KNOWLEDGE ABOUT SMOKING AMONG HIGH SCHOOL LEARNERS

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Abstract

Introduction
Individuals continue to smoke despite knowledge about dangers of smoking. It is imperative that knowledge about factors
that determine smoking and ways of preventing smoking be investigated.

Objectives
The objective of the study was to investigate knowledge about dangers of smoking, sources of information on smoking, impact of smoking on economy, determinants of smoking and strategies to prevent smoking among grade twelve learners.

Methods
This paper reports on selective concepts of a larger cross-sectional descriptive survey.

Participants
All learners who gave informed consent and who were enrolled during 2001 as grade twelve learners at the three selected
schools (n=452), were recruited to participate in the survey.

Setting
The study was done in the multi-cultured community of Tshwane South Education District located in Gauteng Province. The
district was divided into three strata. One school was selected randomly from each stratum.

Intervention
A self-administered questionnaire.

Results
There were 401 (89%) returned questionnaires. Overall 104 (26%) of learners were current smokers. Information about
smoking was grouped as follows: dangers of smoking (lung disease, cancer, mortality etc); sources of information
(media, school, health care professionals etc); determinants of smoking (stress, experimentation, status and media) and
strategies (awareness campaigns, policies, self control etc).

Conclusion
Despite knowledge, smoking among grade 12 learners continues. Appropriate health promotion interventions should be
based on the needs of the learners.

Keywords
Knowledge, smoking, high school learners.
Introduction
Knowledge is defined as an intellectual acquaintance with “facts,” truth, or principles gained by sight, experience, or report (Simon-Morton, Greene & Gottlieb, 1995). Acquisition and production of knowledge follow empowerment in the health promotion activities and further, this process requires consideration of the cultural background in changing behaviour of the individuals (Aihihenbuwa, 1995). Several studies reported that individuals have knowledge about smoking. In the study of cigarette smoking among high school boys in the developing countries, all students group were found to be aware that smoking was a risk factor for lung cancer, respiratory diseases and ischemic heart diseases (Bener & al-Ketbi, 1999). The majority of smokers (97.6%) and non-smokers (94.8%) in Mexico, indicated that that cigarette smoking is damaging to individuals’ health whilst 90% of the smokers are trying and intending to quit smoking (Tapia- Conyer, et al, 1997). Current smokers in Sierra Leone reported that they were less aware of the health hazards of smoking whilst the majority of previous smokers indicated that they stopped the behaviour because they thought it was bad for their health (Abul & Lisk, 1995). In South Africa, students (33%) reported that they were taught in school about the dangers of the use of tobacco (Warren, et al, 2000). However, the above mentioned findings reported the following similarities: individuals have knowledge about smoking (Bener & al-Ketbi, 1999; Tapia-Conyer et al, 1997; Abul & Lisk, 1995; Warren, Riley, Asma, Erikson, Blanton, Batchelor, & Yach, 2000) and are aware of the health hazards (Bener & al –Ketbi, 1999 and Tapia–Conyer et al. 1997). The findings reported the following differences: Nearly equal number of smokers and non-smokers know about the hazards of smoking (Tapia –Conyer et al, 1997), current smokers and previous smokers had different level of knowledge about smoking (Abul & Lisk, 1995) whilst in South Africa it was reported that 33% of the students received information on smoking in school (Warren et al, 2000). Knowledge production and acquisition on health behaviour change take place in different settings. The five major settings for health promotion are: schools, communities, worksites, health care facilities and consumer market places. Health knowledge acquisition in school takes place in the classroom, teacher training and socio-environmental teaching that supports healthy lifestyles (Glanz, Marcus, Lewis & Rimer, 1997). Smoking is a risky behaviour and further, young people start smoking at a very young age. The average age for smoking initiation was found to be ten years or under in the Global Youth Tobacco Survey in 1999 (Swart, 2001). Siemiska, Jassem, Konopa, Damps and Slomiski (2000) reported that the average age of smoking initiation in Poland was 13 years for boys and 15 years for girls. These latter findings reported similarities that young people start smoking before the age 16 years. This is a source for concern because legally individuals have access to tobacco products after the age of 16 years (Tobacco Products Control Amendment Act, 2000). Health behaviour is defined as those personal attributes such as beliefs, expectations, values, attitudes, perceptions and so on that relate to health maintenance, health restoration and health improvement (Glanz et al, 1997).

