Compliance of oral snuff (Naswar) packaging and sales practices with national tobacco control laws and the relevant articles of Framework Convention on Tobacco Control in Khyber Pakhtunkhwa Pakistan

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**Abstract (246 words)**

**Introduction:** Smokeless tobacco (SLT) is a significant contributor to tobacco related harm in Pakistan but its control has lags behind that of combustible tobacco. We assessed the compliance of Naswar’s (a widely used SLT product in the Southeast Asia) packaging and sales practices with the national legislations and relevant articles of the WHO framework convention on tobacco control (FCTC).

**Methods:** A cross-sectional observational audit was conducted in three districts of Pakistan. We recruited 286 general point of sale (GPOS) and exclusive Naswar sellers (ENS) through a multistage cluster sampling strategy. Data were gathered on packaging and labeling practices of Naswar and advertisement and promotion practices inside and outside the shops. Statistical tests for association between the dependent variable- advertisement practices, and independent variables- area and vendor types were conducted.

**Results:** We analyzed 133 and 49 unique Naswar products sold in 229 GPOS and by 57 ENS respectively. None of the local products had any written or pictorial health warning. More than half of retailers used one or two methods of advertising Naswar inside the shops while only 9% advertised outside the shops. ENS were more likely to be non-compliant with tobacco advertisement and promotion compared to GPOS.

**Conclusions:** The study presents first insights on the compliance of Naswar packaging and sale practices with local regulations and WHO FCTC provisions in Pakistan. Almost all products were on display in the shops and none of the local products had any health warning or contents disclosure on the packages.

**Implications**

Naswar is a form of SLT used extensively in Pakistan, Central Asia and Pashtun populations across the globe. This study provides an important insight into the Naswar retail environment in a geographical setting where the use of Naswar is endemic. The study brings to fore previously un-reported issues like an urban-rural disparity, and differences between exclusive and non-exclusive Naswar sellers, with regards to Naswar advertisement and promotion. These findings have potential implication on the implementation of tobacco control retail policies. Lack of health warnings and free display of Naswar brands call for alignment of tobacco control efforts with the FCTC.

Introduction

Smokeless tobacco (SLT) refers to tobacco products that are used without burning the product1 and are consumed orally or via the nose2. More than 40 SLT products have been identified across the globe2 and most are considered carcinogenic by the International Agency for Research on Cancer. More than 90% of the estimated 350 million people using SLT worldwide live in South Asian countries including Pakistan3 4. The global adult tobacco survey (GATS) of 2014 estimates that approximately 17 million adults in Pakistan use smokeless tobacco5. Paan (Betel quid with tobacco), Gutkha and Naswar are the most common SLT products used in Pakistan6 7. Naswar is primarily a combination of dried and powdered tobacco, ash, water and lime with supplementary addition of other ingredients such as cardamom and menthol as flavoring agents and indigo as a coloring agent8. Historically, Naswar has mostly consumed by the tribes of South and Central Asia, but it is now also available in other parts of the world 7,8. Naswar is commonly used by the Pashtun ethnic population of Pakistan, living mostly in the Khyber Pakhtunkhwa, Baluchistan, and Sindh provinces9. An estimated 60% of tobacco consumed in the capital city of Khyber Pakhtunkhwa, Peshawar, is in the form of Naswar10. There, it is available as a moulded solid product, packed in small transparent poly-ethylene bags. Naswar, produced mostly by informal manufacturers, holds a nicotine level of 7-26mg/g8 and TSNAs (tobacco specific nitrosamines) level of 478–1380 ng/g wet weight6. It is highly addictive, far cheaper than cigarettes and culturally acceptable11.

