New Smokers and Quitters Transitions in Smoking Status in a National Population

By Willemsen MC, Hoogenveen RT, Lucht FVD

Pasha AKMMK

Abstract

Background: Few studies have examined individual transitions in smoking status in national populations.

Methods: A representative sample of 21,970 men and women aged 15-64 were questioned regarding current smoking status and smoking status of 12 months ago.

Results: 1.6% of respondents had started to smoke and 1.6% had quit smoking. Becoming a smoker was significantly associated with younger age and lower social economic status (SES). Among women, many new smokers were between the age of 30 and 34, presumably due to relapse after pregnancy. High SES smokers quit at a younger age than lower SES groups.

Conclusion: To reduce smoking prevalence in the Netherlands, more attention should be given to women aged 30-34 years and to people from the lower SES groups, especially those under the age of 45.

National institute of Public Health and the Environment (RIVM), P.O. Box 16070, 2500 BB The Hague, The Netherlands, tel. +31703120413, fax +3170 3120495, e-mail; mwillemsen@defacto-rookvrj.nl

Introduction

One of the key messages of evidence based medicine is: "Don't believe everything you read." This means that you need to evaluate or critically appraise the quality of the research that you find. Critical appraisal is a systematic process used to identify the strengths and weaknesses of a research article in order to assess the usefulness and validity of research findings[1]. The most important components of a critical appraisal are an evaluation of the appropriateness of the study design for the research question and a careful assessment of the key methodological features of this design. Other factors that also should be considered include the suitability of the statistical methods used and their subsequent interpretation, potential conflicts of interest and the relevance of the research to one's own practice.

The world is in the midst of a smoking epidemic. WHO stated that "If we don't work right now, tobacco-borne diseases will kill more than 8 million people every year globally by 2030. More than 80% of these preventable deaths will be among people living in low and middle-income countries[2]."

Bangladesh is one of the largest tobacco consuming countries in the world. Over 58% of men and 29% of women use some form of tobacco. In 2012, an estimated 46.3 million adults used some form of tobacco product, smoked or smokeless. In Bangladesh cigarette smoking including adolescent smoking has raised by over 40% between 1997 and 2010. Bangladesh faces considerable health and economic consequences from tobacco. Over 57,000 deaths are attributed to tobacco use each year, about one in six of all deaths among Bangladeshis 30 years and older. In 2004, nearly 51 billion taka was spent to treat the diseases caused by smoking, including 5.8 billion taka spent to treat non-smokers exposed to tobacco smoke. In addition, the economic costs of tobacco use in Bangladesh accounted for over 3% of GDP in 2004[3].

With this backdrop, an epidemiological study conducted in the Netherlands, titled "New Smokers and Quitters - Transitions in smoking status in a National Population", which was published in European Journal of Public Health in 2002 has been chosen to be critically apprised.

Objective

This critical appraisal aims to identify methodological flaws in the literature and to provide opportunity to make informed decisions about the quality of research evidence.

Scope

Scopes of this critical appraisal are:

- To ensures a comprehensive assessment of the whole paper
- To identify the strengths and weaknesses of research
- To develop an improved understanding of the research methodology used
- To relate the published research to the local situation prevailing in Bangladesh
- To identify any bias in the research
- To facilitate the implementation of effective interventions in clinical practice

1. **Maj Gen AKM Mustafa Kamal Pasha**, *SPP, ndc,* MPhil (Strategy & Development Studies), MPH (Epidemiology), Commandant, Armed Forces Medical College, Dhaka Cantonment.

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Critical Appraisal

Abstract: A well-written and compact abstract concisely touched upon background, methods, results, conclusions and recommendations. But clear mentioning of objective(s) of the study was not there.

Title: Title is focused and self explanatory but hypothetical. As we know, a hypothesis is a prediction of a relationship between one or more factors and the problem under study (Dependent variable). Here prediction of transition of smoking status is being tested on the basis of new smokers and quitters. In relation to the new smokers and quitters, transition in smoking status may only be observed, if new smoker increases against quitters or in spite of quitting no new smokers have been added to the list. On the other hand, there will be no transition, if there is no change in the status of new smokers and quitters i,e. if both the variables remain unaltered or number of new smokers and quitters remain equal.

More importantly, some other socio-demographic factors which might have strong determining role over transition have not taken into consideration e.g. mortality, migration etc.

