Original Article

Smoking Turnover IntentionAmong Active Tobacco Smokers During the COVID-19 Pandemic in Kathmandu, Nepal

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Abstract

Background: SARS-CoV-2 mainly causes respiratory tract infection in humans. ***Objective:*** This study was aimed to access active smokers' knowledge of health consequences caused by smoking, perception, and turnover intention during the COVID-19 pandemic. ***Methods:*** A cross-sectional descriptive, questionnaires-based, face-to-face interview was conducted with 350 participants inside Kathmandu valley, Nepal. The questionnaire consisted of socio-demographic characteristics, knowledge of health consequences, and perception and turnover intention. The Association of smokers' perception towards harmful health effects of smoking and turnover intention during the pandemic measured by chi-square test and p-value <0.05 was considered significant. ***Results:*** Overall, 93.7% of participants were male, more than 63.0% were from age group 31 to 50 years, 41.4% had intermediate level education, 76.3% were employed, 76.3% followed Hindu religion, 67.7% were married and 64.2% were daily wage workers. 94.8 % smoked cigarettes and nearly 50.0% smoked 11-20 sticks/day. The majority of the participants had knowledge about lung cancer and COPD. Significant association of perception with turnover intention was seen in smoking damages health severely with COVID-19 infection, quitting smoking was beneficial for health, smoking could damage health in the future and smokers may show severe complication. ***Conclusion:*** This study showed that even though majority participants were familiar about the health hazards caused by smoking, some of them had no turnover intention. The respondents did not have perceptionof health consequences resulted from smoking to second-hand users and that smoking could reduce lung and immunity function. Public awareness programs, imposing heavy taxes on tobacco products and active advertisements can be done to promote turnover intention in smokers.

Keywords: Smoking, health, COVID-19, quit intension, perception

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Introduction

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) has severely affected human health and the economy globally. SARS-CoV-2 is transmitted via contact of infected respiratory droplets with nasal, conjunctivaor oral mucosa. SARS-CoV-2 spike has a receptor-binding domain that binds to an Angiotensin-converting enzyme 2 receptor present in the host cells[1].The virus primarily attacks the respiratory tract and then can affect a variety of organs ofthe human body[2]. Symptoms induced by infection can be mild to fetal such as fever, cough, tiredness, loss of taste or smell, lung injury and other organ damage [3]. The morbidity and mortality of the disease are higher in individuals with underlying clinical conditions like diabetes, cardiovascular diseases, pulmonary diseases, cancer, etc.

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Globally, about one-third of the adult population consumes tobacco daily [4]. Tobacco is associated with several life-threatening non-communicable diseases which cause significant morbidity and mortality. Death associated with smoking is higher in low and middle-income countries [5]. Nepal is a low-income country and has insufficient health infrastructures [6]. Demographic and Health Survey (DHS)[7]and World Health Organization Step-Wise Surveillance (WHO STEP) surveys[8] are used to estimate the national prevalence of tobacco consumption in Nepal. In Nepal, 27 thousand people die from tobacco-related diseases annually accounting to 14.9% of all deaths[9]. In 2015, 21.6% of the people were tobacco users in Nepal.Mostly males, older aged, socioeconomically poor, hilly and rural areas individuals were more likely to smoke. According to WHO[10], in 2019, 28.9% aged between 15-69 years use either smoked or smokeless tobacco products. Also, tobacco is mainly popular among males, 50.0% of men aged 15-69 years use tobacco. In addition, exposure to secondhand smoke accounted to one–third of household population and two-fifth people at the workplace [10].

Smoking is associated with lung disease, chronic obstructive pulmonary disease, chronic bronchitis, heart disease, stroke, cancer, problems of the immune system etc.[11]. Research suggests that smokers are at higher risk of developing severe COVID-19 outcomes and death. Tobacco smokers are more vulnerable to contracting COVID-19 via virus transmission from hand to mouth. In community and social setting sharing cigarettes, mouth-pieces and hoses facilitate virus transmission[12]. Smoking increases the risk and severity of pulmonary infection by damaging the upper airway, increasing inflammation and reducing immune function. A study has evidenced that smokers have 1.91 times the odds of progression in COVID-19 severity than non-smokers[13]. Thus, the present study was designed to know about the knowledge of tobacco associate health hazards, perception and intention to quit smoking among active smokers of Kathmandu valley during the SARS-CoV-2 pandemic.