In 2005, Pakistan ratified the WHO “Framework Convention on Tobacco Control (FCTC)”12, which provides guidance to governments on the regulation and control of tobacco including SLT. Among the five key demand reduction articles of the FCTC, two articles focus on the packaging and labeling of tobacco products (Article 11) and tobacco advertisement, promotion and sponsorship (Article 13)13. Product visibility as means of tobacco marketing has become an important tool for tobacco vendors. Tobacco products are made more noticeable through striking pack designs, shapes, and by deliberately placing the products on display within the customer’s view14. Evidence shows that brand advertisements at the point of sale (POS), are a key predictor of tobacco uptake, especially in young people15,16and bans on tobacco advertisement and promotion at the POS have been shown to a decrease in susceptibility to tobacco use among youth and adults17-20. Written and graphic health warnings on product packaging are also an effective tool in curbing tobacco use21, the latter being particularly effective in communicating the information of health risks to tobacco users, reinforcing their intention to quit, and motivating them to decrease their daily consumption22-24.

Although Pakistan has made substantial progress in the policies to control smoking25, the progress on SLT control has been lagging12. Pakistan introduced its first tobacco control principal ordinance, the Cigarettes (Printing of Warning) Ordinance, in 1979. The ordinance and its subsequent amendments necessitate a combined written and graphic health warning covering 50% or more of the cigarette pack, but do not cover other forms of tobacco, despite the FCTC Article 11 requiring these on all the tobacco products, not just cigarettes26. Similarly, tobacco control laws in Pakistan prohibit many forms of tobacco advertisement and promotion such as in print and electronic media, outdoor advertising and free distribution of products26. At the tobacco POS there are restrictions on advertising through posters, banners, billboards, or fascia affixed outside a shop. In February 2020 a new statutory notification from the Pakistan Government has come into force, prohibiting display of tobacco products and advertising tobacco products inside the POS26.

As a signatory of the internationally binding FCTC, Pakistan requires transformation of national tobacco control laws and subsequently the implementation of these laws in light of the guidance provided by FCTC. The national laws are reasonably elaborate for smoking but less clear on regulating smokeless tobacco products. This ambiguity can lead to poor implementation and compliance. This study reports the compliance of Naswar with applicable national laws on packaging and sale practices in the Khyber Pakhtunkhwa province of Pakistan. Additionally, using these local products we assess the implementation status of tobacco packaging and sales laws as prescribed by the FCTC guidelines (Articles 11 and 13). Moreover, evidence points towards urban-rural disparities in both tobacco use, and the implementation of tobacco control policies27,28, therefore we explored the association between Naswar promotion and advertisement practices and rural or urban location of retailers. Additionally, we assessed the association between the sales practices and the shop types, general POS (GPOS) and exclusive Naswar sellers (ENS).

Methods

Study setting

Using a cross-sectional design, we conducted an observational audit study of GPOS and ENS shops in three districts of the Khyber Pakhtunkhwa province in Pakistan (Peshawar, Mardan and Bannu). These districts were purposively selected based on the scale of consumption, production and business of Naswar29 30. Collectively these districts have a population of 8.3 million31. Each district has an administrative division of rural and urban predominance called sub-districts or tehsil councils. Within the Tehsil Council, a “union council” is the lowest administrative unit which is called a “village council (VC)” in the rural areas and a “neighborhood council (NC)” in urban settings.

**Study sample**

We recruited two types of shops for observations: GPOS vendors (grocery stores, selling mainly edibles and convenience stores, selling edibles and other daily use commodities) and ENS vendors (whole-sale dealers and manufacturers of Naswar who use their manufacturing unit as a sales point as well). The main eligibility criterion for shops was sale of at least one brand of Naswar. For products, we sampled the five most popular unique Naswar brands (same brand name product sold in multiple shops, was not considered) in each selected shop. Foreign Naswar substitutes available in the form of powdered tobacco, prepackaged in ready to use filter pouches with country of manufacture mentioned on the packet, were also included in the sample of products.

**Sampling strategy**

We recruited our shop sample based on a multi-stage cluster sampling. We first randomly selected one predominantly urban and one predominantly rural sub-district/Tehsil council in each selected district, the primary sampling units (PSU). Next, we randomly selected NCs and VCs, the secondary sampling units (SSU), from the respective urban and rural settings in each district. To recruit the required numbers based on proportionate sampling, we selected 11 NCs and five VCs in Peshawar, six NCs and four VCs in Mardan, and three NCs and two VCs in Bannu. For selection of GPOS shops, in each selected NC and VC, we employed systematic sampling and selected every third eligible shop. For ENS shops, we included all shops in the respective areas as these shops were fewer and distantly located in every council.

