



AWARENESS, SKILL BUILDING AND BEHAVIOUR MODIFICATION PROGRAM AMONGST COMMUNITY AND OFFICE EMPLOYEES ON SAFER USE OF COMPUTING TECHNOLOGY EQUIPMENT (LAPTOPS, DESKTOPS, HAND-HELD DEVICES, INCLUDING SMART-PHONES)

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ABSTRACT

BACKGROUND: Constant Use of laptops and hand-held devices increase the risk of different musculoskeletal disorders (MSDs). More time spent on this activity adopting faulty postures, higher the risk of developing such injuries. This study addresses creating awareness on safe working postures and training on office ergonomics with emphasis on sustainable behavior change among employees to work safely, as this is a top priority in corporate environment, today.

OBJECTIVE : The main objectives of the study was to create awareness on safer use of Computers, Smartphones and Hand-held Devices in maximum individuals in shortest possible time and to develop skills in the participants to encourage ergonomic work posture.

METHODOLOGY : A KAP study was carried out in 6 different sessions, town-hall lectures, small groups of participants, social community gatherings like rotary club meetings and their respective office employees from May – 2019 to December 2019. Feedback was collected in a pre-tested and validated feedback form (on the spot), with five structured questions having only 13 tick mark options on - the usefulness & efficacy of the training and a mouse pad summarizing prevention precautions was handed over to participants- as a 'ready reckoner' n= 276, male 161 (58.33%) and female 115 (41.67%).

RESULTS : Feedback responses received from participants' on trainings, clearly indicate that percentages of total agree responses were high in all places i.e. >92% [Table 3], while total disagree percentage is very low i.e., below 5% in all the places. This clearly shows the remarkable success of the training which was highly efficacious in both office and community with respect to the training parameters including - simplicity and comprehensiveness, practicality, replicability and usefulness, knowledge enlargement, skills enrichment and inspiration to influence behavior modification. This training lead to propose as a best practice for community and corporate offices globally.

KEYWORDS : Awareness, Skill Building, BCC, Safer Use, Computing Technology Equipment

INTRODUCTION:

Computers and Handheld devices (HHD) combine advanced computing capability, like internet communication, information retrieval, video & e-commerce & e-learning that makes the device a necessity for modern day lifestyle, as currently not only IT industry, but modern day office-goers, our family members, school children & students in universities/colleges are using these devices, experiencing discomfort and even serious injuries necessitating physiotherapy, pain management and surgeries.

There is an urgency to create awareness on safer use of Computers and HHD in maximum individuals in shortest possible time, develop trainers' who can train family members or colleagues to become trainers (TTT) & further spread awareness on safer use . In this way awareness on ergonomics can be achieved widely.

Training is imparting a specific skill to do a particular job while development deals with general enhancement and growth of individual skill and abilities through conscious and unconscious learning^[1,2]. The main purpose of training and development is by improving the employee competencies & confidence so that organizations can maximize efficiency and effectiveness of their human assets^[3]. Armstrong (2009) clearly stated in his book that organizations could benefit from training and development through winning the "heart and minds of" their employees to get them to identify with the organization, to exert themselves more on its behalf and to remain with the organization^[4].

Many organizations meet their needs for training in an ad hoc and haphazard way. Training in these organizations is usually unplanned and unsystematic. Other organizations however set about identifying their training needs, then design and implement training activities in a rational manner, and finally assess results of training^[5,6,7].

It has been widely accepted that prolonged static, awkward and constrained postures during office work causes musculoskeletal stress on different body regions of seated workers, including call center operators and is a major factor in development of musculoskeletal disorders [popularly known as MSDs] such as pain in neck, back, shoulders and wrist, prolapsed inter vertebral discs, upper limb repetitive strain injuries, visual fatigue and mental stress, as observed in Nigeria and Thailand.^[8,9] Computer use increases the risk of musculoskeletal disorders among newspaper office workers. More time spent on this activity, higher the risk of developing such injuries. Even in the United States of America, according to reports published by U.S Department of Labor in the year 2011, MSD accounted for 33% injuries resulting in sickness absenteeism as well as loss of productivity (occupations commonly associated were store clerks and nurses, to name a few)