Methods

A cross-sectional, descriptive study was conducted between January and March of 2021 in Kathmandu valley, Nepal. All adult tobacco smokers (18 years and above) of both genders were enrolled in this study from the community. Adult smokers who reported active smoking every day and agree to participate were eligible for this study and those who were not willing to participate, had cognitive impairment and could not complete the study were excluded.

A convenience sampling method was used to recruit the participants.A total of 350 participants' data were collected.In this study, questionnaires were used to obtain data from the participants. Questionnaires were developed into two languages; English and Nepali. The questionnaire consisted of the following parts: 1) questions on socio-demographic characteristics, 2) knowledge of health consequences of smoking and turnover intention 3) Smokers' perception and turnover intention. Questionnaires were developed with the help of studies previously published and indexing in PubMed, Scopus, Hinari and Medline. The translated version was pretested in 20 smokers and two health care professionals who are an expert in this field to get feedback about thevalidity of questions. A face-to-face interview of around 10-12 minutes was conducted to obtain data from each participant. Confidentiality of participants was ensured. All participants were consented before obtaining the data.

The results were analyzed using the Statistical Package for Social Sciences (SPSS)version 20.0 (SPSS Inc., Chicago, IL). The data were described using frequency distribution. A Chi-square test was used to measure the association between the perception of health effects of smoking and intentions to quit.

Results

In this study number of male participants was much higher than females. The number of participants of age groups between 31 to 40 and 41 to 50 were 115 (32.8%) and 109 (31.4%) respectively. Majority of participants had intermediate level of education followed by school-level education. More than three-fourth participants had employment. More than half of the participants were Hindus religion followed by Buddhist and more than half were daily wage workers. Majority of participants (97.9%) smoked cigarette and 48.8 % of them

