

# CHARACTERISTICS OF TOBACCO USERS WHO VISITED THE TOBACCO CESSATION CLINIC IN AN URBAN PRIMARY HEALTHCARE CENTER IN MALE' MALDIVES FROM 2017-2023: A RETROSPECTIVE, DESCRIPTIVE CROSS-SECTIONAL STUDY

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## Abstract

**Objective:** This study aimed to identify the demographic profiles, tobacco usage patterns, and history of previous quit attempts among attendees of the tobacco cessation clinic at an Urban Primary Healthcare Center (Dhamanaveshi) in Male', Maldives, spanning from 2017 through 2023. Key aspects included examining participants' demographic details, their habits related to tobacco consumption, and their experiences with attempting to quit smoking or using tobacco products. **Methods:** A retrospective, quantitative, descriptive survey was undertaken utilizing secondary data extracted from tobacco cessation assessment forms at the Urban Primary Healthcare Center (Dhamanaveshi)'s tobacco cessation clinic. The study employed a census sampling approach, encompassing all available tobacco cessation forms, resulting in a total sample size of 544 participants. The primary researcher developed a data transfer sheet based on a review of the assessment forms, facilitating the systematic transfer of required data. Descriptive statistical analyses were performed using SPSS version 21.0 to summarize and interpret the collected data. **Results:** Out of 544 tobacco users, 494 (90.8%) were male and 50 (9.2%) were female. The majority were married and employed, and most did not take any medication or have allergies. The average age of tobacco users was 39.6 years, with the majority falling within the 36-64 age range. A significant number of tobacco users started using tobacco before the age of 18, and most had been using it for at least 10 years. Many of them were traditional smokers who exclusively used Camel brand cigarettes. The majority smoked more than 10 cigarettes daily or used tobacco more than 10 times a day. Regarding quitting habits, most of the study participants had attempted to quit smoking at least once. About one third had attempted to quit in the past, with an equal number having quit for less than a week. The largest group of tobacco users had never used tobacco cessation services and relied mainly on willpower to quit. Challenges such as cravings, withdrawals, and triggers were significant barriers reported by tobacco users trying to quit. **Conclusion:** The majority of tobacco users attending the selected tobacco cessation clinic began using tobacco at a young age, consumed over 10 cigarettes daily, and had been using tobacco for more than 10 years. They predominantly smoked traditional cigarettes, with a strong preference for Camel brand cigarettes. Given these characteristics, it is crucial to enhance public awareness about the risks associated with tobacco use. Furthermore, it is advisable to provide orientation and training to healthcare providers in tobacco cessation strategies to better support tobacco users in quitting in a timely manner. This proactive approach can significantly contribute to reducing tobacco-related harm and promoting better health outcomes in the community.

**Keywords:** Tobacco Use, Tobacco Cessation, Dhamanaveshi, Tobacco Cessation Clinic, Practice of Tobacco Use. Maldives Cessation Service, Tobacco Cessation in Maldives.

## INTRODUCTION

Tobacco use is a leading cause of preventable deaths worldwide. Tobacco use kills half of its users (WHO, 2022)<sup>1</sup> and it is a risk factor for six out of eight leading causes of deaths

globally (WHO, 2022)<sup>1</sup>. Tobacco use is a growing epidemic in most of the low to middle-income countries (NCD Alliance, 2022)<sup>2</sup>. Tobacco cessation is of great importance as well as the prevention of tobacco use commencement (Gallert et al., 2012)<sup>3</sup>. Yong et al. (2014)<sup>4</sup> reported that nearly two-thirds of smokers wanted to stop smoking; however, only a few people consequently succeed in quitting attempts (Yong et al., 2014)<sup>4</sup>. Surveys across several countries and various age groups including Maldives show that approximately 70% of smokers have thought of quitting at some point in time, but only 2-3% had successfully quitted without assistance (Smoke free teens, 2017)<sup>5</sup>.

