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# Factors influencing intention to quit tobacco among adult residents of budge-budge II block, West Bengal, India: A cross-sectional study

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**Abstract:** *Introduction:* Tobacco consumption has a significant public health threat; it affects human health invariably. World's second largest consumer of tobacco is India. Intention to quit tobacco has an important role in improving human health. So, this study was conducted to estimate the proportion of Intention to Quit and the factors associated with it. *Materials and Methods:* A community-based cross-sectional study was conducted among 270 adults (18-45 years) residing in Budge-Budge II block of West Bengal for one year (June 2022-May 2023). A predesigned pretested structured schedule was used to collect the data and 30x7 cluster random sampling was done. Data were analyzed using Microsoft excel 2019 and SPSS v.25. *Results:* Among 270 participants nearly two fifths (42.2%) were smokers, more than two thirds (34.8%) were smokeless tobacco users and one fourth (23%) consumed both forms of tobacco. Nearly one fourth (26.1%) of smokers showed high dependence whereas about three fourth (72.4%) had significant dependence towards smokeless tobacco. More than half (51.1%) had not yet decided to quit in next 12 months. Association found across age of the participants and intention to quit tobacco, which was statistically significant ($\chi^2$ =12.289 df = 2, significant value-0.015). *Conclusion:* About half of them intended to quit tobacco in last 12 months. Two fifths of the participants were smokers and statistically significant association found between age of the participants and intention to quit tobacco.

**Keyword:** Cross Sectional Studies, India, Non communicable Diseases, Tobacco Use Disorder, Smoking Cessation.

## Introduction

According to the report obtained from 2020 Global Burden of Diseases it was estimated that worldwide over seven million deaths attributed to tobacco use [1]. India, being the second largest consumer of tobacco in the world, its prevalence is greater in rural areas than urban [2]. Tobacco consumption plays a significant role in human health and related to various diseases like cancers, heart and lung diseases, diabetes, rheumatoid arthritis etc [3]. Tobacco consumption poses threat to pregnant women too, it can cause infertility, complication during pregnancy, low birth weight infants, infant death as well as miscarriages [4-5].

Data obtained from National Family Health Survey-5 (NFHS 2019-2021), revealed that about three out of ten men and women who were tobacco user, attempted to quit smoking or tobacco use in any form in the 12 months preceding the survey [6]. As per NFHS 5 data61% female, 54% male who were tobacco users and visited a doctor or any other health care facility were advised to stop smoking in the last 12 months before starting the survey [6]. Thirty days preceding the survey 48% of women and 62% of men reported that someone was smoking in their home or elsewhere [6]. NFHS-5 revealed that most common form of tobacco consumed among men was paan masala or gutka (15%),

followed by cigarettes smoking (13%), khaini (12%), and bidi smoking (7%) [6]. According to it 39% among men and 4 % women aged 15-49 used any form of tobacco [6]. Men preferred chewing over smoking, among smokers 46% men smoke cigarette/bidi on average ≥5 cigarette/bidiper day. Woman mostly chewed paan masala or gutka, paan with tobacco, and khaini (1%) [6].

A survey was conducted in the year 2016-2017 which was known as Global Adult Tobacco Survey 2 (GATS), reported that the prevalence of any form of tobacco use has decreased from 34.6% to 28.6% which is 6% less than GATS 1 Survey [7]. It was also reported that there was a relative decrease in the prevalence of tobacco use by 17.3% [7]. GATS 2 survey revealed that the prevalence of current tobacco user among men were 42.4% whereas for women it was 14.2% [7]. Every tenth adult (10.7%) in India are smokers whereas every fifth adult Indian (21.4%) addicted to smokeless tobacco [7]. According to GATS 2 report nearly 38.5% of smokers tried to quit smoking whereas One-third 33.2% of users of smokeless tobacco attempted to quit the use of smokeless tobacco in the last twelve months [7].