Work related musculoskeletal disorders (WMSDs) among office workers are receiving growing attention through different designs, trainings and activities.^[10,11] Approximately, 76% computer professionals from India, too reported MSDs (including pain in neck, back, shoulder and wrist) in various

epidemiological studies^[12,13]. Sharan, *et al.*, 2011 studied work related musculoskeletal symptoms among computer professionals in India and reported that work style factors were significant predictors of pain and loss of productivity.^[14,15]

User-centered seating evaluations tend to emphasize user outcomes associated with long-term sitting such as low back disorders.^[16,17] Marras, 2005 reviewed research that demonstrated interactions between basic tissue and musculoskeletal biomechanics with individual differences (e.g., personality, gender, and LBD history), task demands, and stress. He argued that to increase our understanding and the long-term value of practical implications, investigations of lower back disorders should focus on its causal etiology – one of the most important causes being abnormal/unergonomic work postures. Hence this study was undertaken to create awareness on safe working postures and training on office ergonomics especially in ergonomic arrangement of work-stations, practicing desk-stretches, ensuring eye-protection with emphasis on sustainable behavior change among employees to work safely along with improving their physical activity.

OBJECTIVES:

The main objectives of the study area 1) to create awareness on safer use of Computers, Smartphones and Hand-held Devices in maximum individuals in shortest possible time, 2) develop skills in the participants to encourage ergonomic work postures & 3) modify behaviour to adopt safe work practices thereby promoting ergonomic working as a way of life. The principle motive was to educate the participants so that they can train their fellow colleagues & impart them skills to inspire behavior modification towards ergonomic working - by becoming trainers (TTT- Train The Trainers). In this way the training and awareness on ergonomics can be achieved widely.

METHODS:

Hence solution lies in educating individuals and groups on safer use of Computers and HHD by conducting training sessions emphasizing that all individuals and community using computer hardware and accessories should arrange the work spaces to their respective body dimensions for avoidance of slouched posture, protecting eyes by lubrication, avoiding glare, taking rest breaks, performing desk stretches and engaging in aerobic activities. A KAP study was carried out in 6 different sessions, town-hall lectures, small groups of participants, social community gatherings like rotary club meetings and their respective office employees (total n=276) from May – 2019 to December 2019. Feedback was collected in prescribed format and a mouse pad summarizing prevention precautions was handed over to participants- as a 'ready reckoner' n= 276, male 161 (58.33%) and female 115 (41.67%)

After the training sessions, a feedback form was circulated amongst the participants and immediate feedback was taken by a pre-tested and validated feedback form (on the spot), with five structured questions having only 13 tick mark options on - the usefulness & efficacy of the training.

The questionnaire covered the following parameters about the training method; viz-simplicity & comprehensiveness of training, practicality and replicability, knowledge enhancement, skills enrichment & inspiration to influence behaviour modification.

The employees had to tick mark in any one of the 4 alternatives-whether they agreed, strongly agreed, disagreed or strongly disagreed on the above parameters.

To make the feedback complete, the form also included special comments, if any-- on what was liked best, liked least, usefulness of the training as well as suggestions for its improvement.

RESULTS AND DISCUSSION :

Effective awareness on working safely with computers and hand-held devices was organized in different groups in six sessions.

Table 1 shows that out of 276 respondents male were 161 (58.33%) and female were 115 (41.67%). Respondents from different offices were male 95 (34.42%) and female 64 (23.19%) and respondents from community were male 66 (23.91%) and female 51 (18.48%).

Distribution of respondents according to their age shows that maximum respondents were from the age group 26-40 years 97 (35.14%) followed by 20-25 years age group 77 (27.90%), 41-60 years age group 64 (23.19%) and > 60 years were 38 (13.77%). (Table 2)

Feedback responses received from participants' on trainings, clearly indicate that percentages of total agree responses were high in all places i.e. >92% [Table 3], while total disagree percentage is very low i.e., below 5% in all the places. This clearly shows the remarkable success of the training which was highly efficacious in both office and community with respect to the training parameters including - simplicity and comprehensiveness, practicality, replicability and usefulness, knowledge enlargement, skills enrichment and inspiration to influence behavior modification.

