

**EFFECT OF HEARTFULNESS SPIRITUAL PRACTICE BASED
PROGRAMS AND PROCESSES ON MENTAL AND
PHYSIOLOGICAL HEALTH INDICATORS**

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**NATIONAL RESOURCE CENTRE FOR VALUE EDUCATION
IN ENGINEERING**

INDIAN INSTITUTE OF TECHNOLOGY DELHI

OCTOBER 2018

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PHYSIOLOGICAL HEALTH INDICATORS**

by

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**NATIONAL RESOURCE CENTRE FOR VALUE EDUCATION IN
ENGINEERING**

Submitted

in fulfilment of the requirements for the award of degree of Doctor of Philosophy

to the



INDIAN INSTITUTE OF TECHNOLOGY DELHI

OCTOBER 2018

Dedicated to my parents

Late Shri Dharmendra Kumar

&

Late Smt Brahmvasati

CERTIFICATE

This is to certify that the thesis titled “**Effect of Heartfulness Spiritual Practice Based Programs and Processes on Mental and Physiological Health Indicators**” being submitted by **Mr. Narendra Kumar Arya** to the Indian Institute of Technology Delhi in the fulfilment of the requirements for the award of the degree of **Doctor of Philosophy** is a record of bona fide research work carried out by him under our supervision at National Resource Centre for Value Education in Engineering, Indian Institute of Technology Delhi.

The results documented herein have not been submitted in part or full to any other University or Institute for the award of any degree or diploma to the best of our knowledge.

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Acknowledgements

With deep sense of gratitude, I would like to convey my sincere thanks to my supervisors, Prof. Kamlesh Singh and Prof. Anushree Malik, for raising my level of knowledge and guiding me through my work during Ph.D at the Indian Institute of Technology Delhi. I can never thank them enough for their continuous supervision and encouragement throughout my Ph.D.

I acknowledge the blessings, guidance and support provided by Shri Kamlesh D. Patel, President – Shri Ram Chandra Mission. I would like to thank Mr. Victor Kannan, Dr. Anagha Matapurkar, other functionaries of Heartfulness Institute and the participants for their support during the study.

Sincere thanks are due to Dr. Rahul Mehrotra, Head-Non Invasive Cardiology, Max Super Speciality Hospital, Saket who collaborated with me for Study III. I would also like to thank the Management and Staff of Max Super Speciality Hospital for all the support they provided.

I am also grateful to Prof. Rahul Garg, Prof. M.R. Ravi, Prof. R.R. Gaur, Prof. Sangeeta Kohli, Prof. Santosh Satya, Prof. Varsha Singh and all other faculty members and staff for giving me guidance and support from time to time.

Sincere thanks are due to my wife Suman and sons Abhimanyu and Anirudh for letting me spend almost all the time at home on my Ph.D and cooperating in every possible way. Sincere thanks are also due to my colleague Mr. Ashutosh Saxena for providing valuable support.

Finally I express my gratitude towards my late father Shri. Dharmendra Kumar and late mother Smt. Brahmavati for instilling emotional strength in me, which helped me throughout my work.

Narendra Kumar Arya

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Abstract

While there are many organizations running popular spirituality based programs, comprehensive studies on these programs and practices of organizations running full day programs are rare. There is scarcity of studies on effect of Heartfulness/*Sahaj Marg* meditation related processes like cleaning and meditation using Heart Rate Variability (HRV). To fill these gaps three studies were planned. While Study I and Study II explored the effect of Heartfulness/*Sahaj Marg* spiritual programs on different mental and physiological parameters at CREST Bengaluru and Himalayan Ashram respectively, Study III, carried out at Max super Speciality hospital saket New Delhi, looked at the effect of heartfulness cleaning and meditation on HRV. All the three studies consisted of participants who were already practitioners of Heartfulness/*Sahaj Marg* practice.

