Tobacco use and concurrent engagement in other risk behaviours: A public health challenge for occupational therapists

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ABSTRACT

Introduction: Occupational therapists are concerned about what people do and how that impacts their health and well-being. However, occupational therapy contributions to the cessation and prevention of tobacco use remain limited. Tobacco use constitutes occupational performance that poses a serious threat to health, well-being and quality of life. The purpose of this paper is to report the extent of tobacco use and discuss the nature of risk behaviours among high school learners in the city of Maseru, Lesotho.

Method: The paper draws on findings of a larger study that aimed to establish the prevalence of risk behaviours among high school learners in Lesotho. 1121 learners aged 12-27 years completed the Lesotho Youth Risk Behaviour Survey (LYRBS) in a school-based cross-sectional survey. STATA and Microsoft Excel we used for data analysis.

Results: The findings highlight the co-occurring and concurrent nature of risk behaviours, such as use of other substances, gambling and sexual behaviours with tobacco use dominating clusters of concurrent engagement.

Conclusion: Tobacco use is an occupation and a public health emergency that requires urgent attention from an early age. Delaying early initiation of tobacco use could prevent engagement in other risk behaviours thereby avoiding associated health consequences. With their understanding of occupation, occupational therapists can contribute immensely to interventions aimed at curbing engagement in risk behaviours.

Key words: Health risk behaviours; Youth; Occupational performance; Lesotho Youth Risk Behaviour Survey (LYRBS); concurrent behaviours

INTRODUCTION

Tobacco use is defined as any habitual use of the tobacco plant leaf and its products through inhalation, sniffing, sucking and chewing. Tobacco use predominantly starts in adolescent years as a drug of initiation. Hence, the prevalence of tobacco use tends to be higher among adolescents than other age groups. Using tobacco forms part of the occupational repertoire of many people. This is despite knowledge of the long-term negative consequences of engagement for the users and those around them. Within the occupational repertoire of many youth, including learners, there are activities which promote their health and activities that may put them at risk of ill health. Activities that expose youth to the risk of ill-health are classified as health risk behaviours and they include sexual intercourse, tobacco use, alcohol consumption, violent behaviours and taking illicit drugs. Literature that explores risk behaviours from an occupational perspective is scarce. Activities [and risk behaviours] associated specifically with addiction have been found to meet the criteria for occupation and tobacco use was only recently acknowledged in occupational therapy and science literature as an occupation. Hence the continuing need for further research on this health-risk behaviour from an occupational perspective. The aim of the study was to establish the prevalence of risk behaviours among the youth who are high school learners in the city of Maseru, Lesotho.

The objectives focused on different health risk behaviours. These were:

- To establish the socio-demographic profile of high school learners who engage in health risk behaviours in schools in the city of Maseru.
- To determine the proportion of learners who engage in risk behaviours related to personal safety.
- To determine the proportion of learners who engage in violence-related behaviours.
- To determine the proportion of learners who express feelings of sadness or have attempted suicide.
- To determine the proportion of learners who engage in tobacco use.
- To determine the proportion of learners who use alcohol.
- To determine the proportion of learners who use illicit drugs.
- To determine the proportion of learners who engage in sexual behaviours.
- To determine the proportion of learners who engage in physical activity.
- To establish relationships between different groups of learners within and across categories.
in other forms of tobacco use. In this case smoking is used as a mechanism for socialisation.

Tobacco is also used as part of rites of passage into adulthood or as a signifier of membership to a specific group. In a study among learners aged 14-15 year in two schools in Stockholm, smoking was regarded as a symbol of adult life. In a study of teenage subcultures and their role in shaping attitudes, use of substances; tobacco and alcohol were identified as recognised markers of members of counter-subcultures. In this regard, tobacco use fostered a sense of belonging and it was enacted as a shared occupation. For example, Sjöerna et al. show that smoking, as a predominant form of tobacco use is sometimes described as part of teenage lifestyle; such as being together with friends, ‘going out’ and enjoying oneself. The same sense of belonging derived from smoking with others was also reported by adult females.