Dasgupta *et al* conducted a study which showed that around 76.3%had intention to quit, out of which around thirty-two percent (31.8%) attempted to quit in the last one year [8]. Around fifty percent (49.2%) attempted only once in the last year and only 12.6% attempted more than three times [8]. Dasgupta *et al* also found out that 63.5% succeeded in quitting for a period of less than a month, 11.1%quit period was more than three months and about (47.5%) had medium-to-high nicotine dependence [8].

From NFHS-5, GATS-2 data it came to light that people living in the rural area consume more tobacco than urban. Tobacco consumption is the reason for various diseases like lung diseases, heart diseases, and cancer. Smoking affects smokers as well as those who inhaled it passively. Tobacco, being the risk factor for non-communicable diseases, quitting tobacco can act as preventable factor. Intention to quit is a strong predictor for cessation of tobacco, as intention to quit is considered the first step before quitting tobacco. The promotion of quitting tobacco is needed as it has significant and immediate health benefits and improves the impacts of other tobacco control strategies**.** Despite various awareness programs like handbill distribution, miking, posters, hoardings, advertisements etc still there is inadequate knowledge which fails to impose positive attitude among them to quit tobacco. It is very important to find out the addiction patterns, quitting attempts of tobacco users who were from rural areas to develop policy, program implementation, resource allocation in that area to make them aware about the harmful effect of tobacco. So, this study was conducted to estimate the proportion of Intention-to-Quit tobacco, their addiction patterns and to find the factors associated with it.

## Material and Methods

*Study type, design, setting and duration:* It was a community-based observational study cross-sectional design conducted in Budge-Budge II Community Division block in South-24 Parganas, West Bengal, a rural field practice area of the institute for a duration of one year (June 2022 to May 2023).

*Study population and selection criteria:* Budge-budge II block has 61 Villages; adults residing at selected villages of Budge-Budge Block-II for last one year or more, aged between 18 to 45 (in complete years), current tobacco users (consuming tobacco daily for ≥ 1year) were included in the study. Those who were diagnosed with heart diseases/respiratory illness were excluded [9].

*Sample Size calculation:* Taking p = 76% as proportion of intention to quit tobacco from a study by Dasgupta *et al.* among adult population in Singur block, West Bengal in 2020 [8]. Where p=0.76, 1-p = 0.24, Confidence Interval (C.I) = 95%, Standard normal deviate (Zα) at 95% C. I= 1.96, Relative error (d) = 10% of p (7.6%), design effect= 2, applying Cochran's formula: = 122 x design effect (2 for cluster sampling) =244. Therefore, from each cluster (village) 244/30= 8.13 ≈9 residents were selected; final sample size: 30 x 9= 270.

*Sampling technique:* 30*7 cluster sampling technique was done from 61 villages of Budge-budge II block. Each village was

considered as a cluster. Household was selected from central location of the village; Direction was selected from central location using a random number. From the selected direction households was visited till 9th tobacco users. Those who provided informed written consent were considered as participants and interviewed.

*Study tools:* A pre-designed, pre-tested structured schedule will be used for the study comprising of:

a. Socio-demographic and behavioural characteristics (age, gender, level of education, occupation, socio-economic status, family history of tobacco consumption)
b. Information on tobacco: types of tobacco used by the participants (cigarette/bidi/shisha/ tambakoo/beetel quid/nassi), its duration of use (< 5 years, 6–10 years, 11–20 years and ≥20 years), whether there were any influencer/s or not (who suggested the individuals to quit tobacco -self-decision, parents, relatives, friends and healthcare providers).
c. *Nicotine dependence:* Fagerstrom Test for Nicotine Dependence (FTND) for smokers where the cumulative score which ranges from 0 to 10 and higher the total, the more intense physical dependence on nicotine; 1-2: Low dependence, 3-4: low-Moderate dependence, 5-7: Moderate dependence, ≥8: High dependence [10]. Fagerstrom Test for Nicotine Dependence- Smokeless tobacco-FTND-ST: where cumulative scores range from 0-10;0-4: Low to Moderate dependence, ≥5: Significant dependence [11].
d. Information on perceived application (Tobacco that you usually buy, is sold by licensed vendors or not, signs of "No smoking" in public places, the packaging of tobacco that you buy-displays harmful warnings of tobacco use) and benefits of tobacco control measures, (Seen tobacco being sold near schools/colleges and other institutions, Seen tobacco advertised on streets and other public places)
e. *Intention to quit tobacco:* The response was taken on a five-point Likert scale (never, not yet decided, sometime in the future, in the next 6 months, and now) with a higher score indicating a more positive attitude. Information on this was obtained by asking one question, "Do you plan to quit tobacco?"

