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Research Article

Knowledge and Attitudes of Bar Attendants towards Second-Hand Smoke in Nyarugenge District, Rwanda

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Abstract

A report has shown that there is an increase in respiratory disease among bar attendants over time whereby in 2011, 32% of bar attendants reported respiratory diseases. The purpose of this study was to assess the knowledge and attitudes of bar attendants towards second-hand smoke (SHS) at work place in Nyarugenge District, Rwanda. This was a cross-sectional study using mixed methods of both qualitative and quantitative. A total of 384 bar attendants participated in the study. Quantitative data were analyzed using SPSS version 21 while qualitative data were analyzed using thematic analysis. Descriptive analysis using frequency and percentages was computed. he qualitative data was analyzed using thematic analysis. The majority of respondents (66.4%) were within the age group of 28-37 years, 60.2% of respondents were males, 60.9% of respondents were illiterate, and 57.3% of respondents were single at the time of data collection. The majority (78.6%) of the study respondents knew that smoking is dangerous to human health. The cited consequences of SHS include air pollution that enter the respiratory system and damage the lungs, dizziness and others. All respondents agreed that people who smoke should not be allowed to smoke in public places. Improving bar attendants' access to health education on SHS and encouraging continuous and constant exposure would significantly increase the knowledge and attitude levels of bar attendants towards SHS.

Keywords:
Second hand smoke; bar attendant; Rwanda

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Background

Smoking increases the risk of non-communicable diseases, not only to smokers but also for second-hand smokers. Second-hand smoke may adversely affect health and aggravate illness. A recent report of World Health Organization (WHO) shows that tobacco kills more than eighty million people each year. The report underlined that around 1.2 million of those deaths are the result of non-smokers being exposed to second-hand smoke. The same report shows that 1.3 billion tobacco users live in low- and middle-income countries[1].

Every year, millions of people die from tobacco use and several hundred thousand die from exposure to second hand smoke (SHS). Families, industries and nations suffer from these preventable deaths. The World Health Organization (2005) indicates that more than 5 million people die annually from tobacco use and more than 600 000 die annually from second hand smoke exposure. It is disturbing that such a large number of people (600 000) die due to unintentional smoking. Passive smoking, which is unintentional smoking, is the inhalation of smoke, called second hand smoke (SHS) or environmental tobacco smoke (ETS), by persons other than the intended "active" smoker. Passive smoking occurs when tobacco smoke permeates any environment and is inhaled by people within that environment[2]. Recent studies have shown that, of all public places, restaurants and bars have the highest SHS concentrations. Restaurants and bars are frequently visited by the public for entertainment [3].

Rwanda is one of the countries that have enacted regulations on tobacco control. The regulations, among other issues, control tobacco smoking in public premises such as food premises, hospitals, public meeting halls, schools as well as in public transport. A study conducted in Rwanda found that the prevalence (weighted) of current tobacco use (all forms) was 8% (95%CI: 7.08–9.01) in 2013. The prevalence was found to be significantly higher among males, young adults aged 24– 34, youth with primary school education or less, those from Southern province, people with income (work in public, private organizations and self-employed) and young married adults. However, geographical location i.e. urban (7%) and rural (8%) settings did not affect prevalence of tobacco use. Factors that were found to be associated with current tobacco use through the multivariate analysis included being male, aged 25 years and above, having an income, and residing in Eastern, Kigali City and Southern Province compared to Western province [4].

The public health problem remains to the second-hand smoke which is the leading cause of preventable diseases and premature death and smoking can increase the risk of cardiovascular disease, respiratory disease, and different forms of cancer which was among the first diseases found to be caused by smoking. However, some people knowing the effects are still smoking that cause the increasing the number of second-hand smoke [5], yet no study investigated the knowledge and attitude of bar atten-

dants towards second hand smoke. The purpose of this study was to assess the knowledge and attitudes of bar attendants towards second-hand smoke at work place in Nyarugenge District, Rwanda.

