

Perceptions of Health Risks amongst Tertiary Education Students in Mauritius

Smita S. D. Goorah and Dilish Jokhoo

Abstract—A personal estimate of a health risk may not correspond to a scientific assessment of the health risk. Hence, there is a need to investigate perceived health risks in the public. In this study, a young, educated and healthy group of people from a tertiary institute were questioned about their health concerns. Ethics clearance was obtained and data was collected by means of a questionnaire. 362 students participated in the study. Tobacco use, heavy alcohol drinking, illicit drugs, unsafe sex and potential carcinogens were perceived to be the five greatest threats to health in this cohort. On the other hand natural health products, unemployment, unmet contraceptive needs, family violence and homelessness were felt to be the least perceived health risks. Nutrition-related health risks as well as health risks due to physical inactivity and obesity were not perceived as major health threats. Such a study of health perceptions may guide health promotion campaigns.

Keywords—Health promotion, perceptions of health risks, university students.

I. INTRODUCTION

HEALTH risk perception is an important component of health behavior. Health promotion campaigns aim to promote behaviors which favor good health and inversely target those behaviors which are detrimental to health. In this context, how do people perceive a health risk? which factors influence an individual's concept of a health risk? how does the perception of health risk shape health promoting behaviour? and what can be done to ensure that people have accurate health risk perceptions and engage in healthy behaviours? are pertinent questions which require reflection for effective health promotion.

Risk, as defined by the World Health Organization, in its World Health Report 2002, is “a probability of an adverse outcome, or a factor that raises this probability” [1]. The personal estimate of a health risk is often a subjective judgment based on the interplay of many factors. It may not accurately reflect the scientific assessment of actual health risk. Initial psychological research investigating how people evaluate information and make judgments have shown that people make use of heuristics as simplified pathways for estimating risk but that this process could introduce potential biases [2]. Thereafter, several models have been put forward to

explore determinants of risk perception: the psychometric model which highlights the influence of “dread” in the perception of risk as well as the dimensions of “newness” or “the unknown” [3], the cultural theory of risk perception model which categorizes people as belonging to different ways of life with their own specific view of risk [4], the social amplification of risk model which explains how the perception of risk may be amplified or attenuated by other influences in society [5], and the basic risk perception model which takes into account factors such as “attitude”, “risk sensitivity” and “specific fear” [6].

Perceptions of health risks also reflect a society's particular concerns at a point in time reflecting its appreciation of prevailing health threats. Individual perceptions of health risks are important because they can affect subsequent health behaviors. Perceived susceptibility to a condition is indeed one of the four components of the health belief model [7]. Hence, health risk perceptions can play a key role in the prevention of disease and injury and investigation of these perceptions can help improve health promotion campaigns. A recent paper investigating the relationship between risk perception and subsequent protective behavior [8] conclusively showed that “higher risk judgments appear to have encouraged people to engage in protective behavior”. However, it should be noted that in addition to perceptions of health risks, many other factors influence health behaviors and that health risk perceptions are themselves the outcome of “motivational, cognitive, affective, contextual and individual” antecedents [9].

In Mauritius, the Ministry of Health and Quality of Life invests considerable time and funds in health promotion activities. The rationale behind this study was to investigate health concerns in the public, specifically in a young, healthy, educated and informed group of people. This would enable an understanding of current health risk perceptions and whether those corresponded to the main health problems experienced in the country. Risk communication also being an important aspect in the management of health issues, this study also aimed to explore whether health risks were being communicated adequately.

II. METHODS

A. Study Population

The Island of Mauritius is situated in the Indian Ocean and ranks 77 out of 187 countries in terms of human development. Its life expectancy at birth for 2011 was 73.4 years [10]. The

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University of Mauritius is the main tertiary education institution. The number of students enrolled in the university at the time of the cross sectional survey was 10,391. Based on this population size, a sample size of 370 was calculated at 95% confidence level.