The sample size in Study I consisted of 31 participants with a mean age of 49.7 years (SD=15.2), while Study II was carried out with a total of 55 participants (mean age=49 years, SD=12.5). Both the studies were of five days duration and were conducted at two different locations, wherein the participants were required to follow set routines, specific to the programs comprising of different activities like morning meditation, evening cleaning, night prayer, lectures, group discussions, voluntary work etc. Psychological scales used in studies I and II were Mental Health Continuum Short Form (MHC-SF), Scale of Positive and Negative Experience (SPANE), Flourishing Scale (FS), Sat-Chit-Ananda Scale, Mindful Attention Awareness Scale (MAAS), and Depression, Anxiety and Stress Scale-21 item version. (DASS 21).

Study III was conducted with a total of 30 participants (mean age=45.1 years, SD=12.7) at the non-invasive cardiology laboratory of Max Super Speciality Hospital Saket, New Delhi.

HRV was measured using the Holter monitor. Psychological scales used in this study were Cantril's Ladder for happiness, SPANE and FS.

The results of Study I obtained that all factors of MHC-SF (Emotional, Social and Psychological well-being) and its total score, Positive and Negative experiences and Balance score of SPANE, Flourishing, Sat-Chit-Ananda and Depression–DASS were significantly different in post testing. However other selected factors were not found significantly different. Content analysis of the interview schedule revealed that for majority of the participants, the reason for joining this program was to learn more about this spiritual program and to improve their own spiritual practice. Most of the participants further revealed that participating in Heartfulness/ *Sahaj Marg* program has given a boost to their spiritual condition.

Analysis of self-report measures in Study II indicated significantly different scores for mental health and its Emotional and Social well-being components, Positive and Negative experiences and Balance score of SPANE and Sat-Chit-Ananda, post spiritual program. Depression, Anxiety and Stress components of DASS were also found to be significantly different, post testing. However, no significant change was seen for psychological component of MHC-SF, flourishing and mindfulness. While, for majority of the participants, working on their spiritual progress was the main aim of attending this program, some confessed they had come to experience the ambience and the silence of the unique location of the program. Most of the participants reported tremendous spiritual improvement in their condition, post program. Results of well-being and ill-being related parameters, physiological parameters and semi-structured interview indicate perceived change towards general improvement.

In the Study – III, Heartfulness processes of cleaning and meditation were found to have a positive effect on sympathovagal balance as demonstrated by significant decrease in

normalized unit of power in low-frequency band (LFnu), ratio of power in low frequency band to power in high frequency band (LF/HF) and significant increase in normalized unit of power in high-frequency band (HFnu) values. Blood pressure (BP) Systolic and maximum heart rate (HR_{max}) were also found to decrease significantly, indicating an overall positive effect of meditation and cleaning. The results of self report measures showed that participants had sound levels of happiness on Cantril's ladder, scales of flourishing and experiences. Positive response of participants about how enjoyable it was and how peaceful and happy they felt, supported the results found by HRV analysis.

The present study contributes to the knowledge base of effect of meditation based programs and processes in more ways than one. Firstly, what sets this study apart is the fact that it is a combination of three different studies carried out in three different locations with different sample sizes for all the three studies. Secondly, while the first two studies gave an insight on effect of meditation based programs comprising of different practices and activities, the third study on the other hand clearly assessed the effect of Heartfulness cleaning and meditation on Heart Rate Variability (HRV), which is a very reliable parameter for indicating the sympathovagal balance. It is being demonstrated for the first time that Heartfulness/*Sahaj Marg* cleaning also results in increase of parasympathetic tone and decrease of sympathetic tone, similar to what happens with meditation.

