positive affect. Due to the pandemic and the surroundings of the healthcare workers, the increased exposure to patients of the Covid-19 virus leads to secondary traumatic stress in them. As the secondary traumatic stress increased, the negative effect also increased. This explains the positive relationship between the two variables of negative affect and secondary traumatic stress.

6. LIMITATIONS AND SUGGESTIONS

- The current study investigated the relationship between secondary traumatic stress and subjective well-being in the frontline workers in the healthcare domain. Future investigations can assess secondary traumatic stress among other frontline workers like cops, media reporters, army officers and so on.
- The current study is a correlational study that does not clearly indicate a cause-and-effect relationship; future studies could use an experimental design to indicate causation.
- The current study had a broader age range. Future investigations can do a comparative study by comparing two age groups: younger adults and older adults.
- In the current study, respondents included experienced as well as relatively less-experienced workers from the healthcare domain. Future investigations can assess these two groups separately in order to explore differences in their subjective well-being.
- The current experiment used a mode of online form to collect responses from the frontline workers. Hence it could not be monitored; further investigation can use an offline mode of collecting the responses from the frontline workers after the end of the pandemic to avoid this confound.
- The current experiment assessed subjective well-being only with respect to positive and negative affect. Future investigations can assess other domains of subjective well such as life satisfaction in frontline workers.
- In the current experiment, the sample consisted of only doctors and not other individuals belonging to the medical personnel such as nurses or caretakers directly dealing with Covid-19 patients; further investigation can include a more diverse sample including them.

7. CONCLUSION

The Covid-19 pandemic has greatly affected the mental health and well-being of all individuals, but especially that of frontline workers, which has been indicated by this study. Frontline workers have been playing a crucial role in providing care for individuals that got infected with Covid-19. Dealing with patients of Covid-19 every day and putting themselves and their family members at risk is a selfless act. While healthcare workers are often resilient, they are human and often need more psychological support in times of turmoil. However, this has also led them to face high levels of stress and trauma about the health of their patients as well as their family members back home. The pandemic is one such emergency at a global scale that can have detrimental effects on an individual's mental health, especially those at the frontline. It was imperative to understand how treating patients can affect the subjective well-being of the healthcare personnel. It is advised that policymakers and managers implement welcoming, encouraging, motivating, training and educational strategies, especially through information and communication platforms. While the current research discovered that negative affect is common in healthcare workers operating in these settings dealing with a highly infectious illness, the majority of Healthcare Workers operate in isolated wards without having the proper training to enhance their mental health. As a result, routine psychiatric treatment is desperately needed to satisfy these needs. In order to reduce depressive anguish and health-related concerns, certain interventions should be taken. These solutions may be useful not only in dealing with the SARS-CoV-2 pandemic but also in dealing with possible future outbreaks of infectious diseases. Further research needs to be conducted in the future to understand other aspects of subjective well-being among the frontline workers, along with variables that relate to their day-to-day life.

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APPENDIX

A1. Letter seeking permission to use Secondary Traumatic Stress Scale:
Letter Seeking Permission to Use Questionnaire Tool
Secondary Traumatic Stress Scale

Name: S. Barot, P. Gohil, V. Jain, A. Kochhar, U. Modi, R. Parti, S. Ramesh, K. Sand (BA).
Institution: Mithibai College of Arts
Department: Psychology
Address: Bhaktivedanta Swami Marg, V.L. Mehta Road, Vile Parle (West), Maharashtra, Mumbai- 400056

Dear Sir,
We are undergraduate students from Mithibai College of Arts conducting a correlational study as a part of our final year research proposal assignment. We want to understand the relationship between secondary traumatic stress and subjective well-being of frontline health care workers during the Covid-19 pandemic. The Secondary Traumatic Stress Scale would help us bring this proposal to completion because the three factors of intrusion, avoidance, and arousal are essential to our study.

The research is being conducted under the direction of Dr. Keshmira Patel, Head of Department of psychology, who can be reached at email id: Keshmira.Patel@mithibai.ac.in and contact number: +919833006150.

We would be grateful if we could get your permission to use the Secondary Traumatic Stress Scale since it is a valid and reliable tool. We would like to use and print your tool under the following conditions:

We will use the tool only for our research study and will not sell or use it with any compensated or curriculum development activities. If these are acceptable terms and conditions, please indicate so by replying to us through email:
sanjanabarot@hotmail.com , poojagohil13@gmail.com , jainvrishti34@gmail.com , anjinikochhar@gmail.com , unnatikmodi@gmail.com , roshniparti@gmail.com , soumitaramesh@gmail.com , kanirasand@gmail.com

Thank you.