There are three categories of health behaviour:

Preventive health behaviour:
It is any action taken by individuals who believe to be healthy but wanting to prevent or detect the illness before show of the symptoms.

Illness behaviour
Actions taken by individuals who perceive themselves, to be ill in order define their health status in order to get the suitable remedy.
Sick role
Actions taken by individuals who consider themselves, to be ill in order to get help from the health care providers. It includes taking medications, dependence to medical interventions and exemption from the independent usual responsibilities.

The latter synopses share the similarities of getting outcomes of behaviours (i.e. prevent illness, define the health status and get treatment and care) whilst the differences are: asymptomatic state, diagnosis and lastly, treatment and care (Glanz et al., 1997). Therefore the smoking behaviour can be at any of the categories and individuals deserve to receive an intervention despite this. It is imperative that any intervention that is planned an implemented for changing the smoking behaviour should be preceded by knowledge identification.

Method
Research setting
The research was conducted in the Tshwane South Education District, a multi-cultured (i.e. Africans, White, Coloured and Indians) community of Tshwane Metropolitan in Gauteng Province of South Africa. The Tshwane South Education District is one of the twelve education districts in Gauteng province and the third in the Greater Tshwane Metropolitan. There are forty public schools in this district.

Research design
This paper is a report of a selected component of research within a larger study. It employs a cross-sectional descriptive survey to describe knowledge of dangers of smoking, knowledge of sources of information, knowledge of impact of smoking on economy, factors that determine smoking and the preventive strategies among the grade twelve learners of randomly selected public high schools of the Tshwane South Education District.

Sample and procedure
The study population involved grade twelve learners from the ages sixteen to the age of twenty-five who were enrolled in grade twelve class of 2001 academic year. A multi-stage sampling technique was used. Firstly, Tshwane South was divided into three strata (i.e. eastern suburbs i.e. predominated by Whites, Laudium for Indians and Mamelodi for Black Africans). Secondly, one school was selected randomly from each stratum to get a total of three high schools. Finally, a convenient sampling technique was used and a total of (n=452) grade twelve learners were recruited into the study.

Calculation of sample size
Assuming a smoking prevalence of 25% (from national data), a sample of 300 would be sufficient to estimate the smoking prevalence to within approximately 5%, using 95% confidence limits. Grade twelve learners who were present at three schools on the days of data collection and willing to participate were included. We therefore recruited 452 to ensure that we will be able to detect a difference.

Instrument
A self - administered questionnaire comprising of mostly open-ended questions was used to gather the information. Closed ended questions were included. The questionnaire was developed in English and consisted of 25 items of the main study. English was used because it was the medium of instruction in all the schools. The particular area of study obtained the following information: race, age, gender, reception of dangers of smoking on individual smokers and non-smokers, reception of impact of smoking on the economy, knowledge of impact of smoking on the
economy, knowledge of dangers of smoking, knowledge of sources of information on smoking, knowledge of socio-environmental factors determining smoking and the preventive strategies. The questions were developed based on literature (Smith & Umneni, 2000).

Data collection
A questionnaire was completed by grade twelve learners on three consecutive days after school for a period of thirty (30) minutes.