*Study Technique:* Principal investigator (PI), two co-investigators visited to the household along with the ASHA, study objectives and process were explained to the participants. After obtaining informed written consent participants selected participants were interviewed by face-to-face interview technique.

*Study Variables:* Intention to quit tobacco was considered as the dependent variable, whereas socio-demographic profile and behavioural characteristics, information on tobacco, nicotine dependence and information on perceived application and the benefits of tobacco control measures were the independent variables in the study.

*Operational Definition and Data Analysis:* An individual who is consuming tobacco daily, in any form, for ≥1 year, in any frequency was considered as current tobacco user.Data were tabulated into Microsoft Excel 2019, data clearing and final sheet was made. Then imported to Statistical Package for the Social Sciences (SPSS v26.0) for analysis. Categorical data was represented as proportions and with help of suitable diagrams. Continuous data was represented in the form of mean or median and other suitable measures. Chi-Square test was used to ascertain association between intention to quit and Socio-demographic variables.

*Ethical Consideration:* Institutional Ethics Committee permission (IPGMER/ IEC/2022/392; dated: 15.09.2022) was obtained for the study. Informed written consent was taken before each interview. Anonymity, confidentiality etc were strictly followed during and after the study.

## Results

Data were obtained from 270 participants of Budge Budge II block, half (50%) of them belonged to the age group between 20-33 years, two third (65.9%) were male, 71.9% followed Hinduism, and more than half (59.3%) them were from general caste. About half of them (51.9%) went to middle school, 31.9% were skilled worker, 19.3% were from businessman, 55.5% were from joint family and 44.1% belonged to lower class (class

V)according to Modified B G Prasad Scale 2023 [12] [Table 1].

**Table-1: Socio-demographic characteristics of the study participants (n=270)**

| Socio-demographic characteristics | | n (%) |
|---|---|---|
| Age group | 20 to 33 years | 135 (50.0) |
| | 34 to 47 years | 101 (37.4) |
| | 48 to 62 years | 34 (12.6) |
| Gender | Male | 178 (65.9) |
| | Female | 92 (34.1) |
| By Religion | Hindu | 194 (71.9) |
| | Muslim | 76 (28.1) |
| Caste | Others (General) | 160 (59.3) |
| | Scheduled Caste | 57 (21.1) |
| | Scheduled Tribe | 19 (7.0) |
| | Other Backward Classes (OBC) | 34 (12.6) |
| Education | Illiterate | 0 |
| | Non formal education | 11 (4.1) |
| | Primary | 10 (3.7) |
| | Middle school | 140 (51.9) |
| | Secondary level | 84 (31.1) |
| | Higher Secondary | 24 (8.9) |
| | Graduate | 1 (0.4) |
| Occupation | Semi Professional/ Professional | 2 (0.7) |
| | Business | 52 (19.3) |
| | Clerk/Private job | 9 (3.3) |
| | Skilled work | 86 (31.9) |
| | Semi-skilled work | 15 (5.6) |
| | Unskilled work | 84 (31.1) |
| | Homemaker | 21 (7.8) |
| | Student | 1 (0.4) |
| Socio-economic class (Modified BG Prasad Scale updated 2023) | Upper | 1 (0.4) |
| | Upper Middle | 11 (4.1) |
| | Middle | 39 (14.4) |
| | Lower Middle | 119 (44.1) |
| | Lower | 100 (37.0) |
| Type of family | Joint | 150 (55.6) |
| | Nuclear | 120 (44.4) |

