Factors Influencing the Persistence of Tobacco Smoking in Public Places in Tanzania: A Cross-Sectional Study in Urban, Rural and Semi-Rural Settings

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Abstract- ①Background: In 2003 the government of Tanzania enacted the Tobacco Products (Regulation) Act 2003, which, among other things, prohibited smoking in public places. However, smoking has persisted despite the existence of the Act. This study aims to establish the reasons behind the persistence of tobacco smoking in public places.

⁽²⁾Methods: This was a cross-sectional study where data were collected using pre-tested, self-administered questionnaires with both open and closed questions and documentary reviews. The study was conducted in urban, rural and semi-rural areas in three districts located in eastern, central and northern Tanzania. Quantitative data were analyzed using SPSS ver. 15. Qualitative data were analyzed manually using a thematic content approach.

③Results: The study involved 240 participants, of whom 67% were males. Overall smoking prevalence was 26.5% (36.3% for males and 6.4% for females, p<0.05). The prevalence of smoking in rural, urban and semi-rural settings was 34.9%, 28.6% and 36.5% respectively, (p> 0.05). About 40% of the smokers were between 25-35 years old and 52.4% had primary school as their highest level of education. About 56% of participants said they were aware of the Tobacco Regulation Act, but the majority could neither define it nor state the penalties for its infringement. Only 59.5% were aware that tobacco smoking causes lung cancer. About 4 out of 10 cigarette smokers do not adhere to NO SMOKING warnings.

(4) Conclusions: Cigarette smoking in public places in Tanzania has persisted mainly due to low awareness and passive implementation of the Tobacco Regulation Act, 2003. Other causes are aggressive advertising and promotion by the tobacco industry and insufficient awareness about the health effects associated with tobacco smoking. This study calls for an increase in cigarette taxation, sensitization about the dangers of both smoking and second-hand smoke and active enforcement of the act as immediate intervention strategies.

Keywords- Tanzania; Tobacco Regulation Act; Cigarette smoking; Public; Rural

I. INTRODUCTION

Tobacco is the only legal consumer product that can harm everyone exposed to it, and unfortunately it kills up to half of those who use it as intended [1]. Despite its dangers, tobacco use is common throughout the world due to low prices, aggressive and widespread marketing, lack of awareness of its dangers and inconsistent public policies against its use [1]. In sub-Saharan African countries the overall average prevalence of smoking has been estimated to be 19% (about 29% for men and 8% for women) [2]. A study in Tanzania in 2002 reported an increased number of tobacco smokers for both men (27%) and women (5%) [3].

After prolonged debates among stakeholders, the government of Tanzania passed a law in 2003 which, among other things, banned smoking in public places [4]. Regardless of this restriction, smoking in public places has persisted and evidence suggests that the situation has worsened over the past few years. A two-week survey by the Guardian newspaper in Dar es Salaam in 2006 reported increased cigarette smoking in all parts of the city. From bus stands and makeshift kiosks to five star hotels, the Tobacco Product Act 2003, which prohibits smoking in public places, was being routinely flaunted [5]. The violators of this law range from common men to government officials; and in some spot checks city residents were observed by the reporter of the newspaper smoking at police stations [5].

On the other hand, the leading tobacco company in the country has exploited the passive regulations imposed by the government by increasing its advertising for various brands of cigarette all around the cities. As a result each year the company reports an increased turnover and profit [6].

Since the time that the relationship between smoking tobacco and lung cancer was publicly articulated, smoking has decreased dramatically in most developed countries [7, 8]. In the developing countries, including Tanzania, the real impact of tobacco smoking is yet to be seen. By 2030, the global death toll has been predicted to exceed eight million a year and more than 80% of tobacco deaths will occur in developing countries [1]. Recently, Ocean Road Cancer Institute in Tanzania

announced that the cost of treating one patient with tobacco-related cancer was 3,000 US dollars [9]. Despite the fact that it has been established that tobacco is the single most preventable cause of death in the world today, many governments, especially in low-income countries, are hesitating to take serious actions to curb smoking. This study aims to establish the factors behind the persistence of smoking in public places in Tanzania.

II. METHODS

A. Study Design and Setting

This was a cross-sectional study conducted in 2009 in Ilala district, Dar es Salaam; Moshi Rural district, Kilimanjaro; and semi-rural areas of Dodoma Township. These districts are located in coastal, central and northern areas of Tanzania. The three districts were purposively selected to represent urban, rural and semi-rural settings as well as for geographical representation.

B. Sample Size and Data Collection

A sample of 240 study participants was calculated using a formula for sample size estimation using population proportions [10]. The following values were substituted in the formula: margin of error, ε , of 5%, level of significance, α , of 5% and proportion, *p*, of 18%. This sample was equally divided between the three districts. Baseline data were collected between April and December 2009 using self-administered questionnaires which were completed by the participants at the places where they were found by the data collectors.