Material and Methods

Study Design, Setting and Population

This was a cross-sectional descriptive study using a mixed approach of both qualitative and quantitative methods to capture information on the knowledge and attitudes of bar attendants towards second-hand smoking at workplaces in urban areas.

The qualitative study consisted of focus group discussions (FGDs) among bar attendants to cover the goals of the study. The quantitative component preceded the qualitative study and consisted of structured questionnaires to be administered to the bar attendants. The target population for both quantitative and qualitative methods was the bar attendants of Nyarugenge district. The current report from Nyarugenge district indicates 394 bars with 4728 bar attendants.

Nyarugenge District is one of the districts that make up Kigali City and divided into ten (10) Sectors with a total of 47 cells. The District is bounded by Nyabarongo River which runs along almost the entire western and southern edge of the District. The fourth Rwanda Population and Housing Census conducted by the National Institute of Statistics of Rwanda in 2012 provided 284,561 people corresponding to 25.1 percent of the total population of Kigali City amounting to 1,132,686 residents. According to the census results, Nyarugenge has the highest population density with 2,149 inhabitants/km and is the least populated district in Kigali city with 284,561 inhabitants.

Sample Size and Data Collection Tools

For the quantitative method, Cochran formula used to determine the proportions in single cross-sectional surveys was used for sample size determination [6].

The sample size formula is:

$$n = \frac{z^2 p(1-p)}{d^2}$$

Where:

n= Expected sample size

Z= Degree of confidence at 95% that corresponds to 1.96

P= since no similar study has been done in the region, a P of 0.5 was used to estimate sample size so as to give maximum variability for this study.

d= Acceptance error at 0.05 (5% precision)

Using the above formula a sample of 384 bar attendants was estimated.

For qualitative methods, three focus group discussions (FGDs) were conducted among bar attendants in order to capture detailed information on their knowledge and attitudes towards second-hand smoking in Nyarugenge that supported the information captured from the quantitative data. The total number of FGDs was three with 24 bar attendants whereby each FGD consisted of 8 bar attendants.

For the quantitative method, a multi-stage sampling technique was used to select Nyamirambo sector from the district and a simple random sampling technique was used to select 50 bars and also simple random sampling was used to select participants from each bar. A list of all bar attendants was done at each bar assigning each one a number per order. Then the list was entered into SPSS Version 21 from each bar and participants were selected randomly according to the proportion of the bar attendants in each bar while for the qualitative method, the group of eight bar attendants were selected randomly.

An administered questionnaire and FGDs were used to gather information needed to answer the study's research questions. This questionnaire and FGDs were adopted from another study done on the knowledge and attitudes of bar attendants towards second-hand smoking at workplaces. However, only questions related to the current study objectives were chosen and adapted.

Data were collected using a questionnaire in all bars and the bar attendants were the primary respondents. At the end of each day the researcher cross checked the questionnaire for completeness. Only completed questionnaires were considered for data entry. To ensure the validity and reliability a pilot study was conducted among 20 bar attendants in Gasabo District.

Data Analysis

Data analysis methods helped to observe patterns, understand facts, and formulate explanations regarding knowledge and attitudes of bar attendants towards second-hand smoke in rural area. Quantitative data were analyzed using SPSS version 21 while qualitative data were analyzed using thematic analysis.

Descriptive analysis using frequency and percentages was computed. For the qualitative data, the analysis was done from verbatim transcripts using the thematic framework approach, with the following stages: transcribing the interviews, familiarization of the transcripts and the audio recordings, producing a coding framework, coding and identifying key themes from individual transcripts, merging themes, searching for key findings from provided information.

Ethical Considerations

Approval to conduct the study was sought from the Mount Kenya University (MKU) School of Postgraduate studies, and from MKU institutional review board. Additionally, study participants were informed that the information to be collected would be for study purposes only; and that they have a right to decline participating or withdraw without affecting their practices; and issues of confidentiality were articulated to all bar attendants. Written informed consent was obtained from all study participants.