Around two fifths (42.2%) were smokers, more than one third (34.8%) consumed smokeless tobacco and nearly one fourth (23%) used both forms of tobacco. Among smokers nearly two third (64.4%) consumed Bidi; among smokeless tobacco users nearly one fourth (24.4%), one fifth (21.8%) and one tenth (13.7%) consumed betel quid with tobacco, khaini and gutka respectively. On asking upon the family members' involvement in tobacco consumption, more than one third (38.1%) responded that their fathers were tobacco users.

Almost half of the (51.5%) respondents knew that the tobacco they used to buy was sold by a certified company. Though more than half (56.3%) of them had the sense that tobacco cannot be bought by a minor, but majority (94.5%) had knowledge about taxation on tobacco. About 90% noticed that tobacco packaging display harmful warnings of tobacco use. Nearly eighty-seven percent (86.7%) observed that the television and movies they usually watch display warnings about tobacco use [Table 2].

More than two third (70.4%) often noted signs of 'No smoking' or 'No tobacco' in public places. Nearly three fourth (73.3%) and two third (62.2%) of them were counseled on quitting tobacco by family members and healthcare workers in the last 12 months. More than one fourth (27.8%) of them strongly agreed to the fact that the place where they live had strict regulations for the use of tobacco, whereas 32.2% of them disagreed with the fact [Table 2].

Fagerstrom Test for Nicotine Dependence for smokers revealed that more than two thirds (70.5%) of the participants smoked their first tobacco 5-30 minutes after waking up in the morning. Seventeen percent (17%) find it very difficult to refrain from smoking in forbidden places. More than ninety percent (93.2%) responded that the first cigarette in the morning would like to hate to give up. More than half (52.5%) of them smoked 11-20 cigarettes per day. Everyone responded that they even smoke if they were sick and to be in bed most of the day [Table 3].

| Table-2: Perceived application and benefits of tobacco control measures of study participants (n=270) | | |
|---|---|---|
| **Questions on perceived application and benefits of tobacco control measures** | **Response** | **Number (%)** |
| Is the tobacco that you usually buy, sold by a certified company in your area? | Yes<br>No<br>Don't know | 139 (51.5)<br>80 (29.6)<br>51 (18.9) |
| Can tobacco be bought by a minor age person? | Yes<br>No<br>Don't know | 38 (14.1)<br>153 (56.7)<br>79 (29.3) |
| Is the tobacco that you usually buy, taxed? | Yes<br>No<br>Don't know | 256 (94.8)<br>0<br>14 (5.2) |
| Does the packaging of tobacco that you usually buy, display harmful warnings of tobacco use? | Yes<br>No<br>Never observed closely | 243 (90.0)<br>10 (3.7)<br>17 (6.3) |
| Do television and movies that you usually watch, display about the warnings of tobacco use? | Yes<br>No<br>Never observed closely | 234 (86.7)<br>12 (4.4)<br>24 (8.9) |
| Do you often see signs of "No smoking" or "No tobacco" in public places? | Yes<br>No<br>Never observed closely | 190 (70.4)<br>40 (14.8)<br>40 (14.8) |
| Have you ever been counseled on quitting tobacco by family members in the last 12 months? | Yes<br>No | 198 (73.3)<br>72 (26.7) |
| Have you ever been counselled on quitting tobacco by healthcare workers in the last 12 months? | Yes<br>No | 168 (62.2)<br>102 (37.8) |
| Do you feel the place where you live; have strict regulations for the use of tobacco? | Strongly agree<br>Agree<br>Disagree<br>Strongly agree | 75 (27.8)<br>105 (38.9)<br>87 (32.2)<br>3 (1.1) |
| Have you seen tobacco advertised on streets/on television/during movies? | Yes<br>No<br>Never observed closely | 256 (94.8)<br>7 (2.6)<br>7 (2.6) |

