

## **Efficacy of a Positive Psychology Based Intervention on Stress and Happiness among Working Women: An RCT protocol**

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Women are an integral part of the workforce in India. The female labour force participation has reduced from 30.6% in 1990 to 20.25% in 2019 (Statista.com, 2021). The causes for this decline are said to be a lack of flexible work timings, lack of family support and lack of satisfaction and contentment in their lives. This paper is an attempt to understand the psychological manifestations of stress and happiness among women working in various structured and unstructured occupations. The study also uses a positive psychology-based intervention to improve stress and hence its impact on happiness. The research design used for the study is a before-after with a control group experimental design. Eighty-four women from various registered and unregistered occupations, aged between 22 to 60 years, were selected using a purposive sampling technique. They were then randomly assigned to an experimental group and a waitlist control group. The Subjective Happiness Scale (Lyubomirsky, 1999) was used to measure Happiness, and the Holmes-Rahe Stress Inventory (1967) was used to measure Stress. The positive psychology-based intervention consisted of activities and exercises given virtually for 28 sessions to build self-compassion and positive emotions in the participants of the experimental group. Results revealed that the Positive Psychology Based Intervention improved happiness and also reduced stress levels among working women. There were no significant differences in happiness and stress with regard to the salary drawn or the types of jobs that women were involved in.

**Keywords:** Stress, happiness, positive psychology intervention, working women

India is now a country with a growing female workforce. Women currently are employed in various jobs, ranging from driving trucks and autorickshaws to launching rockets. The womenfolk, called the softer gender, are employed in hardcore professions that require skill, ability and grit. The age when jobs were segregated according to gender is a thing of the past. Gender is no longer a criterion when choosing careers now. This kind of improvement of gender representation in the varied workforce is a qualitative change; the quantity has decreased. The female labour force participation has reduced from 30.6% in 1990 to 20.25% in 2019 (Statista.com, 2021). The causes for this decline are said to be lack of flexible work timings, lack of family support and lack of satisfaction and contentment in their lives.

Along with the changing demands on women, there is a change in the time these women spend for themselves. Even homemakers who are

not gainfully employed outside the house are lost in odd jobs and find it difficult to find even a little time for themselves. Working women have been found to be more stressed due to their responsibilities of managing the home and workplace. To achieve Work Life balance, the working woman strives hard and many of them are plagued by sleeplessness, fatigue, lack of family support, guilt among many other stressors. This causes a great amount of stress and its related disorders that manifest themselves physically and psychologically.

Happiness is a state of subjective well being. Different people have different understandings of the meaning of the word happiness. It is being in an enthusiastic state of mind; for others, it is materialistic. Still, others think that a calm and peaceful life is happy. The subjective feeling of happiness is the feeling that one is well and that things are going on well. Happiness is a state of mind with many positive emotions, such as joy,

satisfaction, contentment, and positive emotions, such as optimism, love and affection.

This paper is an attempt to develop a Positive Psychology Based Intervention Programme designed to alleviate stress and bring about increased happiness in the lives of working women. Positive Psychology postulates that the absence of "Negative", that is the absence of disease, does not ensure well being. Applying this construct, an intervention model was constructed and named "The C. A. R. E Intervention Model". It consisted of activities and exercises designed to develop compassion and self compassion, achieve a sense of purpose in life, build relationships and enhance positive emotions, thus leading one to the experience of well being. C.A.R.E is an acronym, that can be elaborated as:

C: stands for Compassion and Self Compassion

A: stands for Achieving a Purpose in Life

R: stands for Relationship Building

E: stands for Enhancing Positive Emotions

A brief review of the literature was conducted to understand the previous research on the variables taken up for the study. Fekete and Deichert (2022) analyzed the efficacy of gratitude writing as an intervention in overcoming stress during the pandemic and reported that gratitude writing brought down the stress related to the pandemic effectively. Dennis and Ogden,(2022) reported that the benefits of nostalgia, gratitude and optimism, used as brief interventions improved well being during the COVID-related lockdowns.

Tejada-Gallardo et al. (2020) conducted a meta-analysis on the effectiveness of Positive Psychology Interventions in reducing distressing symptoms such as depression, anxiety and fatigue, and in improving well being. It was reported that the positive psychological components are very effective in improving psychological well being and subjective well being and in reducing depressive symptoms among adolescents. Sudha (2020) conducted a study among migraine sufferer women teachers who were administered the Mindfulness Based Interventions, reported a marked improvement

in the experience of stress related headaches. A metanalytic review on the effectiveness of Positive Psychology Interventions in the workplace by Donaldson et al. (2019) revealed that Positive Psychology Based Interventions focusing on gratitude building and well being focused interventions were found to improve work related outcomes and reduce stress and build well being.

