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IMPACT OF HEARTFULNESS MEDITATION MASTERCLASS ON REDUCING STRESS IN COLLEGE STUDENTS- A PROSPECTIVE OBSERVATIONAL STUDY

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ARTICLE INFO	ABSTRACT					
Article History: Received 15 th May, 2017 Received in revised form 25 th June, 2017 Accepted 23 rd July, 2017 Published online 28 th August, 2017	Objective: To assess the effectiveness of Heartfulness Meditation Masterclass in reducing stress levels of college students. Methodology: We assessed stress levels of students from different colleges in Chennai, who attended the online live event of ultra short (one hour a day for three days) Masterclasses on Heartfulness Meditation conducted on February 1 st , 2 nd and 3 rd , 2017, by the global trainer of Heartfulness Meditation. A standard stress questionnaire comprising of 30 questions assessing joy and common types of emotional stress such as overload, worries, tension and harassment- was filled up before and after the Masterclass. Results: Data from 848 students was analysed. At the baseline, females had more stress than males and adolescents had more stress than adults. Emotional stress due to overload, worries, tension and harassment reduced and joy increased after meditation.					
Key Words:	This response was greater in subgroups that had higher stress at the baseline. Conclusion: Heartfulness Meditation Masterclass has significantly reduced stress due to overload, worries, tension, harassment etc. and					
Stress, Masterclass, Heartfulness, Meditation, Cleaning, Yogic Transmission.	enhanced joy. To the best of our knowledge, this is the shortest meditation based intervention studied in the medical literature to reduce stress in college students. Along with the time tested heart based raja yoga meditation, the synergistic combination of certain unique methods like Relaxation, Cleaning and Yogic transmission that helped participants to go deep in to the meditation quickly, are the likely reasons for such a					

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INTRODUCTION

Stress results from one's response to the disturbances in one's emotional and physical environment (Selye H). How an individual responds towards that disturbance paves way for stress (Lazarus RS and Folkman S, 1986). If the event is perceived as challenging, it becomes a motivation and results in

positive outcome. Whereas, if the disturbance is perceived as a threat, it ends in anxiety, depression and emotional stress. In general, overstress ends with failure, discomfort and negative outcomes in one's health.

Stress has become inevitable in current lifestyles. Stress manifestations include emotional reactions like panic state,

significant stress reduction.

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frustration, low self-esteem, a temporary hindrance in coping, debilitation, peevishness, nervousness, a state of dissemination, etc and physical symptoms like low energy, headaches, stomach upsets, tachycardia, pain, insomnia, profuse sweating, muscle spasms, frequent respiratory infections, etc (Niazi AK and Niazi SK, 2011).

Stress in Adolescents

The period between childhood and adulthood is viewed as Adolescence (13yrs to 18 yrs). It is the period, where physiological and psychological maturity takes place (Liou SR and Cheng CY, 2010).

By nature, adolescents are sensitive, emotional and temperamental and pass through a major transformation from childhood to adulthood involving a great physical, mental and emotional evolutionary process (Kai-Wen C, 2009; Chiang CX, 1995). Current generation lifestyles have made adolescence a stressful period for the children. Emotional stress in adolescents can result from multiple factors like sensitive feelings or relationships with opposite sex, peer influences, social networking, parental pressures, academic pressures such as excessive assignments, poor academic performance and failure, poor relationship with teachers and friends etc (Sharma MS and Sinha S; Fairbrother K and Warn J, 2003; Lohman BJ and Jarvis PA, 2000).

Most of the students are stressful during the times of exams. Stress occurs while preparing and clearing the exams as one struggles to achieve the expected grade and mastering the content in a defined time (Abouserie R, 1994). Stress is self imposed and inversely affects student's health, time management and academic performances (Goodman ED, 1992).

Stress in Young Adults

The period between 19 yrs to 25 yrs is considered as young adulthood. Young adults are highly sensitive and prompted by their emotions, feelings and take decisions according to their instincts and peer influences. As they have less experience to make proper judgments, they are highly stressful compared with older adults. At the same time, they are open to alternative and complimentary therapies (Zimmerman C, 2012).