Physical consequences
The use of tobacco tends to continue through adulthood to old age, often with adverse and life-threatening consequences. There is an abundance of evidence showing physical negative effects of tobacco use amongst different groups and societies. Tobacco use has been reported to account for deaths of about 6 million people globally on an annual basis and these may increase to an estimated 8 million per year by 2030. This amounts to more deaths than those associated with HIV/AIDS, TB and malaria combined. Smoking in particular has been identified as a risk factor for cancer, atherosclerosis, and oral ailments such as teeth loss and halitosis among others. It has also been categorised as one of the leading causes of coronary heart disease. These consequences are likely to impede daily function and social interaction, therefore affecting well-being and quality of life.

Psychiatric consequences
Smoking has been strongly associated with psychiatric illnesses, although the nature of the association may differ. In a study conducted among 43 093 young adults, “prior, occasional, and daily smoking were found to statistically increase the odds of presenting with current and lifetime major depression”. This form of tobacco use was also associated with an increased risk of developing panic attacks and panic disorder in young adults. The relationship between anxiety and depression and smoking seems to be interdependent. Extensive research has been conducted that shows that anxiety and depressive symptoms were more likely to be reported by smokers than non-smokers and that those with pre-existing symptoms were also more likely to smoke. A study in the Netherlands explored the association between age of initiation of smoking and age of onset of depression and anxiety disorders and the findings indicated that smokers developed psychopathology within five years of starting smoking, suggesting a causal relationship between smoking and depression and anxiety.

Early onset
Other than predisposing the individual to psychopathology, early initiation of tobacco use could precipitate engagement in other health risk behaviours. Smoking has been associated with the increased likelihood of alcohol and other substance use, therefore predisposing the individual to alcohol and drug dependence or abuse in adulthood. Another risk behaviour that was associated with early onset of tobacco use was sexual behaviours, resulting in early pregnancy. This association between risk behaviours suggests co-existence of risk behaviours.

Co-occurrence of multiple risk behaviours poses a bigger threat to health and well-being. There has been increasing research on multiple risk behaviour engagement and associated consequences. For example, a study conducted among homeless youth in Ghana established that the youth tend to engage in multiple risk behaviours associated with survival and participants exhibited psychological problems that were moderate to severe in nature. Another study conducted among 12-18 year-old African American youth examined
interdependent trajectories of risk behaviours such as sexual behaviours, substance use and conduct problems and consequences were mapped out according to the level of risk taking. These studies present a challenge for single behaviour intervention strategies, as designing intervention for one risk behaviour negates the fact that risk behaviours tend to co-occur. In addition, “integrated prevention programs have been found to be more feasible and effective than discrete prevention strategies.”

Literature presented above supports the view that meaningful occupations could be detrimental to health. This realisation has led to a proposed review of the profession’s shared assumptions that view engagement in occupations from a positive stance only. This perception has perpetuated “marginalisation of those occupations that may be negative, problematic or detrimental to health” as evident in the limited attention these occupations have received in literature. This could explain why tobacco use has not been well documented in occupational therapy and occupational science literature.

The limited attention to the study of tobacco use as occupation could explain the lack of contributions by occupational therapists in prevention, curbing and cessation of tobacco use. As a result, the profession may be lagging behind in critical international public health conversations regarding the epidemic. This is despite the professions’ commendable contribution in addressing other public health issues, such as obesity as shown in an integrative literature review that explored the role and evidence base of occupational therapy practice in obesity. Such evidence suggests that occupational therapists have the knowledge and skills to draw intervention for other public health issues.

**METHOD**

This paper draws on findings of a larger study conducted in 2010. The aim of the study was to establish the prevalence of health risk behaviours among high school learners in the city of Maseru, Lesotho. A study of this nature and magnitude had not been conducted in Lesotho. One of the objectives of the study was to determine the proportion of learners who engaged in tobacco use. The objective of this paper is to report on this objective and discuss the nature of risk behaviours, supporting the argument of a need for occupational therapy to contribute to intervention on tobacco use.