सार

हालांकि आध्यात्मिकता पर आधारित लोकप्रिय कार्यक्रम चलाने वाले कई संगठन हैं, इन कार्यक्रमों और पूर्ण दिवसीय कार्यक्रम चलाने वाले संगठनों के अभ्यासों पर व्यापक अध्ययन दुर्लभ हैं। हार्ट रेट वैरिएबिलिटी (HRV) का उपयोग करके मन की निर्मलता (Heartfulness cleaning) और ध्यान (Heartfulness meditation) जैसी हार्टफुलनेस/सहज मार्ग ध्यान से संबंधित प्रक्रियाओं के प्रभाव पर अध्ययन की कमी है। इस अंतराल को भरने के लिए तीन अध्ययनों की योजना बनाई गई थी। जबकि अध्ययन प्रथम और अध्ययन द्वितीय ने क्रेस्ट बेंगलुरु और हिमालयी आश्रम में क्रमशः विभिन्न मानसिक और शारीरिक मानकों पर हार्टफुलनेस/सहज मार्ग आध्यात्मिक कार्यक्रमों के प्रभाव का अध्ययन किया, मैक्स सुपर स्पेशलिटी अस्पताल साकेत नई दिल्ली में किए गए तृतीय अध्ययन ने HRV पर हार्टफुलनेस मन की निर्मलता और ध्यान के प्रभाव का अध्ययन किया। सभी तीन अध्ययनों में वह प्रतिभागी शामिल थे जो पहले से ही हार्टफुलनेस/सहज मार्ग का अभ्यास करते थे।

अध्ययन प्रथम में 49.7 वर्ष (एसडी = 15.2) की औसत आयु के 31 प्रतिभागी शामिल थे, जबकि अध्ययन द्वितीय कुल 55 प्रतिभागियों (औसत आयु = 49 वर्ष, एसडी = 12.5) के साथ किया गया था। दोनों अध्ययन पाँच दिनों की अवधि के थे और दो अलग-अलग स्थानों पर आयोजित किए गए थे, जिसमें प्रतिभागियों को निर्धारित दिनचर्या का पालन करना आवश्यक था, जिसमें विभिन्न गतिविधियाँ जैसे सुबह ध्यान, शाम की मन की निर्मलता, रात की प्रार्थना, व्याख्यान, समूह चर्चा, स्वैच्छिक कार्य आदि शामिल थे। अध्ययन प्रथम और द्वितीय में उपयोग किए गए मनोवैज्ञानिक मापदंड, मेन्टल हेल्थ कंटीनुअम शार्ट फार्म (MHC-SF),

स्केल ऑफ पाजिटिव एण्ड निगेटिव एक्सपीरिएंस (SPANE) प्लोरिशिंग स्केल (FS), सत-चित-आनंद स्केल, माइंडफुल अटेंशन अवेयरनेस स्केल (MAAS), और डिप्रेशन एंक्साइटी स्ट्रेस स्केल-21 आइटम वर्जन (DASS 21) थे।

अध्ययन तृतीय का आयोजन मैक्स सुपर स्पेशलिटी अस्पताल साकेत, नई दिल्ली की नॉन इन्वेसिव कार्डियोलॉजी प्रयोगशाला में कुल 30 प्रतिभागियों (औसत आयु = 45.1 वर्ष, एसडी = 12.7) के साथ किया गया था। HRV को होल्टर मॉनीटर का उपयोग करके मापा गया था। इस अध्ययन में इस्तेमाल किए गए मनोवैज्ञानिक मापदंड, कैंटिल लैडर ऑफ हैप्पीनेस, SPANE और FS थे।

अध्ययन प्रथम से यह परिणाम निकले कि MHC-SF के सभी कारक (भावनात्मक, सामाजिक और मनोवैज्ञानिक) और इसके कुल अंक, सकारात्मक अनुभव, नकारात्मक अनुभव और संतुलित स्कोर SPANE, प्लोरिशिंग, सत-चित-आनंद और डिप्रेशन-DASS परीक्षण के अंत में उल्लेखनीय रूप से अलग थे। हालांकि अन्य चयनित कारक उल्लेखनीय रूप से अलग नहीं पाए गए। साक्षात्कार के विश्लेषण से पता चला कि अधिकांश प्रतिभागियों के लिए इस कार्यक्रम में शामिल होने का कारण इस आध्ययात्मिक कार्यक्रम के बारे में जानना और अपने आध्यात्मिक अभ्यास में सुधार करना था। अधिकांश प्रतिभागियों ने आगे बताया कि हार्टफुलनेस/सहज मार्ग कार्यक्रम में भाग लेने से उनकी आध्यात्मिक स्थिति में सुधार हुआ है।