| Table-3: Fagerstrom Test for Nicotine Dependence ($n_1$=176) | | | |
|---|---|---|---|
| **FTND questionnaire** | | **Score** | **Number (%)** |
| How soon after waking, do you smoke your first cigarette? | Within 5 minutes | 3 | 27 (15.3) |
| | 5-30 minutes | 2 | 124 (70.5) |
| | 31-60 minutes | 1 | 25 (14.2) |
| Do you find it difficult to refrain from smoking in places where it is forbidden? | Yes | 1 | 146 (17.0) |
| | No | 0 | 30 (83.0) |
| Which cigarette would you hate to give up? | The first in the morning | 1 | 164 (93.2) |
| | Any other | 0 | 12 (6.8) |
| How many cigarettes a day do you smoke? | 10 or less | 0 | 25 (14.2) |
| | 11-20 | 1 | 92 (52.3) |
| | 21-30 | 2 | 59 (33.5) |
| | 31 or more | 3 | 0 |
| Do you smoke more frequently in the morning? | Yes | 1 | 176 (100.0) |
| | No | 0 | 0 |
| Do you smoke even if you are sick in bed most of the day? | Yes | 1 | 176 (100.0) |
| | No | 0 | 0 |

Fagerstrom Test for Nicotine Dependence for smokeless tobacco users revealed that one third (34%) of them place their first dip within 31-60 minutes after waking up. Nearly ninety percent (90.4%) sometimes intentionally swallow tobacco juice. More than two thirds (71.2%) hate to give up the first in the morning chew. More than half (58.3%) of them use 2-3 cans/ pouches per week. About eighty percent (80.1%) chewed more frequently during the first hours after waking up than the rest of the day. Nearly seventy eight percent (78.2%) of them chewed if they were severely ill that they compelled to be on bed [Table 4].

**Table-4: Fagerstrom Test for Nicotine Dependence- Smokeless tobacco ($n_2$=156)**

| FTND-ST Questionnaire | | Score | Number (%) |
|---|---|---|---|
| How soon after waking do you place your first dip? | Within 5 min | 3 | 32 (20.5) |
| | 6-30 min | 2 | 42 (26.9) |
| | 31-60 min | 1 | 53 (34.0) |
| | After 60 min | 0 | 29 (18.6) |
| How often do you intentionally swallow tobacco juice? | Always | 2 | 7 (4.5) |
| | Sometimes | 1 | 141 (90.4) |
| | Never | 0 | 8 (5.1) |
| Which chew would you hate to give up most? | The first in the morning | 1 | 111 (71.2) |
| | All others | 0 | 45 (28.8) |
| How many cans/pouches per week do you use? | More than 3 | 2 | 30 (19.2) |
| | 2-3 | 1 | 91 (58.3) |
| | 1 | 0 | 35 (22.4) |
| Do you chew more frequently during the first hours after awakening than during the rest of the day? | Yes | 1 | 125 (80.1) |
| | No | 0 | 31 (19.9) |
| Do you chew if you are so ill that you are in bed most of the day? | Yes | 1 | 122 (78.2) |
| | No | 0 | 34 (21.8) |

FTND revealed that among smokers nearly one fourth (26.1%) showed high dependence and nearly three fourth (73.9%) had moderate dependence. FTND-ST showed that among smokeless tobacco users nearly three fourth (72.4%) had significant dependence, more than one fourth (27.6%) showed low to moderate dependence towards tobacco [Figure 1].