### **Tobacco usage in Maldives**

Tobacco use is relatively high in Maldives. STEP survey (2011)<sup>6</sup> conducted in Maldives, showed that 34.7% of men and 3.4% of women were tobacco users. However, these numbers have increased to 35.6% for men and 7.6% for women in the STEP survey of 2020-2021 (Raheem & Moosa, 2022)<sup>7</sup>. These values vary and prevalence also varies following geography and age group. The highest prevalence of current daily smokers among men (37.6%) was in the age group 25–34 years. Among women, daily smokers were higher in the older age group of 55–64 years (9.2%) (WHO, 2013)<sup>8</sup>. However, the recent STEP survey (2020-2021)<sup>7</sup> showed the highest prevalence of current smokers was in the age group 30-44 years with the percentage of 29%, followed by the age group 45-69 years with a percentage of 23.4% (Raheem & Moosa, 2022)<sup>7</sup>.

### **Tobacco cessation service in Maldives**

Maldives has signed with WHO Framework Convention for Tobacco Control (FCTC) in which tobacco cessation service is considered as a basic healthcare service to be provided in all health facilities, everywhere in the country, accessible to everyone who needs the service. The Tobacco control act (15/2010) mandated the provision of tobacco cessation services to the general public. Unfortunately, tobacco cessation service was not available in Maldives until the opening of the very first tobacco cessation clinic in 2015 at the Urban Primary Healthcare Center (UPHC) named “Dhamanaveshi”, Male, Maldives (Dhamanaveshi, 2015)<sup>9</sup>. Currently, Maldives has very few tobacco cessation clinics. The first tobacco cessation clinic in Maldives was opened in UPHC (Dhamanaveshi), Male’ on 4<sup>th</sup> of February 2015, while the second tobacco cessation clinic opened in ADK Hospital in the year 2017. The third tobacco cessation clinic was opened in IGMH, on 8<sup>th</sup> of April 2018. Furthermore, tobacco cessation service is also provided by the Public Health Unit of Hulhumale’ Hospital. These four cessation clinics are located in the greater Male’ region, thus the tobacco cessation service is limited mostly to the people residing in the Greater Male’ Area where half of the population of Maldives resides. The first tobacco cessation Clinic opened out of the capital in an Atoll was the clinic at Sh. Atoll Hospital, Sh. Funadhoo, Maldives. The anecdotal data of the tobacco cessation clinic in Urban Primary Healthcare Center (UPHC) showed that most of the smokers who attended this quit service were heavy smokers who had been smoking for the past few years and most of them were youths or adults younger than 50 years of age (Dhamanaveshi, 2022)<sup>10</sup>. However, other characteristics of smokers such as demographic characteristics, their

practice of tobacco use and their history regarding tobacco cessation were not evaluated previously. Thus, this study was aimed to identify the characteristics of tobacco users such as demographic characteristics, practice of tobacco usage and history of previous quit attempts among tobacco users who attended tobacco cessation clinic at UPHC (Dhamanaveshi) from 2017 to the end of 2023.

## **Aims and objectives**

### **Aims**

The aim of this study is to identify the demographic characteristics, patterns of tobacco use, and history of previous quit attempts among tobacco users who visited the tobacco cessation clinic at the Urban Primary Healthcare Center (Dhamanaveshi) in Male', Maldives, from 2017 through the end of 2023. The primary aim of the research project was to comprehensively study the characteristics of tobacco users attending the tobacco cessation clinic at the Urban Primary Healthcare Center (Dhamanaveshi) in Male', Maldives, from 2017 to the end of 2023. Specifically, the study focused on the following objectives: (1) demographic characteristics, (2) practice of tobacco uses, (3) history of previous quit attempts (4) nicotine dependence (5) status of follow ups (6) status of quit and relapse among tobacco users who attended tobacco cessation clinic and analyzed (7) variation in nicotine dependence amongst tobacco users. This paper primarily addresses the first three objectives of the research project. Future research articles will delve into the remaining objectives to further explore and analyze the characteristics of tobacco users attending the tobacco cessation clinic at the Urban Primary Healthcare Center (Dhamanaveshi) in Male', Maldives, from 2017 to 2023

