

RESEARCH COMMUNICATION

Predictors of Quitting Tobacco - Results of a Worksite Tobacco Cessation Service Program Among Factory Workers in Mumbai, India

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Abstract

Background: Tobacco cessation would provide the most immediate benefits of tobacco control to prevent tobacco related disease morbidity and mortality. **Methods:** A tobacco cessation program involving individual and group behavior therapy was implemented in three stages at a worksite. Tobacco quit rates were assessed at the end of each contact session. **Results:** Out of the 291 tobacco users identified, 224 participated in the tobacco cessation interventions. At the end of three interventions, 38 (17%) users had successfully quit tobacco use. Presence of clinical oral pre-cancer lesion was found to be associated with quitting ($p=0.02$). Also tobacco users with oral pre-cancer lesions were around three times more likely to quit than those with no lesions (OR= 2.70 95% C.I= 1.20 - 6.05). **Conclusion:** Cost effective multi-pronged tobacco cessation approaches, inbuilt into other occupational health and welfare activities, are acceptable and feasible to achieve long term sustainable tobacco cessation programs at worksites.

Keywords: Tobacco cessation - individual counseling - group behavior therapy - India

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Introduction

Tobacco cessation would provide the most immediate benefits of tobacco control and maximize the benefits in terms of preventable disease morbidity and mortality. According to projections by the WHO, the majority of tobacco-related deaths that can be prevented over the next 40 years will be among current tobacco users who can be persuaded to quit. (The World Health Report 1999). The proportion of deaths in India attributed to tobacco use is rising rapidly, with 1 million Indians expected to die from tobacco-related causes annually (Jha et al., 2008). Studies on the efficacy of tobacco cessation interventions have mostly been conducted on smoking forms of tobacco, especially cigarettes and mostly in the developed countries. As the burden of tobacco epidemic is now moving from developed countries to developing countries, there is an urgent need of tobacco cessation intervention studies to be conducted in less researched developing countries such as India; with focus on the issues of various smokeless forms of tobacco along with smoking. More over pharmacological interventions for tobacco cessation which are relatively costly may not be the answer for cessation interventions in low resource settings. There is strong evidence that interventions like individual and group counseling directed towards

individual tobacco users increase the likelihood of quitting tobacco habit. (Cahill et al., 2008)

Tobacco cessation is a relatively new area in tobacco control in India and the cessation facilities are centered around establishment of cessation clinics, with limited health care facilities. A health promotional activity like tobacco cessation may not be necessarily accessed by apparently healthy young tobacco users most in need of such services, which also involves their personal time and time to travel to these facilities. Tobacco cessation programs to be effective generally requires multiple visits by the tobacco user, therefore may encounter program failures either by non participation and/or lost to follow up. Workplaces may transcend the above barriers by providing large accessible population ensuring better participation in such programs and the workforce being stable can be followed up on multiple occasions without incurring much of their personal time. Therefore, the current study attempts to report the effect of multi-component tobacco cessation program comprising of tobacco use awareness with individual and group behavioral therapy in a workplace settings.

Materials and Methods

Details about the design and the methods for the study

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are already described in a companion article (ref paper I here). All the workers within the factory were interviewed for information on tobacco use and those who were currently using tobacco in any form were listed during the assessment conducted prior to the intervention. The workers with tobacco use in any form were then invited to enroll for the three contact intervention program for tobacco cessation with three months interval between each contact.

Information about participants demographic characteristics, tobacco usage and their assessment of stages of change (i.e., pre-contemplation; contemplation; preparation; action; and maintenance) in tobacco use behavior, modeled by Prochaska and Diclemente (Prochaska et al., 1983), were collected by using interviewer administered questionnaire.

The Behavioral Therapy Intervention

The individual and group behavioral therapy session were conducted as per predefine schedule with all tobacco users by trained Medical Social Worker (MSW) for the first and the second contact program and by MSW and Clinical Psychologist for the third and final contact programme.

