Impact of covid -19 among smokers in Oman

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Abstract

This study will revolve around recent tobacco-users during this pandemic Covid-19 scenario and threat to the smokers. The young smokers are increasing day by day exponentially around the world and a big challenge to parents and governments. In Oman, the number of smokers and tobacco sales is increasing rapidly year by year. This pandemic situation hurdled the movement worldwide; Covid-19 is a big threat to the community with high risk for infected people with comorbidity. As per WHO guidelines the smokers have high risk of Covid-19 infection with high mortality chances. This study reveals around the impact of Covid-19 among tobacco users in Oman during this pandemic.

Keywords: *Pandemic; Covid-19; Tobacco in Oman; Smoking Habit; Tobacco Elasticity; Income.*

1. Introduction

It is always a new day for an ex-smoker as his lungs breathe in the cleansing breeze while leaving to work in the morning. However, that beautiful reality comes to an end when the curtains roll down to reveal the escalating percentages of smokers all over the world announcing the up rise of an unforgiving epidemic. The truth is that the numbers of new comers to cigarette smoking are in a surplus since its formal birth in the 18th century. That increasing demand for the lustful puff of smoke had intrigued the wealthy and the powerful to invest in this death-sentencing business by mass producing cigarettes within the 5 continents. The result was devastating to say the least, people of all backgrounds were addicted, hospital beds welcomed the sick and governments bled out severely. The same governments that collected millions in taxes to let tobacco company's products roam freely in its stores had to ensure that its people lived a long healthy life. This dilemma grew greatly as the spending on health insurance acted as a burden to their budgets with no solution but taxation up their sleeves. Nevertheless, smokers weren't always wealthy, they came from multiple demographics and the addiction had no mercy even in oil-rich countries such as the Oman.

The current coronavirus disease (Covid-19) pandemic presents a significant public health threat, posing an immediate risk to the health of the global population, and creating far-reaching, long-term consequences. As this new virus spreads, questions continue to emerge regarding risk factors. One widely debated question is the potential effect of smoking on severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection rates and on the clinical outcomes of the resulting disease, Covid-19.

Tobacco use is the world's leading cause of preventable morbidity and mortality, and was classified as a global epidemic by the World Health Organization (WHO) and the World Bank in 2014 and 1999 respectively. The WHO estimates that tobacco use kills nearly six million people annually. A descriptive analysis of the evolution of tobacco control policies in Oman in relation to the country's international obligations and recommend policy options that, if followed, will likely lead Oman to achieve the 2025 target is clearly explained by Jawad Al-Lawati, 2017. It is evident that chronic illnesses, especially respiratory and cardiovascular diseases, which are risk factors for worse outcomes in Covid-19 are accumulating[5,6]. Smoking contributes to the development of such long-term conditions[2]; conversely, it is reasonable to assume that smoking may increase risks of Covid-19. Early in the pandemic, it was argued that higher mortality among males in China may reflect and be partly explained by the gender disparity in smoking prevalence[7]. Nevertheless, smokers are not currently identified as a vulnerable group within the UK Government's Covid-19 guidance on social distancing[8]. Undoubtedly, smoking is a big threat as primary morbidity and vulnerable to Covid-19 infection. The risk pertaining to limit the smoking habit and lead to quit smoking in Oman.

The Current findings in Oman though various medium have been announcing for the past 6 years the alarming raises in smoking among youth, and the step to be taken was suggested by both the Ministry of Health and the Ministry of Economy. The focus on youth is due to the reality that 25% of smokers had their first cigarette before the age of 10 while the current smoking percentage in the Oman is somewhere between 25% and 30% (Zaman, 2017). A clear advice to reduce your risk of serious lung disease caused by corona virus by quitting smoking and vaping is given by Stanton Glantz, 2020.

The WHO has also concluded that, "smokers are more likely to develop severe disease with COVID-19, compared to non-smokers" and provides a nice discussion of how smoking increases the risk of COVID-19 by increasing the risk of heart, lung, and other diseases.

In addition, an article in Scientific American (Tanya, 2020), "Smoking or Vaping May Increase the Risk of a Severe Coronavirus Infection," summarizes how smoking and vaping affect the lungs and the immune system - that is consistent with the view that using these products increases the risk of infection and worse outcomes. CNN also has a good story, "How smoking, vaping and drug use might in-

crease risks from Covid-19." KQED/NPR reports on a young man who developed Covid-19 that may have been aggravated by his vaping. Fortunately, he recovered and has now stopped vaping.