In general, young adults respond to stress with unhealthy behaviors such as irritability, anger, sleep deprivation, overeating or eating unhealthy food, substance abuse and stress headaches (Anstead SJ).

Chronic stress in young adults can have lasting repercussions on their psychological and physical health in their future life (Asberg KK *et al.*, 2008; Ashton WA and Fuehrer A, 1993; Cohen S and Wills TA, 1985).

Gender base differences in stress

In general, females are more sensitive to emotions and feel more stressed than males in any given adverse circumstances (Miller SM and Kirsch N; Ptacek JT *et al.*, 1992).

Females go through many psychological and physiological changes during puberty, adolescence and adulthood. Stress related to body image issues, eating disorders and peer relationships is common in this age group (Martz DM *et al.*, 1995). They are expected to multitask in daily activities, face

greater burden, demands and restrictions in the family compared to their opposite sex (Matthews S *et al.*, 1998; Mirowsky J and Ross CE, 1995). Furthermore, females may experience gender specific violence and discrimination in the society adding to their stress (Heim C *et al*; Klonoff EA *et al.*, 2000; Koss MP *et al.*, 1991; Landrine H *et al.*, 1995).

The main aim of this study is to assess the effectiveness of Heartfulness Meditation Masterclass on stress management in college students.

MATERIALS AND METHODS

Participants

Students from different disciplines such as engineering, arts and science in Chennai who have shown interest in participating in the online live Masterclass sessions on Heartfulness meditation conducted across the world on February 1st, 2nd and 3rd of 2017 were included in this study with prior permission from the respective institutional authorities well in advance.

Tools

A standard proforma was used consisting of demographic profile of the participants and perceived stress scale (Karatza E *et al.*, 2014). This scale consists of 30 questions assessing the feeling of joy and different types of stress such as overload, worries, tension and harassment. Each question be responded in a 4 point Likert scale arranged from strongly disagree (1) to strongly agree (4).

Data Collection

All the students attending the Heartfulness Masterclass were given the proforma before the first day session (baseline) and after the third day session (post intervention). In both the situations they were not informed about the assessment of their stress levels until just before filling the questionnaire. Appropriate consent was taken.

Heartfulness Meditation Masterclass, an ultra-short meditation workshop, was conducted as a live streaming webcast by the global trainer of Heartfulness Meditation, Mr. Kamlesh D Patel known to many as Daaji. This workshop had three sessions, one hour each, on three successive days, on February 1st, 2nd and 3rd of 2017. Around 1million people across the globe have attended the Masterclass session.

On the day 1, first session began with a 13 minutes short lecture on the basics of meditation and the need for relaxation for physical well being, followed by a 24 minutes practical walk through session of Heartfulness guided meditation with a supposition that divine light is present within the heart.

On the second day, the theme was to highlight the need for decluttering the mind at the end of each day to let go of stress and emotions in one's life. This was a practical walk through session of guided cleaning and rejuvenation for about 15 minutes followed by guided Heartfulness Meditation for about 30 minutes.

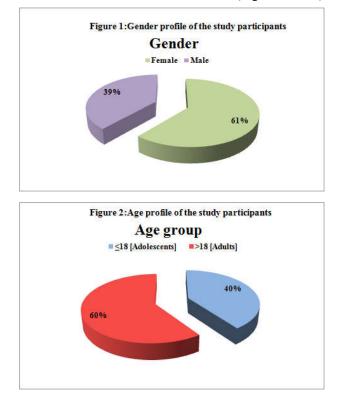
On the last day, the third and final session of Heartfulness Masterclass highlighted the need to go deep inside and connect with the inner self to observe the deepest feelings and listen to one's heart's voice in order to make wise decisions in life thereby weaving one's own destiny. There was a practical walk through session of Heartfulness prayer for about 10 minutes followed by guided Heartfulness Meditation for about 25 minutes.

