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Original Research Article

An efficient method to conduct large population survey in a low resource setting: Tamil Nadu tobacco survey

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ABSTRACT

Background: Resource allocation for tobacco surveillance in low-income settings like India is a challenge. The current study describes an efficient method to conduct a large population-based tobacco survey in an Indian state.
Methods: Tamil Nadu Tobacco Survey (TNTS) was conducted in Tamil Nadu, the sixth most populous state in India, between March and November, 2015. About 100,000 subjects aged 15 years and above, representing both urban and rural populations within 32 districts, were included. The Global Adult Tobacco Survey (GATS) questionnaire was modified and translated into the local language (Tamil) to develop the survey questionnaire, which was pre-tested in 1,690 participants in three districts in November 2014. The survey was conducted through research collaboration between 31 educational institutions and three NGOs. Once collected, data were double-entered using an open access tool (Epidata).
Results: The quality and the accuracy of the data was ensured at every level and the data was double entered to minimise the entry error. Among a total number of 32,945 participating households, 111,363 eligible individuals were identified, of which 99,825 individuals completed the survey. The overall Household Response Rate (HRR) was 91.23% (range within districts: 72-99%). The overall Individual Response Rate was 89.24% (range within districts: 73-99%). The unweighted population almost equally represented the weighted population in the selected demographic variables such as age, gender, and type of residence.
Conclusions: TNTS was conducted in an efficient manner utilizing local resources, without compromising on quality. This method can be replicated in any setting with the low or limited resource.

Keywords: Tamil Nadu tobacco survey, Methodology, Low resource setting, MPOWER, FCTC

INTRODUCTION

The ratification of WHO's Framework Convention on Tobacco Control (FCTC) in India in 2004 stimulated various tobacco control measures.[1] Article 23 of FCTC emphasizes that institutional arrangements and financial resources should be deployed for tobacco control surveillance. Under the National Tobacco Control Programme (NTCP) in India, the resources were allocated for five tobacco control components which include: monitoring tobacco control laws and reporting; training; information, education and communication; school programs and tobacco cessation.[2] An efficient and systematic surveillance was needed to monitor the extremely diverse tobacco epidemic in India.[3,4] This is also emphasized by Article 20 (Research, Surveillance,

and exchange of information) and Article 21 (Reporting and exchanging of information) of the WHO FCTC.[1] However, the resources to earnestly implement Article 20 in India is limited.

Prevalence of tobacco use has previously been assessed as a part of various other major health surveys in India, whereas the Global Adult Tobacco Survey (GATS) has been the only survey carried out exclusively for tobacco.[5-11] GATS-India (2009-10) did not provide precise state-level estimates due to inadequate sample size, largely due to errors in base population estimate. For example, in GATS (2009-2010) a tobacco use prevalence of 16.2% (Men 24%, women 8.4%) was estimated for Tamil Nadu - a state with a population of 70 million - based on a small sample size of 2,670. Therefore, this estimate that serves as an indicator to compare tobacco prevalence across countries and states, is unlikely to represent the entire population of Tamil Nadu and could risk under or over-estimation of the magnitude of tobacco use.[11]

Given the burden of diseases caused by tobacco and the benefits from reversing the epidemic, several tobacco control measures were initiated by various Government and Non-Governmental Organizations (NGOs) at every level in India. Surveillance of the prevalence of tobacco use at regular intervals was considered useful in evaluating the efficacy of those interventions and helpful in planning further interventions and allocating the efforts and resources accordingly. To achieve this, better representation of the surveillance data within every state and every district was required.

Therefore, a large district-wise tobacco survey covering both urban and rural population was conducted across the State of Tamil Nadu, India. Due to the lack of resources, the current survey could not use hand-held computers (like HP-iPAQ) as used in GATS 2009-10 instead, used the traditional paper-based questionnaire. In this paper, we describe the survey methods including our sampling strategy, data collection procedures including quality checks and the organizations involved. In addition, provide the response rate (household and individual level) and key demographic characteristics of the study population.

METHODS

Setting

India is the second most populous country in the world, with 1.3 billion people, consisting of 18% of the world's population. Tamil Nadu lies in the southernmost part of the Indian peninsula and is the eleventh largest state in India by area (Appendix-1). It is the sixth-most populous state with a population of 7,21,38,958 as per the 2011 Census - 5.96% of the Indian population. The major administrative units of the state constitute 32 districts, 285 taluks, 10 municipal corporations, 125 municipalities, 385 panchayat unions (blocks), 561 town panchayats and 12,618 village panchayats.[12-14]

Sample size and sampling

Tamil Nadu tobacco survey (TNTS) is a household-based cross-sectional survey designed to recruit a random sample of about 100,000 subjects aged 15 years and above, representing the entire state. As TNTS is the first survey of its kind, the large sample size was estimated to provide population representation in order to acheive validity and to reduce the non-coverage bias.

