ORIGINAL ARTICLE

Societal Risk Perception of Death Among Workers in a Security Company in Malaysia

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Summary

How people perceive risk influences their behaviour towards these risks. We do not know how workers perceive risk of dying from diseases or accidents. This study was conducted among 198 workers of a security company in Malaysia. The workers were asked to score on a Likert scale of 1 to 5 the perceived risk of death of Malaysians from selected causes of death. The highest perceived risks of death were, in order of ranking, motor vehicle accidents, cancer and diabetes mellitus whereas according to the certified causes of death in Malaysia the highest risks of death among the selected items were cardiovascular disease, cancer and stroke. The difference in perception and mortality data needs be addressed.

Key Words: Risk, Perception, Diseases, Accidents, Health

Introduction

In 1994 the Malaysian Occupational Safety and Health Act (OSHA)[1] was enacted. This Act emphasizes the importance of risk management. Risk communication is an important element in managing risks[2]. In order to formulate effective strategies to communicate risk, the perception of risk among the target group needs to be ascertained. Risk perception is also important because it influences the probability of behavioural change[3,4]. Among the earliest and most extensive research on risk perception was that conducted by Slovic *et al* which ascertained among others, the difference in risk perception among different groups of people[5]. There is a difference in how individuals perceive the risks of a hazard to themselves as compared to their perception of risks of a hazard to society at large. Perceived societal risk of death is an individual's perceived risk of a hazard to cause death to society at large. The objective of this study was to determine how a group of Malaysian workers perceive societal risk of death from diseases or accidents.

Materials and Methods

In the year 2000, a cross sectional study was conducted among 198 workers of a security company, in the Klang valley who were selected by convenience sampling. The study tool was a self administered questionnaire. The validity of the questionnaire was ensured by applying design methods suggested by Armstrong *et al*[6] and Lindstrom *et al*[7]. The questionnaires were developed by pretesting, discussing with interest groups, getting feedback from risk perception experts and testing internal consistency of items representing diseases and accidents. Respondents were asked to consider societal risk of death from 10 causes of death

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listed in the certified causes of death in Malaysia[8]. The pretest group had difficulty understanding two conditions that are septicaemia and perinatal causes of death. The 10 leading causes of death with the exclusion of the two earlier mentioned items were selected to represent causes of death. The conditions selected to represent diseases or accidents were; kidney diseases, cancers, strokes, diabetes mellitus, motor vehicle accidents, other accidents, congenital abnormalities, pneumonia, cardiovascular diseases and tuberculosis. The internal consistency of items used to represent diseases or accidents were acceptable based on the obtained Cronbach Alpha value of 0.80 [9]. Risk perception of respondents were analysed using two methods. The first was to treat the data as continuous variables and calculate the mean score (based on Likert scale of 1-5) of a respondent for the respective diseases or accidents. Although calculating means is a common measure of central tendency it is influenced by extreme values. The second method entailed classifying a respondent's score of 1 or 2 as low risk, 3 as moderate risk and 4 or 5 as high risk.

Results

Sociodemographic characteristics of respondents

The age of respondents ranged from 18 to 70 years with a mean age and standard deviation of 39 ± 12 years. Most respondents were male (83.8%) and Malay (92.4%). More respondents were married (69.7%). The education status of respondents was relatively low whereby 55% of them received lower secondary education or below. The income ranged from RM 450-6700 (USD 118- 1763) per month with a mean and standard deviation of RM1129 ± RM815. Most of the respondents (63.6%) worked as security guards (Table I).

Perceived risk of death by selected causes

The rank of perceived risk using these two methods (mean scores method versus percentage rating risk as high, medium or low) did not differ much. Using mean scores (Table II), the highest perceived risk are for; motor vehicle accidents, followed by cancers, diabetes mellitus, cardiovascular diseases, kidney diseases, strokes, tuberculosis, pneumonia, other accidents and congenital abnormalities. Based on the ranking of percentages of respondents rating risk as high, moderate or low the higher perceived risk are for motor vehicle accidents, followed by cancers, cardiovascular diseases, diabetes mellitus, kidney diseases, stroke, pneumonia, tuberculosis, other accidents and congenital abnormalities. A slight difference in ranking was found in the ranking for diabetes mellitus and cardiovascular disease, and for pneumonia and tuberculosis. Based on the mean score approach, risk perception of death due to diabetes mellitus ranked 3rd, cardiovascular diseases 4th, tuberculosis 7th and pneumonia 8th. Based on the percentage of high risk approach, perceived risk of death due to diabetes mellitus was 4th, cardiovascular diseases 3rd, tuberculosis 8th and pneumonia 7th. The results are further discussed based on the findings obtained using mean scores.