When successfully implemented, 95% participants reported that these awareness sessions were extremely practical. When we compared feedback of all participants by converting their responses in a scoring pattern, it was observed that most parameters achieved high scores for training. [Figures 1].

In a study conducted by

In a study carried out in 11 countries by Madhwani KP, Nag PK showed that in deep and quick training enhance awareness in providing comprehensive training and influencing behavior modification. Results revealed that 82.55% participants from India attended the deep training and 38.95% attended quick training. In South East Asian Countries (Srilanka, Vietnam, Philippines, Indonesia, Malaysia, Thailand and Singapore) 14.05% participated in deep training and 43.96% participated in quick training. In countries to the West of India (UAE, South Africa and Nairobi) 3.40% participated in deep training and 17.09% participated in quick training, as it was not possible to arrange deep training workshops in these countries due to the busy schedule of employees.^[18]

In another study Madhwani KP, Nag PK showed that a subsequent 3-month evaluation after web-based intervention showed a significant 41–50% decline in ongoing symptoms. This decline was attributable to the following behavior changes observed in the trained employees post-intervention viz., a) approximately 83.7% employees could arrange their workstation ergonomically against 7.1% preintervention; (b) approximately 81.2% employees performed desk stretches against 18.8% preintervention; and (c) approximately 77.8% employees started taking rest breaks against 16.7% preintervention. A striking 97% of the employees reported that animation graphics were educative and motivating.^[19]

CONCLUSION:

All general practitioners and community health workers today share a responsibility to educate community on safer use of computer technology, smart phones and handheld devices, based on ergonomics principles and also about the seriousness of this matter.

Table 1 : Distribution of Participants according to different sessions

Sessions Details	Male		Female		Total	
	No.	%	No.	%	No.	%
Office -1	47	17.03	34	12.32	81	29.35
Office - 2	22	7.97	14	5.07	36	13.04
Office - 3	14	5.07	9	3.26	23	8.33
Office - 4	12	4.35	7	2.54	19	6.88
Community - 1	14	5.07	8	2.90	22	7.97
Community - 2	52	18.84	43	15.58	95	34.42
Total	161	58.33	115	41.67	276	100

Table 2 : Distribution of Participants according to their age

Age	Male		Female		Total	
	No.	%	No.	%	No.	%
20-25 years	45	16.30	32	11.59	77	27.90
26-40 years	53	19.20	44	15.94	97	35.14
41-60 years	37	13.41	27	9.78	64	23.19
> 60 years	26	9.42	12	4.35	38	13.77
Total	161	58.33	115	41.67	276	100.00

Table 3 : Responses received from participants on training.

Sl		Strongly Disagree (%)	Disagree (%)	Agree (%)	Strongly Agree (%)	Total Agree (%)
1	Comprehensive Training	3.60	1.00	10.67	84.83	95.50
2	Knowledge enlargement	3.27	2.17	12.93	81.67	94.60
3	Provided skills enrichment	2.70	4.43	15.63	77.17	92.80
4	Practical and replicable	0.30	2.30	10.10	87.30	97.40
5	Influenced behaviour modification	3.17	0.87	8.90	87.07	95.97

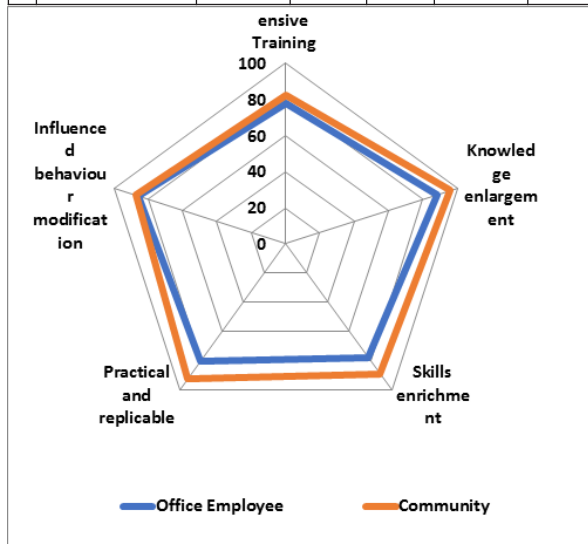


Figure 1 : Distribution of respondents according to their opinion regarding different variables in workshop training.

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