Data was collected from all 32 districts of Tamil Nadu between March and November, 2015. Chennai, the capital city of Tamil Nadu was partitioned into 15 administrative zones. One ward from those consisting of both slum and non-slum areas within each zone, was randomly chosen. List of slums was enumerated from the Tamil Nadu Slum Clearance Board. Slum and the non-slum population were sampled in the ratio of 1:4, based on the proportion of households in Chennai. Streets were randomly chosen within the wards. All the households in the chosen streets were enumerated and all the members (15 years and above) of the selected households were surveyed (Figure 1).

Among the rest of 31 districts of Tamil Nadu, population were stratified into several geographic regions. However, a different sampling strategy was employed within urban and rural areas, as follows.

In urban areas, four stage sampling was adopted. The district headquarters (Municipal corporations, Municipalities, Town panchayats) formed primary sampling unit; wards secondary sampling unit and streets the tertiary sampling units.[15] At the fourth stage, a list of all residential households in each selected streets were included in the sampling frame and all the individuals from the selected households were surveyed (Figure 1).

In rural areas, one administrative sub-unit (or Taluk) was chosen randomly from each district and one panchayat union was randomly identified from each Taluk. One village was selected randomly from each panchayat union and the streets were enumerated within each village. All households on each street were approached. When the selected village population was less than the estimated sample size, the next village was included.

All individuals (≥15 years), males and females, in the selected household were interviewed until the stratum quota was met. The participation was purely voluntary. The interviewer read out the information sheet and consent form to participants and the written consent was obtained before conducting the interview. In the case of minor respondents (<18 years), the consent was obtained from the parent/guardian as well.

Questionnaire

Centers for Disease Control and Prevention, as part of GATS has developed a standard set of questions to maintain consistency and comparability of data within

and across the countries in monitoring tobacco use.[16] The questionnaire used for the current study was adopted and translated from the GATS questionnaire, modifying to the local needs reflecting the current tobacco control scenario in India (Appendix-2). The questionnaire consisted of two parts: household level questions (n=4), and individual level questions (n=31). The questions were designed to reflect participants' perception of the WHOs MPOWER strategy including three to nine items under each category (Monitor-6, Protect-6, Offer 9, Warn-5 and Enforce-3) except for 'R', which represents tax measures.[17] One open-ended item asking their suggestions for tobacco control was added. These items were given to a group of experts (n=4) for review and their suggestions were incorporated. The items were translated into Tamil, which is the language spoken by the majority in the state. The questionnaires were back-translated into English by two independent experts to ensure the quality of the translated version. The response pattern was either binary or multiple choices (not graded).