Woo et al. (2019) used Positive Psychology Group Intervention for occupationally injured employees in Korea and reported that it was effective in reducing stress and motivating the injured employees to return to work effectively. In a similar study on positive psychology interventions for the workforce by Meyers et al. (2013), it was reported that these interventions effectively reduced stress and burnout among employees and enhanced their well being and performance. Also, Greenawalt et al. (2019) found out that Happiness Based Positive Psychology Intervention was beneficial in reducing perceived stress and fatigue among elderly participants.

The above review suggests that the need for Positive Psychology Based Intervention to increase well being and to reduce stress of working women. Especially in the post-COVID scenario, when there is an economic emergency as well, the women are stressed to continue their jobs despite added pressures and hence require such simple easy to do solutions for effective stress management. A simple survey conducted among the working women in Tamil Nadu revealed that Stress was a major mental health issue and that majority of the surveyed sample were unsure of their happiness, and satisfaction levels. Hence, it was decided to take up stress and happiness as variables for this study.

### ***Need for New Innovative Intervention***

Early research in Psychology followed only a preventive paradigm. Studies focused on reducing abnormalities in individuals rather than promoting positive aspects. Positive Psychology as a branch of Psychology was founded by Martin Seligman and colleagues with the objective of promoting positive concepts and develop flourishing and hence, building well

being. As a result, many Positive Psychology Interventions mushroomed, most of them focusing on developing optimism, hope or happiness, empathy, strength etc. Sin and Lyubomirsky (2009) defined Positive Psychology Interventions, as “a psychological intervention that primarily focuses on raising positive feelings, positive thoughts, and positive behaviour”. According to Sin and Lyubomirsky, all the Positive Psychology Interventions focus on improving happiness through positive thoughts and emotions and also sustaining these effects for long term. Parks and Schueller (2014) identified seven types of Positive Psychology Interventions namely focused on savouring, gratitude, kindness, empathy, optimism, strength building and meaning.

The present research aims to develop a comprehensive need based positive psychology intervention. The intervention was developed after a need survey undertaken with a sample of 2780 adults representative of the population for which the intervention is aimed at. The survey results identified that four main constructs of positive psychology (compassion and self compassion, achievement of purpose in life, relationship building and enhancing positive emotions) are the most needed in the COVID and Post-COVID scenario. The rationale for this study is that this intervention with the acronym, C.A.R.E Intervention module is a one stop solution to develop all these Positive Psychology constructs in a brief period of one month and start the journey towards well being. Moreover, the survey also suggested that working women have high amounts of stress and that the levels of happiness are also significantly low. Hence, it was decided by the authors to embark upon this research study.

The present study on “Efficacy of a Positive Psychology Based Intervention on Stress and Happiness among Working Women” was conducted with the objectives of identifying the happiness and stress levels of working women and also to understand the efficacy of the developed C. A. R. E Intervention in reducing stress and building happiness among working women.

The hypotheses for the study are:

- There will be significant relationship between stress and happiness among working women
- There will be significant difference in the before, during and after intervention levels of Stress among working women
- There will be a significant difference in the before, during and after intervention levels of happiness among working women
- There will be a significant difference in the levels of Stress and Happiness among working women with regard to income and types of occupation (Permanent/ Temporary).

### Method

The research design used for the study is Before After with Waitlist Control Group Experimental Design. The initial sample consisted of 750 working women, who were surveyed for their stress and happiness levels. The Subjective Happiness Scale (Lyubomirsky, 1999) was used to measure Happiness and the Holmes-Rahe Stress Inventory (1967) was used to measure Stress.

### Sample

The sample for the study consisted of 84 women (from various registered and unregistered occupations, aged between 22 to 60 years) were selected using a purposive sampling technique (those who had higher stress levels and lower happiness levels and who were interested in undergoing a Positive Psychology Intervention).