### **Objectives**

1. To identify demographic characteristics of tobacco users who attended tobacco cessation clinic at one of the Urban Primary Healthcare Center (Dhamanaveshi) in Male' Maldives, from 2017 to the end of 2023.
2. To assess and identify practices of tobacco use among tobacco users who attended tobacco cessation clinic at one of the Urban Primary Healthcare Center (Dhamanaveshi) in Male' Maldives, from 2017 to the end of 2023.
3. To identify previous history of tobacco cessation among tobacco users who attended tobacco cessation clinic at one of the Urban Primary Healthcare Center (Dhamanaveshi) in Male' Maldives, from 2017 to the end of 2023.

## **METHODS**

This quantitative retrospective cross-sectional study utilized secondary data from the tobacco cessation clinic (TCC), Dhamanaveshi, covering the period from 2017 to 2023. During this seven-year span, a total of 693 clients attended the clinic. However, for the study, 544 subjects were sampled after excluding those who made repeated visits and cases or assessment forms that were either misplaced or inaccessible during the data

analysis phase. The study employed census sampling, meaning the entire target population of 544 clients who attended the clinic during the study period was included in the analysis. Thus, the sample size used in the study corresponds exactly to the total number of clients targeted for inclusion. The primary researcher developed a data transfer sheet based on the tobacco cessation assessment form, which consisted of five sections. These sections include: 1. Demographic characteristics, 2. Practices of tobacco users, 3. History of tobacco cessation among tobacco users, 4. Nicotine dependency, 5. Follow-up status of tobacco users. For the purposes of this paper, the focus is specifically on the first three sections: demographic characteristics, practices of tobacco use, and history of tobacco cessation among tobacco users. These sections were selected to provide a detailed analysis and understanding of the characteristics and behaviors of tobacco users who attended the tobacco cessation clinic at Dhamanaveshi from 2017 to the end of 2023. This focus sets the foundation for potential further research and analysis into nicotine dependency, follow-up status, and other relevant factors related to tobacco cessation outcomes. Prior to data transfer or data collection, no objection letter was obtained from urban primary health care center (Dhamanaveshi) and ethical approval from National Health Research Council (NHRC) Ministry of Health, Maldives was attained. The NHRC approval number for actual research project is NHRC/2023/18. Data was analyzed by utilizing SPSS software version 21.0. Simple descriptive statistics such as mean, median, mode, frequency and percentages were applied to measure the objectives.

## RESULTS

**Table 1: Demographic characteristics of tobacco users**

Variable			Variable		
Year	N	%	Age group	N	%
<b>2017</b>	117	21.5%	18-25 years	54	9.9%
<b>2018</b>	<b>120</b>	<b>22.1%</b>	26-35 years	198	36.4%
<b>2019</b>	110	20.2%	36- 64 years	<b>267</b>	<b>49.1%</b>
<b>2020</b>	56	10.3%	Above 65 years	24	4.4%
<b>2021</b>	33	6.1%	<b>Marital status</b>		
<b>2022</b>	53	9.7%	Single	159	29.2%
<b>2023</b>	55	10.1%	Married	321	<b>59.0%</b>
Age range			Divorced	59	10.8%
<b>26</b>	19	3.5%	Widowed	3	0.6%
<b>27</b>	22	4.0%	<b>No of children</b>		
<b>29</b>	22	4.0%	No children yet	186	<b>34.2%</b>
<b>30</b>	20	3.7%	1 child	100	18.4%
<b>31</b>	17	3.1%	2-3 children	169	31.1%
<b>32</b>	<b>23</b>	<b>4.2%</b>	> 4 children	87	16.0%
<b>33</b>	20	3.7%	<b>Awareness about the clinic</b>		
<b>34</b>	22	4.0%	By friends	257	47.3%
<b>35</b>	18	3.3%	By family members	92	16.9%
<b>36</b>	18	3.3%	By HCPs	122	22.4%
<b>38</b>	17	3.1%	By media (Radio, TV, etc)	51	9.4%