Data Analysis

Totally, data was collected from 954 students who participated in this survey. Incomplete data and failure to sign the consent of participation were rejected from the returned questionnaires and the data from 848 students was analysed finally. Frequencies of variables such as age, sex and stress type were calculated. Chi square analysis was performed to analyze the relationships among the variables and subscales such as overload, worries, tension, harassment and joy. The assimilated details were entered in the statistical package of social sciences (SPSS), version 19. Data were conferred using inferential and descriptive statistics in the pattern of numbers, percentages, frequencies, chi square tests and cross tabs. t-test was used to find out the means and standard deviation.

RESULTS

Median age of the study participants was 19 years (range, 15-24 years). Of the 848 participants, 61.3% were females and 38.7% were males. Overall, 59.8% of the respondents were adolescents and the rest 40.2% were adults (Figures-1 & 2).



At BASELINE, mean values of the emotional stress subscales such as overload, worries, tension and harassment and joy were higher in females compared to males. p value was highly significant at p < 0.00*with a 95% confidence interval of 519 and 327 degrees of freedom in females and males respectively (Table-1).

Table 1: Gender wise BASELINE stress scores

	SEX	Test Value = 0								
			df	Sig. (2	Mean	95% Co	onfidence			
				tailed)	Difference	Interv	al of the			
						Difference				
						Lower	Upper			
Female	B Overload score	110.297	519	.000*	2.683413	2.63562	2.73121			
	B_Worries score	95.725	519	.000 *	2.512821	2.46125	2.56439			
	B_JoyScore	115.295	519	.000*	2.985897	2.93502	3.03677			
	B_Tension score	106.539	519	.000 *	2.456868	2.41156	2.50217			
	BHarassmentscore	71.119	519	.000*	2.382051	2.31625	2.44785			
Male	B_Overload score	72.391	327	.000*	2.665396	2.59296	2.73783			
	B_Worries score	58.339	327	.000*	2.362297	2.28264	2.44196			
	B_JoyScore	71.941	327	.000*	2.795732	2.71928	2.87218			
	B Tension score	70.276	327	.000*	2.343641	2.27803	2.40925			
	BHarassmentscore	52.883	327	.000*	2.343496	2.25632	2.43067			

Mean values of overload, worries, tension, harassment and joy at BASELINE were higher in Adolescents compared with Adults. p value was highly significant at p < 0.00*with a 95% confidence interval of 340 and 506 degrees of freedom in Adolescents and Adults respectively (Table-2).

	Table 2: Age group wise BASELINE stress scores										
	Age, years			Test Value = 0							
			df	Sig. (2	Mean	95% Co	nfidenc e				
				tailed)	Difference	Interval of the					
						Diffe	rence				
						Lower	Upper				
=18	B Overloadscore	89.237	340	.000*	2.678152	2.61912	2.73718				
	B_Worriesscore	72.152	340	.000*	2.439394	2.37289	2.50590				
	B_JoyScore	92.369	340	.000*	2.957478	2.89450	3.02046				
	B_Tensionscore	85.525	340	.000*	2.419774	2.36412	2.47543				
	B Harassmentscore	59.138	340	.000*	2.372434	2.29353	2.45134				
>18	B_Overloadscore	95.629	506	.000*	2.675296	2.62033	2.73026				
	B_Worriesscore	81.659	506	.000*	2.464826	2.40552	2.52413				
	B_JoyScore	96.200	506	.000*	2.881986	2.82313	2.94084				
	B Tensionscore	92.870	506	.000*	2.408566	2.35761	2.45952				
	B_Harassmentscore	66.193	506	.000*	2.363577	2.29342	2.43373				

In females, the mean decrease in overload, worries, tension and harassment score and the mean increase in Joy score AFTER MEDITATION compared with that of BASELINE were statistically significant at p value <0.05. In males, the mean increase in Joy score AFTER MEDITATION compared with that of BASELINE was highly significant at p value of 0.00 (Table-3)