**Study Context**

Lesotho is landlocked by South Africa, with a population of about 1.8 million with 51.3% being between 5 and 29 years of age. The official languages are Sesotho and English. Administratively, the country is divided into three districts; Maseru is both the largest district and the capital of Lesotho with 22.9% of the country’s population. These factors contributed to the decision to conduct this study in the city of Maseru and among youth.

The Lesotho school system managed by the Ministry of Education and Training is divided into five consecutive levels. The Early Childhood Care and Development level accommodating children between the ages of 3-5; primary, consisting of 7 levels with children starting at the age of 6; junior secondary comprising of 3 levels (Forms A-C); higher secondary with two levels (Form D & E) and tertiary education. The main proprietors or owners of schools are churches; the Anglican, Methodist, Roman Catholic and Seventh Day Adventist churches and the Government. After the pilot, rate from the Anglican school was lower than 50%, therefore a second Anglican school was recruited.

The study population comprised of all learners (n=9726) in Forms A,B,C,D and E in co-educational high schools within a 10km radius of the central business district of Maseru. Only schools that followed the school calendar set by the Ministry of Education and Training were included. A total of 1769 learners from 7 schools were recruited for this study and 1121 learners (63.4% response rate) took part in the study. One questionnaire was excluded from analysis as it was 50% incomplete.

Of the 1121 participants 50.1% (N=562) were female and 49.9% (N=559) were male. The majority of the sample were Lesotho citizens by birth (93.6%, N=1049). Their age range was between 12 and 27 years. The mean age was 16 years with a standard deviation (sd) of 2.09 and a confidence interval (CI) of between 16.3 and 16.5. The age distribution of the sample reflected the typical profile for high school learners in Lesotho. For instance, learners in Form A are often in the age bracket of 12-13 years and those who progress through high school education successfully at each level often complete at age 16 or 17.

**Recruitment process**

Two stage sampling was employed to select both the schools and the participants, starting with cluster sampling and then random sampling. For selection of schools, 18 schools were clustered according to the proprietor. A representative school was then randomly selected from each cluster, resulting in six schools initially selected from the following proprietorship clusters: the Anglican, Lesotho Evangelical, Methodist, Roman Catholic and Seventh Day Adventist churches and the Government. However, the response rate from the Anglican school was lower than 50%, therefore a second Anglican school was recruited.

Schools tend to have more than one class per level, due to the number of learners that apply to the schools. For example, Form A can have A1, A2, A3 and sometimes A4 with an average of about 50 learners per stream giving a total of 200 Form A learners. All the selected schools had more than one class per level. A class was then randomly selected to represent each Form adding up to a total of 5 randomly selected classes.

**Data collection**

The study instrument was an hour long paper-based, self-administered questionnaire presented in English. The US Youth Risk Behaviour Surveillance System (US YRBSS) was adapted to develop the Lesotho Youth Risk Behaviour Survey (LYRBS). The validity and reliability of the USYRBSS had been previously established. The Lesotho YRBS was designed to ensure clarity and contextual relevance. Phrases and specific terms for behaviours were changed to make it contextually relevant. This was tested in a pilot study; however, reliability and validity were not tested, because this involves an extensive and rigorous process that limitations in resources did not permit. After the pilot, questions were added and others modified. It is recommended that the tool be tested for reliability and validity in the future. The Lesotho YRBS was a 112 item long questionnaire divided as follows:

- Section A: demographic information
- Section B: questions about personal safety on the road
- Section C: violence-related behaviours
- Section D: questions on suicide
- Section E: tobacco use
- Section F: questions about drinking alcohol
- Section G: questions about matekoane use
- Section H: drug use
- Section I: sexual behaviour
- Section J: questions on body weight
- Section K: questions on physical activity
- Section L: nutrition.

The questionnaire was administered in English, because this is the language of instruction in high schools in Lesotho. This paper reports on section E, tobacco use (the questions from Section E are attached as Appendix).

* Matekoane is the local name for dagga or cannabis
Data analysis

Data analysis was conducted using STATA 10.0. The process of analysis began with descriptive statistics such as frequencies and percentages which were relevant for establishing prevalence. The mean age of subjects, range and standard deviation were calculated to enable analysis using age and gender. To establish relationships between and across categories the Chi-square test was used. This analysis was compatible to that used in the USYRBSS and the South African YRBS. Conducting a similar analysis in this study would enable comparison with youth risk behaviours surveys conducted in other countries.