B. Questionnaire design

The questionnaire was based on “The World Health Report 2002 - Reducing Risks, Promoting Healthy Life” [1], along with the “Kaiser/Pew Global Health Survey” [11]. Moreover, a pilot study was conducted amongst 15 students to assess suitability and relevance of questionnaire. Consequently, an additional 10 health hazards were included in the final questionnaire and 7 health risks from the World Health Report were excluded from it. The final questionnaire therefore contained 33 health hazard items in different categories: environmental-related health risks, nutrition-related health risks, lifestyle-related health risks, work-related health risks, sexual and reproductive health risks, social-environment related health risks and other selected health risks.

C. Ethics Clearance

Ethics clearance was obtained from the Research Ethics Committee of the University of Mauritius on the 10th January 2011.

D. Data Collection and Analysis

382 students were recruited out of whom 362 consented to participate in the study. Data collection was carried out over 2 months in 2011 and data was analyzed using statistical software SPSS 19.0. Participants were requested to rate the 33 health hazard items in the following categories: high health risk, moderate health risk, low health risk and almost no health risk. The distribution of perceived health risks were analyzed in the sample and also by gender and socio-economic group. Chi-square tests were done to analyze differences between groups. A p-value of <0.05 was considered significant.

III. RESULTS

The profile of participants is described in the Table I. Males and females participated equally and participants also included those from both urban and rural regions. Most of the participants enjoyed good health.

TABLE I
PROFILE OF PARTICIPANTS

		Count	%
Gender	Male	186	51.4
	Female	176	48.6
Residence	Rural	188	51.9
	Urban	174	48.1
Total household income	High	136	37.6
	Medium	167	46.1
	Low	59	16.3
	Good	264	72.9
Personal health condition	Neither good nor bad	60	16.6
	Poor	16	4.4
	Don't know	22	6.1

As illustrated in Fig. 1, tobacco use, heavy alcohol drinking, illicit drugs, unsafe sex and potential carcinogens were perceived to be the five greatest threats to health in this cohort. On the other hand natural health products, unemployment, unmet contraceptive needs, family violence and homelessness were felt to be the least perceived health risks as shown in Fig. 2.

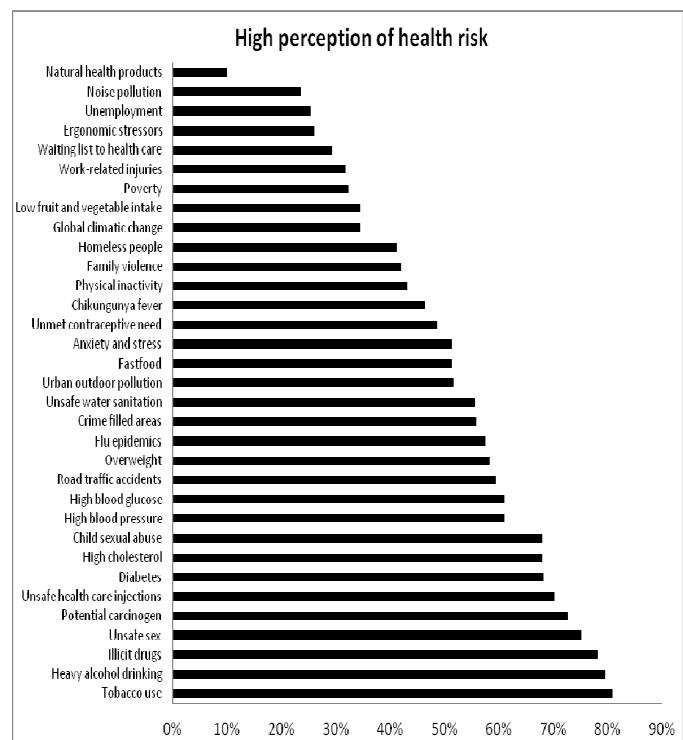


Fig. 1 High perception of health risk ratings for the 33 health hazard items studied in order of frequency

Gender differences were explored and are illustrated graphically in Fig. 3. Pearson chi-square tests were performed on health risk ratings by male and female students. For 30 out of 33 health hazards items, there were no significant differences between males and females' perceptions of health risks. Significant differences at $p < 0.05$ were observed with respect to tobacco use, high cholesterol and child sexual abuse.