The group limit was set to a maximum of fifteen people for 30-45 minutes for a session at a time. All sessions were conducted on the basis of group therapy principles. A therapeutic package was designed incorporating psychotherapy techniques like supportive Psychotherapy, Cognitive Behavior Therapy and Psychodrama. Group psychotherapy, like individual psychotherapy, is intended to improve understanding by exploring, sharing and reflecting psychosocial, familial, environmental issues which attribute to the problem. Members of the group were encouraged to exchange information and ideas about the perceived barriers towards tobacco cessation. Psychotherapeutic interventions were used with the tobacco users as a part of group therapy where the group context and the process is explicitly utilized as a mechanism of change by developing, exploring and examining interpersonal relationships within the group. The group interaction were used to help the participants to identify most common areas of concern, notably relationship with family peers, problem solving and stress management and change the patterns that are sabotaging the behavior.

Cognitive behavior therapy were used to help tobacco users to understand how they think, create meaning about situation, develop beliefs about self and others, and events in their life. Techniques like reflecting, exploring and re-evaluation were used to identify their problem through the process of 'guided discovery' to improve insight and reinforce attitudinal change.

The psychodrama method is an important source of role-playing. The action techniques of psychodrama also offer a means of discovering and communicating information concerning events and situations in which the communicator has been involved. Members in a group were divided into three or four sub-groups. Each sub-group was given different subjects relevant to the therapeutic theme and was instructed to enact accordingly

to the situation which helped the therapists to better understand their point of view.

Measurements

Information on demographics, baseline tobacco use, attitudes and behaviors on tobacco consumption and personal medical details were obtained through a self administered questionnaire before clinical examination in the premises of the workplace. Nicotine dependency was assessed by the Fagerström score, for both smoking and smokeless forms of tobacco (Heatherton et al., 1991).

Participants were also assessed for appropriate stages of tobacco use behavior change, based on transtheoretical model consisting of five stages: 1) Pre-contemplation, during which a tobacco user has not considered quitting; 2) Contemplation, individuals are using tobacco but are considering quitting in the next six months; 3) Preparation, during which a tobacco user is preparing (experimenting with different ways) to quit in the next thirty days; 4) Action, during which a tobacco user has quit using tobacco and is being abstinent for less than six months. 5) Maintenance, during which a tobacco user has quit and been abstinent for more than six months after initial quitting. (Prochaska et al., 1983)

Results

Out of 739 workers, 291 (39.4%) were found to be users of tobacco in some form. The main reasons for initiation of tobacco use reported by 291 users were influence of friends in the work and outside work set up (55.7%), shift work pattern (25.1%) which required them to keep awake during night shifts, curiosity & pleasure (8.9%), family and workplace tensions (5.2%) and health problems (mainly toothaches, constipation, 3.8%). In addition to this, the main reasons reported for continuation of tobacco usage were habit formation and hence inability to quit tobacco (75.3%), demands of shift work (15.1%), pleasure (8.9%) and tension (0.7%) (Figure 1).

Out of 291 tobacco users, 100 workers reported at the baseline having made some self attempts to quit the tobacco habit in the past while 191 had not given any thought nor made any attempts to quit usage of tobacco. Among the workers who made an attempt to quit tobacco, 91% workers made one or two attempts and 9 % workers made three or more attempts to quit tobacco (Table 1). When enquired about experiencing any withdrawal symptoms when they remained quit: 38 (38%) workers experienced uneasiness and restlessness, 35 (35%) workers felt intense craving for tobacco, 12 (12%) had feeling of depression, 10 (10%) could not concentrate on work, and 5 (5%) workers experienced altered food taste (Figure 1).

All the 291 workers who reported using tobacco in some form at the baseline were invited to participate in the tobacco cessation program. Out of which 224 (76.9%) enrolled themselves for the said program and attended the first intervention session. Of which, 212 (94.6%) attended the second contact program and 176 (78.6%) attended the third contact program. All the workers who dropped out from the program (12 at second and 48 at third contact)