Discussion

The difference between perception of risk and statistical estimates of cause of death has been previously documented. An educated general public was found to have overestimated the risk of death from rare conditions such as death due to smallpox vaccination but underestimated causes of death, which are common such as cancer and diabetes mellitus [10]. Different populations also perceive risks differently. Canadians rated smoking as the highest environmental risk followed by ozone depletion, drugs, stress and chemical pollution[3]. Members of the British Toxicological Society ranked smoking as the highest health risk, followed by asbestos, dioxin, nuclear waste and vehicles on the road [11]. Norwegian students ranked cancer as the highest natural and manmade risk followed by coronary artery disease, alcohol, smoking and diseases related to lifestyle [12]. This study explored the perception of health risks among a selected group of Malaysian workers and compared it to statistical estimates of mortality in Malaysia.

Good mortality data on the risk of death among the Malaysian population does not exist. In this study medically certified and inspected deaths were used to represent risk of death among the Malaysian population. An important limitation of these statistics is that due to cultural and religious reasons post mortem is often not done to determine the cause of death in Malaysia. A big proportion of all deaths are also not medically certified. The most evident difference between perceived risks of death compared to the certified causes of death in Malaysia were for motor vehicle accidents and diabetes mellitus (Table III). This study found that perceived risk was highest towards motor vehicle accidents although it is only ranked fourth in the selected certified causes of death in

Malaysia. We believe that the high level of perceived risk is due to the wide media coverage of motor vehicle accidents and also road traffic safety campaigns, which are conducted especially during the festive seasons when accident rates tended to increase. Another important contributing factor to the high perceived risk of death due to motor vehicle accidents could be that death in motor vehicle accidents are bloody and maiming thus presenting something which is vivid and scary which persisted in the mind of respondents.

Perceived risk of death due to diabetes mellitus is ranked third highest although it is ranked ninth in the selected certified causes of death in Malaysia. This high perceived risk is probably due to the fact that the prevalence of diabetes mellitus [13] in Malaysia is high at 8.0%. This would mean the chances are high that the study respondents knew of friends or family members suffering from this disease. The Ministry of Health Malaysia has also conducted a nationwide healthy lifestyle campaign on Diabetes Mellitus in 1996 and on healthy diet in 1997. Diabetes Mellitus is a chronic disease which if not well controlled can lead to feared complications such as gangrene, limb amputations or dialysis due to renal failure. These outcomes are probably perceived as 'fate worse than death' [14].

The perceived risk of death due to cancer is ranked second which is the same as the selected certified causes of death. Cancer was a theme for the nationwide healthy lifestyle campaign in 1995. The perceived risk of cardiovascular diseases was ranked fourth although it is ranked first in the certified cause of death among Malaysians. In 1991, cardiovascular disease was the theme for the healthy lifestyle campaign. In spite of this, the perceived risk of death due to this cause is relatively lower compared to other causes. This is probably because cardiovascular diseases are perceived as affecting the older population, more treatable and does not cause as much suffering as accidents, cancers and diabetes mellitus. The perceived risk of death due to renal diseases is ranked fifth which is not much different from its actual ranking, 6th place, among certified causes of death in Malaysia. The perceived risk of death due to strokes, pneumonia, other accidents and congenital abnormalities are lower in comparison to their actual ranking among selected certified causes of death in Malaysia. Strokes ranked as third whereas pneumonia, fifth as a cause of death in the selected certified causes of death in Malaysia. The relatively low perceived risk of strokes, as a cause of death is probably due to the perception that it is more an affliction of the elderly. As a general rule, it is said that one third of stroke patients will die immediately as a result of the stroke; one third will recover completely whereas for the remaining one third, the deficit sustained during the acute attack neither improves nor worsens. Strokes being a cause of death may not be realized by the population who feel death is due to hypertension and not stroke. The low perceived risk towards pneumonia is probably because it is not seen as a great concern by the general population. It may be seen as a disease of the very young, very old or immunocompromised.

The limitations of this study are that the number of items selected to represent diseases or accidents were rather small (only 10). The study sample was also selected by convenience methods. This means the sample does not represent all Malaysian workers or the Malaysian population.

Conclusion

This study further emphasizes the fact that perceived risk is not always similar to the 'real' risks. It is important for us to further understand how Malaysians perceive risk of diseases or accidents as a cause of death. This will enable us to formulate a more comprehensive risk communication and behaviour change strategy. In order to do so more extensive studies on different population groups representative of genders, all age groups, economic status and occupation groups need to be conducted. Representative samples need to be selected to assess the risk perception of Malaysians.

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