Out of 270 participants, more than half (51.2%) not yet decided to quit in next 12 months, twenty eight percent (28.1%) wanted to quit sometime in the future whereas around sixteen percent (15.9%) intended to quit in next 6 months and less than five percent (4.8%) informed that they will never quit [Figure 2].

**Fig-1:** Nicotine dependency of study participants (n1=176, n2=156)*

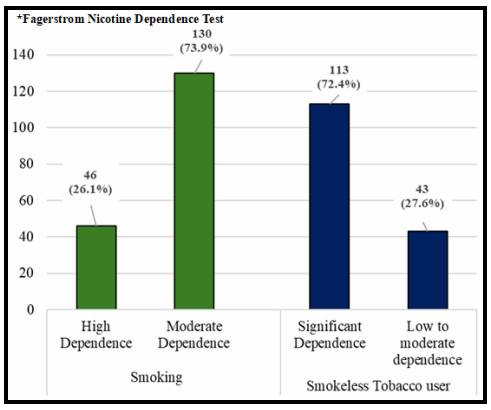
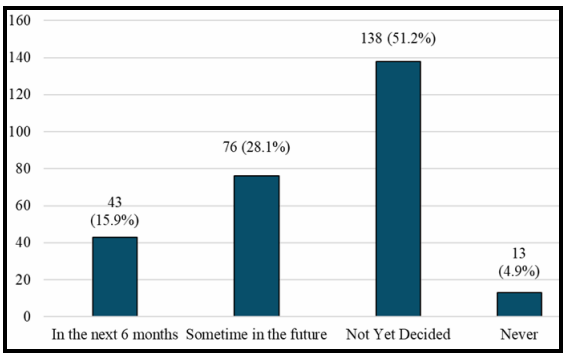



**Fig-2:** Intention to quit tobacco of the study participants in last 12 months (n=270)



Chi-square test of association between intention to quit tobacco and socio-demographic variables showed that there is an association between age of the participants and intention to quit tobacco, which is statistically significant ($\chi^2$ =12.289 df=2, p-value=0.015). No other significant associations were found [Table 5].

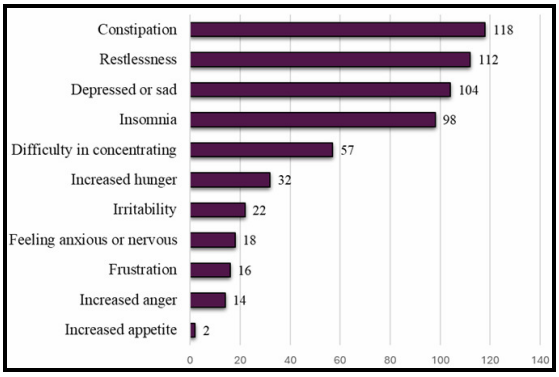
**Table-5: Association between Intention to quit tobacco and Background profile (n=270)***