A selection of behaviours that participants reported was used to determine concurrent engagement in risk behaviours using Pivot tables in Microsoft Excel. The criteria for selection entailed behaviours participated in 30 days prior to data collection (data was collected in the first term of the school year), but not those that they were subjected to, such as being threatened or being driven drunk. However, other lifetime behaviours were included due to their clinical relevance and likelihood to recur, such as addictive behaviours. A total of 35 behaviours were selected as depicted in Table I.

Eleven clusters, shown in Table II were created based on the associations derived from the Chi-square test and literature.

Table I: List of risk behaviours that formed clusters

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Co-occurring behaviours</th>
<th>Number of participants engaged in behaviours concurrently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster One</td>
<td>Did not use seat belt when driving</td>
<td>Total = 37</td>
</tr>
<tr>
<td></td>
<td>Did not use seat belt when driven</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drank alcohol in lifetime</td>
<td></td>
</tr>
<tr>
<td>Cluster Two</td>
<td>Drank drunk</td>
<td>Total = 9</td>
</tr>
<tr>
<td></td>
<td>Drank alcohol in lifetime</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Had sexual intercourse</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drank one in past month</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Days smoked</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Had multiple sexual partners in last 3 months</td>
<td></td>
</tr>
<tr>
<td>Cluster Three</td>
<td>Days smoked</td>
<td>Total = 2</td>
</tr>
<tr>
<td></td>
<td>Drank alcohol in lifetime</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Had sexual intercourse</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Binge drunk in past month</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attempted suicide</td>
<td></td>
</tr>
<tr>
<td>Cluster Four</td>
<td>Drank alcohol in lifetime</td>
<td>Total = 31</td>
</tr>
<tr>
<td></td>
<td>Drank one in past month</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Binge drunk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cigarettes smoked per day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fought</td>
<td></td>
</tr>
<tr>
<td>Cluster Five</td>
<td>Drank alcohol in lifetime</td>
<td>Total = 29</td>
</tr>
<tr>
<td></td>
<td>Binge drunk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smoked dagga in lifetime</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smoked dagga last month</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of Days smoked</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drank one in the last month</td>
<td></td>
</tr>
<tr>
<td>Cluster Six</td>
<td>Used inhalants</td>
<td>Total = 2</td>
</tr>
<tr>
<td></td>
<td>Used prescription drugs to get high</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drank alcohol in lifetime</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Binge drunk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smoked dagga in lifetime</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smoked dagga last month</td>
<td></td>
</tr>
<tr>
<td>Cluster Seven</td>
<td>Had sexual intercourse</td>
<td>Total = 1</td>
</tr>
<tr>
<td></td>
<td>Did not use condoms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Used no birth control method</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Binge drunk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drank alcohol in lifetime</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Had multiple sexual partners in last 3 months</td>
<td></td>
</tr>
<tr>
<td>Cluster Eight</td>
<td>Walked alongside road drunk</td>
<td>Total = 35</td>
</tr>
<tr>
<td></td>
<td>Drank alcohol in lifetime</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Walked alongside road after dagga use</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smoked dagga in lifetime</td>
<td></td>
</tr>
<tr>
<td>Cluster Nine</td>
<td>Carried a weapon</td>
<td>Total = 13</td>
</tr>
<tr>
<td></td>
<td>Fought</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Used mathematical compass as weapon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Threatened another person</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slapped partner</td>
<td></td>
</tr>
</tbody>
</table>

..... Table II continued on page 30
Ethics
Ethical approval was obtained from the University of Cape Town (FHS HREC REF: 075/2010). To gain access to the learners, permission was requested and obtained from the Ministry of Education and Training through the office of the Chief Inspectorate-Secondary and the Principals of the selected schools.