Simons et al. 2020, reviewed 33 studies investigating the association between disease severities and smoking status. The meta-analysis of Zhao et al. 2020, investigated the risk of development of 'severe Covid-19' in COPD patients and current smokers. Despite some uncertainty regarding the exact nature and magnitude of the association between smoking and Covid-19, there is growing evidence to support the WHO's position that 'smokers are at higher risk of developing severe disease and death'. Therefore, public health messaging should strongly highlight the benefits of smoking cessation and not detract from the importance of this during the pandemic or in the aftermath. (Emily J. Grundy, 2020)

2. Purpose and hypothesis

This study is to begin with examining the true effect on smoker's decisions in Oman with this Covid-19 situation where mortality rate and risk factors are high for the smokers. According to the people's incomes level and work nature, the awareness about the threat of Corona virus and their tendency to quit the cancerous habit for good. In light of this purpose a null hypothesis is developed to act as a neutral measure displaying that the Covid-19 will affect all smokers in the same way announcing that there is no clear relationship between income level and the tendency to quit. H0 is displayed as follows:

H01: Varying income levels among smokers will not affect their smoking habit even this pandemic Covid-19 after knowing the threat of high-risk and mortality due to the addictive nature of tobacco.

H02: Varying age group among smokers will not affect their smoking habit even this pandemic Covid-19 after knowing the threat of high-risk and mortality due to the addictive nature of tobacco.

On the other hand, the goal here is to prove that income levels and the tendency to quit smoking have an inverse relationship through an alternative hypothesis, meaning that the less income an individual receives, the more compelled he or she will to quit and vice versa. H1 is displayed as follows:

H1 Varying income levels/age group among smokers will affect their smoking habit after awareness about risk of mortality due to Covid-19 differently despite the addictive nature of tobacco.

3. Methodology and materials

It is evident that for this research study to bear fruit, a plan is to be put to gather and measure information from smoking individuals within Oman. A well-developed questionnaire and a valid sample taken from the Oman population will aid in deeper discoveries and eventually testing our hypothesis to yield definitive results. The questionnaire was sent to the smokers and manual entering of the questionnaire was probable as not all smokers in the study are accessible electronically.

3.1. Questionnaire and scale

The questionnaire formulated includes 3 main multiple-choice questions within, the first having 5 choices of age intervals begin with 18 which is the legal smoking age in Oman ending with an open choice of 50+ as there is no age for smoking these days. This question will be utilized for classification purposes only. Further on, the second question displays the income group of people to know the awareness of Covid-19 and tendency. The question displays 5 choices of interval-based choices beginning with below 150 OMR and ending with an open range of more than 1000 OMR. Moreover, these income levels are tied with low-paid workers sending money to their families in overseas home countries. The last question displays the participant's tendency to quit smoking in a 5-choice gauged answer. The first being the most inclined to quit smoking gauged at 5 and the last stating that no change will occur to their smoking habit gauged at 1. In matters of scaling, the 4 questions are universally scaled 1 to 5 for further statistical analysis. A final classification of the Omani residence is added to the questionnaire for sampling purposes. To sum up, the Questionnaire is delivered to smokers through survey monkey and other manual methods such as interviews and phone calls.

3.2. Sampling

Moving on to the sample of choice, it is crucial to derive the current population of Oman which was 4,975,000+ in 2019. The smoking population of Oman is said to be between 20% and 26 % as no exact number could be confirmed. However, both percentages will result in the same study sample in numbers, which implies no effect on our study's accuracy as both numbers if extracted will suggest the maximum sample needed, 385 (Raosoft.com, 2017). But we indented to move quite large number to know the tendency of people. Considering this, the following is determined:

Target population: 4,975,000+. This includes expat population also. And for our study no difference among smokers whether they are Omani nationals or expats. Target Population: 1,243,750 approximately 25 %

Further on, the sample is chosen from across the eleven governorates. Al Batinah South and North is pooled as single sample. Similarly, Ash Sharqiyah North and South as one. The population is unequally divided and disproportionate stratified sampling is administered between them as shown under:

Hence the total number of samples is stratified based on the approximate population of each governorate as samples from Muscat – 32%, Dhofar- 17 %, Al Batinah- 10 %, Al Buraimi- 8 %, Al Wusta -7%, Ad Dakhiliya- 8 %, Ad Dhahriya -6%, Ash Sharqiya- 9 % and Musandam 3 %.

3.3. Data analysis: preliminary statistical findings

After the long journey of receiving responses through an online survey and multiple manual entries the study moved to its most critical stage, analysis. We were able to collect almost 2023 error-free samples from various category and income group of peoples.