Results

Socio-Demographic Characteristics

A total of 384 respondents participated in the study giving a response rate of 100%. The results are presented in frequency tables and graph forms.

The distribution of the selected socio-demographic characteristics among bar attendants is shown in Table 1.

As indicated in the table above, most of the respondents (66.4%) were within the age group of 28-37 years; 60.2% were males; the majority (60.9%) were illiterate. The findings also show that most of the respondents (81.5%) were Christians and most of the bar attendants (57.3%) were single at the time of data collection.

Smoking Related Factors

The distribution of the selected smoking related factors among bar attendants is shown below.

As indicated in Table 2, some (37.8%) spouses/partners of the study participants smoke, the majority (58.3%) of people who were in a bar were smokers and (60.4%) smokes 31- 60 minutes a day by the presence of the study respondents.

Knowledge of Bar Attendants Towards Second Hand Smoke

Dangerous to human health, 75.3% knew that a person who does not smoke can get cancer, 80.5% knew that person can be arrested for smoking tobacco within school grounds. Table 3.

The quantitative findings were supported by qualitative data where the study respondent reported to have high knowledge about SHS. The participants of FGD 2 said that: **"***All people know the consequences of second hand smoke. There are bad consequences to people who approach the smoker. These include air pollution that enter the respiratory system and damage the lungs, dizziness and others***"**.

Other participants of FGD 3 also said that: "*Many times, people who drink beer also smoke tobacco. This is what cause second hand smoke in this bar. In addition, both beer and tobacco are at the level of drugs. However, there are no law against tobacco and measures taken for people who smoke*".

About preference to work in a smoke-free environment, the participant of FGD1 said that: "*Human nature is what makes a person to be glad with working in a certain place. For instance, if a person is a*

Table 1. Socio-demographic characteristics

Variable	N=384	%
Age group		
18-27 years	95	24.7
28-37 years	255	66.4
38-47 years	34	8.9
Gender		
Male	231	60.2
Female	153	39.8
Education level		
Illiterate/primary	234	60.9
Secondary	90	23.4
College/university	60	15.6
Religion		
Christian	313	81.5
Muslim	71	18.5
Marital status		
Married	164	42.7
Single	220	57.3

Source: (Primary data, 2020)

smoker, no problem for him/her to work in a smoke free environment, but if he/she is not, he/she cannot be content of the job except that he/she needs money". The same was supported by FGD 2&3.

Attitude of Bar Attendants Towards Second Hand Smoke in Nyarugenge District

As indicated in Table 4, all study respondents (100%) agreed that people who smoke should not be allowed to smoke around others and the majority (62.2%) feels that health has been compromised by exposure to SHS.

This was demonstrated in qualitative where the participant from FGD 3 commented that: "*Second hand smoke makes servants and other people being drunk and causes dizziness, regular cough and pulmonary diseases like those that attach lungs. The Government laws prevent people from smoking in bar. However, many bars fail to put them in practice"*. Feeling if the health of bar attendants has been compromised by occupational exposure to second-hand smoke.

All the FGDs comments supported the motion. About perception on indoor and/or outdoor public places should be smoke-free, the participant of FGD 2 said that: **"***What is known is that it is forbidden to smoke in public where many people are meeting. But, no problem if those who continue smoking go away or out of the bar***".** FGD 1&3 comments were similar to key.