The Sesotho version of the parent consent forms and information sheets were issued and data collection appointments set. The majority of the learners did not return the consent forms while some parents declined reducing the potential number of participants. The principals indicated that they were regarded as legal guardians of the learners while at school. Therefore, they deemed it unnecessary to seek parental consent. However, due to the requirements of the university parental consent was sought. The Sesotho version of information sheets and assent forms were given to the learners. Learners who did not give assent, or were denied parental consent or those who were absent on the day of data collection were excluded from the study.

FINDINGS
Tobacco use was analysed and reported using gender and age of initiation. In accordance with the objective of this paper the findings presented will focus on tobacco use amongst school going adolescents, showing the extent and nature of use. In this study, tobacco use referred to smoking cigarettes or rolled tobacco and using snuff as these are the most prominent methods of use among youth in Lesotho. Tobacco is neither grown nor packaged in Lesotho, therefore tobacco products are imported but the products remain easily accessible to adolescents and preteens. Frequencies of tobacco use are illustrated in Table III below.

Smoking was the most predominant form of tobacco use, particularly among males, as depicted in Table III below. 15% of the participants reported tobacco use as current occupational performance, with 12.2% admitting to smoking and 2.8% using snuff on a number of days per month. The age of initiation of smoking was used to establish the percentage of participants who had smoked in a lifetime, regardless of whether they had stopped or not, as captured in Table IV below. 19.6% (N=220) of the participants had smoked in a lifetime. In terms of gender distribution, 25.1% (N=42) of the early initiators were female and close to three quarters (74.9%, N=125) were male. Those participants who started using tobacco at 8 years of age or younger, accounted for 6.8% of those who had smoked in a lifetime. Smoking among females is frowned upon in Lesotho; perhaps contributing to the smaller percentage of girls that reported to have smoked. The use of snuff is perceived to be an occupation of adulthood or old age and more common among females than males, hence use of snuff was reported by a small percentage of participants.

Tobacco use among 13-15 year old learners in Lesotho was studied in 2002 and 2008 using the Global Youth Tobacco Survey (GYTS). The findings in 2008 showed an overall smoking prevalence of 22.3% and current tobacco use was reported by 10.1% of the participants.43 In this study tobacco use constituted current occupational performance for 15% of the participants and almost one in five learners (19.6%) had smoked in a lifetime. Current use for this study was 5% higher than the national prevalence among 13-15 year olds. This could be due to the higher age bracket applied in this study and the environment of the city of Maseru. The environment of Maseru presses for certain behaviours associated with lifestyles modelled as desirable.

Table III: Percentages of participants who used tobacco

<table>
<thead>
<tr>
<th>Risk behaviour</th>
<th>% of male participants (N=559)</th>
<th>% of female participants (N=562)</th>
<th>% of participants (N=1121) engaged in behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoked in a lifetime</td>
<td>15.4</td>
<td>4.2</td>
<td>19.6</td>
</tr>
<tr>
<td>Smoked between 1 and 30 days in past 30 days</td>
<td>19.9</td>
<td>4.5</td>
<td>12.2</td>
</tr>
<tr>
<td>Smoked at school in past 30 days</td>
<td>6.6</td>
<td>0.9</td>
<td>3.8</td>
</tr>
<tr>
<td>Used snuff between 1 and 30 days in past 30 days</td>
<td>2.2</td>
<td>3.4</td>
<td>2.8</td>
</tr>
<tr>
<td>Used snuff at school in past 30 days</td>
<td>0.5</td>
<td>1.8</td>
<td>1.2</td>
</tr>
<tr>
<td>Passive smoking in past 7 days</td>
<td>61.6</td>
<td>53.8</td>
<td>57.7</td>
</tr>
<tr>
<td>Have a smoking guardian</td>
<td>71</td>
<td>72.2</td>
<td>71.6</td>
</tr>
<tr>
<td>Did not try to stop smoking</td>
<td>3.4</td>
<td>0.7</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Table IV: Age of onset