**Sample size**

This study was conducted as part of a larger project involving interviews with tobacco POS vendors and shop observations in Pakistan. In the absence of relevant literature on violation of laws for SLT products, we calculated the sample based on an observed 10% violation of a nationally implemented tobacco control law-sale of cigarettes to minors32. We used a 5% margin of error and a design effect of 2.0 (based on cluster size of 10 shops and intra-cluster correlation coefficient of 0.1). We calculated a sample size of 273 through OpenEpi software (version 3.01)33. Utilizing the findings from a mapping study of SLT POS going on in Peshawar, the estimated total number of shops was 10,300 in the three districts, 1750(17%) in Bannu, 3090 (30%) in Mardan and 5460 (53%) in Peshawar. Based on these estimations, a proportionate sampling scheme was used. We planned to recruit 50 shops in Bannu, 90 in Mardan and 160 shops in Peshawar. The same study also revealed that the number of shops in a VC was approximately half to that in an NC, hence we recruited proportionately, i.e. two shops in a NC for each shop in a VC.

**Data collection**

We used an audit tool adapted from a pilot study conducted in three countries of South Asia34. Following the adaptation of the tool to the local settings and study objectives, it was pilot tested on a sample of 10 GPOS and three ENS shops. The tool (supplementary file 1) is based on the relevant FCTC articles. The first section of the tool addressed the packaging and labeling practices of Naswar. The second section recorded information on advertisement and promotion practices inside and outside the shops. Data on any available foreign Naswar substitutes in the local market were also collected. Naswar packs were not purchased but observed on the spot and all packaging related features were recorded using a checklist. The data were collected during one visit by a trained team of two research team members at each study site. The data collectors initially built rapport with the shop owners/managers, then explained the purpose of study and addressed shop staff’s queries and concerns before obtaining informed written consent. In cases where the shop owners/managers were reluctant to give a written consent, verbal consent was obtained instead.

**Ethics approval**

Ethical approval for the study was obtained from the Research Ethics Committee of Khyber Medical University. (No. DIR/KMU-EB/ST/000554)

**Data analysis**

Descriptive analyses, including response frequencies and percentages were carried out to describe types of stores, naswar packaging, labeling, and practices of advertisement and promotion at the POS. For the analyses, we used the data from unique products, removing duplicates. To check association between vendor and area type (independent variables) and the advertisement and promotion practices (dependent variables) we applied Chi-squared test. We examined the association between potential determinants (vendor type and area type) and practices of advertisement and promotion inside the shops by calculating crude and adjusted odds ratios (adjusted either for vendor type or area type) using logistic regression analysis. All analyses were conducted using STATA version-1435.

**Results**

A total of 286 shops were surveyed within the selected villages and neighborhood councils between 10th November and 30th December 2019. Approximately half of the shops were grocery stores (51%), followed by convenience stores (29%) while 20% were exclusive Naswar shops (Table 1).

We observed 557 Naswar and foreign Naswar substitutes sold at 229 GPOS shops while 76 Naswar products at 57 ENS shops. After removal of the duplicate products, we were left with 133 unique products at GPOS and 49 unique products at ENS shops. All products observed at ENS and around 95% products at GPOS were locally manufactured while only seven products were imported (six from India and one from Afghanistan). Table 2 provides information about packaging and labelling practices of Naswar brands at both types of shops. Among the observed products, a vast majority (98%) of the products did not disclose contents on the packets and were devoid of any detail about the type of ingredients. None of the locally manufactured products had any written or pictorial health warning. Similarly, statements of any health claim or harm trivialization (like xyz is better than cigarettes or it relieves toothache etc) were not present on any of products at both types of shops. The only information available on these products was that related to business identity. Among the six foreign Naswar substitute products reported at GPOS only, a written health warning was present on five products. All these health warnings were legible, written in English, covered only approximately 1% of the packet, and gave the unanimous warning statement of “Tobacco is injurious to health”.