The participant of FGD 3 said that: "*The Ministry of Health should look into this case of tobacco smoking and takes appropriate measures. In order to preserve the health of people, the Ministry of*

Table 2. Smoking related factors

Variable	N=384	%
Does your spouse/partner smoke?		
Yes	145	37.8
No	239	62.2
Number of people who are smokers in bar		
Two	82	21.4
Three	78	20.3
More than three	224	58.3
How often do they smoke in your presence		
1 -30 minutes a day	152	39.6
31- 60 minutes a day	232	60.4
In the last 30 days did you smell tobacco smoke in a bus		
Yes	79	20.6
No	305	79.4
Smell any tobacco smoke inside the food premises you went		
Yes	239	62.2
No	145	37.8
In the food premises you visited there was a clearly marked “NO SMOKING ZONE”		
Yes	309	80.5
No	75	19.5
Other public places where people have smoked in your presence		
At the bus station	78	20.3
In the road	306	79.7

Source: (Primary data, 2020)

Health should prevent from buying and selling tobacco; increase taxes for sellers of tobacco, or stop industries of tobacco carrying on a function”. FGD 1&2 comments were similar to that of FGD 3.

Table 3. Knowledge of bar attendants towards second hand smoke

Variable	Yes		No	
	Freq.	%	Freq.	%
Smoking is dangerous to human health	302	78.6	82	21.4
A person who does not smoke can get cancer	289	75.3	95	24.7
Unborn babies can be affected by second hand smoke	309	80.5	75	19.5
Can a person be arrested for smoking tobacco within school grounds	283	73.7	101	26.3
Can a person be arrested for smoking tobacco in a hospital	323	84.1	61	15.9
Have you ever seen anyone being arrested for smoking in a public place	314	81.8	70	18.2
Is it right to arrest people who smoke in public	302	78.6	82	21.4

Source: (Primary data, 2020)

Table 4. Attitude of bar attendants towards second hand smoke

Variable	Yes		No	
	Freq.	%	Freq.	%
People who smoke should not be allowed to smoke around others	384	100	0	0
Feel that health has been compromised by exposure to SHS	239	62.2	145	37.8
Prefer to work in a smoke-free environment	160	41.7	224	58.3
Think that indoor and/or outdoor public places should be smoke-free	82	21.4	302	78.6
Believe that RBC needs to implement further policies to control SHS	302	78.6	82	21.4

Discussions

Smoking also has an environmental impact due to second hand (passive) smoking[7]. The impact of smoking is not limited to the smokers, but it can spread to affect the non-smokers as well. Second hand smoking has an impact on birth outcomes represented in low birth weight[8], and contributes significantly to respiratory tract infections in infants[9].

Globally, improving knowledge, attitude, and practice (KAP) is considered an effective solution to reducing exposure to SHS [10]. We found that the majority (78.6%) of the study respondents knew that smoking is dangerous to human health, 75.3% knew that a person who is exposed to second hand smoke had a risk of getting lung cancer. Similarly, a study conducted in Vietnam among pregnant women found that the majority of women answered correctly that SHS could cause lung cancer (80.8%)[11]. A study conducted in Jordan found that the majority of the smoking students (75.2%) knew the adverse effects of smoking. Rates of non-smoking students who knew the adverse effects of smoking were significantly higher than those of students who smoke[12].

In consistent with our findings from qualitative analysis, regarding attitude toward SHS a study conducted in Vietnam reported that the majority of them recommended that smoking should be banned at home (85.7%), workplace (70.4%), and in public areas (67.6%)[11]. Another study conducted in Uganda found that almost 75% (213/286) of the bar attendants were exposed to secondhand smoke (SHS); 92% knew SHS was harmful to their health. The majority (82.2%) were in favour of banning

smoking in bars and 98% wanted non smokers to be provided with a smoke free environment to work[13].

Goodman *et al*. (2007) showed that, of all public places, restaurants and bars have the highest SHS concentrations. Restaurants and bars are frequently visited by the public for entertainment. It is well known that SHS or known as environmental tobacco smoke or tobacco smoke pollution is a risk of a number of health problems including cardiovascular disease, lung cancer, respiratory problem, asthma as well as infant death syndrome[14]. Therefore, knowledge about SHS exposure is very important because the environment today is extremely exposed to smoking.