### Tools:

*The Subjective Happiness Scale* (Lyubomirsky, 1999) consists of 4 items, with a rating scale ranging from 1 (less happy) to 7 (happier). More than 14 studies proved the reliability and validity of this scale among adults, school students and college students. Cronbach alpha value was 0.77 (Lyubomirsky, 2020) and another study reported was 0.84 for a translated version (Alquwez et al., 2021)

*The Holmes-Rahe Stress Inventory* (Holmes & Rahe, 1967) consists of 43 life-changing stressful events. More than 300 as a score is considered highly stressful and the participant had high risk to develop stress related disorders.

The reliability of the scale was found sufficient and the rank ordering remained extremely consistent ( $r = 0.96 - 0.89$ ) among patients and the validity of the stress scale as a predictor of illness (Rahe, 1970).

### **Randomization Process**

The selected 84 participants were randomly assigned to an experimental group and waitlist control group, each group consisted of 42 participants. Randomization started only after all the participants were registered and gave their informed consent to participate in the study. The allocation of participants to experimental and waitlist control groups was concealed by assigning unique numbers to each participant and the random sorting was done in SPSS version 21. The participants were blinded to the group allotment. The waitlist participants were only informed of a delay in start of their intervention programme. Participants were also not allowed any contact with each other till the start of the intervention for the experimental group. After this also, the experimental group members were unaware of the presence of the other group.

Eighty four participants were tested for homogeneity using normal distribution and the Shapiro-Wilk Test and they were normally distributed. After the initial assessment using the aforesaid psychological scales, only the participants of the experimental group were administered the C. A. R. E intervention module for 28 sessions (7 weeks), with 4 sessions (20 minute duration each) in a week.

### **Development of the C. A. R. E Intervention Module**

This Intervention Module was developed as a part of the doctoral work of the author and was the first subject to content validation by 12 subject experts and 25 stakeholders (adults). The Content Validity Ratio (CVR) was found to be above 0.85 (The acceptable value for CVR is 0.99 for 5 raters, 0.85 for 8 raters, and 0.62 for 10 raters (Polit, Beck & Owen, 2007).

The next step in validation was establishing a Randomized Control Trial (RCT). Five such RCTs were planned by the authors. This paper

presents one of the Randomized Control trial Experiments to validate the C.A.R.E Intervention Module.

It includes Relaxation Exercises such as Counted Breathing, Deep Breathing, Breathing from the Stomach, and Jacobson's Progressive Muscle Relaxation (for a period of 30 to 40 minutes every day in the morning)

The C. A. R. E intervention with a sample of the activities used in the intervention is given below:

*On day one, the focus of the activities was on developing Compassion. This activity required the participant to choose a kind task (Donate money/time/clothing, Smile and wish someone when they least expect it, show concern to someone, Give your time and pleasantness to someone from your family).*

*Day two consisted of activities striving to build Optimism. The participant is asked to deliberately consider an adverse event that has happened to them in the past 15 days and look at the advantages/positives deliberately hidden behind the negative emotion associated (Examples given to the participants). They are then required to write down a thought opposed to the negative thinking associated with the adverse event.*

*Day three comprised of helping to build Resilience. Here, the participant must think of a stressful situation weighing them down. They are asked to write it down in detail. Also, to write down ways in which they believe they can challenge themselves and bounce back from the negativity. They are asked to imagine that the stressful event is a cloud spreading over them. They are then required to break through the barrier and build on thoughts focusing on building the strength to bounce back.*

*Similarly, each day comprises activities to build one particular positive psychology construct. The constructs included were creating a sense of purpose, building good relationships, constructing one positive emotion of their choice, developing self compassion, understanding and practising gratitude even for small things in life, exploring their strengths through an*

*activity, building hope and happiness, spreading smiles, and overcoming obstacles in the path to positivity.*

At the middle of the intervention, stress and happiness levels were again measured for both the experimental and waitlist control group using the same tools. Following the intervention, the same tools were used for the after intervention assessment for both the experimental and the waitlist control group. No intervention was given to the participants of the waitlist control group. After the completion of the study, the experimental group were used as peer volunteers to facilitate the intervention for the wait list control group as well.

### Results

The data was collected and analyzed using the SPSS software version 21. Pearson's Product Moment Correlation was computed to understand the relationship between stress and happiness among the working women.