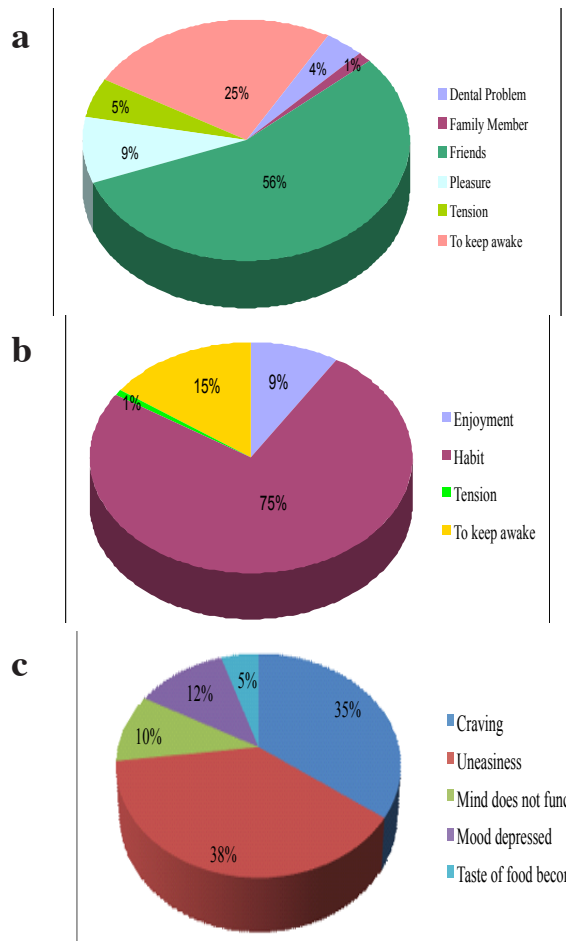


Figure 1. Reasons for Initiating & Continuing Tobacco Use with Withdrawal Symptoms Experienced after Stopping Tobacco Use. a) Reasons for starting tobacco use reported by 291 baseline tobacco users; b) Reasons for continuing tobacco use reported by 291 baseline tobacco users; c) Withdrawal symptoms experienced by 100 tobacco users who tried quitting tobacco use at baseline

refused to attend subsequent contact programs on multiple requests. At the final outcome assessment 176 (78.6%) workers participated.

On baseline assessment of 224 enrolled tobacco users, 184 (82.1%) were in the pre-contemplation phase, 39 (17.4%) in contemplation and only one (0.4%) was in the preparation phase. After 3 months post first contact only one user remained at the pre-contemplation phase, while the number increased from 39 to 181 for contemplation, from 1 to 21 for preparation and 0 to 21 for action phase compared to pre-intervention assessment (Table 1, Figure 2).

After 3 months post second contact, 59 users remained at the contemplation phase, while the number increased from 21 to 52 for preparation, from 21 to 95 for action and maintenance, and 6 were relapsed compared to post-intervention I assessment (Table 1, Figure 2). After 3 months post third contact, 57 users remained at the contemplation phase, while the number decreased from 52 to 45 for preparation, from 95 to 38 for action and maintenance, and 36 were relapsed compared to post-intervention II assessment (Table 1, Figure 2). The relapse rate increased post third intervention with 22 (9.8%)

Table 1. Assessment for Readiness to Quit Status Among Tobacco Users (N=224)

	Pre	Post Int* I	Post Int* II	Post Int* III
Assessment for Change in the Status of tobacco use:				
Precontemplation	184(82.1)	1(0.4)		
Contemplation	39(17.4)	181(80.8)	59(26.3)	57(25.4)
Preparation	1(0.4)	21(9.4)	52(23.2)	45(20.1)
Action		21(9.4)	80(35.7)	2(0.9)
Maintenance			15(6.7)	36(16.1)
Relapse			2(0.9)	22(9.8)
Relapse with reduced use			4(1.8)	14(6.3)
No Follow up			12(5.4)	48(21.4)
	224	224	224	224