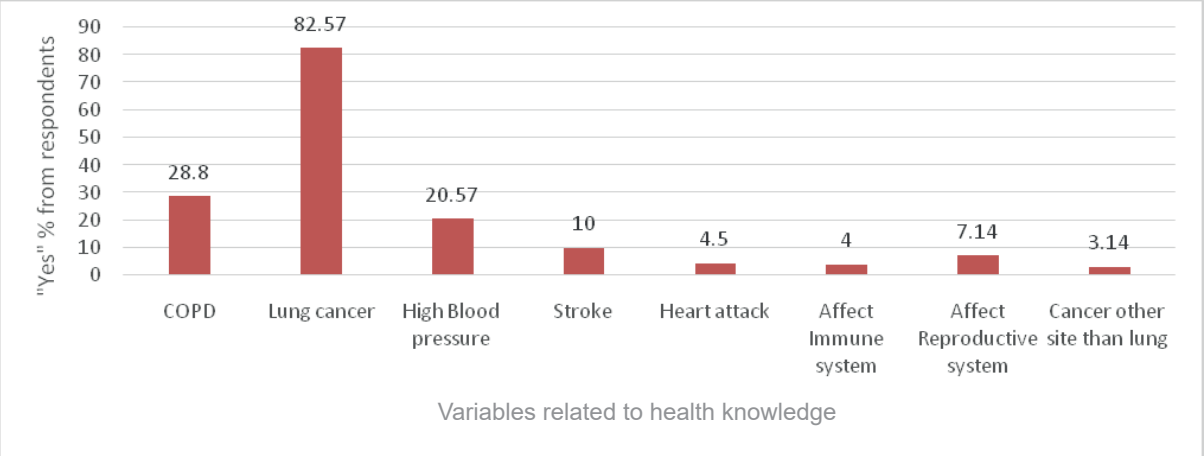

Figure 1: Respondents who had knowledge about various diseases caused by smoking

smoked 11-20 sticks/day. 28.5% of participants had less than 10 sticks/day dependency as shown in table 1.Majority of the participants had knowledge about the health risks of smoking; about lungs cancer (289) followed by COPD (101) and high blood pressure (72). On the other hand, respondents had little knowledge regarding smoking as a cause of cancer at sites other than the lungs (11). Very few respondents knew that smoking affects the immune system (14) and the reproductive system (25) as shown in Figure 1.Table 2 shows that the majority of participants responded that smoking severely damages health with COVID-19 infection, quitting smoking will benefit them and the current outbreak was the right time to quit smoking. Furthermore, there were significant associations ($p<0.05$) noted for turnover intention with different perception questions like smoking severely damages health, health benefitted if quit smoking, smoking damages health in the future and there can be severe complications among smokers. However, there were no significant relations of perception with the turnover intention in the respondents in this pandemic for the following: smoking makes more susceptible to COVID-19 infection, smoking reduces lung (oxygen saturation) function, cigarettes reduce immunity and make more susceptible to COVID-19, the current outbreak was the right time to quit smoking and smoking is dangerous to second-hand smokers.Moreover, 32.3% of respondents had turnover intention within one month, 21.0% had within three months, 46.1% had turnover intention within six months and interestingly 0.6% had no intention to quit.

Table 1: Socio-demographic characteristics of the respondents

Variables		Frequency(n)	Percentage (%)
Gender	Male	328	93.7
	Female	22	6.2
Age	<20	18	5.1
	21-30	94	26.8
	31-40	115	32.8
	41-50	109	31.4
	>50	14	4.0
Education level	Uneducated	19	5.4
	School	128	36.5
	Intermediated	145	41.4
	Bachelor	41	11.7
	Master	17	4.8
Current employment status	Yes	267	76.3
	No	83	23.7
Religion	Hindu	181	51.7
	Muslim	19	5.4
	Buddhist	142	40.5
	Other	8	2.2
Marital Status	Married	237	67.7
	Unmarried	113	32.3
Profession	Student	5	1.4
	Government	9	2.5
	Private employee	31	8.8
	Self business	80	22.8
	Daily wage worker	225	64.2
Type of smoke	Cigarettes	332	94.8
	Bedi (rolled tobacco)	11	3.1
	Others (hookah, Sulfa, chillum)	7	2.0
Smoke Dependency	Low (<10 sticks/ day)	100	28.5
	Moderate (11-20 sticks/day)	171	48.8
	High (>20 sticks/day)	42	12.0
	Occasional (<7 sticks/week)	23	6.5

Table 2: Smokers' perception towards harmful health effects and turnover intention

Perception variables	Categories	Frequency	Intention to quit		χ^2 & p-value
			Yes	No	
How much do you think smoking damages your health more severely with COVID-19 infection?	Very much Somewhat Not at all	224 99 27	128 67 21	96 32 6	$\chi^2(2)=6.41$ P<0.04*
How much do you think you would benefit from health if you quit smoking during COVID-19?	Very much Somewhat Not at all	251 66 33	133 38 25	118 28 8	$\chi^2(2)=6.21$ P<0.04*
How worried are you that smoking will damage your health in the future?	Very much Somewhat Not at all	70 230 50	41 147 48	29 83 2	$\chi^2(2)=22.37$ P<0.001*
How much do you think smoking makes you more susceptible to COVID-19 infection?	Very much Somewhat Not at all	37 228 95	16 144 72	11 84 23	$\chi^2(2)=5.43$ p=0.66
How much do you think smokers may show severe complications in COVID-19?	Very much Somewhat Not at all	101 186 63	72 112 52	29 74 11	$\chi^2(2)=11.64$ p<0.002*
How much do you think smoking reduces lung (oxygen saturation) function?	Very much Somewhat Not at all	42 227 81	23 137 52	19 90 29	$\chi^2(2)=1.04$ P=0.59
How much do you think that cigarette reduces immunity and makes you more susceptible to COVID-19?	Very much Somewhat Not at all	10 31 309	4 15 134	6 16 175	$\chi^2(2)=0.3464$ p= 0.840
How much do you think the current outbreak is the right time to quit smoking habit?	Very much Somewhat Not at all	261 65 47	158 45 36	82 20 9	$\chi^2(2)=3.54$ P=0.169
How much do you think smoking is dangerous to second-hand smokers in this pandemic?	Very much Somewhat Not at all	23 201 125	16 127 80	9 74 44	$\chi^2(2)=0.05$ P=0.97