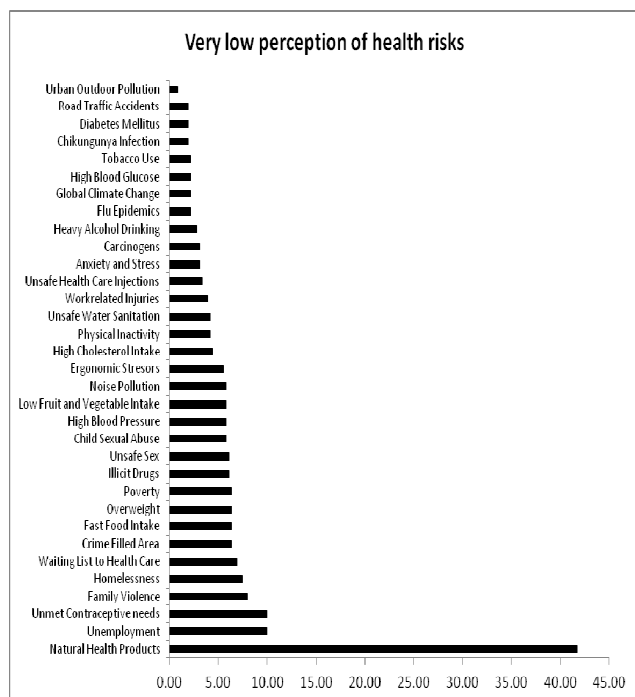


Fig. 2 Very low perception of health risk ratings for the 33 health hazard items studied in order of frequency

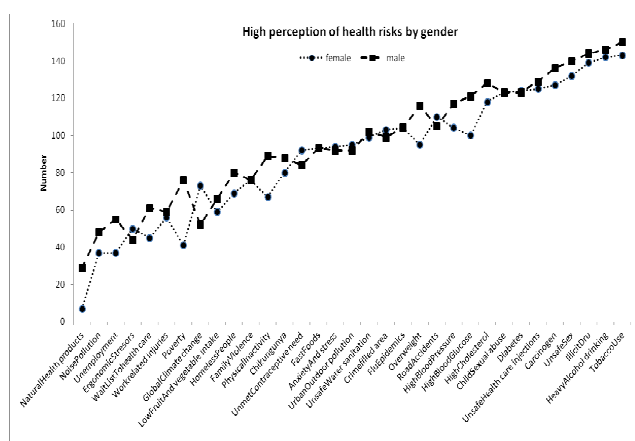


Fig. 3 Comparisons of high perception of health risks amongst males and females

Regarding perception of health risks in different socio-economic groups as categorized by total household income, there were no significant differences in 21 out of the 33 health hazards studied. Significant differences were observed with 12 health hazards items namely fast foods, child sexual abuse, high cholesterol levels, noise pollution, family violence homelessness, physical inactivity, anxiety and stress, work related injuries, poverty, tobacco use and finally chikungunya outbreaks.

IV. DISCUSSION

In this study, a young, well informed and healthy cohort of people perceived tobacco use, heavy alcohol drinking, illicit drugs, unsafe sex and potential carcinogens as the being the five main potential threats to their health. In Mauritius, the five main causes of deaths in 2010 were classified, in order of frequency, as diseases of the circulatory system, endocrine, nutritional and metabolic diseases (including diabetes), neoplasms, diseases of the respiratory system and finally injury, poisoning and deaths due to external causes [12]. Hence, there are indications that selected health risks such as high blood pressure, high blood glucose, high cholesterol levels, obesity and physical inactivity which are risk factors of diseases of the circulatory system were not rated amongst the most important perceived health threats in this group. Similarly diabetes which is a major chronic disease in Mauritius was rated only as seventh amongst the highly perceived health risks. It is also to be noted that this group of young people was not too anxious about low fruit and vegetable intake. Thus, health messages about nutrition-related health risks as well as health risks related to physical inactivity and obesity were not appearing to cause much concern in this group. It is possible that diseases of the circulatory system as well as diabetes have their onset later in life and are not perceived as being immediate threats to health although the lifestyle factors which lead to their emergence have their roots in the early decades of life.