In an initial overview of income levels of the participants, figure 3.1 displays that the majority of the participants' income ranges are between 600-1000 OMR. And the income group with 1000+ OMR category and income between 300-600 OMR are secondly high in the number of participants. These advantageous indicators to this study serve the initial aim of focusing on this low paid category.
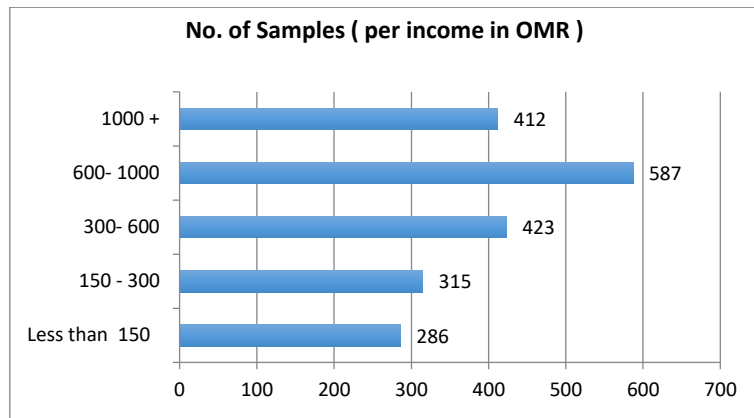
No. of Samples (per income in OMR)

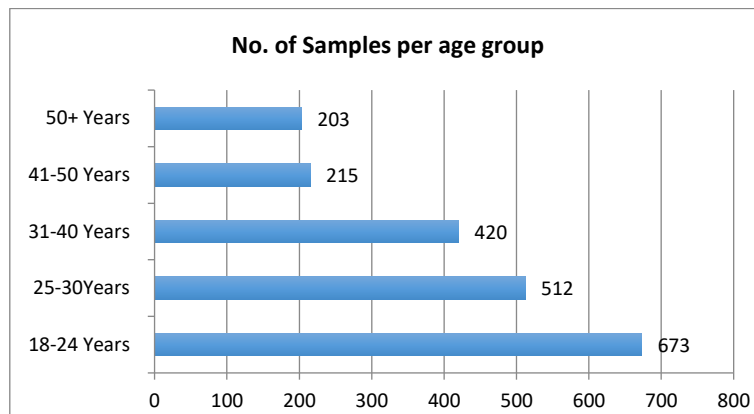| Income	Value
1000 +	412
600- 1000	587
300- 600	423
150 - 300	315
Less than 150	286

Fig: 3.1: Number of Respondents per Income in OMR.

No. of Samples per age group

Age Group	Value
50+ Years	203
41-50 Years	215
31-40 Years	420
25-30Years	512
18-24 Years	673

Fig: 3.2: Number of Respondents per Age Group.

No. of Samples per reaction

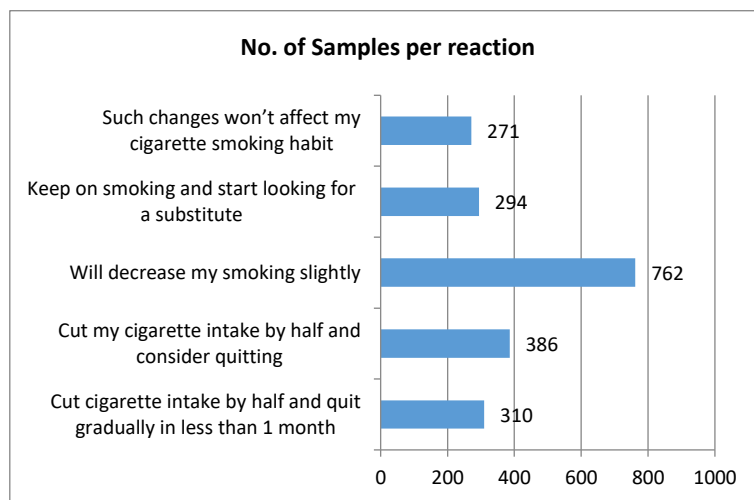| Reaction	Value
Such changes won't affect my cigarette smoking habit	271
Keep on smoking and start looking for a substitute	294
Will decrease my smoking slightly	762
Cut my cigarette intake by half and consider quitting	386
Cut cigarette intake by half and quit gradually in less than 1 month	310

Fig. 3.3: Number of Respondents per Reaction.

Here, people's reaction for quitting smoking during this pandemic due to the life threat looks positive from the reports. The series of campaigns by the Ministry of Health through various mediums and tweets by experts and WHO have made some changes in the habit of smoking among the people in Oman. Although, we intended to do a cross-sectional analysis to know more about which group of community based on salary range and age group, an analysis carried out with the above said hypotheses to understand the actual situation of quitting the smoking habit.

3.4. Data analysis: hypothesis testing and resolving

Although primary analysis has yielded enough data to assume that there will be a definite difference in the Oman's smoker's reactions according to their income, as well as age group the null hypothesis has been tested through SPSS statistical analysis tool in a two-way ANOVA test maintaining a 5% confidence percentage to confirm the inverse relationship between income level and/ age group with smoker's intention to quit. The cross tabulation for the age group and income group against the reaction of smoking habits is provided below.