C. Data Management and Analysis

The information collected was treated confidentially. Primary data were cleaned before analysis. This included checking for internal consistency and completeness, eliminating miscoded responses by running the frequencies using the computer and coding open-ended questions from the respondents, which were analyzed thematically. Quantitative data were analyzed using SPSS version 15. A chi-square test was used to test the level of significance between variables. All statistical tests were considered significant when the p-value was less than 0.05.

D. Ethical Clearance

Ethical clearance was sought from MUHAS Senate Research and Publications Committee. Also, the respective District Commissioners were consulted for permission to conduct the study in their areas. Permission was also sought from local village authorities. Prior to the data collection, written informed consent was obtained from the study participants.

III. RESULTS

Overall prevalence of smoking was 26.5% (36.3% among males and 6.4% among females, p<0.05). The prevalence of smoking in the urban, rural and semi-rural settings was 28.6%, 34.9% and 36.5% respectively (p>0.05). Nearly half of the cigarette smokers were aged 15-34 years (49.2%) and 52.4% had reached primary school as their highest level of education. Refer to Table 1.

Variables	Categories	Smokers	Non-smokers	Total
Gender	Male	58 (36.3%)	102	160
	Female	5 (6.4%)	73	78
Location	Rural	22 (34.9%)	49	71
	Urban	18 (28.6%)	70	88
	Semi-rural	23 (36.5%)	57	80
Age (Years)	15-24	6 (9.5%)	61	67
	25-34	25 (39.7%)	57	82
	35-44	11 (17.5%)	28	39
	45-54	13 (20.6%)	16	29
	55 plus	8 (12.7%)	14	22
Education level	Adult educ.	0	1	1
	Primary	33 (52.4%)	89	122
	Secondary	24 (38.1%)	55	79
	College	5 (7.9%)	29	34
	Other	1 (1.6%)	0	1

TABLE I PREVALENCE OF SMOKING ACROSS GENDER, AREAS OF RESIDENCE, AGE GROUPS AND EDUCATION LEVEL

1) Awareness of Tobacco Regulation Act 2003:

Only 56% of the study participants acknowledged being aware of the existence of the law banning smoking in public places; however, the majority of these were unable to state what the law says. Study participants confused the warnings written on cigarette packs and billboards, that "cigarettes are harmful to your health" with the Tobacco Regulation Act 2003. The study

found that only 22% of participants reported having "No smoking" signage in their workplaces; however, only in a few places did we actually see them. Approximately 4 out of 10 smokers do not adhere to "No smoking" warnings.

2) Awareness of Age Restrictions and the Fines for Smoking in Public Places:

The study found that only a few individuals were aware of age restrictions and interestingly the majority claimed that cigarettes can be sold to customers of any age. Those who were aware of the age restriction argued that it is not implementable because it is incompatible with some cultural norms in the society. They went on to say that children are supposed to obey orders from their parents and because of this it is hard for them to refuse to go and buy cigarettes for their parents and grandparents when they are told to do so. They also said that in certain situations children are ordered to buy and light the cigarette. Therefore, indirectly they are forced to smoke since they have to puff in and out along the way until it reaches the user.

"Children come to my shop to buy cigarettes; when I tell them they are not allowed to smoke, they tell me that they have been sent by their parents. If you do not sell to them then they go to the next shop and buy. Worse still they will at times order you to light it because the smoker wants it that way. You immediately see them making small puffs as they disappear into the street." (Participant 20, from Moshi Rural District)

The Tobacco Regulation Act 2003 stipulates a fine not exceeding 200,000 Tshs (130 US \$), or imprisonment of one term or not exceeding twelve months, or both fine and imprisonment for anybody who contravenes any provisions of the Tobacco Act. However no-one was aware of these penalties. We believe that, if fully enforced, this fine will without any doubt discourage people from smoking in public places.

3) Establishment of Special Rooms for Cigarette Smokers:

The study participants were equally divided on the issue of establishing separate places for smoking as stipulated by the Act. Those who were against argued that whether there are rooms for smokers or not, at the end of the day, the smoke will eventually end up in the air. They argued that establishing places for smoking does not promote a smoke-free environment or even protect non-smokers from second-hand smoke.

"How can that be possible? That means you will build rooms everywhere, along the roads, market places etc. No one with a sound mind can even think of that, where will you get all that amount of money to waste?" (Participant 79, Ilala District, Dar es Salaam)

The Act, however, binds every seller of tobacco products to post in a conspicuous place signs in prescribed form and content stating that it is prohibited to sell tobacco products to persons under the age of 18 years. Our study did not find any place with such a sign. One participant said the following:

"I know the age limit is 18 years but if I do not sell to them then my neighbour will sell and as a result over time I will lose all my customers. When customers come they ask for cigarettes first before asking for other needs. Therefore we sell even when we know about the age restriction." (Participant 160, Dodoma Township)

4) Awareness of Health Effects Associated with Tobacco Smoking:

Almost all the study participants were aware that smoking is associated with health problems; however, only half of them were able to mention lung cancer as the major health problem caused by cigarette smoking. Increased respiratory tract infections, heart disease and tuberculosis were other frequently mentioned health problems (Figure 1). Almost all (97%) of the participants acknowledged the necessity of banning public smoking; however, 41.9% were not optimistic that it will ever be successful.