<b>42</b>	22	4.0%	Others	21	3.9%
Gender			<b>Allergy to medication</b>		
<b>Male</b>	<b>494</b>	<b>90.8%</b>	Yes	38	7.0%
<b>Female</b>	50	9.2%	No	<b>506</b>	<b>93.0%</b>
Employment			<b>Medical condition</b>		
<b>Yes</b>	<b>455</b>	<b>83.6%</b>	Yes	139	25.6%
<b>No</b>	87	16.0%	No	<b>405</b>	<b>74.4%</b>

### Sociodemographic characteristics

The current study conducted at Dhamanaveshi reported that the mean age of tobacco users attending the tobacco cessation clinic was 39.6 years, with participants ranging in age from 18 to 80 years. A significant majority (49.1%) of the tobacco users fell within the age group of 36-64 years. The majority of attendees were male (90.8%) and married (59.0%). Regarding family demographics, more than one third (34.2%) of tobacco users did not have children at the time of data collection. Employment-wise, a large proportion (83.6%) of tobacco users were employed, encompassing self-employment, government positions, or jobs in the private sector. The primary sources of awareness about the clinic were through friends (47.3%) and health professionals (22.4%). The study also found that the majority of tobacco users (74.4%) were not taking any medication for chronic medical conditions, and a high percentage (92.8%) reported no allergies to medications. The demographic characteristics of tobacco users were presented in table 01.

**Table 2: Practice of tobacco use**

Variable	N	%
<b>Age of initiation</b>		
<b>Before 10 years</b>	35	6.4%
<b>11-15 years</b>	220	40.4%
<b>16-18 years</b>	141	25.9%
<b>Above 18 years</b>	147	27.0%
<b>Duration of tobacco use</b>		
<b>&lt; 5 years</b>	33	6.1%
<b>6-10 years</b>	61	11.2%
<b>11-20 years</b>	201	36.9%
<b>21-30 years</b>	120	22.1%
<b>More than 30 years</b>	127	23.3%
<b>Frequency of daily usage</b>		
<b>&lt; 5 times or &lt; 5 cigarettes</b>	39	7.2%
<b>6-10 times or 6-10 cigarettes</b>	49	9.0%
<b>11-20 times or 11-20 cigarettes</b>	198	36.4%
<b>21-40 times or 21-40 cigarettes</b>	125	23.0%
<b>&gt;40 times or &gt; 40 cigarettes</b>	130	23.9%
<b>Average days of use in a month</b>		
<b>6-15 days</b>	3	0.6%
<b>16-29 days</b>	2	0.4%

<b>30 days or almost every day</b>	537	98.7 %
Inhalation of tobacco smoke or liquid in		
<b>Always</b>	378	69.5%
<b>Sometime</b>	135	24.8%
<b>Never</b>	12	2.2%
Tobacco uses in Forbidden area		
<b>Yes</b>	253	46.5%
<b>No</b>	281	51.7%
Place of tobacco use		
<b>No specific area or any place</b>	537	99.8%
<b>Home</b>	1	0.2%
<b>Work place</b>	0	0.0%
<b>Public or roads</b>	0	0.0%
<b>Caffe or restaurants</b>	0	0.0%
<b>Others</b>	0	0.0%
Duration between wake up & First tobacco use		
<b>Within 5 minutes</b>	238	43.8%
<b>6-30 minutes</b>	164	30.1%
<b>31-60 minutes</b>	113	20.8%
<b>After 60 minutes</b>	21	3.9%
Tobacco uses more in first hours of the day		
<b>Yes</b>	186	34.2%
<b>No</b>	350	64.3%
Tobacco uses during illness		
<b>Yes</b>	346	63.6%
<b>No</b>	190	34.9%

### Practice of tobacco use

The current study revealed that 40.4% of tobacco users started using tobacco between 10-15 years of age and, considering 18 years as median, it showed that the majority (72.7%) of tobacco users started tobacco use before 18 years of age. The present study reported that more than one-third (36.9%) of tobacco users used tobacco for a duration between 11-20 years. The study also identified that majority (92.3%) had used tobacco for more than 10 years of duration. According to this study the majority (78.1%) of tobacco users were traditional smokers and consumed cigarettes solely. Also, majority (67.5%) used camel brand either camel hard (39.0%) or camel light (28.5%).