| Background profile | | Intention to Quit tobacco | | | Chi square; df | p-value |
|---|---|---|---|---|---|---|
| | | In 6 months and somewhat in near future | Not yet decided | Never | | |
| Age group | 20 to 33 years | 51 (37.8) | 80 (59.3) | 4 (3) | 12.289;4 | 0.015 |
| | 34 to 47 years | 46 (45.5) | 47 (46.5) | 8 (7.9) | | |
| | 48 to 62 years | 22 (64.7) | 11 (32.4) | 1 (2.9) | | |
| Gender | Male | 80 (44.9) | 92 (51.7) | 6 (3.4) | 2.386;2 | 0.303 |
| | Female | 39 (42.4) | 46 (50) | 7 (7.6) | | |
| Religion | Hindu | 87 (44.8) | 98 (50.5) | 9 (4.6) | 0.185;2 | 0.912 |
| | Muslim | 32 (42.1) | 40 (52.6) | 4 (5.3) | | |
| Caste | General | 63 (39.4) | 87 (54.4) | 10 (6.3) | 4.466;2 | 0.107 |
| | Others (OBC, SC, ST) | 56 (50.9) | 51 (46.4) | 3 (2.7) | | |
| Education | Non formal education | 5 (45.5) | 5 (45.5) | 1 (9) | 2.207;4 | 0.698 |
| | Upto Secondary | 101 (43.2) | 121 (51.7) | 12 (5.1) | | |
| | Higher secondary and above | 13 (52) | 12 (48) | 0 | | |
| Occupation | Unskilled work | 36 (42.8) | 45 (53.6) | 3 (3.6) | 4.206;8 | 0.838 |
| | Semi-skilled work | 10 (41.7) | 12 (50) | 1 (8.3) | | |
| | Skilled work | 36 (41.9) | 47 (54.7) | 3 (3.5) | | |
| | Semi-professional | 25 (46.3) | 26 (48.1) | 3 (5.6) | | |
| | Others (Home maker, student | 12 (54.5) | 8 (36.4) | 2 (9.1) | | |
| Socio-economic class (Modified BG Prasad Scale updated 2023) | Upper | 23 (45.1) | 27 (52.9) | 1 (2) | 1.120;2 | 0.571 |
| | Upper Middle | 96 (43.8) | 111 (50.7) | 12 (5.5) | | |
| Type of family | Joint | 59 (39.3) | 85 (56.7) | 6 (4) | 1.205;2 | 0.861 |
| | Nuclear | 60 (50) | 53 (44.2) | 7 (5.8) | | |
| Addiction pattern | Smoking | 42 (44.7) | 46 (48.9) | 6 (6.4) | 4.001;4 | 0.406 |
| | Smokeless Tobacco | 55 (48.2) | 54 (47.4) | 5 (4.4) | | |
| | Both | 22 (35.5) | 38 (61.3) | 13 (3.2) | | |

***Chi-square Test of association**

Participants who quitted tobacco for few days majority of them experienced constipation (43.7%), restlessness (41.5%), depression/sad (38.5%), insomnia (36%), difficulty in concentrations (21.1%) etc [Figure 3].

**Fig-3:** Symptoms experienced by study participants on quitting tobacco (n=270)




## Discussion

In our study more than two fifths (42.2%) of the participants were smokers, nearly one third (34.8%) were smokeless tobacco users and less than one fourth (23%) used both forms of tobacco which is almost equal to GATS survey report [7]. Addiction in both forms of tobacco (23%) in current study were lower to result observed in Dasgupta *et al* [8]. Shilong study reported that nearly seventy seven percent (77.3%) used any form of tobacco which was very high than our study [13]. Anandaraj *et al* described in their study that more than three fourth (82.3%), less than one fourth (22.2%), and less than five percent (4.5%) were smokers, smokeless tobacco users, and dual users respectively where smokers are higher [14].

Panigrahi *et al* from Bhubaneswar reported that more than half (53.3%) of the adolescent people were smokeless tobacco users, less than one third (30.3%) were using smoked tobacco and less than one fifth (16.4%) were both forms of tobacco consumer [15]. A survey conducted by Dhumal *et al* revealed that seventy two percent (72%) preferred smokeless tobacco, whereas 17.1% were smokers and10.9% consumed both [16]. This survey also revealed that the prevalence of smokers and mixed users was highest in West Bengal (32.7% and 15.8% respectively), whereas smokeless tobacco consumers were found to be highest in Maharashtra (84%) followed by Bihar (82.5%) [16]. This kind of findings may be due to different socio-demographic variables like gender, age group and others.

The present study also revealed that among smokers nearly two thirds (64.4%) were bidi smokers. Jangra *et al* in their study concluded that in rural area there were high prevalence of tobacco use among male participants (11.2%) than female (3.2%) and overall prevalence were 12.8% [3]. Among smokeless tobacco users main form of chewing tobacco was zarda (among males) and snuffed tobacco (among females) [3].