Figure 1 Chart showing awareness of health effects

The study participants said that they have seen people smoking in the following areas: bus stands, bars, restaurants, markets and malls, hotels, schools, higher learning institutions, airports, healthcare facilities, libraries and in places of worship, Figure 2.



Figure 2 Public places where people commonly smoke cigarettes

IV. DISCUSSION

This study has established that smoking in public places has persisted despite the existence of the Tobacco Regulation Act 2003, which prohibits smoking in public places in Tanzania. The study also found that four out of ten males in rural and semirural areas smoke tobacco products and three in ten smokes in urban areas. Passive implementation of the Tobacco Regulation Act 2003 and lack of advocacy campaigns about the dangers of tobacco, especially among the younger generations, could be cited as the main reasons for the persistence and even increase in smoking in public places.

There is no other intervention program in Tanzania warning smokers not to smoke in public places or even sensitizing nonsmokers to stay away from smoke to avoid secondary smoking. More often than not the warning messages about the dangers of cigarettes occur alongside messages that promote smoking. The tobacco industry has chosen to use soft warnings like "cigarette smoking is harmful to your health" rather than strong and specific warnings like "Smoking harms people next to you, Smoking seriously damages your health, Smoking cause cancer, lung diseases, smoking causes heart and fatal diseases," as stipulated in the Tobacco Regulation Act 2003.

Across the cities there are many tobacco-industry-sponsored billboard advertisements that promote various brands of cigarette as well as saying that the Tanzania Cigarette Company is good for the country's economy. At the same time these advertisements carry messages warning people about the health effects of cigarettes, but the font chosen for these warning messages is small, faint and difficult to read compared to the messages that promote smoking. The tobacco industry has created fear among politicians that strict tobacco controls will harm the national economy. They have argued that if tobacco smoking is eliminated, the country will suffer substantial job losses, incomes will fall, tax revenues from tobacco will disappear and international trade will suffer [11]. Tobacco farming and production employs 1.3% of the population, which is roughly equal to 500,000 Tanzanians, and 85% of the tobacco is exported [12]. This is an excuse for not taking serious action on tobacco use even at a time when tobacco-related health problems have increased. In the year 2003/2004 the tobacco industry brought in about 55.5 million US\$; however, the Ocean Road Cancer Institute (ORCI) reported spending 30 million US\$ treating smoking-related cancers during the same period [13].

The health effects associated with smoking are not well known to the population despite the fact that people underestimate the risks of smoking and the connection between smoking and the incidence of specific diseases [14]. Smokers usually trade off between the immediate pleasure and satisfaction they get by smoking and the unforeseen harmful health effects they will get years later [15]. Many of the smokers were below the age of 34 years. This finding is consistent with previous studies, which found that people start to smoke at a younger age, mostly in their early twenties, in developing countries [16]. This is the most productive age group which in many developing countries is faced with all kinds of life uncertainties and as a consequence turns to alcohol consumption, smoking and other high-risk behaviours.

Health activists are worried that as long as cigarettes are still on the market and industries continue to advertise them aggressively, people will continue to smoke. Since many people start to smoke while young, it is necessary to create awareness amongst the young, especially males [17]. This can be achieved by teaching the dangers of tobacco use in primary and secondary schools in Tanzania. Policy makers should also prohibit the retail sale of cigarettes near schools as a means of

keeping tobacco products away from school children, who are vulnerable to early cigarette smoking. Research has shown that an increase in distance in accessing cigarettes reduces their consumption significantly [18].

A. Study Limitation

The study used purposive sampling to select the study areas, which may limit the generalizability of its findings since the selected districts may not be a true representation of other districts in the country. Therefore, these findings must be interpreted with care. Because of resource and time constraints we could not use a much larger sample size; however, we were guided by prevalence rates reported by previous studies to arrive at the sample size we used in the study. We believe that a much larger sample size would have been more adequate to generate enough statistical power for this study.

V. CONCLUSION

Cigarette smoking in public places in Tanzania has persisted, especially among young men. The law that prohibits smoking in public places is not well known to the citizens. Low levels of education and the weak enforcement of regulations contribute to the problem of cigarette use. This study calls for more strict regulation that, among other things, will impose costs on the tobacco industry to cover for the negative externalities they impose on non-smokers and the environment.

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