Validity and reliability of the instrument
Measures taken to enhance the validity and reliability of the study included: approval of a questionnaire by the Post graduate Committee of the University of the Witwatersrand; the content in the questionnaire was phrased in such a way that they displayed neutrality (Lee, 1993); the questionnaire was piloted on grade twelve learners of a high school in Ga-Rankuwa, a township in the North-West Province. All unnecessary and ambiguous questions were removed following results of the pilot study. The researcher oversaw the administering of the questionnaire. Participants were instructed not to write their names, nor school name or any form of identification on the questionnaires. They were also told to place the questionnaire inside an envelope after completion, and drop it in a box that was provided. Each completed questionnaire was given a response number starting from one.

Ethical considerations
The researcher obtained individual consent (i.e. from learners who were over 18 years old), parental consent (for learners who were below 18 years old) and institutional consent (from Gauteng Education Department and Tshwane South Education District) as well as ethical and protocol approval from the Ethics and Postgraduate Committees of the University of the Witwatersrand. Participant confidentiality and anonymity were upheld throughout the study.

Data analysis
The questionnaires were coded and data entered into a computer using Epi Info version 6 (1995). Descriptive statistical analysis was used.

Results
Of all the 452 questionnaires distributed, 401 questionnaires were returned; yielding a response rate of 89%. The mean age for all learners was 18 years (SD=1.2, range, 16 - 25 years). More females than males participated in the study 237 (59%) vs 164 (41%) males (Figure 1). The total number of smokers was (26%, 104/401) (Table 1).

Demographic data of participants
Table 1 Smoking state by school

<table>
<thead>
<tr>
<th>School</th>
<th>Non-smoker</th>
<th>Smoker</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>2</td>
<td>113 (83%)</td>
<td>23 (17%)</td>
</tr>
<tr>
<td>3</td>
<td>85 (56%)</td>
<td>67 (44%)</td>
</tr>
<tr>
<td>4</td>
<td>99 (67%)</td>
<td>14 (12.4%)</td>
</tr>
<tr>
<td>Total</td>
<td>297 (74%)</td>
<td>104 (26%)</td>
</tr>
</tbody>
</table>

- 33 -
All the racial groups were found within each school, the African group accounted for 56% (226) of the total population (Figure 2). 95% of the learners heard of the dangers of smoking whilst 85% of them heard of dangers of passive smoking (Table 2). Table 3 shows whether or not the learners have heard of the negative impact of smoking on the economy of the country and results are given by smoking status. There is a significant relationship between the response to the question and the smoking status (p =0.001).
Table 3  Heard of the negative impact of smoking on the economy

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Don't Know</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>(%)</td>
<td>n</td>
<td>(%)</td>
</tr>
<tr>
<td>Non-smoker</td>
<td>107</td>
<td>(37%)</td>
<td>80 (28%)</td>
<td>100  (35%)</td>
</tr>
<tr>
<td>Smoker</td>
<td>32</td>
<td>(31%)</td>
<td>49 (48%)</td>
<td>22    (21%)</td>
</tr>
<tr>
<td>Total</td>
<td>139</td>
<td>(36%)</td>
<td>129 (33%)</td>
<td>122  (31%)</td>
</tr>
</tbody>
</table>

Furthermore, learners were able to express their knowledge about the impact of smoking on economy of the country as follows:

"People in parliament die and we lose them".
"If people experience a lot of cancer it means many people cannot work / who will work if everybody is sick"?
"People get sick and the state has to provide and pay for expensive treatment".
"Many people are sick in hospitals because of diseases caused by cigarettes and this affects development of the economy".
"People waste their money on cigarettes / smoking causes financial problems".
"Many people die from smoking and if you find that the youth are smoking you sometimes ask yourself whether they might live up to the age of 80 years".
"Many people get diseases".
"Because many people will die and it would mean more cost in terms of government expenditure".
"Cigarettes cause poverty in other areas".
"Because it kills people who are educated and our economy will become poor and differ from other countries".

These responses were categorised into five themes (illness, death, cost of health, causes poverty and waste of money).