In current study, assessment of FTND revealed that nearly one fourth (26.1%) showed high dependence, which differed from Dasgupta *et al* and three and half times (7.5%) higher than Anandaraj *et al* [8, 14]. In contrast to Burdwan study there was no low dependence on tobacco found in current study [18]. Assessment of FTND-ST for smokeless tobacco user identified that nearly three fourths (72.4%) had significant dependence towards tobacco which is five and half times higher than Puducherry study [14].

Recent study revealed that 38.1% of participants' fathers were tobacco users whereas in Ballal *et al* a lower proportion (16.4%) of family members had addiction [17].

Our study documented that more than three-fourth (86.7%) observed that the television and movies they usually watch display warnings about tobacco use which was little higher (67.2%) than the findings obtained from Dasgupta *et al*. [8]. Current study identified that 73.3% and62.2%of them were counseled on quitting tobacco by family members and healthcare workers in the last 12 months whereas in Dasgupta et al it is 78.8%, it was a little higher than our study [8]. This study revealed that 90% noticed that tobacco packaging display harmful warnings of tobacco use which was higher (85.9%) than Dasgupta *et al*. [8].

Current study reported that 51.2% had not yet decided to quit in next 12 months, 28.1% wanted to quit sometime in the future. In

Dasgupta *et al* 76.3% showed intention to quit though nearly thirty two percent (31.8%) attempted to quit in the last one year which was much higher than recent study [8]. According to Anandaraj *et al* among smokers 46.1% tried to quit whereas, only 19.6% smokeless tobacco users tried to quit in the past [14]. Khan *et al* concluded in their study that 52.4% intended to quit out of which 41.4% attempted to quit smoking in last one year [19]. Whereas in Binu *et al* conducted their study in Kerala showed that 48.3% of the participants intended to quit tobacco it was a little higher than current study [20].

Dhumal *et al* surveyed that overall, 19.6% of tobacco users had an intention to quit tobacco in future, and 25% had tried it but failed; among them 36.9% wanted to quit in future [16]. Reddy *et al* found that individuals aged between 15–24 and 25–44 years compared with ≥65 years, region (North, Central, East compared with West), time of first smoke after wakeup (≥60 minor within 5 min), attempted to quit in the previous twelve months, advised to quit smoking by doctor [21].

Chi-square test of association between intention to quit tobacco and socio-demographic variables showed that there is an association between age of the participants and intention to quit tobacco, which is statistically significant ($\chi^2$ =12.289 df=2, p-value=0.015). Dasgupta *et al* concluded that attempt to quit was significantly associated with low nicotine dependence on tobacco as well as family pressure [8]. Survey revealed that those who were smokers had less intention to quit tobacco in respect to smokeless tobacco consumer whereas mixed users showed high intention to quit (OR = 1.48, 95% CI = 1.12–1.97) compared to smokeless tobacco users; though residence (urban or rural area), and gender were not significant predictors of intentions to quit, this findings was similar to our study [16].

*Strength of the study:* Strength of this study includes large sample size and robust methodology (cluster random sampling technique). Being a community-based study with diverse study population was strength itself.

*Limitation of the study:* A few limitations were there as it was conducted in rural areas, its' data cannot be generalized to urban areas.

## Conclusion

Though this population belonged to rural areas, none of the smokers had low dependence and one fourth smokers had very high dependence. Among smokeless tobacco users nearly three fourths had significant dependence. More awareness related to harmful effects of tobacco are required for this issue.

More than one fourth intended to quit tobacco in next 6 months and age group showed significant association with intention to quit tobacco. Social support, motivation to individuals, and access to cessation programs play vital roles in tobacco cessation. Individual counselling regarding behavioural change, continuous support is essential for breaking the addiction cycle to achieve long term tobacco control. Establishment of tobacco dead diction clinic can be extended, and distribution of IEC (Information, education and Communication) material is important to promote tobacco cessation.

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