Table 3.1: Number of Respondents Reacting as Per Income in OMR

Reaction \Income (in OMR)	Below 150	150 - 300	300- 600	600- 1000	1000 +	No. Samples
Cut cigarette intake by half and quit gradually in less than 1 month	156	100	30	12	12	310
Cut my cigarette intake by half and consider quitting	85	101	136	42	22	386
Will decrease my smoking slightly	15	32	168	247	300	762
Keep on smoking and start looking for a substitute	20	49	71	147	7	294
Such changes won't affect my cigarette smoking habit	10	33	18	139	71	271
No. of Samples	286	315	423	587	412	2023

Table 3.2: Number of Respondents Reacting Per Age Group

Reaction \ Age	18-24 Years	25- 30 Years	31-40 Years	41-50 Years	50+ Years	No. Samples
Cut cigarette intake by half and quit gradually in less than 1 month	112	102	56	22	18	310
Cut my cigarette intake by half and consider quitting	136	98	72	34	46	386
Will decrease my smoking slightly	288	184	199	66	25	762
Keep on smoking and start looking for a substitute	101	86	36	33	38	294
Such changes won't affect my cigarette smoking habit	36	42	57	60	76	271
No. of Samples	673	512	420	215	203	2023

Table 3.3: ANOVA Test Results

Source of Variation	SS	df	MS	F	P-value	F crit
Reaction (Rows)	33422.24	4	8355.56	1.320044	0.304863	3.006917
(Columns)	11151.44	4	2787.86	0.440437	0.777636	3.006917
Error	101276.2	16	6329.76			
Total	145849.8	24				

The P value is greater than 0.05 (5%) at both situations. It clearly evidences that accepting null hypotheses in both cases. This is really shocking about the peoples' smoking habits. Varying age group/income range among smokers will not affect their smoking habit even during this Covid-19 pandemic after knowing the threat of high-risk and mortality due to the addictive nature of tobacco. Quitting smoking is not easier just by a small campaign and warning messages received though various media. People continue to be smokers due to addictive nature only. They find very hard to quit and many are not worried about their health hazards or severances. Though most of the smokers are well-informed about the health hazards due to their consumption of tobacco, they are unable to quit only because of their additive nature.

Hence, it is noticed that the series of warning, campaigns, lockdowns, threats does not make any positive change among smokers and it gives only a temporary reduction of numbers of cigarettes per day due to lockdown, economic crisis etc. during this pandemic that too is evident only in certain age group and income group. Meanwhile, high- income group people and people more than 60 years old are never cared at all.

4. Limitations

Every effort in developing a research study will have its ups and downs, based on the sheer amount of constraints affecting the accuracy in yielding results. Such limitations present themselves in this cigarette-fighting study also. The sample taken by the researchers is the people who are uninfected by Covid-19. So, their addiction to smoking and other extraneous factors don't prevent them from smoking. Though they are well-informed about the health hazards of smoking and the Covid-19 doesn't make any significant impact in their habit and tendency to quit smoking.

On the other hand, some people with smoking habits when infected with Covid-19 were noticeably under serious conditions and the mortality rates are high among them. Those have co-morbidity with smoking habits are significant as victims of Covid-19 per hospital database. It was hard to reach the infected people to bring them under the survey and the consolidated results are obtained through reliable sources. Ministry of Health in Oman continues organizing campaigns and giving warnings to the public to quit smoking and taking care of self-health, family and surroundings.

5. Conclusion

After conducting a survey among more than 2000 smokers around the country and testing, results are verily supportive that the smokers are not interested to quit smoking due to the threat of Covid-19 pandemic. This is either because of their addictiveness or due to their casual approach as they are unmindful of the seriousness of the Covid-19. Hence, this pandemic does not support the smokers to quit, instead some people have reduced the number of cigarettes per day due to lockdown only. Though the results are not positive, we need to accept the truth that the smoking habit leads to addiction and requires the support of the government and individuals to make habitual changes.

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Appendix

- Survey Web Link (https://www.surveymonkey.com/r/H677G3Y)
- Survey Questions:
1) Which of these age groups do you fall into?
- 18-24 Years of age
- 25-30Years of age
- 31-40 Years of age
- 41-50 Years of age
- 50+ Years of age
2) Which of these income ranges do you fall into?
- Less than 150 OMR
- 150-300 OMR
- 300-600 OMR
- 600 -1000 OMR
- 1000+ AED
3) The threat of Corona virus Covid-19Pandemic, high risk for smokers in case of mortality and severe respiratory illness, how will your reaction be assuming you dislike any cigarette substitutes at the time of the raise?
- Cut cigarette intake by half and quit gradually in less than 1 month
- Cut my cigarette intake by half and consider quitting
- Will decrease my smoking slightly
- Keep on smoking and start looking for a substitute
- Such changes won't affect my cigarette smoking habit