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A Comparative evaluation of Conventional and Telephonic intervention for smoking cessation among rural population of Mappedu, Thiruvallur district,Tamil Nadu.

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ABSTRACT

Background: Rural areas present a higher prevalence of tobacco than the urban areas of India. However, village based smoking cessation intervention has the potential to assist in smoking cessations in communities unlike the tobacco cessation clinics in the urban settings. The present study is aimed to assess the effectiveness of smoking cessation interventions among the rural population of Mappedu, Thiruvallur district, Tamil Nadu.

Materials and Methods: Current daily smoking residents in the age group of 20-80 years were allocated to conventional group and telephone groups of smoking cessation interventions.Self reported abstinence was assessed at 1st month and 6th month follow up intervals.

Results: An increased percentage (50.76%) of study participants in the telephonic group remained abstinent as compared to the conventional group (44.96%) in the 1st month follow up.A majority (67.93%) of study participants in the telephonic group remained abstinent as compared to the conventional group (60%) in the 6th month follow up.

Conclusion: Multimodal behavioral approaches for smoking cessation programmes can motivate people to quit smoking in rural areas.

Keywords: *Community approach, smoking cessation, rural population*

INTRODUCTION

The global health impact of tobacco use is enormous. Ill effects of tobacco use are impairing the bio-physical, psychological and social spheres of life. More than 5 million deaths occur every year worldwide due to tobacco use based on the estimates of the World Health Organisation (1).

Smoking is the predominant habit among males in India constituting more than 50% of the tobacco users. The prevalence of tobacco use among males in India is 48% compared with 20% among females according to the Global Adult Tobacco Survey(2) .Initiation and progression to daily use of tobacco is widely predominant in adolescence and young adulthood (3)(4). This addictive property is majorly attributed to the alkaloid 'nicotine' found in tobacco. Smokers have to overcome the major obstacle of nicotine dependence in the process of quitting the habit(5). There is no specific method or technique that has been confirmed as the best way to improve the quitting rates of smoking. Several studies reported that up to 70% of the tobacco users who quit smoking cigarettes had relapsed within the first two weeks of their smoking abstinence(6). Thus, the initial two weeks serve to be a significant window period for achieving the long-term smoking abstinence. Studies have proven the fact that prevention of relapse in the first two weeks accelerates the probability of successful long-term abstinence(7). Smartphones have been in demand in India, especially among young adults as they have provide numerous options of commercially developed apps which are specifically curated to help quit tobacco use(8)(9).Several studies state that text messaging treatment approach has been increasingly favored by government agencies(9,10). These trends indicate that mobile phone interventions may be an effective tool for reaching underserved populations (eg, low income, minority, low literacy attainment, and rural). Indeed, World Health Organization identified mobile phone–delivered interventions as one of the most efficient and affordable interventions for global tobacco control (11). Counselling sessions or group programmes (person–to–person contact) prefer to cease using tobacco products, however, this impairs an increased loss in attendance and these are minimally prioritized. Ease of use, whenever required and wherever the tobacco user is located; cost-effective delivery and scalability to a large number of people are numerous potential benefits of telephone counselling for smoking cessation (12), regardless of location; the ability to personally interact with the key user characteristics (such as age, sex, ethnicity);motivating the smokers to quit and distracting the smokers from craving; and also linking the smokers with others for social support(13)(14).In Countries like India, it is imminent to introduce smoking cessation programmes in the rural community where majority of the population are residing to reach a wider target population(15).Hence the feasibility of using multiple approaches to deliver health education messages and counselling against smoking cessation needs to be assessed(16–18))(19-33)In this scenario, a study was initiated with the objective of evaluating the effectiveness of a community based smoking cessation intervention among smokers in a rural area in Tiruvallur district,Tamil Nadu.

MATERIALS AND METHODS

The present study was carried out among smokers in Mappedu,Thiruvallur district, Tamil Nadu, India. Mappedu is a large village located in Thiruvallur district,Tamil Nadu. The inhabitants of the village constitute a major part of economically deprived areas of Thiruvallur district. The village has a population of 4205 of which 2098 are males while 2107 are females as per Population Census 2011. Mappedu village has a lower literacy rate compared to Tamil Nadu.In 2011,literacy rate of Mappedu village was 76.58% compared to 80.09% of Tamil Nadu.