**Table 1. Correlation between Stress and Happiness among Working Women (N = 84)**

Variables	Stress	Happiness
Stress	1	-0.47**
Happiness	-0.47**	1

\*\* = Correlation is significant at 0.01 level

Table 1 indicates that there is a significant negative correlation between Stress and Happiness levels among working women. As the stress levels increase, the happiness levels reduce and vice versa. Hence, the hypothesis, "There will be significant relationship between

**Table 2. Means, and Standard Deviations of the Experimental and Waitlist Control Group in the Before, During and After Phases of Intervention for Stress and Happiness (N = 84)**

Dependent Variable	Time of Measurement	Experimental Group		Waitlist Control Group	
		M	SD	M	SD
Stress	Before Intervention	336.21	46.74	342.79	30.40
	During Intervention	271.90	58.05	351.29	28.86
	After Intervention	188.93	46.87	352.38	27.97
Happiness	Before Intervention	8.71	3.81	9.57	2.30
	During Intervention	15.79	2.88	8.67	1.72
	After Intervention	20.31	2.82	9.95	1.39

stress and happiness among working women" is accepted.

The independent variable for the research, is the intervention that had two groups, the experimental group which received the intervention and the waitlist control group that had not receive it. The stress and happiness (the dependent variables) levels were measured three times namely, prior to the intervention, henceforth called before intervention scores, during the intervention and also after the intervention. As there were three time scores for two dependent variables and two groups in the independent variable, it was decided to use Two Way Repeated MANOVA (also referred to as doubly multivariate MANOVA) to statistically compute the results.

A Two Way MANOVA of repeated measures [2 (experimental and waitlist control groups) x 3 (before, during and after intervention scores of both the dependent variables, stress and happiness)] was computed. The results are presented below. \

Average stress was significantly lower in the after-intervention phase (M = 188.93, SD = 46.87) than the during intervention phase (M = 271.90, SD = 58.05), and which was significantly lower than the before intervention phase (M = 336.21, SD = 46.74) for the Experimental Group. There were no significant differences in the mean of stress scores for the waitlist control group.

Average happiness was significantly higher in the after-intervention phase (M = 20.31, SD = 2.82) than the during intervention phase (M =

**Table 3. Test of Sphericity for Stress (N=84)**

Variable	Within Subjects Effect	Mauchly's W	Chi-Square	df	Sig.
Stress	Intervention	1.00	.00	0	
	Time	.88	4.91	2	0.09
	Intervention * Time	.90	4.16	2	0.13
Happiness	Intervention	1.000	.000	0	
	Time	0.81	8.29	2	0.02
	Intervention * Time	0.96	1.35	2	0.51

**Table 4. Multivariate Analysis of Variance for Stress and Happiness**

Measure	Wilk's Lambda value	F (df)	p	$\eta^2$
Intervention (2 groups)	0.12	151.76 (2,40)	0.000	0.88
Time (3-time measures)	0.14	67.32 (4,162)	0.000	0.62
Intervention*Time	0.14	68.54 (4,162)	0.000	0.63

**Table 5. Univariate Analysis of Variance for Stress and Happiness in the experimental group**

Measure	Sum of Squares	F (df)	p	$\eta^2$
Stress	222329.41	217.45 (2, 40)	0.000	0.84
Happiness	1399.06	226.27 (2, 40)	0.000	0.85

15.79, SD = 2.88), and which was significantly lower than the before intervention phase (M = 8.71, SD = 3.81) for the Experimental Group. There were no significant differences in the mean of stress scores for the waitlist control group.

As the above table indicates, for the interaction effect, the test of sphericity is not significant,  $\chi^2 = 4.16$ ,  $p = 0.13$  for stress and  $\chi^2 = 1.35$ ,  $p = 0.51$ . The rule of thumb indicates that reject the null hypothesis if  $p < 0.05$ . Hence the sphericity (homogeneity) seems to be met. The main within subjects' interaction effects were then computed.

The above table shows a significant effect of the interaction between the 2 groups of the independent variable (intervention), the experimental and waitlist control groups shown by an  $F(2, 42) = 151.76$ , which is significant at the 0.01 level, and the partial eta square value  $\eta^2$  is 0.88, showing a strong effect size. There is also, a significant difference between the 3-time measures, that is, the before, during and after measures of the dependent variables namely,

stress and happiness; where  $F(4, 162) = 67.32$ , which is significant at the 0.01 level, and the partial eta square value  $\eta^2$  is 0.62, showing a moderate effect size.

The multivariate analysis also reveals significant interaction effects between the independent and dependent variables,  $F(4, 162) = 68.54$ , which is significant at the 0.01 level, and the partial eta square value  $\eta^2$  is 0.63, showing a moderate effect size.