* Int = Intervention

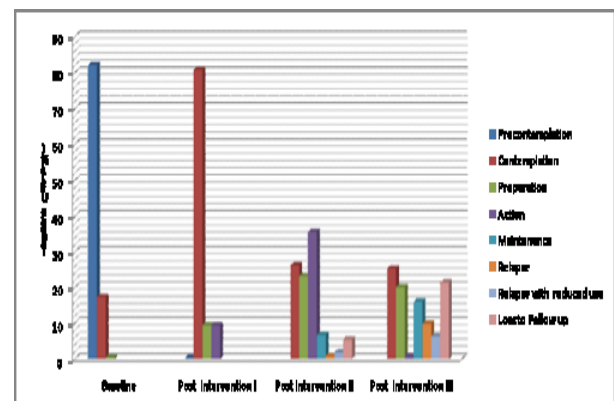


Figure 2. Assessment for Readiness to Quit Status Among Tobacco Users (n=224)

workers relapsing completely and another 14 (6.3%) relapsing with reduced quantity and frequency of tobacco consumption. The dropout rate also increased from 5.4% after 3 months post second contact to 21.4% at the time of final assessment, despite repeated request and invitation to attend the program. (Table 1, Figure 2) Although, there was no difference observed among those who were dropped out compared to those who were quitters, across all studied variables. (Table 2)

When workers were evaluated on the basis of characteristics which differentiated tobacco quitters from non quitters (Table 2) it was found that none of the factors like age, gender, education, income, marital status, religion, alcohol use, personal medical history, fagerstrom score, previous quit attempts, forms of tobacco use, withdrawal symptoms experienced and family members tobacco history had any bearing on their intent and decision to quit. In contrast, presence of clinical oral pre cancer lesion found to be associated with quitting, (Table 2)

Age, alcohol consumption, personal medical history, type of tobacco consumed and combined use of alcohol with tobacco were found to be associated with presence of oral pre cancer lesions. Therefore, we further stratified the analysis by oral pre cancer lesion and quitting (Table 3). Using multiple logistic regression analysis it was observed that workers identified during screening (ref paper I here) as having oral pre cancer lesion were around three times more likely to quit than those with no lesions (Odds Ratio= 2.70; 95% Confidence Interval= 1.20 to