A Prospective randomised controlled trial with single blinding(Outcome assessor) was the study design employed. Smokers in the age group of 20-40 years,41-60 years and 61-80 years constituted the study population. There were 9 major wards in Mappedu.The target population was divided into units(households) and the sample was collected directly in the selected

units. The sample size was calculated by G power software based on the study by demindenko (2007).The calculated sample size for the study was 834, 278 in each group with a power of 90%. The survey instrument consists of a self administered closed ended questionnaire containing demographic information like name, age, gender, address, education, marital status followed by assessing smoking behaviour comprising of Readiness to Quit Scale. The study had follow up intervals at the 1st month and 6th month assessing the self reported abstinence followed by the counselling techniques.

Inclusion Criteria
a. Tobacco use in the past 7 days or daily users.
b. Use of tobacco including cigarettes, bidi or a combination of both.
c. Smoking at least four per day on at least 6 days/week
d. Owning a cell phone and able to send and receive a text message.
e. Seriously thinking about quitting tobacco use.

Exclusion criteria
a. Currently on pharmacological use to quit smoking.
b.The presence of an unstable or life-threatening medical condition.
c. Current unstable psychiatric illness.
d. Currently using illegal drug consumption.
e. Unwilling to participate in the program

f. The migrant inhabitants who were not the permanent residents of Mappedu were excluded

Conventional Method
The house visit took around 10 minutes which stressed on developing coping skills, stress reduction methods and strategies for prevention of relapse.

Telephonic Method
Smokers in the telephonic group received 2 group counselling sessions following the baseline examination. Those who nominate a quit date within a month would receive 4 sessions on the quit date,3rd day,7th day and 14th day respectively. Consequently, the study participants were reinforced with another session of videos before the successive follow up intervals. The content were based on quit line protocols and the advisor used evidence based techniques such as cognitive behaviour therapy and motivational interviewing to support smokers to quit.

Randomization was carried out by an assistant (statistician) with no knowledge of the study and individual participants. Allocation in the three groups was concealed from the participants until the grouping was completed. Only completely filled proforma were considered for analysis.

Data was entered in Microsoft excel spreadsheet and analyzed using SPSS software (version 23.0).Descriptive statistics were presented in number and percentage.
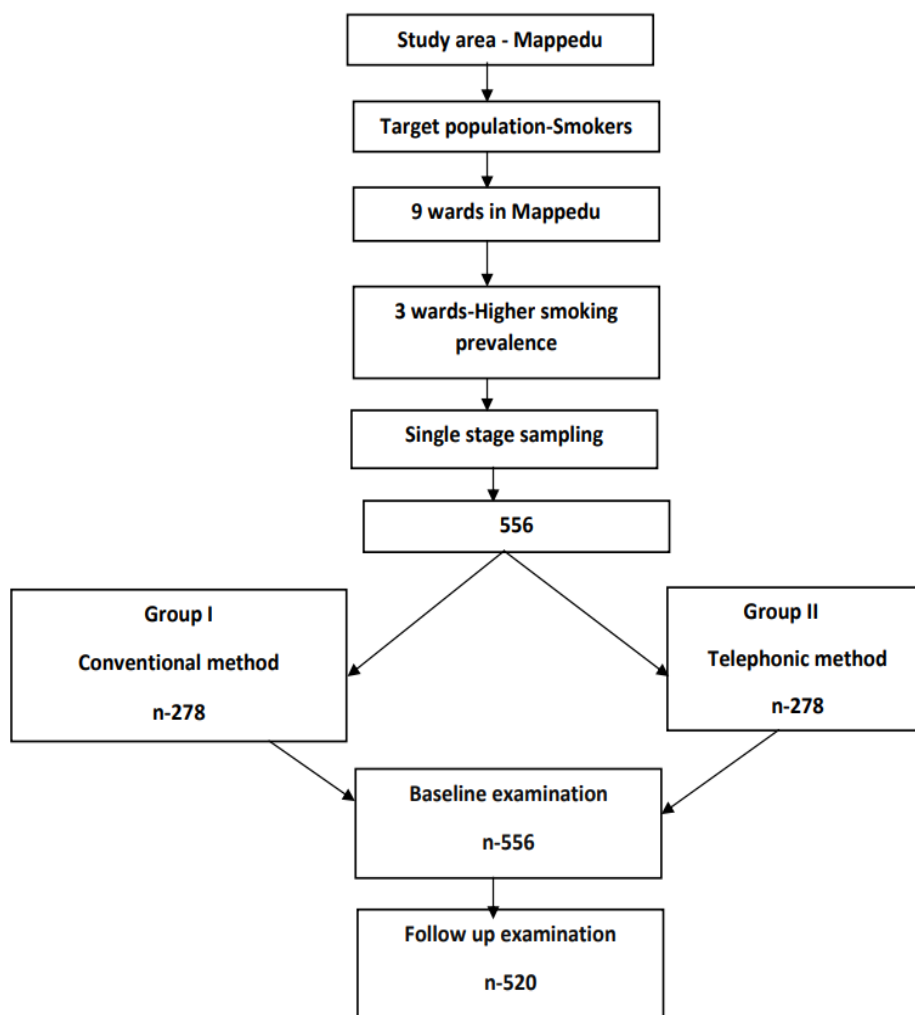
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FIGURE 1: Study design flow chart