The above MANOVA indicates maximum difference in the independent variable, that is between the stress and happiness scores for the experimental and waitlist control groups. It can be interpreted that the C.A.R. E Intervention module given to the experimental group has a good effect on the dependent variables namely, stress and happiness.

The above table indicates a significant interaction effect of  $F(2, 40) = 217.45$ ,  $p = 0.001$  for stress and  $F(2, 82) = 226.27$ ,  $p = 0.001$  for happiness, were both statistically significant and the  $\eta^2$  (partial eta square) = 0.84 and 0.85 respectively, showing strong effect size. The

**Table 6. Pairwise comparisons for Before, During and After Intervention Phases for the Experimental Group on Stress and Happiness**

(I) Time	(J) Time	Mean Difference (I-J)		Std. Error	
		Stress	Happiness	Stress	Happiness
Before Intervention	During Intervention	28.80*	-3.08*	3.63	0.35
	After Intervention	74.54*	-5.99*	4.92	0.41
During Intervention	Before Intervention	-28.80*	3.08*	3.63	0.35
	After Intervention	45.74*	-2.91*	4.70	0.28
After Intervention	Before Intervention	-74.54*	5.99*	4.92	0.41
	During Intervention	-45.74*	2.91*	4.70	0.28

post hoc values for paired comparisons were computed.

Post hoc paired comparisons were performed to understand the effect of the C. A. R. E

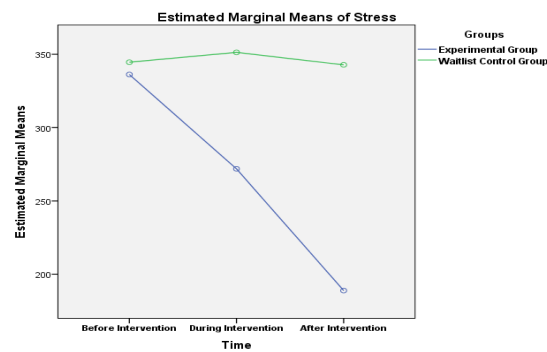
intervention in the before, during and after intervention phases on Stress. The above table shows that there is a significant mean difference in the before and the after Phases (M=74.54, SE=4.92). Also, there is a significant mean difference in the before and during intervention Phases (M= 28.80, SE=3.63). The above table shows that there is a significant mean difference in the during and the before phases (M=-28.80, SE=3.63). Also, there is a significant mean difference in the after and during intervention phases (M= 45.74, SE=4.70). The above table also shows that there is a significant mean difference in the after and the before phases (M=-74.54, SE=4.92). Also, there is a significant mean difference in the during intervention and after intervention phases (M= -45.74, SE=4.70).

Post hoc paired comparisons were performed to understand the effect of the C. A. R. E

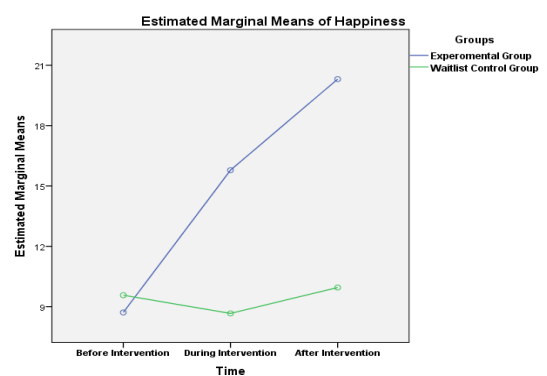
intervention in the before, during and after intervention phases on happiness. The above table shows that there is a significant mean difference in the before and the after Phases (M=-5.99, SE=0.41). Also, there is a significant mean difference in the before and during intervention Phases (M= -3.08, SE=0.35). The above table shows that there is a significant mean difference in the during and the before phases (M=-2.91, SE=0.28). Also, there is a significant mean difference in the after and during intervention phases (M= 3.08, SE=0.35). The above table also shows that there is a significant mean difference in the after and the before phases (M=-5.99, SE=0.41). Also, there

is a significant mean difference in the during intervention and after intervention phases (M= 2.91, SE=0.28).

The profile plots for the significant difference is shown below.