Table 3 shows advertisement and promotion practices outside and inside the shops by vendor type (GPOS and ENS shops) and area type (rural and urban). Around 90% of the GPOS and urban sellers while 100% of the ENS and rural sellers displayed their products at the counter or a location that was freely visible to customers. Advertisement and promotional practices inside the shops other than product visibility were, 49% at GPOS, 100% at ENS, 68% at urban and 42% at rural shops. Shelf-edging was the most prominent practice of advertisement inside the shops, while display packs and bags printed with the brand logo were less common approaches. All the three practices inside the shops were significantly different by vendor type while urban and rural vendors varied significantly only for shelf edging. The practices outside the shops were less frequently observed, 10% at GPOS, 7% at ENS, 14% at urban and around 3% at rural shops and we found a significant difference for one practice only, posters displayed, among urban and rural vendors. The results of the logistic regression analysis, for determinants of advertisement practices inside the shops are shown in Table 4. Visibility of products was not considered in the model as it was already practiced 100% in ENS shops and in rural shops. The odds of shelf edging, display packs and use of printed bags for advertisement inside the shops were significantly increased among ENS shops. Similarly, the odds of shelf edging as a mean of advertisement inside the shops were significantly increased among urban shops.

**Discussion**

All observed packets of Naswar were not in accordance with FCTC Article 11, meaning all were devoid of any written or pictorial health warning. Although written health warnings were present on the Indian substitutes of Naswar, these products constitute less than 5% of the total sample. The warnings on these products covered only a very small surface area. Almost all the Naswar brands were non-compliant with FCTC’s provision of content disclosure with no mention of ingredients on the packages. Visibility of the products was high (around 93%) both by vendor type (GPOS and ENS shops) and area type (urban and rural). Advertising and promotions outside the shops were less prominent than inside and among the approaches of promotion inside the shops; shelf edging, display packs and use of printed bags for advertisement were significantly high among ENS while shelf edging only was significantly high in urban shops.

Warnings on tobacco packaging are important for the comprehensive control of tobacco use36. FCTC Article 11 recommends that packaging should contain different warnings about the health effects of tobacco use on a rotating basis and should ideally include images. The warnings should cover 50% or more of the principal display areas but shall be no less than 30% of the principal display areas13. Pakistan’s tobacco control law also requires a health warning to cover 60% of the cigarette packs and be placed on the front top of the pack in Urdu and on the back top of the pack in English. SLT products, however, are not covered by this law, as the definitions of key terms in the implemented national laws are not completely aligned with the FCTC26. Our findings revealed that none of the products carried any health warning. A pilot survey conducted in three South Asian countries found that if existent, health warnings on SLT packs were text-only, were mostly concealed, sometimes not in the native language, and not complying with the provisions of FCTC Article 1134. These findings are replicated here in our current study in which health warnings were only found on five Indian products, covering about one percent of the packet. India is among the leading countries to implement the law of health warnings on SLT packages and all SLT warnings since 2011 were accompanied by the text “TOBACCO KILLS”; however, the size (40%), location, and rotation of warnings remained unimplemented37. Half of the analyzed products had a colorful sticker of business identity, and were completely discordant with the tobacco control best practice of plain packaging (removal of colors, brand imagery or logos and to print only the brand name in an assigned size in addition to required health warnings) policies advocated by the FCTC38-40. Article 11.2 of FCTC specifies that “each unit package of tobacco products and any outside packaging and labelling of such products shall, in addition to the warnings, contain information on relevant constituents and emissions of tobacco products”13,41. Ingredients of smokeless tobacco products were mentioned on nine out of 16 observed packages in a study conducted in India42. The law of Pakistan does not require to mention the contents of tobacco products on packaging26. Almost all the observed Naswar products and its foreign substitutes were found non-compliant with this provision of the FCTC.