RESULTS

TABLE 1: Frequency distribution of demographic characteristics of study participants

Demographic variables		Group1 (Conventional Method)		Group2 (Telephonic Method)	
		n	%	n	%
Age	20-40 years	110	42.63	118	45.03
	41-60 years	72	27.90	77	29.38
	61-80 years	76	29.45	67	25.57
	Total	258	100	262	100
Education	Primary school	88	34.10	95	36.25
	Middle school	85	32.94	97	37.02
	High school	49	18.99	38	14.50
	Graduate	36	13.95	32	12.21
	Total	258	100	262	100
Occupation	Unemployed	49	18.99	43	16.41
	Student	56	21.70	57	21.75
	Labour	65	25.19	81	30.91

	Farmer	22	8.52	22	8.39
	Business	44	17.05	35	13.35
	Working in Office	22	8.52	24	9.16
	Total	258	100	262	100
Income	Below 5000	54	20.93	62	23.66
	5000-10000	74	28.68	88	33.58
	10000-15000	60	23.25	67	25.57
	Above 15000	70	27.13	45	17.17
	Total	258	100	262	100
Marital status	Single	130	50.38	121	46.18
	Married	128	49.61	141	53.81
	Total	258	100	262	100

Table 1 shows the distribution and comparison of demographic factors among Conventional and Telephonic group study participants
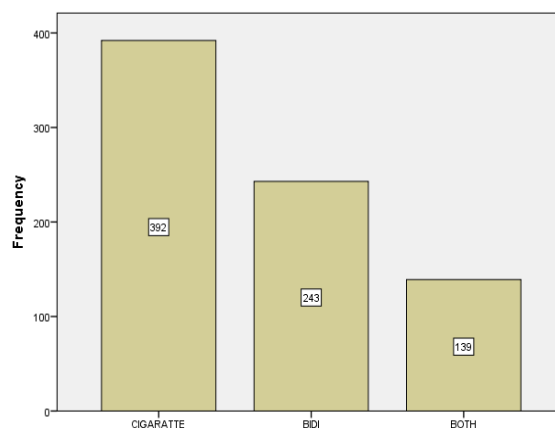

FIGURE 2: Frequency distribution of types of tobacco consumption among the study participants

Figure 2 represents the types of tobacco consumption in different age groups. A higher consumption of cigarettes is observed in 292 participants followed by bidi consumption in about 143 participants.
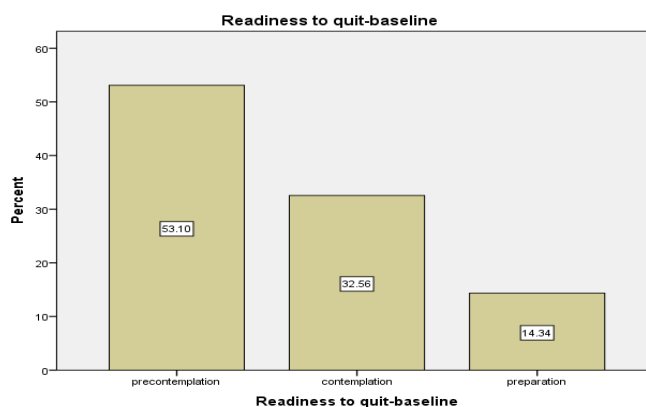

FIGURE 3: Frequency distribution of study participants based on readiness to quit scale at baseline