<table>
<thead>
<tr>
<th>Age of onset</th>
<th>Number of male participants</th>
<th>Number of female participants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never smoked</td>
<td>385</td>
<td>515</td>
<td>900</td>
</tr>
<tr>
<td>&lt; 8 years old</td>
<td>31</td>
<td>14</td>
<td>45</td>
</tr>
<tr>
<td>9-10 years old</td>
<td>52</td>
<td>14</td>
<td>66</td>
</tr>
<tr>
<td>11-12 years old</td>
<td>42</td>
<td>14</td>
<td>56</td>
</tr>
<tr>
<td>13-14 years old</td>
<td>21</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>15-16 years old</td>
<td>13</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>17 and older</td>
<td>14</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>TOTAL</td>
<td>558</td>
<td>562</td>
<td>1120</td>
</tr>
</tbody>
</table>
Despite the lower lifetime prevalence of smoking (19.6%) among the participants as compared to the US, where the overall prevalence in having smoked was 46.3% and 29.5% for South Africa the high percentage of early initiators is a grave concern. More than one in five (24.1%) of those participants who had smoked in a lifetime had started before the age of 13 compared to only 10.7% in the US. In South Africa 6.8% of the smoking learners initiated before the age of 10. This could suggest that learners in Lesotho are more likely to suffer longer term consequences associated with tobacco use as they initiate tobacco use early.

Risk behaviours often co-occur and the consequences of concurrent engagement can be severe. Using tobacco could also expose the learner to other substances or other risk behaviours. A significant association was found between smoking cigarettes or rolled tobacco and alcohol and dagga use (p = 0.00). An association was also established between smoking and gambling (p = 0.00). The nature of the associations requires further exploration as some may be causal and others may just increase the chances of participation in an additional risk behaviour. In this study the association showed co-occurrence; those that smoked also used alcohol or dagga or gambled.

3.8% reported smoking at school. The risk associated with smoking at school was the likely exposure of others to second hand smoke. Although this (3.8%) appears to be a small percentage, it is considerable given the consequences of second hand smoke. More than half of the participants were exposed to second hand smoke (57.7%). Although alarming, this was not surprising, given that 71.6% of the participants’ guardians smoked. Therefore, participants were likely to be exposed to second hand smoke at home or when with their guardians (p = 0.00), at school and on the way to and from school, thereby increasing the risk of contracting illnesses associated with passive smoking.

**Concurrent engagement in risk behaviours**

Concurrence in this paper refers to current engagement in multiple risk behaviours. Less than half (41.4%) of the participants participated in six or more risk behaviours concurrently and 55.9% engaged in between one and five risk behaviours. 2.7% reported not taking part in any form of risk behaviour. Concurrent engagement in risk behaviours is a concern for occupational therapy as substance use related behaviours were the most prevalent and a strong association between these and tobacco use was found.

Tobacco use dominated clusters with the most number of participants engaging in multiple risk behaviours as depicted in Table IV. However, the analysis was not intended to be exhaustive, rather it focused on behaviours that have the most concerning consequences on health and well-being, hence the reported clusters represented only 15.2% of the sample. The highest number of behaviours participated in was 21, and 3 male participants engaged in these behaviours. Table V below presents clusters of behaviours that were found to co-exist, with tobacco use being the common denominator. A more detailed account of other clusters may be found in Ramafikeng.

**DISCUSSION**

Literature shows that tobacco use as previous and current occupational performance adversely impact performance in other occupational performance areas, particularly learning as it affects cognitive ability. A study in China found that smoking one cigarette per day reduced learners’ mathematical abilities. This may have been due to biological alterations that result in reduced learning ability; nicotine results in damage to the brain and limits cognitive abilities resulting in poorer academic performance. Learners in this study are also susceptible to poor academic performance due to tobacco use.