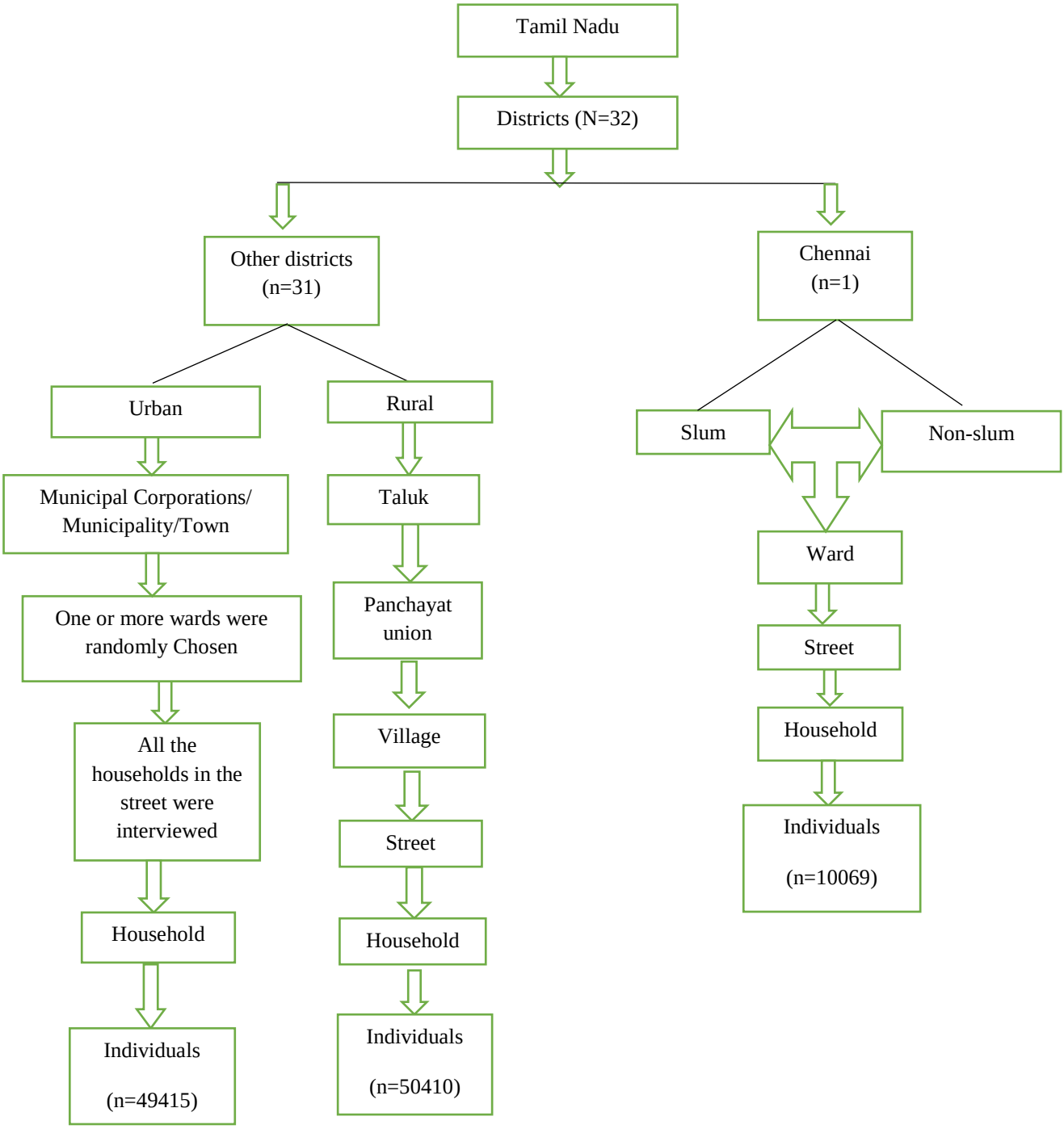

Figure 1: Flow chart of sampling frame.

Organizations involved in TNTS

A list of Educational Institutions (EIs) and the contact details of the respective National Service Scheme (NSS) programme officers were collected from Training Orientation and Research Centre (TORC). TORC functions under the NSS, as part of the Ministry of Youth Affairs and Sports, for orienting new officers at induction. The nearest institution/NGO in each district from the study site was invited to join the research collaboration. Written consent to participate in the survey was obtained from the head of the institutions as well as the co-ordinator deputed by the Institution. The participation was purely voluntary and no remuneration was paid. The study group comprised of 31 EIs and three NGOs.

Pre-test

The feasibility of conducting the survey through trained investigators, time taken to complete each form, response rate, receptivity among all sectors of the population, accuracy and completeness of the data collected were tested in a small sample population. This was essential to make sure that all the steps involved in the data collection process were smooth and efficient. The planning for pre-test was started three months prior to the field work and pilot testing was conducted in November 2014.

A specification manual for all the questions was prepared along with the coding sheet. A college from Chennai city was identified and the postgraduate social work students (n=30) were recruited and trained for data collection. Classroom training was conducted, supplemented by demonstration and mock interviews. The investigators collected data from the field on the following day. Four different types of sites were selected to gain diverse experiences. The slum and non-slum areas of Royapuram and Adyar zone from Chennai, one rural area from Pudukottai and one urban location from Trichy district were identified. A total of 1,690 sample was collected from all the sites. During the pilot testing, the potential missing and ambiguous questions, time taken for each interview, response rate, the feasibility of conducting in person/telephonic interview without compromising the quality, costs involved, and commitment of the Field Investigators (FIs) in conducting the survey were explored. The learning from the pilot study helped to ensure the quality of the data and in planning the actual survey efficiently.

Training of field investigators and data collection procedure

One EI/NGO identified in each district, recruited the FIs and they were trained to conduct the survey. Investigators were young graduates from the same locality. The number of FIs (range: 5-25) and the days to complete the data collection varied from district to district (range: 3- 8 days). They were familiarized with the items in the form and trained to administer the questionnaire. Three district co-ordinators were appointed to supervise and assist the FIs during the data collection. The data collection commenced in March, 2015 and ended in November, 2015.