So, considering the aforementioned weakness of the title an alternate proposition can be made as **'NEW SMOKERS AND QUITTERS RELATED TRANSITIONS IN SMOKING STATUS IN A NATIONAL POPULATION.**

Problem under study: No significant change in smoking rates in the Netherlands in comparison to many European countries- is the main focus of the problem under study. Here researchers have systematically analyzed the nature and distribution of the problem and finally clarify the relationship between the problem and the contributing factors.

Relevant/ updated information on the topic: On the basis of data collection period it is assumed that the study has been carried out roughly from 1998 to 2000. Information in this regard which is printed at the very beginning of the introductory statement is: 'After a steady decline since the 1960s, further reduction in smoking prevalence rates has slowed down in many European countries. In the Netherlands, smoking rates have not changed at all over the past 10 years. Here the information time gap has been observed. It would be worthy to mention the comparative statement of smoking rates among European countries and Netherlands in relation to time since 1988 till study period. More relevant information in this regard might have enriched the publication.

Objectives:

General: To asses the transitions in smoking status in the Netherlands.

Specific:

- To compare new smokers to persons who remained nonsmokers (i.e. never smokers).
- To compare quitters to continuous smokers.
- To explore all interactions between the three demographic variables (age, socio-economic status and gender).

Research question:

- What kind of smokers is unable to quit smoking successfully?
- What type of persons replaces the ex-smokers?

Rationale: To justify the study it has been mentioned that: to know the answers of the research question is essential to focus the intervention strategy more effectively. It admits of no doubt.

Other study findings: Other relevant and important study findings have concisely mentioned e.g.

- In 1998 about 23% of Dutch smokers made a serious quit attempt, 7% were successful.
- Smoking onset is related to younger age and lower socio-economic status (SES).
- Smoking cessation is related to older age, higher SES and male gender.

Materials & Methods

Systematic methodology has been followed throughout the study.

- **Study design;** Repeated cross-sectional study (part of a continuous population survey).
- **Data collection period:** October 1998 until January 2000.
- **Sample size:** A representative sample of Dutch population consisting of 21,970 men and women. (Age structure is controversial. Because in abstract it is mentioned 15 to 64 years and in methods section it is mentioned 15 to 60 years).
- **Sampling technique:** Each week, 200 households randomly selected from a register of all houses in the Netherlands. In each household, all adults were interviewed individually (on average two persons). A simple random sampling technique has been employed initially to get the households to be included and subsequently within the household's purposive sampling was carried out according to the selection criteria.
- **Data collection Technique:** Face-to-face interview.
- **Data collection instrument:** Questionnaire.
- **Study place:** All over the Netherlands.

Operational definition/Indicators: All operational definition/ indicators were practicable and workable except one. To ascertain current smoking status the question was prepared: 'Do you (ever) smoke or do you never smoke?' (Yes/No). This intermingled question can not be answered by either yes or no. Here comes the requirement of pre-testing in preparing the questionnaire - which has been clearly overlooked.

- **Continuous smokers:** Respondents who are smoking for the last 12 months from the date of data collection.
- **New smokers:** Respondents who initiated smoking within 12 months from the date of data collection.
- **Never-smoker:** No answer to-'Did you ever smoke?'
- **Quitters:** Respondent who quit smoking less than 7 months ago was classified as quitters.
- **Former smokers:** Respondents who quit smoking more than 2 years ago.
- **Socio-economic status:** A combination of family income and profession of the head of the family and categorize into 5 levels.
- **Age:** Measured in 5-year categories (15-19, 20-24 etc),

Results

Result is presented in accordance with the title and objectives of the study. And it is of course, sequentially presented. The validity of the study has increased tremendously as the study was conducted in a well-defined and well-characterized population. Care has been taken in using abbreviations. It is neither too lengthy nor too short and a norm of presentation style has been followed carefully throughout.
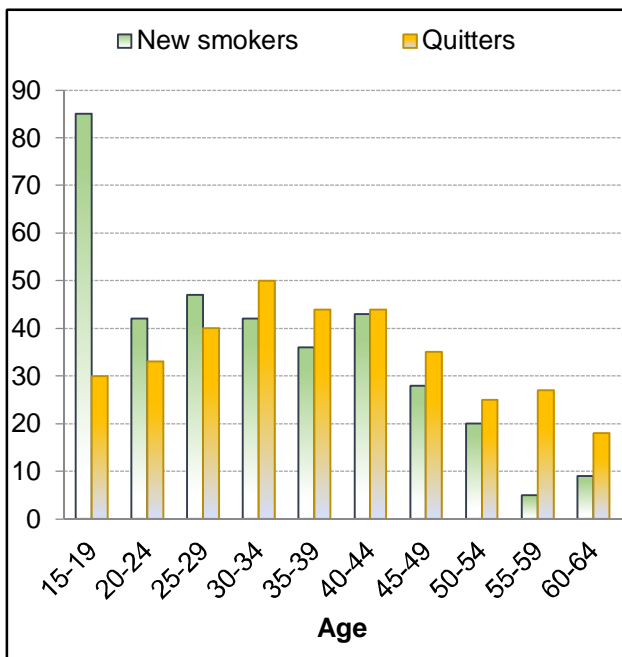