In addition to direct impact on occupational performance in various areas, the concurrent existence of tobacco use with other risk behaviours poses a threat to health and well-being. This co-occurrence places high school learners at a higher risk of experiencing the burden of disease and injury. For example, the co-occurrence of behaviours in Cluster three predisposes learners to substance dependence and the risk of contracting sexually transmitted diseases. A country, such as Lesotho and many others, already confronted with extreme poverty, food shortage and HIV/AIDS cannot ignore the threat to health and wellbeing as a consequence of these clusters of risk behaviours. This threat impacts the youth; the most productive age group that has to contribute to the economy of countries. Lesotho envisions a healthy human resource base by the year 2020 and this could be threatened by current trends in tobacco use among other burdens of disease. Those who initiate tobacco use at a young age are at a higher risk of ill health. In this study, about 24.1% of those who had smoked in a lifetime started before the age of 13 with some (6.8%) starting as early as 8 years or younger. The long term physical and psychological consequences of tobacco use are undesirable and potentially life threatening and early initiators are at a higher risk given the prolonged use. A study conducted among adolescent girls showed that girls who initiated smoking early we more likely to also engage in other health risk behaviours such as alcohol and marijuana use as well as having unprotected sexual relations. Moreover, the prevalence of having multiple sexual partners was 4% among the participants as compared to the US, where the overall prevalence in having a single sexual partner was 31%.

Table V: Behaviour clusters concurrent with tobacco use

<table>
<thead>
<tr>
<th>Cluster One</th>
<th>Co-occurring behaviours</th>
<th>Number of participants engaged in behaviours concurrently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster One</td>
<td>Cigarettes smoked per day Drank alcohol in lifetime Drank in past month Binge drunk Fought</td>
<td>Total = 31</td>
</tr>
<tr>
<td>Cluster Two</td>
<td>Days smoked Drank alcohol in lifetime Drank in past month Binge drunk Smoked dagga in lifetime Smoked dagga last month Drank in the past month</td>
<td>Total = 29</td>
</tr>
<tr>
<td>Cluster Three</td>
<td>Days smoked Drank in the past month Had sexual intercourse Smoked dagga last month Had multiple sexual partners in last 3 months</td>
<td>Total = 9</td>
</tr>
</tbody>
</table>
through advocacy, mediation and occupation-based programs, enabling people to do, be and become according to their needs.” By implementing an occupation-based health promotion approach, occupational therapists can play a significant role in preventing tobacco use and denormalising tobacco use amongst communities using occupations. For instance, occupational therapists could collaborate with communities to explore participation in other occupations instead of tobacco use.

Interventions where occupational therapists have been instrumental in addressing public health issues such as obesity could be used as a point of reference for designing intervention for tobacco use. For example, strategies such as education, adaptations to the environment and introducing and adapting occupations guided by a health promotion approach have been found to be effective in reducing the impact of obesity34. In addition, as an addictive substance, intervention for tobacco use could follow similar principles to intervention designed for other addictive substances even though the impact on activities of daily living may manifest differently from that of other substances. Rojo-Mota et al53, suggested that functional rehabilitation should be a fundamental component of the treatment of tobacco use and occupational therapists are equipped with the skills for improving function in daily activities. Intervention must also be reconceptualised to target multiple risk behaviours rather than be directed at single behaviours. A systematic review conducted by Hale et al on effective interventions for reducing multiple health risk behaviours in adolescence highlighted that “targeting multiple risk behaviours simultaneously is more effective and efficient than targeting single risk behaviours”32,33,19. This integrated approach is what is needed for the participants in this study rather than the single behaviour approach being used, where for instance there are prevention as they also engaged in co-occurring behaviours. For example, in the design on intervention for and addressing substance use, this could include tobacco use.

CONCLUSION

It is evident from the findings that given the age of initiation and current reported use, tobacco use is best defined as a paediatric public health challenge. Occupational therapists should be alert to this public health concern as early onset of tobacco user has implications for the physical, psychological and the occupational wellbeing of the individual. Initiating tobacco use at an early age has also been found to be a predictor of co-occurring behaviours and the consequences thereof. Design of intervention aimed at delaying initiation of tobacco use would be more beneficial. Often when occupational therapy service users report tobacco user, this is classified as an unhealthy habit that is often not considered when planning intervention. This paper advocates for occupational therapy contribution in intervention aimed at cessation and prevention of tobacco use, particularly among children and youth.

This paper has highlighted that occupational science and occupational therapy have a contribution to make to the way in which this pandemic is addressed. However, further research, exploring the effects of tobacco on other occupational performance areas, particularly for adolescents is urgently needed. Tobacco use is a public health emergency and a paediatric illness that occupational therapists can contribute to using occupation-based cessation and prevention interventions.