Furthermore, the study also discovered that majority (83.3%) of the tobacco users consumed more than 10 cigarettes daily or used tobacco for more than 10 times per day. However, most (36.4%) of the study subjects used tobacco 11-20 times a day or consumed 11-20 cigarettes daily. The current study also established that majority (98.7%) of the participants used tobacco on almost every day of the month and most (69.5%) of the tobacco users always inhaled tobacco smoke or liquid in. Similarly, it also described that more than half or majority (51.7%) of tobacco users did not used tobacco in a forbidden area or place, yet majority (99.8%) follow no specific area or place for tobacco use. The existing study also described that majority (73.9%) of them used tobacco within half an hour of waking up and 94.7% consumed tobacco within one hour of their wake



up, however, nearly 43.8% of these used tobacco within 5 minutes of wake up. It was also reported that more than half (64.3%) of them had not used tobacco more during first hour of the day and an equal amount (63.6%) consumed tobacco during their illness. The current study also states that greatest (85.1%) number of tobacco users informed about tobacco use by their family members with usage of 70.2% and 26.3% respectively for nuclear and extended family members. Likewise, the study confirmed that majority (96.9%) of tobacco users informed about tobacco use by their friends with usage of 94.5% and 18.4% of tobacco use to the best friends and coworker respectively. The study also concluded that majority (81.3%) of tobacco users reported that their coworker does not consume tobacco in contrast to (90.6%) reporting someone living together do consume tobacco.

### Previous history of tobacco cessation

**Table 3: History of tobacco cessation among tobacco users**

Variable	N	%
<b>Ever tried quitting</b>		
Yes	461	85.1%
No	79	14.5%
<b>Number of previous quit attempts</b>		
Once only	177	32.5%
Twice	112	20.6%
Thrice	63	11.6%
More than 4 times	107	19.7%
Not tried to quit	79	14.5%
<b>Longest duration of quitting</b>		
< 1 week	177	32.5%
2-3 weeks	20	3.7%
3-4 weeks	21	3.9%
1-3 months	125	23.0%
4-6 months	34	6.3%
7-12 months	15	2.8%
1-2 years	29	5.3%
>3 years	14	2.6%
Not tried to quit	79	14.5%
<b>Previous use of cessation service</b>		
Yes	39	7.2%
No	500	91.9%
<b>Duration of cessation service use</b>		
Less than 3 months	32	5.9%
4-6 months	2	0.4%
7-12months	0	0.0%
More than one year	1	0.2%
Not used cessation service previously	500	91.9%
<b>Methods used to quit</b>		
Will power (self-control)	375	68.9%
NRT alone	76	14.0%
Oral inhaler	0	0.0%

Counselling alone	0	0.0%
App or Website	1	0.2%
Drugs	0	0.0%
Others	0	0.0%
Not tried to quit	79	14.5%
<b>Challenges faced while quitting</b>		
Stress and anxiety	96	17.6%
Peer pressure	59	10.8%
Cravings, withdrawals, triggers	257	47.2%
Weight gain	1	0.2%
Low will power	0	0.0%
Others	62	11.4%

The current study also revealed that majority (85.1%) of study subjects had tried quitting previously, nearly one third (32.5%) had at least one previous quit attempt, and an equal amount (32.5%) had less than one week duration of quitting. While majority (91.9%) of tobacco users had not used tobacco cessation service previously, only 7.2% used tobacco cessation service previously, with 5.9% using tobacco cessation service for less than 3 months of duration whereas a good number (68.9%) used willpower as a method of quitting. Cravings, withdrawals and triggers were considered as major challenges for quitting amongst tobacco users (47.2%).