Learners further named the dangers of smoking as follows (Table 4):

- Lung cancer
- Lung disease
- Cancers of mouth
- Heart diseases
- Danger to pregnancy
- Death
- Breast cancer
- Affects the brain
- Affects sexual performance

These dangers were grouped into the following; lung diseases, cancer, heart diseases, unsafe for pregnancy, impotence and mortality. The participants named the following sources of information for smoking (Table 4):

- Radio
- Newspaper and magazine
- Cigarette package
- School
- Parents and relatives
- Health professionals
- Church
- Internet
- Smokers who were known by the learners.

Forty-eight percent of the learners knew that television and radio were the most sources of information on smoking (Table 4). Sources of information were categorised into the following groups: media, school,
health care professionals, family and community. Learners identified factors that determine smoking as follows:

- Peer pressure
- Stress
- Wanting to belong
- Fitting in
- Experimentation
- Adults
- Status
- Media
- Availability
- Movies
- Adverts

Table 4: Knowledge about smoking

<table>
<thead>
<tr>
<th>Knowledge about dangers of smoking</th>
<th>Knowledge about sources of information on smoking</th>
<th>Knowledge about the determinants of smoking</th>
<th>Knowledge about the strategies for prevention of smoking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Danger</td>
<td>Source</td>
<td>Factor</td>
<td>Strategy</td>
</tr>
<tr>
<td>Lung cancer</td>
<td>Newspaper &amp; magazine</td>
<td>Peer pressure</td>
<td>Awareness</td>
</tr>
<tr>
<td>Lung disease</td>
<td>Cigarette pack</td>
<td>Stress</td>
<td>Sport</td>
</tr>
<tr>
<td>Cancers of mouth</td>
<td>School</td>
<td>Wanting to belong</td>
<td>Policies</td>
</tr>
<tr>
<td>Heart diseases</td>
<td>Parents</td>
<td>Experimenting</td>
<td>Stop sale</td>
</tr>
<tr>
<td>Danger to pregnancy</td>
<td>School</td>
<td>Adults</td>
<td>Stop production</td>
</tr>
<tr>
<td>Death</td>
<td>Church</td>
<td>Status</td>
<td>Show them sick people</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>Internet</td>
<td>Media</td>
<td>Will power</td>
</tr>
<tr>
<td>Affects the brain</td>
<td>Smokers</td>
<td>Availability</td>
<td>Recreation</td>
</tr>
<tr>
<td>Affects sexual performance</td>
<td></td>
<td></td>
<td>Acceptance</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Counselling</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Self discipline</td>
</tr>
<tr>
<td>Total</td>
<td>*769 Total</td>
<td>*473 Total</td>
<td>*404 Total</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*188</td>
</tr>
</tbody>
</table>

*If the total N is not 401 then participants named more than one answers or less than a sample size responded to the question.

Forty three percent of the learners reported that peer pressure was the most cause of smoking among their peers (Table 4). The responses were grouped into the following themes: stress, experimentation, status and media.

Learners mentioned the strategies for prevention of smoking as follows:

- Awareness
- Sport activities
- Apply strong policies
- Stop selling cigarettes
- Stop producing cigarettes
- Show them a sick person
- A will-power
- Recreation
- Acceptance
- Counselling
- Self discipline
- Exempt from stress
Awareness of smoking effects (21%) was the most identified strategy (Table 4). The responses were categorised into the following groups: Health awareness campaigns, policies, self control, sport, counselling and evidence based teaching.

Discussion

It is concerning to see that nearly one third of the learners are smoking whilst over 90% of them heard about the dangers of smoking on an individual and to the non-smokers. It is possible that having heard of the dangers of smoking shows reception of information. Simon-Morton et al. (1995), report that the mechanisms through which messages are interpreted and stored in memory are complex and poorly understood. As such, individuals are capable of consciously considering a great number of health promotion messages and purposefully responding or not responding to them. Hence it is not surprising that the reception of information may either encourage or discourage smoking.