Table 2. Distribution of Characteristics Among Tobacco Quitters and Non Quitters

	Dropouts at Third Intervention Total = 38	Quitter Total = 186	Non Quitter Total = 48
Age Group ($X^2=1.16$, $p^*=0.56$, $X^{2**}=1.28$, $p^{**}=0.53$)			
≤35	11(22.9)	12(31.6)	44(23.7)
36 - 45	20(41.7)	16(42.1)	80(43.0)
≥46	17(35.4)	10(26.3)	62(33.3)
Sex ($X^2=0$, $p^*=0$, $X^{2**}=0.83$, $p^{**}=0.36$)			
Male	48(100.0)	38(100.0)	182(97.8)
Female	0	0(0.0)	4(2.2)
Education ($X^2=0.16$, $p^*=0.69$, $X^{2**}=0.28$, $p^{**}=0.60$)			
Primary (1-4)	5(10.4)	3(7.9)	20(10.8)
Secondary (5-10) & Above	43(89.6)	35(92.1)	166(89.2)
Marital Status ($X^2=0.87$, $p^*=0.03$, $X^{2**}=1.02$, $p^{**}=0.31$)			
Married	47(97.9)	37(97.4)	173(93.0)
Unmarried / Separated	1(2.1)	1(2.6)	13(7.0)
Religion ($X^2=0.87$, $p^*=0.03$, $X^{2**}=0.12$, $p^{**}=0.73$)			
Hindu	47(97.9)	37(97.4)	179(96.2)
Others	1(2.1)	1(2.6)	7(3.8)
Income Group ($X^2=0.9$, $p^*=0.02$, $X^{2**}=1.1$, $p^{**}=0.3$)			
≤ Rs. 5000	7(14.6)	6(15.8)	44(23.7)
≥ Rs. 5000	41(85.4)	32(84.2)	142(76.3)
Family Member Consuming tobacco ($X^2=0.1$, $p^*=0.7$, $X^{2**}=0.4$, $p^{**}=0.5$)			
No	35(72.9)	29(76.3)	133(71.5)
Yes	13(27.1)	9(23.7)	53(28.5)
Alcohol User ($X^2=0.61$, $p^*=0.26$, $X^{2**}=0.08$, $p^{**}=0.78$)			
Yes	19(39.6)	14(36.8)	73(39.2)
No	29(60.4)	24(63.2)	113(60.8)
Personal Medical History ($X^2=0.69$, $p^*=0.16$, $X^{2**}=0.77$, $p^{**}=0.38$)			
Yes	5(10.4)	5(13.2)	16(8.6)
No	43(89.6)	33(86.8)	170(91.4)
Fagerstormscore ($X^2=0.70$, $p^*=0.73$, $X^{2**}=1.68$, $p^{**}=0.43$)			
Low Dependence	36(75.0)	30(78.9)	132(71.0)
Medium Dependence	8(16.7)	4(10.5)	36(19.4)
High Dependence	4(8.3)	4(10.5)	18(9.7)
Previous Tobacco Quit attempts ($X^2=1.7$, $p^*=0.2$, $X^{2**}=2.0$, $p^{**}=0.2$)			
No Attempts	33(68.8)	21(55.3)	124(66.7)
At least one ttempt	15(31.3)	17(44.8)	62(33.3)
Forms of tobacco use ($X^2=2.4$, $p^*=0.9$, $X^{2**}=1.9$, $p^{**}=1.0$)			
Betal Quid with Tobacco	7(14.6)	3(7.9)	14(7.5)
Gutkha	2(4.2)	1(2.6)	10(5.4)
Masheri	1(2.1)	1(2.6)	6(3.2)
Khaini	12(25.0)	13(34.2)	69(37.1)
Mawa	12(25.0)	9(23.7)	38(20.4)
Combination of Smoking + Smokeless tobacco			
	5(10.4)	5(13.2)	17(9.1)
Cigarette	9(18.8)	6(15.8)	29(15.6)
Bidi	0	0(0.0)	3(1.6)
Alcohol and or Tobacco users ($X^2=3.1$, $p^*=0.9$, $X^{2**}=0.2$, $p^{**}=1.0$)			
Alcohol + Smoking	4(8.3)	3(7.9)	17(9.1)
Alcohol + Smokeless Tobacco	15(31.3)	11(28.9)	56(30.1)
Smokeless Tobacco	23(47.9)	21(55.3)	97(52.2)
Smoking	6(12.5)	3(7.9)	16(8.6)
Clinical oral pre cancer Lesion ($X^2=1.5$, $p^*=0.2$, $X^{2**}=5.5$, $p^{**}=0.02$)			
Yes	13(27.1)	15(39.5)	40(21.5)
No	35(72.9)	23(60.5)	146(78.5)

*Chi-squares and p value for Dropouts at Intervention III Vs Quitter, **for Quitter Vs Non Quitter

Table 3. Association of Presence of Oral Pre-Cancer Lesion and Tobacco Quitting

	Y ¹ Y ²	N ¹ Y ²	Y ¹ N ²	N ¹ N ²	Chi Sq, p-value
Total	15	23	40	146	
Age Group					
≤35	5	7	12	32	4.7, 0.6
36 - 45	7	9	19	61	
≥ 46	3	7	9	53	
Sex					
Male	15	23	40	142	2.2, 0.5
Female	0	0	0	4	
Education					
Primary (1-4)	0	3	3	17	2.5, 0.5
≥Secondary (5-10)	15	20	37	129	
Marital Status					
Married	14	23	36	137	2.5, 0.5
Unmarried / Separated	1	0	4	9	
Religion					
Hindu	15	22	38	141	0.8, 0.8
Others	0	1	2	5	
Income Group					
≤ Rs. 5000	2	4	12	32	2.4, 0.5
≥ Rs. 5000	13	19	28	114	
Family Member Consuming Tobacco					
No	12	17	30	103	0.8, 0.8
Yes	3	6	10	43	
Alcohol User					
Yes	6	8	26	47	14.4, 0.002
No	9	15	14	99	
Personal Medical History					
Yes	3	2	7	9	6.9, 0.1
No	12	21	33	137	
Fagerstorm Score					
Low Dependence	10	20	25	107	47.1, 0.0001
Medium Dependence	2	2	10	26	
High Dependence	3	1	5	13	
Previous Tobacco Quit attempts					
No Attempts	6	15	23	101	6.2, 0.1
At least one ttempt	9	8	17	45	
Tobacco Type					
Smokeless	14	15	32	106	11.2, 0.1
Smoking	1	5	2	30	
Mixed	0	3	6	10	
Forms of tobacco use					
Betal Quid + Tobacco	0	3	2	12	22.7, 0.4
Gutkha	1	0	3	6	
Masheri	1	0	1	5	
Khaini	5	7	18	47	
Mawa	1	3	4	25	
Smoking + Smokeless tobacco					
	6	6	10	22	
Cigarette	1	4	1	27	
Bidi	0	0	1	2	
Alcohol and/or Tobacco users					
Alcohol + Smoking	1	2	2	15	25.8, 0.002
Alcohol + Smokeless Tobacco					
	5	6	24	32	
Smokeless Tobacco	9	12	14	83	
Smoking	0	3	0	16	