The data collection procedures were as follows: 1) The selected households were visited to identify the eligible respondents. 2) Each member (15 years and above) was contacted in person or by phone to conduct the interview. The household questionnaire was administered to the head of the household or the adult family member present in each household. A separate questionnaire was used for each individual above the age of 15, to elicit the details related to tobacco usage. The quality of the data was checked at two levels. First, the filled-in forms were verified by the district co-ordinator for any inconsistency or missing data, at the end of each day. The FIs were directed to visit the house again to clarify the data from the respondent, the very next day if any inconsistency found. After completion of data collection in each district, the co-ordinator compiled all the data and it was sent to the Cancer Institute (CI). Once received, the survey forms were checked for their quality by trained staff (n=4) who were post graduates either in Psychology or Social Work. If any inconsistency was observed, these staffs contacted the respondent over the phone and clarified the data and if there were any individuals in the household who were not interviewed, they were also interviewed over the phone to ensure the inclusion of all the individuals from each household.

Each household and individual were provided a unique identifier. The personal details such as their names, phone numbers, and addresses of the participants were kept confidential.

Data entry and analysis

Data collected were double entered (district-wise and zone-wise), validated, combined and analysed using Epi Data (version 3.1 for entry and validation; and version 2.2.2.183 for merging/appending and analysis, Epi Data Association, Odense, Denmark). Frequency and percentage were used to summarize the response rate and key demographic characteristics of the sample. The process of quality assured and efficient electronic data capture will be described in detail elsewhere.[20]

RESULTS

Response rate- house hold

Our surveyors approached 37,648 households; 1380 houses were considered unoccupied if found closed even after two consecutive visits. The response rates for households in each district were presented in Table 1. The overall Household Response Rate (HRR) was 91.23% (district range: 71.8 to 99%) with highest in Salem and lowest in Theni. An HRR of >90% was achieved in 18 districts.

Table 1: Distribution of selected households and individuals by interview completion status and response rates in districts of Tamil Nadu.

Households			Individuals						
Districts	**HR**	**HIC**	**HR**	**UNOCU**	**HRR***	**IC**	**IIC**	**IR**	**IRR***
Ariyalur	317	66	2	25	82.3	969	54	15	93.35
Coimbatore	1643	128	66	16	89.8	4188	354	615	81.21
Chennai	3524	100	103	52	94.55	10069	695	346	90.63
Cuddalore	1077	58	66	16	89.7	3712	34	23	98.49
Dharmapuri	601	91	4	25	86.3	2104	72	91	92.81
Dindugal	922	91	12	27	89.9	2642	334	81	86.42
Erode	1018	100	5	40	90.7	2864	184	174	88.89
Kancheepuram	2303	154	46	13	92	6366	30	297	95.11
Kanyakumari	808	85	6	37	89.9	2199	135	426	79.67
Karur	552	62	21	53	86.9	2638	158	193	88.25
Krishnagiri	702	29	4	28	95.5	1443	15	14	98.03
Madurai	1321	448	26	66	73.6	3372	313	531	79.03
Nagapattinam	771	40	2	97	98.3	2407	4	58	97.49
Namakkal	835	16	3	23	97.8	2596	2	9	99.58
Perambalur	234	21	23	13	84.2	574	7	188	74.64
Pudukottai	616	30	16	30	93.1	2175	42	8	97.75
Ramanathapuram	474	69	21	19	84	1690	95	84	90.42
Salem	1495	3	11	61	99	5043	45	28	98.57
Sivagangai	470	49	3	54	90	1641	191	21	88.56
Thanjavur	888	86	39	54	87.7	3120	281	30	90.94
The Nilgiris	388	20	10	3	92.8	1202	24	15	96.86
Theni	475	149	38	39	71.8	1508	101	260	80.68
Thoothukudi	788	16	14	51	96.3	2525	15	15	98.83
Tirunelveli	1467	164	16	67	85.5	4312	205	197	91.47
Tiruppur	1078	197	31	52	82.5	3235	44	251	91.64
Tiruvallur	1590	50	10	89	96.4	4926	181	103	94.55
Tiruvannamalai	1004	49	13	25	94.2	2754	139	741	75.78
Tiruvarur	493	28	20	60	91.1	1897	27	2	98.49
Trichy	1365	40	12	117	96.3	4187	364	344	85.54
Vellore	1435	102	10	27	92.8	5329	103	300	92.97
Villupuram	1423	59	10	65	95.3	3946	946	70	79.52
Virdhunagar	868	28	32	36	93.5	2192	293	379	78.62
Overall response rate	32945	2628	695	1380	90.1	99825	5487	5909	89.83

Note: HC: Household Completed; HIC: Household Incomplete; HR: Household Refused; HRR: Household Response Rate; IC: Individual Completed; IIC: Individual Incomplete; IRR: Individual Response Rate; IR: Individual Refused

*Household Response Rate (HRR) $=\frac{HC}{HC+HIC+HR}\times 100$ *Individual Response Rate (IRR)= $\frac{IC}{IC+IIC}\times 100$

*Total Response Rate (TRR): HRR × IRR × 100

Table 2: Unweighted sample counts and weighted population estimates according to selected background characteristics.