Figure 3 represents the frequency distribution of study participants based on readiness to quit scale at baseline. A majority (53.10%)) of study participants are reported in the precontemplation stage with the lowest percentage (14.34%) of study participants in the preparation stage.
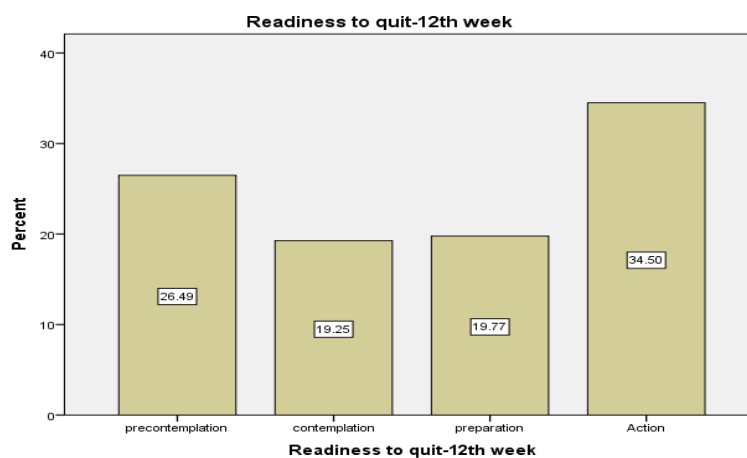

FIGURE 4: Frequency distribution of study participants based on readiness to quit scale at 6th month follow up

Figure 4 represents the frequency distribution of study participants based on readiness to quit scale at 6th month follow up. A higher percentage(34.5) of study participants are reported in the action stage.

TABLE 2: Self reported abstinence of study participants at 1st month follow up

Self reported abstinence	Conventional Group	Telephonic group
Yes	116 (44.96%)	133 (50.76%)
No	142 (55%)	129 (49.23%)
Total	258	262

Table 2 represents the frequency distribution of self reported abstinence among the study participants at 1st month follow up. An increased percentage (50.76%) of study participants in the telephonic group remained abstinent as compared to the conventional group (44.96%)

TABLE 3: Self reported abstinence of study participants at 6th month follow up

Self reported abstinence	Conventional Group	Telephonic group
Yes	155 (60.07%)	178 (67.935)
No	103 (39.92%)	84 (32.06%)
Total	258	262

Table 3 represents the frequency distribution of self reported abstinence among the study participants at 6th month follow up. A majority (67.93%) of study participants in the telephonic group remained abstinent as compared to the conventional group (60%)

DISCUSSION

Tobacco dependence is a chronic medical illness leading to nicotine dependency and majorly affecting individuals' quality of life(34). In India, it is projected that nearly one million deaths occur every year due to tobacco use. Hence to counter the tobacco epidemic, numerous studies have been conducted in India and South East Asian regions, where they have implied the improvement in tobacco control. However, there are still increasing evidences of tobacco usage.

With this background, a community based smoking cessation intervention programme assessing multiple intervention approaches in a rural population like telephone calls and conventional counselling was conducted in Tiruvallur district,TamilNadu, India. It was found through this study that most of the participants were routine smokers with a mean number of tobacco consumption per day was 17.59+_6.22 while a minimum number of tobacco consumption was 8 per day and the maximum was up to 35 per day. That means majority of participants come under higher tobacco consumer category. Similarly, the study conducted by PimpleS. et.al. (2012) &Veraa FV et.al. (2006) among factory workers showed that 53.4% workers smoke more than 10 times a day. After the smoking cessation interventions ,the telephonic method was having better results than conventional method. In a study conducted by Han et al.,there was a significant correlation between cotinine levels and self reported smoking status(35).However,our study failed to evaluate the biochemical validation of quit rate among smokers. A study conducted by Eva Nohlert assessed the relative effectiveness of a high intensity intervention compared with a low intensity intervention, using the local dentistry as a setting for cessation support in Sweden(36).Our study was employed for community smoking interventions to facilitate the quit rate of tobacco use to a wider residing population. Results from this trial should be interpreted in consideration of certain limitations. First, our design did not include a group receiving both Telephonic Text messaging of counseling. Therefore, we cannot completely disentangle the effects of texting and phone calls components. In the present study,we have not evaluated the biochemical verification of abstinence among the smokers in Mappedu,Thiruvallur district,Tamil Nadu.

CONCLUSION

In conclusion, for a developing country like India, priority has to be given to extend tobacco cessation services to rural areas where a majority of tobacco users are residing. Community intervention programmes fill the gap between anti tobacco awareness and tobacco cessation clinic services.

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