It is disappointing that that less than fifty percent of the learners heard of the negative impact of smoking on the economy of the country. As such, it is worth noting that a grade twelve learner is preparing to enter into the world of work and should have received information on this perspective. In Japan, majority of non-smokers had poor knowledge on the economic impact of tobacco (Smith & Umenai, 2000). Although the findings in this study reported reception of information on impact of smoking on economy, there other difference is that smokers and non-smokers had nearly equal opportunities of receiving the information (in this study) whilst non-smokers had little knowledge about impact of smoking on economy (Smith & Umenai, 2000).

Most learners were able to identify different sources of information on smoking. More than one third of them named media as a source of information. The findings in this study were consistent with the results of Bener & al-Keibi (1999) because in their study, media (35%) was reported to be the major source of information on health effects of smoking. Al-Fariss (1995) also supported these findings by stating that the media was the primary source of knowledge. More than one third of the learners reported that cigarette packs were the source of information. In South Africa, 40% of smokers surveyed in a national study, reported that health warnings on tobacco products made them quit or cut down smoking (Reddy, Meyer-Weitz, Abedian, Steyn & Swart 1998). These findings have similarities because over thirty three and half percent of the participants found the health warnings on the tobacco products to be resourceful (in this study & Reddy, Meyer-Weitz, Abedian, Steyn & Swart, 1998). Schools were likely to be one of the information centres regarding smoking. It is worrying because less than one fifth of the learners listed school as information centre for smoking. A school is a site of learning and the tripartite ministries in South Africa (i.e. Education, Health and Social welfare) support the health promoting schools initiative. Further, the curriculum through life skills education is tailored to meet the challenges of everyday life for the learners (Department of Health Promotion, Education & Welfare, 2000). Parents and families also fall under the same percentile as school regarding informing learners about smoking. This is a source for concern because families are the primary source of care and support for children. South Africa is challenged by its socio economic status in particular due to HIV & AIDS because many children are left behind without the support and supervision of adults with the oldest member of the family being under the age of 18 years (Skweyiya, 2005). Census 2001, reported that the
total households headed by children under the age of 19 years was 248,424. As such, these children grow up in an environment which does not provide them with the knowledge, attitudes, values and skills that empowers to face the challenges of risky lifestyles such as smoking. It is shocking that the health care professionals including nurses and doctors were amongst the least sources of information. The findings in this study are supported by Bener & al–Ketbi (1999) who reported that doctors were considered one of the sources of information by 19% of the respondents and al-Faris (1995) reported 45% of the respondents. These findings call for support to uphold one of the key components of health promoting schools by integrating health promotion approaches addressing factors that place learners at risk (Department of Health promotion, Education & Welfare, 2000). Lastly, internet and smokers were named as other sources of information about smoking. It should be noted that only a few learners would have access to the internet, and also not all learners had friends who are smokers. Given the fact that nearly fifty percent of the learners were able to list lung diseases and lung cancer as the dangers of smoking, we realize that knowledge does not translate into behaviour change due the existing number of smokers in this study. Bener & al–Ketbi (1999) and Leonardo (1996) reported similar results on the damaging effects of cigarette because they indicated that lung diseases 46% were the most commonly known dangers of smoking. Health behaviour is determined by different factors such as personal, environmental, social cultural and so on (Simon–Morton et al, 1995). Over forty percent of the learners reported that peer pressure influenced them to smoke. As important as knowledge about smoking is in this study, knowledge about the strategies that can be used to prevent smoking among learners was asked. Learners gave different approaches of preventing smoking among learners. Therefore it is important for policy makers, teachers and health care professionals to plan health promotion interventions based on the needs of the learners.

Conclusion
The study is limited by the fact that a small number of Coloured learners participated in the study. Learners were able to name dangers of smoking, sources of information for smoking, impacts of smoking on economy, determinants of smoking and strategies for prevention of smoking.

Implications for practice
2006 marked the first decade of the health promoting schools initiative in South Africa. Therefore, it is recommended that the appropriate health promotion interventions be used based on the needs of the learners.

References