द्वितीय अध्ययन में आत्म-रिपोर्ट उपायों के विश्लेषण में MHC-SF और उसके भावनात्मक और सामाजिक कल्याण घटकों, सकारात्मक अनुभव, नकारात्मक अनुभव और संतुलित स्कोर SPANE, सत-चित-आनंद के स्कोर आध्यात्मिक कार्यक्रम के बाद उल्लेखनीय रूप से अलग पाये गये। DASS 21 के अवसाद, चिंता और तनाव घटकों को भी परीक्षण के बाद उल्लेखनीय रूप से अलग पाया गया। हालांकि, MHC-SF के मनोवैज्ञानिक घटक, FS एवम MAAS में कोई महत्वपूर्ण बदलाव नहीं देखा गया। अधिकांश प्रतिभागियों के लिए, अपनी आध्यात्मिक प्रगति पर काम करना इस कार्यक्रम में भाग लेने का मुख्य उद्देश्य था, हालांकि कुछ ने स्वीकार किया कि वे इस कार्यक्रम में इस अद्वितीय स्थान के माहौल और शांति का अनुभव करने आए हैं। अधिकांश प्रतिभागियों ने अपनी स्थिति में कार्यक्रम के बाद जबरदस्त आध्यात्मिक सुधार की सूचना दी। कल्याण और बीमार होने वाले मापदंडों के परिणाम, शारीरिक मापदंडों के परिणाम और अर्ध-संरचित साक्षात्कार सामान्य सुधार की दिशा में संकेत करते हैं।

अध्ययन तृतीय में हार्टफुलनेस की मन की निर्मलता और ध्यान प्रक्रियाओं का sympathovagal संतुलन पर सकारात्मक प्रभाव पड़ा, जैसा कि कम आवृत्ति बैंड में पावर की सामान्यीकृत इकाई (LFnu) में महत्वपूर्ण कमी LF/HF में कमी और उच्च आवृत्ति बैंड में पावर की सामान्यीकृत इकाई (HFnu) में महत्वपूर्ण वृद्धि से दर्शाया गया है। रक्तचाप (BP) सिस्टोलिक और अधिकतम हृदय गति HRmax में भी उल्लेखनीय रूप से कमी पायी गयी, जो ध्यान और मन की निर्मलता के समग्र सकारात्मक प्रभाव को दर्शाता है। स्वयं रिपोर्ट उपायों के नतीजे बताते हैं कि प्रतिभागी कैंट्रिल लैडर ऑफ हैप्पीनेस, SPANE और FS के पैमानों पर

अच्छे थे। प्रतिभागियों की सुखदता और उनके शांतिपूर्ण और खुश महसूस करने के बारे में सकारात्मक प्रतिक्रिया HRV विश्लेषण द्वारा प्राप्त परिणामों का समर्थन करती हैं।

वर्तमान अध्ययन, ध्यान आधारित कार्यक्रमों और प्रक्रियाओं के प्रभाव के ज्ञान में योगदान देता है। सबसे पहले, इस अध्ययन के महत्वपूर्ण होने का कारण यह है कि यह तीनों अलग-अलग स्थानों में किए गए तीन अलग-अलग अध्ययनों का संयोजन है, जिसमें तीनों अध्ययनों के लिए विभिन्न नमूना आकार हैं। पहले दो अध्ययनों ने विभिन्न अभ्यासों और गतिविधियों सहित ध्यान आधारित कार्यक्रमों के प्रभाव पर अंतर्दृष्टि दी तो दूसरी तरफ तीसरे अध्ययन ने HRV पर हार्टफुलनेस की मन की निर्मलता और ध्यान के प्रभाव का स्पष्ट मूल्यांकन किया, जो कि *sympathovagal* संतुलन को इंगित करने के लिए बहुत विश्वसनीय मापदंड है। यह पहली बार प्रदर्शित किया जा रहा है कि हार्टफुलनेस/सहज मार्ग की मन की निर्मलता की प्रक्रिया के परिणामस्वरूप भी पैरासिम्पेथेटिक टोन में वृद्धि और सिम्पेथेटिक टोन में कमी होती है जैसा कि ध्यान के संबंध में होता है।