Background characteristics	Unweighted number		Weighted population estimates	
	Number	%	Number	%
Overall	99825	100	55139527	100
Age				
15-24	22208	22.24	12665335	22.99
25-44	42829	42.90	23379971	42.4
45-64	26928	26.97	14300266	25.93
65+	7735	7.74	4727150	8.57
Missing	125	0.12	66805	0.12
Gender				
Male	49663	49.62	27348444	49.65

Female	50122	50.33	27724278	50.34
Transgender	1	0.00	-	-
Missing	39	0.03	-	-
Residence				
Rural	49415	49.50	28118134	51.05
Urban	50410	50.49	26954588	48.94
Education				
No formal schooling	6249	6.25	3325011	6.03
Primary	8808	8.82	8702214	15.78
Secondary	33802	33.86	15783646	28.62
Higher secondary	11576	11.59	6429350	11.66
Degree or Higher	25067	25.11	7166354	12.99
Missing	14323	14.34	148378	0.26
Occupation				
Student	10640	10.65	-	-
Unemployed	3454	3.46	-	-
Home Maker	26500	26.54	-	-
Daily wages	28838	28.9		
Driver	2558	2.56	-	-
Private Job	13262	13.28	-	-
Government Job	1516	1.51	-	-
Self employed	2307	2.31	-	-
Retired	1874	1.87	-	-
Missing	8874	8.88	-	-

Response rate – individual

Among the total number of households (n=32,945) included, 111,363 eligible individuals above 15 years were identified. The overall Individual Response Rate (IRR) was 89.24%, the lowest being in Perambalur (72.82%) and the highest in Namakkal district (99.07%). The IRR for each district is presented in Table 1.

Demographic characteristics of the respondents

A total of 11,538 (11.5%) individual data were excluded from the analysis, as the individual forms were not filled for the following reasons: not willing to participate (n=11,396), inconsistent data collection or data error (n=138) and unavailability of current tobacco use status (n=4). Finally, 99,825 individuals were included in the analysis.

The unweighted count of sampled respondents and population estimates classified by the selected socio-demographic variables is presented in Table 2. The unweighted sample count of individuals responded was 99,825, of which the female respondents weighted more (50.33%) Of the estimated de facto population aged 15 years and above (5,51,39,527) 51.05% were in rural areas. The unweighted population almost equally represented the weighted population in the selected demographic variables namely age, gender and type of residence. However, the representation of respondents with school level education was 55% and the representation of graduates was more in the TNTS sample. The percentage of working population constituted 19.7%, while the non-working (homemakers, students, unemployed and retired) constituted 41.5%. With the contribution of a non-working population being more, the availability of the sample was also on the high.

DISCUSSION

TNTS was a large population-based survey representing rural and urban population covering all districts of Tamil Nadu. The methodology used in this survey proved that using traditional paper pencil method and utilizing the existing local resources in a mutually beneficial way is still efficient and feasible considering the costs and resources invested in other surveys. The overall individual response rate for GATS 2009-2010 in India was 91.8%.[11] Similar IRR was achieved in TNTS (91.58%). However, Tamil Nadu achieved the highest IRR (99.2%) in GATS compared to other states.

There were much strength in the methodology adopted in TNTS. To our belief, this was the single biggest sub-national tobacco control survey (more than 100,000 respondents) conducted cost-effectively (under 18,000 USD). The sample was representative of the urban/rural areas of all the districts and slum / non-slum areas of Chennai. The sample well represented the weighted population in the major selected demographics such as age, gender, and type of residence in TNTS. The sample chosen from Tamil Nadu for GATS was 2,584 whereas TNTS was based on a large sample size (n=99825). Moreover, GATS had chosen one individual per house, whereas TNTS survey had included all 15+ aged individuals from each household which resulted in achieving greater representation under each gender and

