The status of men’s health in Asia

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ABSTRACT

Objectives. This study aims to compare health status and its risk factors between men and women who are from countries of different income status in Asia.

Method. We have included 47 Asian countries and 2 regions in this study. Life expectancy, mortality rate from communicable disease, non-communicable disease and injuries, the prevalence of non-communicable diseases risk factors and their trends were extracted from the WHO and respective governmental database. Subgroup analysis was performed based on country income groups.

Results. Overall, men have shorter life expectancy and higher mortality rates compared to women. Men from higher-income countries lived longer compared to men from lower-income countries. There is a wide variation of male life expectancy in upper and lower middle income countries. The mean systolic blood pressure, fasting blood glucose and body mass index in Asia have also increased over the years.

Conclusion. This study confirms that Asian men have poorer health compared to women besides the growing concerns on NCD risk factors. The findings from this study calls for a concerted effort to find solutions in addressing men’s health problems in Asia.

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Introduction

Men are known to have a shorter life expectancy and higher mortality compared to women (Lynch, 2013; Wang et al., 2013; White and Holmes, 2006; White et al., 2014). This could be attributed to men indulging in higher risk-taking behaviors, reluctance to seek help for prevention and during illness and the lack of male-focused health system (Addis and Mahalik, 2003; Byrnes et al., 1999; Cordier and Wilson, 2013; Lynch, 2013; Tan et al., 2007; White and Holmes, 2006).

In addition, men’s health reports from Australia, Canada and Europe found significant variations in men’s health status within and across different countries (AIHW, 2013; Bilsler et al., 2010; EC, 2011), which could be due to the differences in genetic as well as socio-economic factors. (NCIN and Cancer Research UK, 2009; White et al., 2011).

Asia is rapidly developing both economically and socially. In recent years, more Asian countries are achieving a higher bracket in terms of socioeconomic status, and many are adopting a lifestyle similar to western countries (Tong et al., 2011; Wassener, 2013). However, communicable and non-communicable diseases are on the rise in Asia (Wassener, 2013). While people from higher-income countries are achieving better health status, countries from the middle- and lower-income group continue to face higher disease burden, possibly attributed to financial constraints (Orach, 2009; WHO, 2000). The changing disease pattern and rising healthcare cost have a huge impact on overall population health, particularly in men, who have poorer health than women to begin with (Doyal, 1995; Rahman and Liu, 2000).

The recently published Asian Men’s Health Report found that men’s health status is poorer compared to women and it varies across different countries and regions in Asia (Tan et al., 2013). This study summarized the key findings from the report and aimed to explain the variation in men’s health status across Asia based on country income status. We hope our findings will serve as the first step toward identifying and addressing gaps in men’s health in Asia.

Materials and methods

Selection of countries in Asia

We obtained the lists of member countries in Asia from the WHO and CIA databases (CIA, 2013; WHO, 2013a). Although Hong Kong and Taiwan were not part of the databases, we decided to include them in view of their unique men’s health status and they were not included in the data from China. The final list comprised 47 countries and two regions.

Health indicators

The population health indicators included in this study were as follows: life expectancy at birth; mortality rate attributed to communicable diseases, non-communicable diseases and injuries; general health status indicators such as smoking and drinking; cancer incidence; and other health-related indicators such as physical activity level.
communicable diseases and injuries (Table 1); the prevalence of risk factors for non-communicable diseases (alcohol, current smokers, physical inactivity, obesity, high cholesterol, raised blood pressure and blood glucose); and the trend of cardiovascular disease (CVD) risk factors between 1980 and 2009 (mean systolic blood pressure, mean fasting blood glucose level, mean total cholesterol level and mean body mass index (BMI)).

Data extraction

We used the World Health Organization (WHO) Global Health Observatory Data Repository as the key reference source in this paper (WHO, 2013b). It contains the most comprehensive and updated data comparing health status between men and women across a range of medical conditions and countries in Asia. As for Hong Kong and Taiwan, we used the regional government databases as they were not included in the WHO database (Republic of China (Taiwan), 2011; The Government of Hong Kong Special Administrative Region, 2011).

Data analysis

Microsoft Excel 2010 and Statistical Package for Social Science 21 were used to analyze the data. Age-standardized mortality rate was used as it allows comparison between countries after adjusting for the population age. Subgroup analysis was performed based on sex and income groups (gross national income per capita: low < USD 1,035; lower middle USD 1,035–USD 4,085; upper middle USD 4,085–USD 12,615; high > USD 12,615) (The World Bank, 2013). The comparisons of the overall prevalence of the CVD risk factors between continents (Asia, Europe, USA and world) and between income groups were made. They were calculated based on the average prevalence of all the countries in the respective continents and income groups. Similarly, the mean systolic blood pressure, fasting blood glucose, total cholesterol and BMI in Asia were calculated based on the average values of the 47 countries over the 30-year duration.