**Figure 1. Profile plots of stress in the Before, During and After intervention scores of Stress for the Experimental and Waitlist Control Group**



**Figure 2. Profile plots of stress in the Before, During and After intervention scores of Happiness for the Experimental and Waitlist Control Group**

From both the above two-way multivariate

**Table 7. Independent-samples t-test of Stress and Happiness with regard to the income and type of occupation of working women (N=84)**

Type of measure	Variables	Income	N	Mean	Standard Deviation	t
Income	Stress	Below 25,000	46	341.33	49.392	0.71 <sup>NS</sup>
		Above 25,000	38	331.10	44.530	
	Happiness	Below 25,000	46	9.10	4.277	0.64 <sup>NS</sup>
		Above 25,000	38	8.33	3.337	
Type of Occupation	Stress	Temporary	50	341.32	50.378	0.86 <sup>NS</sup>
		Permanent	34	328.71	41.100	
	Happiness	Temporary	50	9.20	4.425	1.01 <sup>NS</sup>
		Permanent	34	8.00	2.622	

NS= Not Significant

analysis of variance conducted for stress and happiness scores of the before, during and after intervention phases, show that the C.A.R.E intervention is very effective in reducing the stress and improving the happiness levels of working women.

Hence the hypothesis, "There will be a significant difference in the before, during and after intervention levels of Stress among working women" is accepted. Also, the hypothesis, "There will be a significant difference in the before, during and after intervention levels of happiness among working women" is accepted.

Independent samples t-tests were conducted to understand any significant differences in Stress and Happiness levels with regard to the income and type of occupation (Permanent or temporary in nature). The results are presented below.

Table 7 indicates that there is no significant difference in the levels of Stress and Happiness among working women with regard to their income or types of occupation (Permanent/temporary). This indicates that stress and happiness are rather intrinsic factors and arise from certain psychological aspects rather than being extrinsic in nature.

Hence, the hypothesis, "There will be a significant difference in the levels of Stress and Happiness among working women with regard to income and types of occupation (Permanent/Temporary)" is rejected.

## Discussion

The results section above indicates clearly that the C. A. R. E intervention module is highly effective in reducing stress and increasing the happiness levels of working women. This positive psychology-based intervention focuses on increasing compassion and self-compassion; achieving a sense of purpose in life; building relationship bonds and enhancing positive emotions among the working women. These activities are easy to do, simple and practical and the participants of the study found them comfortable to do at any time whenever they were free. Also, the activities were self-motivating and created a feel-good environment in their lives. This was indicated in the feedback sessions held with the participants of the study. The above conducted randomized control trial experiment proves that the aforesaid intervention is effective.

Positive psychology postulates that the absence of negative psychological concepts does not ensure the well-being of human beings. The necessity for the deliberate building of positive emotions with an aim to bring about a state of flourishing is the keystone of all positive psychology interventions. Flourishing is said to be a state of positive psychological and social functioning that bring about the overall well-being of the individual. The present study develops such a positive psychology-based intervention module that is focused on improving the well-



being of the individual. Positive emotions have a way of buffering that helps build well being in one's life. In a supportive study conducted in Iran, among the students pursuing their medical studies, the presence of certain positive psychology constructs like satisfaction in life, spiritual well being and self-esteem were negatively correlated with symptoms of depression and loneliness. (Mirhosseini et al. 2022). Another recent similar study reported that positive psychology interventions focusing on developing self-compassion, coping, character strengths, courage, gratitude and such positive emotions along with helping build relationships are vital for developing, building and repairing any damage to mental health, especially during the pandemic. (Waters et al. 2021). Sudha and Gayatri Devi (2021) reported that the C. A. R. E intervention is beneficial in reducing social anxiety among young adults during the pandemic.

The pandemic situation has brought about a great amount of stress to the lives of the working population, especially women. Such positive psychological interventions are hence necessary to enable the women to manage their stress levels and bring about their well-being. A critical analysis reveals that the intervention used in the study needs to be validated further using more such randomized control trials before its generalized use. There are certain limitations in the study as the sample comprises of a small number of working women only and the variables used for the study are also limited. Such limitations can be overcome in further studies.

### Conclusion

The following conclusions can be drawn from the study on "The Efficacy of a Positive Psychology-based Intervention on Stress and Happiness among Working Women":

There is a significant difference in the levels of Stress and Happiness in the Before, During and After phases of the C. A. R. E intervention.

The C. A. R. E intervention is more effective in reducing the levels of Stress and improving the Happiness of working women.

Overall, it can be concluded that the C. A. R. E intervention is very effective in dealing

with some of the mental health issues faced by working women. It also improves some positive emotions such as happiness among working women.

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