## DISCUSSION

The present study is aimed to identify characteristics of tobacco users who attended tobacco cessation clinic at an Urban Primary Healthcare (UPHC) setup “Dhamanaveshi” in Greater Male’ Area (GMA), Maldives. The main objectives were to identify sociodemographic characteristics of tobacco users, practices of tobacco users towards tobacco use, nicotine dependency among tobacco users, history of tobacco cessation among tobacco users and to explore follow up characteristics among tobacco users. The existing study reported that majority (72.7%) of tobacco user started tobacco consumption before 18 years of age. This makes an agreement with findings by Patle & Khakse (2014)<sup>11</sup> who demonstrated 61% of participants stating tobacco use before 18 years of age. This was also corroborated by a survey conducted in USA in 2016 where it reported nearly 90% of adult smokers started smoking before 18 years of age (DHHS, 2016)<sup>12</sup>. Nevertheless, multiple studies have also reported 20 years as age of initiation (Dasgupta et al., 2021<sup>13</sup>, Khan et al., 2018<sup>14</sup>, Rushender et al., 2018<sup>15</sup>). This study confirmed that a significant majority (92.3%) of tobacco users had used tobacco for at least 10 years. Specifically, more than one third (36.9%) of tobacco users reported using tobacco for a duration ranging between 11 to 20 years. These findings are consistent with previous research by Manish et al. (2017)<sup>16</sup> and Arya et al. (2015)<sup>17</sup>, who reported mean durations of tobacco use as 20 years and 10 years, respectively. However, Majumdar et al. (2015)<sup>18</sup> reported a higher mean duration of 35 years among tobacco consumers. These comparisons highlight variability in the duration of tobacco use reported across different studies, suggesting that tobacco use patterns may vary widely among different



populations and contexts. According to this study, the majority (78.1%) of tobacco users were traditional smokers who exclusively consumed cigarettes. Among these users, the preferred brands were predominantly Camel cigarettes, with 39.0% using Camel hard and 28.5% using Camel light. Marlboro was the next most commonly used brand, with 8.8% of users opting for Marlboro cigarettes, including 6.4% for Marlboro hard and 2.4% for Marlboro light. In contrast, a survey conducted in the USA reported different preferences among tobacco users. According to Perks et al. (2018)<sup>19</sup>, Marlboro cigarettes were more popular, preferred by 38.3% of users, compared to 13.4% who preferred Camel cigarettes.

The present study described that majority (83.3%) of the tobacco users consumed more than 10 cigarettes daily or used tobacco more than 10 times per day and most (36.4%) of the study subjects used tobacco 11-20 times daily or consumed 11-20 cigarettes per day. A consistent finding was reported by Manis et al (2017)<sup>16</sup> where it showed 61.9% of tobacco users used tobacco more than 10 times or consumed more than 10 cigarettes per day. Similarly, Jeong et al (2019)<sup>20</sup> discovered that 53% of tobacco users who visited tobacco cessation clinic consumed 11-20 cigarettes daily. The current study also disclosed that majority (98.7%) of the participants used tobacco on almost every day of the month, which is consistent with multiple previous studies (Hameed & Malik, 2021<sup>21</sup>, Muendo, 2012<sup>22</sup>)<sup>21,22</sup>. In addition, Marzo et al (2022)<sup>23</sup> discovered nearly half (50.6%) of the smokers smoked daily. Contrary to this, a Malaysian study has reported quite lower percentage of smokers who smoked all 30 days of the month (Zawawi & Dick, 2013)<sup>24</sup>. Most (69.5%) of tobacco users always inhale tobacco smoke or liquid in. This is in stark contrast to the finding by Subedi et al (2021)<sup>25</sup> who discovered only 13% always ingest tobacco liquid in. Contrary to the prediction, present study revealed that more than half or majority (51.7%) of the tobacco users do not use tobacco in a forbidden area or place and 46.5% consumed tobacco in a forbidden area. This is almost similar to the finding by Subedi et al (2021)<sup>25</sup> who described that one-third (31%) of smokers felt difficult to stay and not smoke in restricted areas while 69% of smokers felt difficult when tobacco use is not allowed in restricted areas. The study concluded that majority (99.8%) follow no specific area or place for tobacco use which establishes an agreement with a previous study by Fernando et al (2019)<sup>26</sup> who confirmed that more than half of the study subjects do not prefer to smoke at any specific place, rather they smoke at home, friend's home, events or social places.