age category. GATS sample estimation was done based on the 2001 census, whereas the sample estimation for TNTS was based on the 2011 census. At the national level, 70.8% of the population were from rural areas, whereas the urban-rural ratio in Tamil Nadu was 1:1.04 having almost equal representation. No formal schooling category was 30.9% in India, whereas it was 6.03% in Tamil Nadu.[11] Almost equal representation of sample under each category was achieved, however, the primary schooling category had a lower representation and professional degree and above category had a higher representation. This was not controlled in this survey, as all the members of the household were interviewed, unlike GATS. Moreover, the weighted estimates were based on the 2011 census and the survey was conducted in 2015. In the recent years, a number of young adults would have graduated. District wise estimation can help in understanding the variations which would help the district level policy makers to plan interventions accordingly. It may not be possible to allocate large resources for conducting surveys in every state. Moreover, the grants available for tobacco control internationally do not support surveys. However, it is crucial to conduct large population-based district level survey at regular intervals to systematically evaluate the impact of existing programmes and to plan further interventions. In this context, exploring the existing resources and networking with appropriate organizations makes these types of surveys cost effective. As we networked with educational institutions without any financial commitment, we were able to conduct the survey within a low budget including both data collection and entry.

Results from TNTS will help in assessing the impact of recent tobacco control legislations, for example, the banning of chewing tobacco in Tamil Nadu in the year 2013 which is now being extended for the third year. Moreover, Government of India has initiated anti-tobacco awareness campaigns recently by investing a large amount of money through electronic (theatres, televisions, radio) and print media.[18] However, the reach of different mode at the district level for different categories of people by type of residence is yet to be understood. District level TNTS will help in assessing the impact at the micro level which would assist in planning appropriate interventions.

The period of data collection for TNTS was about nine months which could have been reduced. As the majority of the institutions involved in data collection were academic based, the unavailability of the students during summer vacation became a challenge. Thus, we had to concentrate on districts involving NGOs during that period. Moreover, the training for FIs could have been conducted in one setting and the number of district co-ordinators could have been increased. This would have helped in conducting the survey in both costs effective and less time-consuming means, simultaneously in all the districts. As the data entry tool was customized for the first time, it extended for two months. As the tool is readily available now, the data entry can also be started simultaneously to reduce the time. On the whole, if the survey is repeated, it would take about six months, if planned appropriately.

When involving multiple institutions, commitment and responsibility of the participating institutions are very crucial and it is purely based on the head of the institution and the faculty deputed. The systematic approach and obtaining written consent increases the commitment level. Though this survey was conducted using a traditional method involving multiple institutions, the quality, and the accuracy was ensured at every level from data collection to data entry. Ministry of Youth Affairs and Sports engages a large number of youth through its National Service Scheme programmes for the development of the nation. However, these resources have not been systematically utilized in a focussed way. The ministry spends around 80-85 crores annually and engages 36.58 lakh volunteers across the universities, councils and colleges. However, this budget has not been utilized fully as per the Ministry's report. These resources can effectively be trained and utilised for various public health surveys and campaigns.[19,20]

CONCLUSION

This paper demonstrates the feasibility of conducting an efficient large population-based survey with appropriate networking in a low-resource setting. As the similar programmes are running in every state, the NSS volunteers can be involved in conducting the survey in a cost effective manner and this methodology can be replicated in other states without compromising the quality.