A2. Letter granting permission to use Secondary Traumatic Stress Scale:
Permission granted.
 Best,
Brian

Brian E. Bride, Ph.D., M.S.W., M.P.H.
Distinguished University Professor
Director, School of Social Work
Georgia State University
55 Park Place, NE, 5th Floor
Atlanta, Georgia 30302
(404) 413-1052
bbride@gsu.edu

B1. Letter seeking permission to use Positive and Negative Affect Schedule:
Letter Seeking Permission to Use Questionnaire Tool
Positive and Negative Affect Schedule (PANAS)

Name: S. Barot, P. Gohil, V. Jain, A. Kochhar, U. Modi, R. Parti, S. Ramesh, K. Sand (BA).
Institution: Mithibai College of Arts
Department: Psychology
Address: Bhaktivedanta Swami Marg, V.L. Mehta Road, Vile Parle (West), Maharashtra, Mumbai- 400056

Dear Sir/ Ma'am,

We are undergraduate students from Mithibai College of Arts conducting a correlational study as a part of our final year research proposal assignment. We want to understand the relationship between secondary traumatic stress and subjective well-being of

frontline health care workers during the Covid-19 pandemic. The PANAS would help us bring this proposal to completion because it measures the positive and negative emotions of the subjects.

The research is being conducted under the direction of Dr. Keshmira Patel, Head of Department of psychology, who can be reached at email id: Keshmira.Patel@mithibai.ac.in and contact number: +919833006150.

We would be grateful if we could get your permission to use the PANAS since it is a valid and reliable tool. We would like to use your tool online under the following conditions:

We will use the tool only for our research study and will not sell or use it with any compensated or curriculum development activities.

Since the current situation does not permit us to do this in person, we will be doing this in an online format.
If these are acceptable terms and conditions, please indicate so by replying to us through email: sanjanabarot@hotmail.com , poojagohil13@gmail.com , jainvrishti34@gmail.com , anjinikochhar@gmail.com , unnatikmodi@gmail.com , roshniparti@gmail.com , soumitaramesh@gmail.com , kanirasand@gmail.com
Thank you.

B2. Letter granting permission to use Positive and Negative Affect Schedule:
Dear Kanira,

I appreciate your interest in the Positive and Negative Affect Schedule (PANAS), and I am pleased to grant you permission to use the PANAS in your research. Please note that to use the PANAS, you need both our permission and the permission of the American Psychological Association (APA), which is the official copyright holder of the instrument. Because I am copying this email to APA, however, you do not have to request permission separately from APA; this single email constitutes official approval from both parties.

We make the PANAS available without charge for non-commercial research purposes. We do require that all printed versions of the PANAS (including online protocols and mobile apps) include a full citation and copyright information. Thus, any printed copies should state:

"From "Development and validation of brief measures of positive and negative affect: The PANAS scales," by D. Watson, L. A. Clark, and A. Tellegen, 1988, Journal of Personality and Social Psychology, 54, 1063-1070. Copyright (C) 1988 by the American Psychological Association. Reproduced with permission."

Finally, I have moved to the University of Notre Dame. Please direct any future correspondence to my ND email address (db.watson@nd.edu).

Thanks again for your interest in the PANAS. Good luck with your research.

Regards,

David Watson

_____

David Watson, Ph.D.
Andrew J. McKenna Family Professor
Department of Psychology
University of Notre Dame
C. Google form used for data collection
Hello, we are Final Year students of Mithibai College of Arts, Psychology Department and are conducting research to understand the relationship between Secondary Traumatic Stress and Subjective Well-being among frontline workers during the Covid 19 pandemic. We would be really grateful if you could take out 7-10 mins to fill out this form that would help us with our research. Your data will remain confidential and will only be used for the purpose of this study.
https://docs.google.com/forms/d/e/1FAIpQLSfPPzKbF5mzW1eJW_vxeYj1sZXZd9xXyWOZ-4C7wtK_9N8m0Q/viewform?usp=sf_link
Thank you for your time and cooperation.
Regards.

D. Secondary Traumatic Stress items

The following is a list of statements made by persons who have been impacted by their work with traumatized clients. Read each statement then indicate how frequently the statement was true for you in the past **seven (7) days** by circling the corresponding number next to the statement.