FCTC Article 13 calls for a comprehensive ban on tobacco advertising, promotion and sponsorship (TAPS). This ban covers POS displays of tobacco products along with advertisements and promotions at the POS, among others13. According to national law, many forms of tobacco advertising and promotion are prohibited, including advertising on domestic TV, radio, certain billboards, and in print media26. Most other forms of advertising and promotion were allowed26 until a recently (Feb 2020) approved law, which prohibits the display of tobacco products and advertising both inside and outside the POS. Regardless of stringent regulations, the tobacco industry continues to invest profoundly in marketing its products, including SLT43, and continues to target consumers at POS44. Naswar, in this study, was found freely visible at more than 90% of GPOS and in all of ENS shops. Similar findings were reported from Amsterdam with 91.5% overall visibility of tobacco products, while tobacconists, shops selling tobacco and tobacco accessories, had 100% visibility of tobacco products45. A POS display ban will be implemented in supermarkets in the Netherlands in 2020 but tobacconists will remain exempt and thus highly visible. For optimal limitation of tobacco products’ visibility and tobacco advertisements, display bans would need to be all inclusive, covering different types of retailers45. Pakistan’s national laws should also cater for specific entities like exclusive Naswar sellers. A review on neighborhood differences in POS marketing reported targeting of rural and more disadvantaged areas for marketing of SLT16. Naswar in this study was also found visible in all rural shops. Naswar visibility was 90% in urban settings either, showing its social acceptability and lack of stringent laws on tobacco products display (the national law on product display has recently enacted). We observed that the main focus of Naswar advertisement was the inside of the shops compared to the outside of the establishment, a finding similar to those from a US study in communities around college campuses in North Carolina and Virginia46.

There are some limitations to the study, including the fact that it was conducted in only three cities of the Khyber Pakhtunkhwa province in Pakistan. However, these cities are the major hub of the Naswar business in Pakistan and products from here are sent all across the country and even abroad. The new national law on product display was passed after the completion of survey and the results on product advertisement may be interpreted without considering this law. Nonetheless our findings can provide a base-line for future studies assessing developments in tobacco advertisement and promotion related to SLT. Proximity of shops to educational institutes is an important policy issue, however, given our available resources, it was difficult to accurately gauge the distances and hence we did not include it in the scope of our study. Another limitation of the study may originate from the inherent observer bias, bias in recording objective data as a result of inadequate training in the use of measurement tool or preconceived ideas of observer about the findings. However, the pilot study in thirteen shops preceding full data collection and carried out by two independent observers, showed almost perfect agreement in observations. Despite these limitations, this is the first study assessing the packaging, labeling and advertisement practices of Naswar in Pakistan. It provides important insights into the various aspects of compliance of the FCTC and can serve as a baseline measure for future changes.

**Conclusions**

This study provides first insights into Naswar sale practices in Khyber Pakhtunkhwa in the context of the provisions of the FCTC. None of the observed local products have any health warning or contents disclosure on the packages and almost all the products were available with free visibility in the shops. Shelf edging and display packs were the two main methods of advertising products inside the shops, used by more than half of the retailers. Focusing on the Naswar supply chain may be necessary to increase adherence to FCTC provisions related to smokeless tobacco in Pakistan.

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**Competing interests**

None declared.

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**Table 1: Distribution of different types of observed shops by district (N=286)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Type of shop** | **Bannu**  **n (%)** | **Mardan**  **n (%)** | **Peshawar**  **n (%)** | **Total**  **n (%)** |
| Grocery store | 32 (11.2) | 43 (15.0) | 72 (25.2) | 147 (51.4) |
| Convenience store | 0 | 17 (5.8) | 65 (22.8) | 82 (28.6) |
| Exclusive Naswar shops | 18 (6.3) | 15 (5.3) | 24 (8.4) | 57 (20.0) |