Discussion

Globally, smoking is the most common form of tobacco use and over 80.0% of the world`s tobacco consumershave been living in low and middle-income countries[14]. Generally, tobaccos are highly addictive due to nicotine and causes cardiovascular, respiratory diseases and more than 20 different types of cancer. It is estimated that over 8 million people die from tobacco use annually[15]. The finding of this study indicated that majority of the respondents had knowledge about lung cancer (80.2%) followed by COPD (28.8%), increased blood pressure (20.5%) and stroke (10.0%). Lesser knowledge was observed in response to the following: smoking could cause cancer at sites other than lungs (3.1%), smoking affects immune system (4.0%) and smoking could cause heart attack (4.5%). A similar study from Iraq has found that 80.6% had knowledge about lung cancer, 66.33% had knowledge about stroke[16]. In this study, majority of participants responded that smoking severely damages health with COVID-19 infection, quitting smoking will benefit them and the current outbreak was the right time to quit smoking.

Smoking is a known risk factor for respiratory infections.Smokers have several folds increased risk of Pneumococcal disease, Influenza and Tuberculosis compared to non-smokers[17]. In case of COVID-19, smokers are more likely to develop serious disease than non-smokers[18]. A recent study has noted that due to COVID-19 active smokers had higher risks of hospitalization (OR 1.80, 95% CI 1.26-2.29) and mortality (smoking 1–9/day: OR 2.14, 95% CI 0.87-5.24; 10–19/day: OR 5.91, 95% CI 3.66-9.54; 20+/day: OR 6.11, 95% CI 3.59-10.42)[19]. We have found there were significant associations ($p<0.05$) noted with the turnover intention with different perception questions like smoking severely damages health, benefitted if

quitting smoking, smoking damages health in future, and may show severe complications among smokers. In addition, 35.7% (125) respondents responded that smoking is not dangerous to second hand smokers in this pandemic and there was no significance with intension to quit ($p<0.97$). According to WHO, annually second hand exposure causes 1.2 million deaths in which 65,000 were children[15]. In the USA alone, every year 7,300 deaths are reported due to lung cancer caused by second hand smoke[20]. Significant proportion of participants being unaware of the harmful effects of second hand smoke indicates the reluctance to avoid smoking in public places, workplace or home. This has raised the vulnerability of second-hand smokers to smoking related diseases.

In a study conducted in Iraqi smokers about intension to quit, it was revealed that 6.5% had intension to quit next month, 14.5% in the next six months[16]. In our study 32.3% of respondents had turnover intention within one month and 21.0% had intension to quit within three months and 46.1% had within six months. A survey conducted in China had revealed that 31.9% of active smokers intended to turnover at some point in the future[21].36.0 % had an intention to quit smoking in the future among Bangladeshi smokers[22].Also similar study from India also recorded 10.0% of active smokers had intension to quit in next month[23], 54.8% smokers of Kenyan and Zambian had smoking turnover intensions within the next 6 months [24]. In our study 0.6% had no intension to quit in the near feature. A study conducted among adolescent smokers in Eastern Nepal had revealed that nearly 8.0% active smokers were unwilling to turnover in the future[25]. A study concluded that the prevalence of turnover intension is high in developed countries smokers[26].

The Tobacco Product (Control and Regulation) Act, 2010 is the primary law governing tobacco control in Nepal. In 2015 government had increased the health warnings graphics from 75.0% to 90.0% on both sides of the packet[27]. Along with this awareness campaign, counseling to reduce nicotine dependency, publicizing of anti-tobacco message and family, society and healthcare providers support could play vital role to reduce the smoking habits and quit earlier. The fact that 14.9% of all deaths in Nepal are due to Tobacco related diseases[28] is an alarming sign and a scale up of awareness programs are necessary to reduce the burden of tobacco related diseases. Health policy makers and health care workers should actively work on curbing smoking habit starting from adolescents as they are the most vulnerable group. This study was limited only to adult smokers over 18 years of age residing in Kathmandu valley during the semi-lockdown period. A convenience sampling (non-probability) may contribute biases into study. Close-ended questions were used to obtained data thus, the results may not reflect the situation for all active smokers.

Conclusion

This study reflects that even though maximum participants were familiar about the health hazards caused by smoking, some of them still wanted to continue smoking. Also it was found that there was no significant relation in the participants' perception that smoking is dangerous to second-hand smokers, reduces pulmonary function and affects immunity system with quitting smoking.

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