On the other hand, cigarette smoking has been heavily emphasized in the media as a health hazard and there has been recent legislation in Mauritius banning smoking in public places including the University. Thus this health risk may have been over-amplified and hence accounts for the most highly perceived health threat. Heavy alcohol drinking, illicit drugs and unsafe sex are clearly understandable as lifestyle concerns of this age group and may be overemphasized as causes of high health risks. However, it again appears that young people are more concerned about what they perceive as immediate threats to their health and may dismiss those that give rise to health problems later in life.

Regarding potential carcinogens, being rated as being one of the five most highly perceived health threats; this finding is consistent with general concern about cancer, which is viewed with fear. Although cancer is the third major cause of death in Mauritius, young people viewed this with more concern than other lifestyle or nutrition-related health risk contributing to diseases of the circulatory system and to diabetes.

Regarding very low perceptions of health risks, natural health products were perceived as of being safe and causing little concern. This may reflect general public perceptions that "natural" products are safe and even healthy; as well as media emphasis on the beneficial effects of natural products. However, it is of concern that people dismiss side effects which may be caused by natural health products.

This study was limited to a well defined group of young people. Clearly these results are not generalisable to the whole

population as different segments of the population may have different perceptions of health risks. However the results give some indication that health risks with high media exposure are perceived with more concern whereas nutrition-related health risks as well as health risks due to physical inactivity and obesity need more emphasis. In addition, perception of health risks may or may not lead to appropriate health-related behavioral modifications and desirable health outcomes. This aspect has not been investigated in this study and needs to be studied further. On the whole, a study of health perceptions provides useful information on health concerns of people and this may guide health promotion campaigns.

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REFERENCES

- [1] World Health Organization, "The World Health Report 2002 - Reducing Risks, Promoting Healthy Life," *WHO*, 2002. Available at: www.who.int/whr/2002/en/
- [2] A. Tversky and D. Kahneman, "Judgment under Uncertainty: Heuristics and Biases," *Science* vol. 185, no. 4157: pp. 1124–1131, 1974.
- [3] B. Fischhoff, P. Slovic, S. Lichtenstein, S. Read and B. Combs, "How safe is safe enough? A psychometric study of attitudes towards technological risks and benefits," *Policy Sciences* vol. 9, no. 2, pp. 127–152, 1978.
- [4] M. Douglas and A. Wildavsky, "Risk and Culture: An essay on selection of technical and environmental dangers," *Berkeley: University of California Press*, 1982.
- [5] R. E. Kasperon, O. Renn, P. Slovic, H. Brown, J. Emel, R. Goble, J. X. Kasperon and S. Ratick, "The Social Amplification of Risk: A Conceptual Framework," *Risk Analysis* vol. 8 no. 2, pp.177–187, 1988.
- [6] L. Sjöberg, "Factors in risk perception," *Risk Analysis* vol. 20 no.1, pp. 1–11, 2000.
- [7] V.J. Strecher and I.M. Rosentock, "The health belief model," in: *Health behavior and health education: theory, research and practice*, eds. K. Glanz, F.M. Lewis, B.K. Rimer, 2nd ed. San Francisco: Jossey-Bass, pp. 41–59, 1997.
- [8] N.T. Brewer, N.D. Weinstein, C.L. Cuite, J.E. Herrington, "Risk perceptions and their relation to risk behaviour," *Ann Behav Med* vol. 27 no.2, pp.125–130, 2004.
- [9] G. Menon, P. Raghubir and N. Agrawal, "Health risk perceptions and consumer psychology," in: *The Handbook of Consumer Psychology*, eds. C. Haugtvedt, P. Herr and F. Kardes, Hillsdale, NJ: Erlbaum, pp. 981–1010, 2007.
- [10] UNDP, "Sustainability and Equity: a better future for all," *Human development report*, 2011. Available at: <http://hdrstats.undp.org/images/explanations/MUS.pdf>.
- [11] A Global Look at Public Perceptions of Health Problems, Priorities, and Donors: The Kaiser/Pew Global Health Survey, 2007. Available at: <http://www.pewglobal.org/files/pdf/259.pdf>
- [12] Central Statistics Office, "Deaths by cause, Republic of Mauritius, 2010," *Digest of Demographic Statistics*, 2010. Available at: <http://www.gov.mu/portal/goc/cso/report/natacc/demo10/demo10.pdf>.