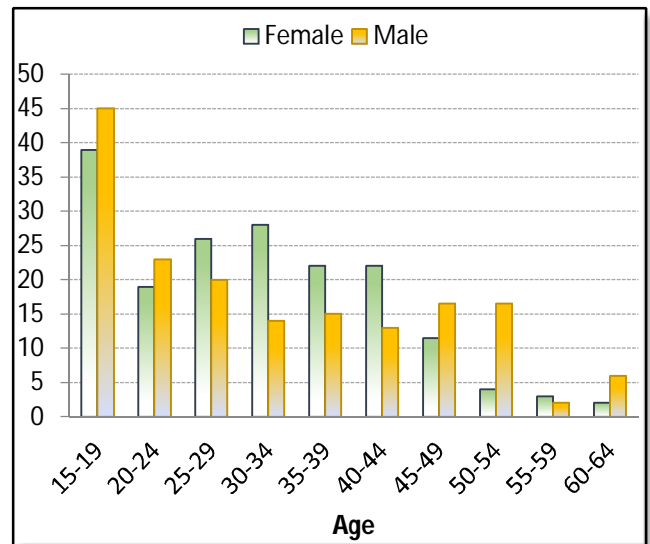**Figure-1:** Number of new smokers and quitters by age

Figure-2: Number of new smokers by age and gender

Salient findings:
- A total 691 (3.2% of the total sample) had changed their smoking status.
- Half of these (1.6% of the total population) changed from non-smoker to smoker.
- Half (1.6%) changed from smoker to non-smoker.
- Most new smokers were in the youngest age group (15-19 years) and lower SES.
- Among women, there are two peaks of new smokers; the first in the youngest age group (15-19) and a second around the age of 25-34.
- Younger quitters more often have higher SES.

Clear and understandable way of presenting tables to be praised worthy. In the result section of this research paper two relevant tables have presented with reference of the table inside the text. One is number of new smokers and quitters, by age, another is number of new smokers by age and gender but third demographic variable i.e. socio-economic status has not been taken into consideration, I should say addition of another table might have glorified the paper by fulfilling its' completeness. One might think about the acceptability of calculating Odds Ratio (OR) in a cross-sectional study, where prevalence ratio is more appropriate. But there is no hard and fast obligation in calculating prediction based OR especially in relation to certain fixed characteristics. Any monotony was not felt while reviewing this paper. This became a rare quality of a paper now a day.

Discussion

Study findings revealed Dutch national smoking prevalence remained virtually unchanged because of balance between quitters and new smokers, So, no transition state has been observed. But it is interesting to note that the researcher have put forward their suggestion to compare this result with more dynamic countries where stronger anti-smoking campaign is prevailing.

Among the women the second peak of new smoker age group was 25 to 34 which was mentioned in the result section. Researchers have explained this situation in this way: women resuming smoking after having quit smoking during pregnancy. Among middle and low SES groups more quitters were 45-49 age groups whereas younger quitters belong to higher SES. It is being explained as higher SES people quit before health problem emerges. Conversely, lower SES people quit after experiencing some sort of health problems. The explanations are quite justifiable.

For adolescents it has been recommended that the period of recall be restricted to no more than one year. As this study is in the line with this recommendation it should not be incorporated as a limitation of the study. Moreover, it could have been suggested making this recommendation applicable irrespective of age group.

Global adult tobacco survey (GATS) data indicate that 61.5% Bangladeshi reporting daily smoking initiation after age 19 and mean age of initiation of 26.5 years. Smoking cessation is also not uncommon in Bangladesh, with 17.9% of ever daily smokers reporting successfully quit smoking[4].

Conclusion

In peroration, it can be said that this research paper deserves lot of appreciation. On the other hand, I must not forget to mention one thing, which is not comparing the study endings with relevant other study findings of home and abroad. Though it is special to discussion section, but, I should say it has over shadowed the overall performance of this research paper as a whole.

References

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