¹Presence of Oral pre cancer lesion; ²Quit status of tobacco user ; N: no; Y: yes.

6.05, adjusted for age, income, alcohol use, Fagerstrom score and personal medical history).

Discussion

Workers participation in the study at workplace setting for initial recruitment was encouraging. Subsequently, though we expected to retain workers in the program, our study witnessed gradual attrition with 78.6% (176) attendance in the last intervention session. However, literature shows in workplace settings, recruitment to counselling is often low (Eriksen et al., 1998; Tanaka et al., 2006). But in this study there was no difference observed among those who were dropped out compared to those who were quitters, across all studied variables (Table 1).

It is an established fact that a majority of smokers (as many as 70%) desire to quit, but only 30% actually try each year, and only 3%- 5% actually succeed in quitting (World Health Organization 2003). Self attempts by workers to quit tobacco in the current study, brings out all important willingness on the part of the workers wanting to break away from the tobacco habit but the inability to do so because of the addiction and low tolerance towards the withdrawal symptoms associated with the process of quitting. Thus the study brings forth the relevance and the need for guided efforts, professional help and reinforcement in quitting tobacco.

In this study, a multicomponent tobacco cessation intervention was targeted at the tobacco users, spread over three contact sessions, comprising of awareness about harmful effects of tobacco, individual and group counseling sessions. Group therapy is a common method of delivering smoking cessation interventions. Over 100 group therapies have been described in the literature (Hajek 1996). Group therapy offers individuals the opportunity to learn behavioral techniques for tobacco cessation, and to provide each other with mutual support. Group therapy programs in the current study were led by professional MSW and clinical psychologist.

Worksite education and behavioral programs for tobacco cessation are effective in bringing in the necessary change in the attitude and perception by the workers towards the need to wean away from tobacco habit and is effective in increasing the intension and preparation for quitting which helps progression to further steps of stages of change model as is amply demonstrated in the present study.

It is important to note the huge turnover of the tobacco users who had not considered quitting and were not interested in change (pre contemplation phase) when assessed before the start of the intervention program now advancing to contemplation phase (80.8%) where workers were considering to quit, after the very first contact program. Further post second intervention a major shift is again observed from contemplation to actual preparation (23.2%) where people are beginning to make changes and are planning to take action very soon, and action phase (35.7%) wherein people had actually quit and had abstained from tobacco use any more. Assessment post second intervention also saw nearly 7% who had successfully quit and were in the maintenance phase. The

above shifts and transitions are significant in the stages of readiness to change considering that none of the tobacco users had made any successful attempt to quit prior to the introduction of intervention program. The ratio of the workers who did not intend to quit was reduced to zero post second intervention.

Post third intervention at the end of 12 months though the program was successful with 38 workers (17%) who had been abstinent for more than six months after quitting tobacco, there remained a sizable number of workers who were still in the contemplation (25.4%) and preparatory phases (20.1%) who probably need more help and reinforcement to quit.

A recent meta-analysis of 7 studies by the Clinical Practice Guideline Panel reported an abstinence rate of 8% when no cessation advice was given, compared with 10% with cessation advice (Fiore, 2000).