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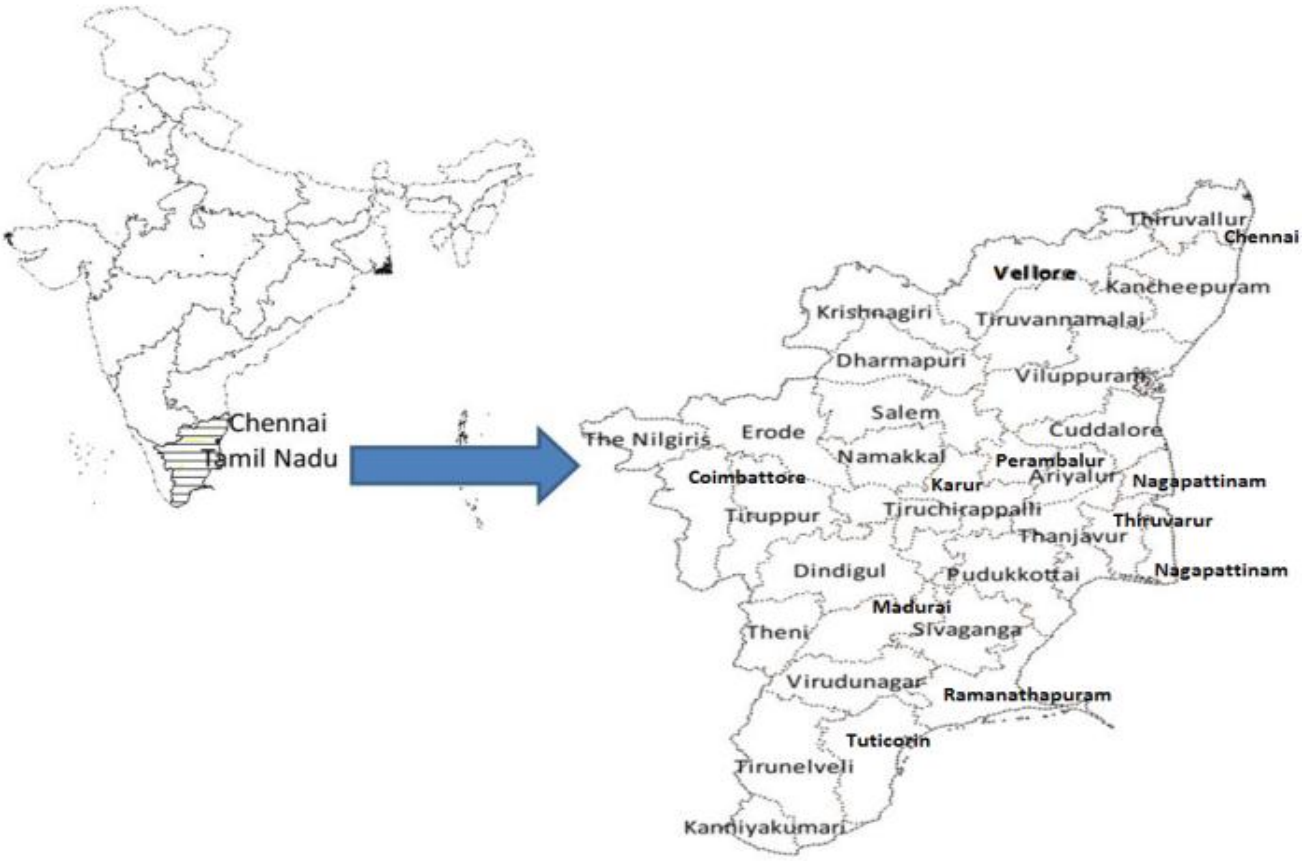
APPENDIX 1

Map of India depicting the state of Tamil Nadu with the capital city of Chennai with 31 districts.



APPENDIX 2

The questionnaire used for the current study was adopted from GATS questionnaire, modifying to the local needs reflecting the current tobacco control scenario in India.

Tamil Nadu Tobacco Survey (TNTS)
Household Questionnaire (Respondent should be above 18 Years)

Address: Zone:

S.No :

An important survey of adult tobacco use behavior is being conducted by the Cancer Institute throughout Tamil Nadu and your household has been selected toparticipate.All houses selected were chosen from a scientific sample and it is very important to the success of thisproject that each participates in the survey. All information gathered will be kept strictly confidential. Ihave a few questions to find out who in your household is eligible to participate.

1. How many persons live in this household? _____
2. How many of these household members are 15 years of age or older?_____ Male _____, Female _____
3. List all the members above 15 years starting from the oldest.

S.No.	Name	Gender	Age	Occupation	Education	Mobile no.

4. Household Items:

1. Electricity		2. Flush toilet		3.Fixed telephone		4.Mobile	
5. Television		6. Radio		7. Refrigerator		8.Car	
9. Two wheeler		10.Washing machine					

Need to call all the eligible members of the family and fix appointment or interview over phone. For each individual use a separate form and take consent.

Consent from respondent, if below 18 years both from parent and respondent.

I am working/studying in_____[Name of Organization]. Cancer Institute is doing a survey about tobacco use in Tamil Nadu. _____ is one of the collaborating organization/institution for this survey. This information will be used for planning public health programs.

Your household have been selected at random. Your responses are very important to us and the community. These answers will represent many other persons. The interview will last approximately 20 minutes. Your participation in this survey is entirely voluntary. The information that you will provide will be kept strictly confidential and the name will not be identified by your responses. There will not be any direct benefits to you, but the results will help the Government and other Non Governmental Organizations plan public health programs for the state.

We will leave the necessary contact information with you. If you have any questions about this survey or your rights as a participant, you can contact the telephone numbers listed. If you agree to participate in this survey, we will conduct a private interview with you.

Individual questionnaires

Do you agree to participate?

Adult/Minor respondent: 1. Yes 2. No. If minors, PARENT/GUARDIAN: 1.Yes 2. No

1. Do you *currently* use Tobacco 1.Yes 2. No
2. In the *past*, have you used Tobacco? 1.Yes 2. No

If the answer is 1 or 2 for any of the above two questions go to 3rd question or else go to question No 21.