The existing study described that majority (73.9%) of tobacco users had used tobacco within half an hour of wake up and 94.7% consumed tobacco within one hour of wake up. This finding is also corroborated by some previous studies such as a study by Majumdar et al (2015)<sup>18</sup> who reported 88% of tobacco users consume tobacco within half an hour of waking up and also by Catherine et al (2021)<sup>27</sup> study which states that 62% of study subjects used tobacco within half an hour of waking up. Notably, current study also reported nearly 43.8% of tobacco users had used tobacco within 5 minutes of waking up. This is consistent with findings by some previous studies (Subedi et al., 2021<sup>25</sup>, GATS-India, 2016-2017<sup>28</sup>)<sup>25,28</sup>. Very less number (3.9%) of tobacco users consumed tobacco

after 60 minutes of wake up. In contrast, nearly one-third consumed their first tobacco after 60 minutes (Subedi et al., 2021)<sup>25</sup>, majority (61.3%) consumed their first tobacco after 60 minutes Reda et al (2013)<sup>29</sup> and a quarter (25%) consumed their first tobacco after 60 minutes of wake up (Catherine et al., 2021)<sup>27</sup>. It is also reported that good (64.3%) number of tobacco users had not used tobacco more during first hours of the day which is opposite to the finding by Subedi et al (2021)<sup>25</sup> who reported 83% of tobacco users had used tobacco more during rest of the day than during first hours of the day. Nonetheless, the same researcher (Subedi et al., 2021)<sup>25</sup> stated smokeless tobacco users consumed tobacco more in the first hour of the day.

The current study also revealed that majority (63.6%) of tobacco users consumed tobacco during their illness. This is in accordance with the findings by Subedi et al (2021)<sup>25</sup>, who discovered 76% of tobacco users had used tobacco during illness. The current study stated huge number (85.1%) of tobacco users informed about tobacco use amongst their family members with usage of 70.2% and 26.3% respectively for nuclear and extended family members. The findings were comparable to some other studies conducted before in diverse cultures where it has shown positive family history of tobacco use among tobacco users (Subedi et al., 2021<sup>25</sup>, Catherine et al., 2021<sup>27</sup>, Sharma et al., 2020<sup>30</sup>, Garmiene et al., 2006<sup>31</sup>). The study also proclaimed that majority (96.9%) of tobacco users had friends who use tobacco with usage of 94.5%, 18.4% and 90.6% for tobacco use by best friends, coworker and someone living together respectively. This is in line with a Bangladeshi study which discovered 38% of students have friends who smoke and 74% of students have roommate who smoke regularly (Ahmed et al., 2020)<sup>32</sup>.