Table 3: Gender wise comparison of stress scores between BASELINE and AFTER MEDITATION

	Gender			P	aired Differ	ences		t	df	Sig.
		Mean	SD	Std. Error Mean	95% Confidence Interval of the Difference				2tailed	
						Lower	Upper			
Female	Pair 1	A_Overload score B_Overload score	.061538	.565495	.024799	.110256	.012820	2.482	519	.013*
	Pair 2	A_Worries score B_Worries score	.181090	.585410	.025672	.231523	.130656	7.054	519	.000*
	Pair 3	A_Joyscore B_JoyScore	.180769	.611751	.026827	.128066	.233472	6.738	519	.000*
	Pair 4	A_Tension score B_Tension score	.114560	.579919	.025431	.164521	.064600	4.505	519	.000*
	Pair 5	A_Harasam ent score B_Harassm ent score	.119231	.783783	.034371	.186754	.051707	3.469	519	.001*
Male	Pair 1	A_Overload score B_Overload score	.030488	.662754	.036594	.102478	.041503	.833	327	.405
	Pair 2	A_Worries score B_Worries score	.028455	.749926	.041408	.109914	.053004	.687	327	.492
	Pair 3	A_Joyscore B_JoyScore	.199695	.701324	.038724	.123515	.275875	5.157	327	.000*
	Pair 4	A_Tension score B_Tension score	.055749	.657462	.036302	.015666	.127165	1.536	327	.126
	Pair 5	A_Harasam ent score B_Harassm ent score	.016260	.850180	.046943	.076089	.108609	.346	327	.729

In Adolescents, the mean decrease in worries, tension and harassment score and the mean increase in Joy score AFTER MEDITATION compared with that of BASELINE was statistically significant at p value <0.05. In adults, the mean decrease in worries score and the mean increase in Joy score AFTER MEDITATION compared with that of BASELINE was highly significant at p value of 0.00 (Table-4).

Age g	group		Paired D	ifferences	t	df	Sig.			
			Mean	Std. Deviatio n	Std. Error Mean	95% Con Interval Difference	of the ce			(2 taile d)
						Lower	Upper			
=18	Pair 1	A_Overload score B_Overload score	.053519	.563255	.030502	.113515	.006477	1.755	340	.080
	Pair 2	A_Worries score B_Worries score	.112414	.616154	.033367	.178045	.046783	3.369	340	.001*
	Pair 3	A_Joyscore B_JoyScore	.159335	.616782	.033401	.093637	.225033	4.770	340	.000*
	Pair 4	A_Tension score B_Tension score	.067868	.604556	.032739	.132263	.003472	2.073	340	.039*
	Pair 5	A_Harasament score B_Harassment score	.083089	.780860	.042286	.166264	.000086	1.965	340	.050*
>18	Pair 1	A_Overload score B_Overload score	.046844	.631703	.028055	.101963	.008274	1.670	506	.096
	Pair 2	A_Worries score B_Worries score	.128534	.684842	.030415	.188289	.068779	4.226	506	.000*
	Pair 3	A_Joyscore B_JoyScore	.207429	.667312	.029636	.149204	.265655	6.999	506	.000*
	Pair 4	A_Tension score B_Tension score	.035785	.624355	.027729	.090262	.018693	1.291	506	.197
	Pair 5	A_Harasament score B_Harassment score	.055884	.833366	.037011	.128599	.016830	1.510	506	.132

Table 4: Age group wise comparison of stress scores between BASELINE and AFTER MEDITATION

Paired t-Test

This test was carried out to determine whether the mean decrease in overload, worries, tension and harassment scores and increase in joy scores between Baseline Vs After Meditation was significant- in the entire study population. To examine the issue of comparable scores, the null hypothesis was evaluated. H0: $\mu_{baseline}=\mu_{after}$ meditation i.e., there is no significant difference in mean score between the BASELINE and After Meditation.