NOTE: *"Client" is used to indicate persons with whom you have been engaged in a helping relationship. You may substitute another noun that better represents your work such as consumer, patient, recipient, etc.*

	Never	Rarely	Occasionally	Often	Very Often
1. I felt emotionally numb	1	2	3	4	5
2. My heart started pounding when I thought about my work with clients	1	2	3	4	5
3. It seemed as if I was reliving the trauma(s) experienced by my client(s)	1	2	3	4	5
4. I had trouble sleeping	1	2	3	4	5
5. I felt discouraged about the future	1	2	3	4	5
6. Reminders of my work with clients upset me	1	2	3	4	5
7. I had little interest in being around others	1	2	3	4	5
8. I felt jumpy	1	2	3	4	5
9. I was less active than usual	1	2	3	4	5
10. I thought about my work with clients when I didn't intend to	1	2	3	4	5
11. I had trouble concentrating	1	2	3	4	5
12. I avoided people, places, or things that reminded me of my work with clients	1	2	3	4	5
13. I had disturbing dreams about my work with clients	1	2	3	4	5
14. I wanted to avoid working with some clients	1	2	3	4	5
15. I was easily annoyed	1	2	3	4	5
16. I expected something bad to happen	1	2	3	4	5
17. I noticed gaps in my memory about client sessions	1	2	3	4	5

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Intrusion Subscale (add items 2, 3, 6, 10, 13)	Intrusion Score	_____
Avoidance Subscale (add items 1, 5, 7, 9, 12, 14, 17)	Avoidance Score	_____
Arousal Subscale (add items 4, 8, 11, 15, 16)	Arousal Score	_____
TOTAL (add Intrusion, Arousal, and Avoidance Scores)	Total Score	

E. Positive and Negative Affect Scale

(52)   Therapist's Guide to Positive Psychological Interventions

Worksheet 3.1   The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988)

PANAS Questionnaire

This scale consists of a number of words that describe different feelings and emotions. Read each item and then list the number from the scale below next to each word. **Indicate to what extent you feel this way right now, that is, at the present moment OR indicate the extent you have felt this way over the past week (circle the instructions you followed when taking this measure)**

1	2	3	4	5
Very Slightly or Not at All	A Little	Moderately	Quite a Bit	Extremely

_____ 1. Interested	_____ 11. Irritable
_____ 2. Distressed	_____ 12. Alert
_____ 3. Excited	_____ 13. Ashamed
_____ 4. Upset	_____ 14. Inspired
_____ 5. Strong	_____ 15. Nervous
_____ 6. Guilty	_____ 16. Determined
_____ 7. Scared	_____ 17. Attentive
_____ 8. Hostile	_____ 18. Jittery
_____ 9. Enthusiastic	_____ 19. Active
_____ 10. Proud	_____ 20. Afraid

Scoring Instructions:

Positive Affect Score: Add the scores on items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19. Scores can range from 10 – 50, with higher scores representing higher levels of positive affect. Mean Scores: Momentary = 29.7 (SD = 7.9); Weekly = 33.3 (SD = 7.2).

Negative Affect Score: Add the scores on items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20. Scores can range from 10 – 50, with lower scores representing lower levels of negative affect. Mean Score: Momentary = 14.8 (SD = 5.4); Weekly = 17.4 (SD = 6.2).

F. Descriptive Statistics

Table 1.

Statistics

sts

N	Valid	200
	Missing	1
Mean		34.70
Median		32.50
Std. Deviation		11.604
Range		57
Minimum		17
Maximum		74

Table 2.

→ Frequencies

Statistics

pa

N	Valid	200
	Missing	1
Mean		39.08
Median		39.50
Std. Deviation		7.325
Range		30
Minimum		20
Maximum		50

Table 3.

Frequencies

Statistics

NA

N	Valid	200
	Missing	12
Mean		19.0500000
Median		17.0000000
Std. Deviation		7.98223530
Range		33.0000000
Minimum		10.0000000
Maximum		43.0000000

G. Correlation

Table 4.

Correlations

Correlations

		STS	PA
STS	Pearson Correlation	1	-.431[**]
	Sig. (1-tailed)		<.001
	N	200	200
PA	Pearson Correlation	-.431[**]	1
	Sig. (1-tailed)	<.001	
	N	200	200

[**]. Correlation is significant at the 0.01 level (1-tailed).

Table 5.

Correlations

		STS	NA
STS	Pearson Correlation	1	.748**
	Sig. (1–tailed)		<.001
	N	200	200
NA	Pearson Correlation	.748**	1
	Sig. (1–tailed)	<.001	
	N	200	200

**. Correlation is significant at the 0.01 level (1–tailed).

H. Regression

Table 6.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	STS[b]	.	Enter

a. Dependent Variable: NA

b. All requested variables entered.

Table 7.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.748[a]	.559	.557	5.31421936

a. Predictors: (Constant), STS

Table 8.
ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7087.796	1	7087.796	250.976	<.001[b]
	Residual	5591.704	198	28.241		
	Total	12679.500	199			

a. Dependent Variable: NA

b. Predictors: (Constant), STS

Table 9.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.665	1.220		.545	.586
	STS	.532	.034	.748	15.842	<.001

a. Dependent Variable: NA