A randomised controlled trial, to compare the effects of a worksite intervention by the occupational physician offering simple advice of smoking cessation with a more active strategy of advice and extra support, showed that a simple cessation intervention strategy during a mandatory annual examination targeting smokers independently, showed a 36% relative increase of the proportion of smokers who quit smoking as compared with what can be achieved through simple advice (Lang et al., 2000). A review for individual behavioral counselling looked at trials of counselling by a trained therapist providing one or more face-to-face sessions, separate from medical care, found that individual counselling could help smokers quit, but there was not enough evidence that more intensive counselling was more effective than brief counselling (Lancaster et al., 2005). A systematic review of group behavioural therapies concluded that such programmes increase the likelihood of quitting, approximately doubling the odds of quitting in workplaces and other settings (OR 1.97), compared with self help. Group programmes were also more effective than no intervention (OR 2.17), however there was no evidence that group therapy was more effective than a similar intensity of individual counselling. (Stead et al., 2005; Cahill et al., 2008).

In our study individual behavioral counseling done by MSW in the single first contact session with the workers resulted in 21(9.4) workers quitting tobacco (action phase). The second contact session involving group behavioral therapy further resulted in 95 (42.4) individuals quitting the habit, though after the third and final group behavioral therapy session the actual number of quitters reduced to 17%. However in the current study the effects of individual and group therapy outcomes alone could not be assessed in isolation or with non intervention group since the study was designed to assess outcomes after three contact sessions for behavioral counseling with the workers. The study also has no information on whether the same number will continue to remain quit for longer duration. Also considering the relapse rate which increased subsequently as the study progressed further brings forth the issue of requirement of sustained efforts and support to help workers quit the habit. Very few studies examined the effectiveness of multiple intervention formats, combination pharmacotherapy, or adjuncts other

than pharmacotherapy to individual counseling. Larger, prospective trials are probably needed to increase the evidence base for long-term persistence of effect (Leah Ranney et al., 2006).

A meta analysis for workplace interventions reported strong evidence that interventions like individual and group counseling, directed towards individual tobacco users, increase the likelihood of quitting tobacco habit. The authors also conclude that interventions like individual and group counselling and pharmacological treatment to overcome nicotine addiction, all show similar effects whether offered in the workplace or elsewhere. (Cahill et al., 2008) Thus not only are behavioral therapy interventions effective but also can be a cost effective alternative in place of expensive pharmacotherapies for both the employees and employers to maintain a long term sustainable tobacco cessation program for the overall health benefits of the employees.

Eventhough relapse is considered a normal expected stage of behavior change it presents a major challenge to long-term effectiveness of tobacco cessation therapy. As seen in our study the majority of the workers 95 (42.4%) who successfully quit in the initial stages post second intervention programme were not able to follow the linear path to maintainance. The current study witnessed around 6 (2.7%) followed by 36 (16.1%) workers relapsing at the end of second and third (last) intervention sessions. Extended cessation therapies with relapse prevention strategies may help combat the problem.

No incentives were offered to the workers nor any competitions were arranged on the part of the study investigators nor by the employer (management of the factory) for the workers to participate in the program. We feel such initiatives cannot be looked upon as something sustainable in the long term plans of a cessation activity at worksites. Also incentives can be looked upon as the necessity of the employer or organizers rather than the genuine need of the employees for their own health benefit. This fact has been aptly reported in the review of workplace interventions where the authors conclude that there was limited evidence that participation in programmes can be increased by competitions and incentives organized by the employer (Cahill et al., 2008).

The study had certain limitations in that non tobacco user at base line were not contacted after the first contact programme, some of whom might have started tobacco use during our follow-up period. Also no attempt was made to re-interview tobacco users at a longer interval after the last intervention to know about further changes in the status of tobacco use which would have added more weightage to the study. Our broader objective being assessment of tobacco quit outcomes after multiple interventions did not allow the evaluation of outcomes for stand alone individual or group behavioral therapies given to the participants.

A comprehensive sustainable tobacco control programme which is inbuilt into other occupational health and welfare activities of the workers are needed at worksites to translate more workers into tobacco quitters and further supported to remain in the quit phase. Constitution of tobacco free policies at workplaces should

help to build supportive environment conducive to quit tobacco.

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