Table 5: Comparison of scores between BASELINE and AFTER MEDITATION

	Subscales		Pair	t	df	Sig.					
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		Interval of the				(2tailed)
					Lower	Lower Upper					
Pair	A_Overloadscore	.049528	.604777	.020768	.090291	.008765	2.385	847	.017*		
1	B_Overloadscore										
Pair	A_Worriesscore	.122052	.65 7758	.022588	.166386	.077718	5.404	847	.000*		
2	B_Worriesscore										
Pair	A_Joyscore	.188090	.647526	.022236	.144445	.231734	8.459	847	*000.		
3	B_JoyScore										
Pair	A_Tensionscore	.048686	.61 63 12	.021164	.090226	.007145	2.300	847	.022*		
4	B_Tensionscore										
Pair	A_Harassment	.066824	.81 2302	.027895	.121574	.012073	2.396	847	.017*		
5	score										
	B_Harassment										
	score										

Reduction in the stress subscales such as overload, worries, tension and harassment and increase in joy was statistically significant at p value <0.05. Therefore, the null hypothesis is rejected- that is there is significant difference in mean values and it can be assumed with 99.9% confidence that the observed change in the stress subscales and joy score from BASELINE to AFTER MEDITATION was significant.

DISCUSSION

In this study, at the baseline, female participants had more stress than males in all types of stress across all age groups. It is consistent with the results found in previous studies that, in general, women experience more stress than men. Common causes of this increased perception of stress in females is due to physiological, psychological and cultural factors, gender based discrimination etc (Barbee AP *et al.*, 1993; Flaherty J and Richman J,1989).

By nature, girls are tender, caring and empathetic towards their loved ones, filled with expectations. They are multi-tasking and culture oriented compared to males. In general, males are funloving; tend to have a swift fight or flight response and escaping tendency by relaxing and distractions (Dedovic K *et al.*, 2009; Frazier PA and Schauben LJ, 1994). After the Meditation Masterclass, there is a significant decrease in stress due to overload, worries, tension and harassment in females and a significant increase in the levels of joy. In the case of male participants, the scores of stress due to overload, worries, tension and harassment are less at the baseline. Stress related to these has reduced after the Meditation Masterclass, though not statistically significant. The levels of joy have significantly increased after participation in Masterclass.

In general, adolescence is a stressful period filled with pressures related to behavior, peers, psychosexual problems, academic demands, parental expectations, relationships etc. Teenagers are more sensitive to emotions than young adults (del Valle JF *et al.*, 2010).

In our study, adolescents had greater stress related to work overload, worries, tension and harassment at the baseline compared to young adults. As expected, they also had more levels of joy than their older counterparts. This indicates the labile nature of emotions in adolescents, explaining their mood swings.

There is a significant reduction in the stress levels related to work overload, worries, tension and harassment and a significant increase in joy among adolescents after Meditation Masterclass. These changes in all parameters except work overload have achieved statistical significance.

In Adults, there is a statistically significant reduction in stress related to worries and a significant rise in joy after the meditation Masterclass. Stress levels related to overload, tension and harassment also have reduced though not to the extent of statistical significance.

Feeling of stress due to 'Overload' is generally related to the burden of work, in this age group- it is mostly academic, like home works, exams, etc- which is an external factor.

As expected, external factors do not change significantly over a period of three days explaining the reason why there was no significant reduction in the stress related to overload.

Compared to adolescents, adults are more mature, more decisive, less aggressive, well oriented of future plans and better treated by their teachers and parents (Isaacowitz DM, 2005). Hence, adults might not have felt greater tension and harassment compared to adolescents- as observed from the results at BASELINE. This explains their blunted response in the reduction of these parameters after meditation.

Our study also confirms the finding that meditation changes the attitude of a person, the way how he/she perceives things. Worries and tension occur when a person perceives the circumstances as a source of an unwanted or unpleasant outcome. Meditation removes such self-generated false perceptions and enhances courage by promoting dependency on the higher self and prepares the person to face the future with a positive attitude. Our study endorses the same as there is a significant reduction in the stress related to worries and tension in all the participants after the Heartfulness Meditation Masterclass.