The current study also revealed that majority (85.1%) of study subjects had tried quitting previously. This is corroborated by findings from National survey conducted in South Africa where it reported that 74.6% of tobacco users had ever attempted to quit (Agaku et al., 2021)<sup>33</sup>. Similarly, GATS survey conducted in 2016 in India have shown that 56% smokers intended to quit smoking (GATS, 2016)<sup>28</sup>, while Dasgupta et al (2021)<sup>13</sup> reported that 76.3% showed intention to quit. Contrary to this, Patle & Khakse (2015)<sup>11</sup> reported that 72% of tobacco users had never tried to quit tobacco earlier and only 15% had ever tried to quit tobacco. The present study found nearly one-third (32.5%) had at least one previous quit attempt. Previous evidence showed that 73.9% of tobacco users had at least one previous quit attempt in their life (Manis et al., 2017)<sup>16</sup>. The existing study has shown that approximately one-third (32.5%) had less than one week of duration of quitting. Much longer duration of quitting was witnessed in previous studies such as 1.2-2.8 years as smokefree periods were reported by Manis et al (2017)<sup>16</sup>. This study revealed that majority (68.9%) of tobacco users who tried to quit previously used willpower as a method of quitting followed by nicotine replacement therapy (14%). Kim et al (2021)<sup>34</sup> reported that most smokers chose willpower to quit smoking and smokers who used willpower or the cold turkey method was more successful than those who used nicotine replacement therapy as a cessation method. In addition, Manis et al (2017)<sup>16</sup> also discovered that majority (70.2%) of smokers quit without any cessation aid and 21% used NRT for tobacco cessation. Cravings, withdrawals and triggers were considered as major

challenges for quitting previously among tobacco users (47.2%). This is followed by stress, anxiety and peer pressure at 17% and 10% respectively. Previous study reported friends (69%), stress (55%) and craving or withdrawals from nicotine (37%) as major barriers for quitting (Carlson et al., 2017)<sup>35</sup>. Another study by Lee et al (2022)<sup>36</sup> reported stress (66%), peer pressure (13%) and withdrawals (20%) as main barriers to quit smoking.

### **Limitation**

The data analyzed in this study is the secondary data collected retrospectively in the past seven-year period from the clients who attended tobacco cessation clinic at UPHC (Dhamanaveshi) from 2017 to the end of 2023, thus data collected later or prior to the given period was not included or assessed in this study. This indicates that the data cannot be generalized to the general public or across the greater Male' area or across the nation as the data is limited to only one tobacco cessation clinic in the greater Male' Area. this study analyzed the data of the tobacco cessation clinic at UPHC (Dhamanaveshi), and no data from any other tobacco cessation clinic established in Greater Male Area were assessed, thus future studies are required to explore stated objectives using data of other clinics and to do a comparable study. The sample used in this study is the total population sampling which is a subtype of non-probability purposive sampling, thus the finding cannot be generalized across tobacco cessation clinics in GMA or nationwide. Furthermore, the possibility of information bias and recall bias may rise especially related to the practice of tobacco use & history of tobacco cessation such as duration, age of initiation, number of quit attempts, and longest duration for being a previous quitter.

### **CONCLUSION**

The study concluded that the majority of tobacco users-initiated tobacco use before the age of 18, consumed at least 10 cigarettes per day, and had used tobacco for at least 10 years. Most participants were cigarette smokers, with a preference for Camel brand cigarettes, and they typically inhaled tobacco smoke or liquid during use. A significant number of tobacco users reported having family members and friends who also used tobacco. Additionally, many participants used tobacco within half an hour of waking up, used it more during the rest of the day than in the morning, and continued to use it even while ill and confined to bed. The study highlights the need for increased awareness of the health risks associated with tobacco use, promotion of the benefits of quitting, and targeted efforts aimed at children and young adults. It emphasizes the importance of providing orientation about cessation services to healthcare providers and conducting more tobacco cessation training for healthcare workers. These measures are crucial in motivating tobacco users to quit and supporting their cessation efforts. Furthermore, the study suggests the necessity of conducting a prospective study to explore public perceptions toward cessation clinics, assess reasons for relapse among tobacco users, and identify barriers to quitting. Such research would provide valuable insights for

developing more effective strategies and interventions to reduce tobacco use and improve public health outcomes.

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**Disclaimer:** This is an article produced by selecting certain objectives from original project or research. Nevertheless, using the data from original research project, no article has been published yet with this title in a peer reviewed journal. Future articles may be created using different objectives from original research and may be published in near future in a peer reviewed journal.

**Conflict of interest:** The author is the primary researcher who works as a team member at tobacco cessation clinic established in one of the urban primary health care centers (Dhamanaveshi) in Greater Male' Area, Maldives. The author gets no financial benefits or incentives.

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