3. Smoking and chewing habits

Type	Name of the Tobacco/ Alcohol	Current (1) Past (2)	Frequency		Age Started (Year)	(past user) Age/year Stopped	Duration of use
			Daily	Weekly			
Smoking							
Cigarettes (Filtered/Non-filtered)							
Bidi							
Cigarette							
Chutta/Cigar/Cheroot							
Others (specify)							
Chewing							
Tobacco alone							
AN or BQ, AN +BQ							
AN +BQ+Tobacco							
AN and Tobacco							
Pan with tobacco							
Others							
Snuffing							
By Mouth							
By Nose							
Alcohol_____							

4. How soon after you wake up do you usually have your first smoke/chew/snuff?

1. Within 5 minutes, **2.** 6 to 30 minutes, **3.** 31 to 60 minutes, **4.** More than 60 minutes

5. When you bought tobacco last time, how many cigarettes/BIDIS/Sackets did you buy?

_____ If it is a pack, how many sticks were there in the packet? _____

6. In total, how much money did you pay for this purchase? _____

7. Expense :No _____ X Rs _____ X 30 (Days) = _____ X 12 X_____ (No. of years)= _____

8. Are you concerned about your tobacco use? 1. Yes 2. No

9. Have you visited a doctor or other health care provider in the past 12 months? 1. Yes 2. No

10. During any visit to a doctor or health care provider in the past 12 months, were you asked if you use Tobacco?

1. Yes 2. No

11. During any visit to a doctor or health care provider in the past 12 months, were you advised to quit Tobacco use? 1. Yes 2. No

12. In the last 30 days, have you noticed any warning on the tobacco product you use? 1. Yes 2. No

13. In the last 30 days, the warning labels on tobacco products led you to think about quitting? 1. Yes 2. No

14. During the past 12 months, did you use any of the following methods to try to stop using tobacco?

1. Counseling	**2.Nicotine replacement therapy**	**3. Medications**
4. Switching to alternate tobacco	**5. A quit line**	**6.Traditional medicines**
7. Quit on my own	**8. No attempt**	**9. Others _____**

15. If you have quit completely, specify the method you found effective. _____

16. Thinking about the last time you tried to quit, how long did you stop using tobacco? _____

1. Months **2.weeks** **3. Days** **4.Less than 1 day (24 hours)** **5. No change**

17. Which of the following best describes your thinking about quitting tobacco?

1. Within one month **2. Within 12 months** **3. Quit someday, but not next 12 months**

4. Don't know **5. Not interested in quitting**

If you are less than 18 years

18. When you purchased tobacco in the past 30 days were you refused tobacco? 1. Yes 2. No

If chewers

19. Did you find it difficult to purchase tobacco in the past 30 days? 1. Yes 2. No

20. What was the price before and after the ban for the tobacco you usually purchase?

1. Brand Name_____, Before: Rs _____, After: Rs_____

Ask these questions for non-users also

21. Do you know the harmful effects of passive smoking? 1. Yes 2. No

22. Which of the following best describes the rules about smoking inside of your home?

1. Allowed 2. Not allowed, but exceptions 3. Never allowed

4. No rules 5. Don't know

23. How often does *anyone* smoke inside your home? 1. Yes 2. No

If yes, 1. Daily 2.Weekly 3. Monthly

4. Less than monthly 5. Never 6. Don't know

24. Which of the following best describes the indoor smoking policy where you work?

1. Allowed anywhere 2. Allowed only in some indoor areas 3. Only in out door areas

4. Not allowed anywhere 5. There is no policy 6. Don't know

25. During the past 30 days, did anyone smoke in indoor areas where you work?

1. Yes 2. No 3. Don't know

26. Based on what you know or believe, does breathing other people's smoke cause serious illness in Non smokers?

1. Yes 2. No 3. Don't know

27. Based on what you know or believe does tobacco cause the following…

1. Stroke 2. Heart attack 3. Cancer

4. Cause serious illness 5. Infertility/impotence 6. Don't know

28. In the last 30 days, have you seen any information about the danger use of tobacco or that encourages quitting of tobacco products?

1. Television 2. Radio 3. News papers 4. Billboards

5. Tobacco packs 6. Movies 7. Theatres 8. Not seen

29. In last 30 days, have you seen any advertisement that encourages or promoting tobacco products?

1. Television 2. Radio 3.News papers 4. Billboards

5.Tobacco packs 6. Movies 7. Theatres 8. Not seen

30. Do you suggest any measures for curbing the use of tobacco?

Thank you for your participation.

Signature