**Table 2: Packaging and labeling practices of Naswar brands at GPOS and ENS shops**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | **Naswar brands at GPOS shops (N=133)** | | | | **Naswar brands at ENS (N=49)** |
| **Packaging and labelling practices** | | **Bannu**  **(*n*=19)** | **Mardan**  **(*n*=55)** | **Peshawar**  **(*n*=59)** | **All brands at POS** | **Combined for all three districts** |
| Only name of the product mentioned | | 02 (10.5) | 05 (09) | 04 (6.8) | 11 (8.3) | 04 (8.2) |
| Product name with address of manufacturer | | 05 (26.3) | 20 (36.4) | 26 (44) | 51 (38.3) | 20 (40.8) |
| Neither name nor address | | 12 (63.2) | 30 (54.6) | 29 (49.2) | 71 (53.4) | 23 (47) |
| Country of origin of the product | Pakistan | 16 (84.2) | 52 (94.5) | 58 (98.3) | 126 (94.7) | 49 (100) |
| India | 03 (15.8) | 03 (5.5) | Nil | 06 (4.5) | Nil |
| Afghanistan | Nil | Nil | 01 (1.7) | 01 (0.7) | Nil |
| Contents of the product listed | | Nil | 03 (5.5) | 01 (1.7) | 04 (3) | Nil |
| Any health warning mentioned on the packet\* | | 03 (15.8) | 02 (3.6) | Nil | 05 (3.7) | Nil |

*Note. All values are numbers of Naswar brands with percentages.*

*\*Health warning was present only on Indian products which was written only, no pictorial health warning.*

**Table 3: Advertisement and Promotion practices outside and inside the shops by vendor and area type**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Type of Vendor** | | ***P* value** | **Type of Area** | | ***P* value** |
| **GPOS (N=229)** | **ENS**  **(N=57)** | **Urban**  **(N=198)** | **Rural**  **(N=88)** |
| **Practices outside the shop** | | | | | | |
| Boards displayed | 08 (3.4) | 04 (7.0) | 0.23 | 9 (4.6) | 3 (3.4) | 0.65 |
| Posters displayed | 11 (4.8) | Nil | - | 11 (6.9) | Nil | 0.02\* |
| Stands displayed | 04 (1.7) | Nil | - | 04 (2.5) | Nil | 0.18\* |
| **Practices inside the shop** | | | | | | |
| Products visible to customers | 208 (90.8) | 57 (100) | 0.01 | 177 (89.4) | 88 (100) | 0.002 |
| Shelf edging | 93 (40.6) | 42 (73.7) | <0.001 | 108 (54.6) | 27 (30.7) | <0.001 |
| Display packs | 15 (6.5) | 09 (15.8) | 0.02 | 16 (8.0) | 08 (9.0) | 0.77 |
| Printed bags with brand logo | 05 (2.1) | 08 (14.0) | <0.001 | 11 (5.6) | 02 (2.2) | 0.21 |

*Note. All values are numbers of practices with percentages. \* Fisher’s exact test is used.*

**Table 4: Differences in Naswar promotional practices between GPOS and ENS, and between urban and rural location of the Naswar sellers.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Shelf edging** | | **Display packs** | | **Printed bags with brand logo** | |
|  | Crude OR  (95% CI) | Adjusted OR  (95% CI) | Crude OR  (95% CI) | Adjusted OR  (95% CI) | Crude OR  (95% CI) | Adjusted OR  (95% CI) |
| **Vendor type** | | | | | | |
| GPOS | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| ENS | 4.1(2.1-7.8) | 4.5 (2.3-8.9)\* | 2.7 (1.1-6.4) | 2.7 (1.1-6.5)\* | 7.3 (2.3-23.4) | 7.5 (2.3-24)\* |
| **Area type** | | | | | | |
| Rural | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Urban | 2.7 (1.6-4.6) | 3.0 (1.7-5.3)\*\* | 0.9 (0.4-2.1) | 0.9 (0.4-2.1) | 2.5 (0.5-11.6) | 2.7 (0.6-12.8) |

*OR=odds ratio, CI=confidence interval, \* adjusted odds ratio are adjusted for area type \*\* adjusted odds ratio are adjusted for vendor type.*

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