At a macro level, occupational therapists, adopting an occupational perspective can contribute to public policy on tobacco control initiatives.

Strengths and limitations

The strength of this study is that it was ground-breaking, as a study of this nature had previously not been conducted in Leshoto. However, there were limitations. Gaining consent from the parents was a challenge. This resulted in the process of data collection being drawn out while waiting for consent to be granted. In instances where learners were 18 years and older, they were asked to give consent.
Honesty and accuracy might have been compromised for data from two schools, because the classes were overcrowded and learners had to share desks, thereby maybe influencing each other’s responses. However, the integrity of all the data collected was not compromised as this only happened in two schools.

Another limitation could have been self-reporting bias. To reduce this, emphasis was put on anonymity, voluntary participation and honesty in reporting. In addition, school personnel were not present in the room when participants were filling in the survey.

A possible source of errors could have been the modifications in the questionnaire as a result of not testing for reliability and validity. It is therefore a recommendation for the future use of the tool that it be tested for reliability and validity.

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DECLARATION OF INTEREST

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

REFERENCES


### Lesotho Youth Risk Behaviour Survey - 2010

**Section E: The following questions are about tobacco use**

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
</table>
| 50. How old were you when you first smoked rolled tobacco (BB) or a cigarette? | A. I have never smoked rolled tobacco or a whole cigarette  
B. 8 years old or younger  
C. 9 or 10 years old  
D. 11 or 12 years old  
E. 13 or 14 years old  
F. 15 or 16 years old  
G. 17 years old or older |

| 51. During the past month (30 days), on how many days did you smoke cigarettes or rolled tobacco (BB)? | A. 0 days  
B. 1 or 2 days  
C. 3 to 5 days  
D. 6 to 9 days  
E. 10 to 19 days  
F. 20 to 29 days  
G. All 30 days |

| 52. During the past month (30 days), on the days you smoked, how many cigarettes did you smoke per day? | A. I did not smoke cigarettes during the past 30 days  
B. Less than 1 cigarette per day  
C. 1 cigarette per day  
D. 2 to 5 cigarettes per day  
E. 6 to 10 cigarettes per day  
F. 11 to 20 cigarettes per day  
G. More than 20 cigarettes per day |

| 53. During the past month (30 days), how did you usually get your own cigarettes? (Choose only one answer.) | A. I did not smoke cigarettes during the past 30 days  
B. I bought them in a store, supermarket, spaza, petrol station or from a street vendor  
C. I asked someone who smokes  
D. I gave someone else money to buy them for me  
E. I borrowed them from someone else  
F. A person 18 years old or older gave them to me  
G. I took them from a store or family member  
H. I got them some other way |

| 54. During the past 30 days, on how many days did you smoke cigarettes at school? | A. 0 days  
B. 1 or 2 days  
C. 3 to 5 days |

| 55. During the past year, have you ever tried to stop smoking? | A. I have never smoked  
B. I did not smoke during the past 12 months  
C. Yes, I tried to stop smoking  
D. No, I did not try to stop smoking |

| 56. During the past month (30 days), on how many days did you use snuff? | A. 0 days  
B. 1 or 2 days  
C. 3 to 5 days  
D. 6 to 9 days  
E. 10 to 19 days  
F. 20 to 29 days  
G. All 30 days |

| 57. During the past 30 days, on how many days did you use snuff at school? | A. 0 days  
B. 1 to 2 days  
C. 3 to 5 days  
D. 6 to 9 days  
E. 10 to 19 days  
F. 20 to 29 days  
G. All 30 days |

| 58. During the past week (7 days), how many days have people smoked in your presence? | A. 0 days  
B. 1 to 2 days  
C. 3 to 4 days  
D. 5 to 6 days  
E. 7 days |

| 59. Do your parents/guardians smoke? | A. Both my parents / guardians do not smoke  
B. Both my parents / guardians smoke  
C. Only my father / male guardian smokes  
D. Only my mother / female guardian smokes  
E. I don’t know |