Harassment is generally related to one's feeling of how he or she is treated by others. 'Feeling of being harassed'- in college students, is generally due to their misunderstanding of the demands made by the parents and teachers, which are actually meant to correct them -for their better future.

Meditation promotes introspection and matured thinking. When we do self-examination as to "why someone is behaving with me like this?"- before judging that behavior as entirely unreasonable, uneasiness of being ill-treated by others subsides. The same is confirmed by the results of this study, showing a significant reduction in stress due to harassment in Adolescents and females- the subgroups that are more vulnerable to this kind of stress.

Overall, the study demonstrates that Heartfulness Meditation promotes a feeling of joy. This could be related to the removal of disturbing thoughts and creation of a sense of calmness and inner peace.

This is consistent with the ancient literature, that the true inner nature of the Soul is 'Joy'. It is the coverings around it, made by one's thoughts and actions, separate the person from it (Chandra R). Meditation takes the person deep within and gives the taste of his or her inner self which reveals its true nature, that is 'Joy' (Vivekananda S, 2015).

Several studies have been done so far using complementary therapies like yoga, music therapy, breathing exercises, meditation, aroma therapy, etc (Grossman P *et al.*, 2004; Chen MC *et al.*, 2015; Calderon KS and Thompson WW, 2004; Astin JA, 1997) to reduce the stress levels among college students. In all these studies, average duration of the therapy was more than 4 weeks. To our knowledge, this is the first study to observe stress management in college students through a three-hour meditation course.

This is the very first time that the participants from different places received training in the ancient Indian method of meditation and Yogic transmission, simultaneously, through online.

In our opinion, this Heartfulness Masterclass has certain unique features which are the main reasons for this magnitude of stress relief in such a short time.

Most important of all is the process itself, which is not just another traditional meditation teaching. It consists of a bundle of different processes like relaxation, heart based meditation, Yogic transmission and Heartfulness cleaning. These processes worked synergistically complimenting the effects of one another. In this class, participants were guided through heart based meditation, not just explaining the method. So far, in the previous studies, participants were guided in yoga exercises, breathing exercises etc guiding the participants during meditation and taking them deep inside was first of its kind.

An extraordinary technique called 'yogic transmission' was used by the guide which is— said to be a unique feature of Heartfulness method. This process is claimed to take the meditators to deeper levels of meditation in a short time.

Heartfulness Relaxation- helped them to relax entire body before beginning meditation, so that the participants could get settled in Meditation, faster.

Finally, the Heartfulness Cleaning, a process of simple commands given by the guide that enabled the participant to mentally clean unnecessary thoughts in his/her mind and rejuvenate it. This made the meditation more peaceful and tranquil (Naidoo P).

CONCLUSION

This first of its kind ultra-short three-hour program of online Heartfulness Meditation Masterclass has significantly reduced stress levels in college students. Higher the stress level at the baseline, greater was the reduction of stress after the Heartfulness Meditation. We observed a markedly increased feeling of joy uniformly among all the participants after the Masterclass.

It is an irrefutable fact that meditation is effective in reducing stress. But, making a person to get settled in meditation is the real challenge. In general, greater the disturbance in mind, longer will be the time required to feel calmness through meditation.

This Heartfulness Masterclass offered a bundle of simple strategies to help the participants get settled in deeper states of meditation faster. These worked in perfect synergy. 'Heartfulness Relaxation' - prepared the person for meditation, 'Heartfulness Cleaning' removed disturbing thoughts, the unique concept of 'Yogic Transmission'-facilitated to go deeper in meditation within a short time and 'Heartfulness Prayer'-helped to connect deep within, thus gaining the guidance and confidence from within.

This multipronged systematic approach, provided as practical walkthrough sessions with real time guidance, appears to be the most important reason for such a significant reduction in stress in such a short time.

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