According to Labib, Abeer & Ahmed (2010), the community have sufficient knowledge about the danger caused by smoking and its effects on the health[12]. Most of the respondents in our study showed high awareness towards SHS.

It is proven that those who are not smoking have better tobacco smoking related knowledge than those who are smoking. This may be due to several reasons and one of them is education, where the more people have education, the more they will tend to avoid SHS.

People, regardless of smokers or non-smokers are not aware of the public smoking policy being enforced in the country. The lack of knowledge among smokers about the effect of SHS expose to non-smokers. The attitude of people played an important role to avoid from SHS exposure. In our study, the different study respondents suggested to design the smoking area in order to avoid the negative impact of tobacco smoking in public places.

Conclusions and Recommendations

Bar attendants demonstrated good knowledge about SHS health consequences but translating this knowledge into practices was found poor; the study also concludes that half of the study participants have positive attitude on SHS. There is a need of interventions to rise up the knowledge and attitude on SHS among bar attendants. Improving bar attendants' access to health education on SHS and encouraging continuous and constant exposure would significantly increase the knowledge and attitude levels of bar attendants towards SHS.

Competing Interests

The authors have declared that no competing interests exist.

References

1. WHO, World Health Organization- Report. 2020 on tobaccouse. https://www.who.int/news-room/fact-sheets/detail/tobacco
2. WHO, World Health Organization: global report on trends in tobacco smoking 2000-2025 - Firstedition. 2015
3. Goodman B. things in perspective. Nurs Stand, 2007. 22(8):61
4. Habiyaremye F (2019).Tobacco use and associated factors among Rwandan youth aged 15-34 years: Findings from a nationwide survey, 2013.PLOS ONE 14(10):0212601. https://doi.org/10.1371/journal.pone.0212601
5. M P Lichy (2005).Magnetic resonance imaging of the body trunk using a single-slab, 3-dimensional, T2-weighted turbo-spin-echo sequence with high sampling efficiency (SPACE) for high spatial resolution imaging: initial clinical experiences. Invest Radiol 40(12):754-60. https://doi.org/10.1097/01.rli.0000185880.92346.9e
6. Cochran W G., Sampling Techniques, 2nd Ed.,New York: John Wiley&Sons, Inc. 1963
7. El-Ansari W (2002).Passive smoking in children: Facts and public health implications. *East Mediterr. Health J*. 8(1):74-87. https://doi.org/10.26719/2002.8.1.74
8. Abu-Baker N N., Haddad L, Savage C. *Int. J. Environ. Res. Pub. Health* (2010).The Influence of Secondhand Smoke Exposure on Birth Outcomes in 7(2):616-634
9. Jones L (2011).Parental and household smoking and the increased risk of bronchitis, bronchiolitis and other lower respiratory infections in infancy: Systematic review and meta-analysis. *Respir. Res*. 12(1):5. https://doi.org/10.1186/1465-9921-12-5

10. Miller-Thomas T (2014).Comparison of cigarette smoking knowledge, attitudes, and practices among staff in perinatal and other substance abuse treatment settings. *Journal of addiction medicine*, 8(5), 377–383. https://doi.org/10.1097/adm.0000000000000068
11. G V Vu. et al.,Inadequate Knowledge, Attitude and Practices about Second-Hand Smoke among Non-Smoking Pregnant Women in Urban Vietnam: The Need for Health Literacy Reinforcement. International journal of environmental research and public health, 2020. 17(10):3744. https://doi.org/10.3390/ijerph17103744
12. Labib S, M A Abeer, Ahmed A (2013).Knowledge, attitude and practice of university students towards smoking in Irbid. 2013. Jordan
13. Amubwine,Knowledge and attitudes of bar attendants towards secondhand smoke and compliance with smoking regulations in bars in Kampala Central Division. 2014
14. Alnawaiseh N (2018).Respiratory Symptoms, Knowledge and Attitude Among Male Smoker Students in Mutah University, Jordan. Biomed Pharmacol J.11(4). 2018

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