Results

Life expectancy at birth

Men have shorter life expectancy compared to women across all countries and regions in Asia except for Kuwait and Qatar (Fig. 1). We found that men from higher-income countries lived longer than those from the lower-income group. However, the life expectancy of men from upper and lower middle income countries varied widely.

Mortality attributed to communicable, non-communicable diseases and injuries

Regardless of the type of disease (communicable, non-communicable diseases or injuries), men have a higher mortality rate compared to

<table>
<thead>
<tr>
<th>Causes of death</th>
<th>Example of diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicable diseases</td>
<td>Tuberculosis, STD, HIV, diarrhoeal diseases, childhood-cluster diseases, meningitis, Hepatitis B and C, malaria, tropical-cluster diseases, leprosy, dengue, Japanese encephalitis, trachoma, intestinal nematode infections, lower and upper respiratory infections and otitis media</td>
</tr>
<tr>
<td>Non-communicable diseases</td>
<td>Malignant neoplasms, diabetes mellitus, endocrine disorders, neuropsychiatric conditions, sense organ diseases, cardiovascular diseases, respiratory diseases, digestive diseases, genitourinary diseases, skin diseases, musculoskeletal diseases, congenital anomalies and oral conditions</td>
</tr>
<tr>
<td>Injuries</td>
<td>Road traffic accidents, poisonings, fall, fires, drownings, other unintentional injuries, self-inflicted injuries, violence and war</td>
</tr>
</tbody>
</table>
women (Figs. 2, 3 and 4). Men from higher-income countries have lower mortality rates compared to those from the other income countries. However, the mortality rates are similar among the upper-, lower-middle and low-income countries, particularly for non-communicable diseases and injuries.

Risk factors of non-communicable diseases

The prevalence of CVD risk factors is lower in Asia compared to Europe, USA and the world except for smoking (Fig. 5). Within Asia, men in higher-income countries tend to drink more alcohol, smoke less, have higher total cholesterol, are less active physically and more overweight than poorer-income countries. A similar pattern is also observed in Europe.

Trends of systolic blood pressure, fasting blood glucose, total cholesterol and body mass index

The level of systolic blood pressure, fasting blood glucose, total cholesterol and body mass index was directly related to the income status of the country (Fig. 6). Between 1980 and 2009, while the level of systolic blood pressure (SBP) decreased in higher-income Asian countries, the opposite trend was observed in the lower-income countries. During the same period, the fasting blood glucose and the body mass index
continued to rise for all income countries while the total cholesterol level decreased over time.

Discussion

This study confirms that, in Asia, men have a shorter life expectancy and higher mortality due to communicable diseases, non-communicable diseases and injuries compared to women. This discrepancy is particularly between higher- and lower-income countries. There is also a rising trend for most of the cardiovascular risk factors, particularly in the middle-income countries.

Overall, Asian men have a shorter life expectancy (70 years) compared to those in Europe (72 years) and USA (76 years) (WHO, 2011b). However, there is a wide variation in life expectancy across different income groups in Asia. For instance, the life expectancy of men from Singapore and Hong Kong (80 years) is comparable to the average life expectancy of men from high-income countries in the world (78 years) (WHO, 2011a). On the other hand, men from low-income countries, such as Afghanistan, Cambodia and Myanmar, have one of the shortest life expectancy in the world.

The difference between the highest and the lowest life expectancy of men in Asia (24 years; Qatar 83 years vs Afghanistan 59 years) is larger than that of Europe (17 years; San Marino 82 years vs Ukraine 65 years) (WHO, 2011b). This pattern is also observed in women, which showed a difference of 26 years in Asia (Hong Kong 87 years vs Afghanistan 61 years) and 10 years in Europe (Switzerland/France/
In Asia, this wide variation in life expectancy in men probably reflects the difference in the healthcare provision, men's lifestyle and environmental factors such as war and pollution (Cockerham et al., 2002; Jabbour et al., 2012; McKee et al., 2002; Rechel and McKee, 2007). For example, in Qatar, the life expectancy at birth is the highest in the world as a result of the lower NCD mortality rate in the Qatari men. This may be attributed to the establishment of its Supreme Council of Health, which has taken positive steps in tackling health inequity by involving government ministries, non-governmental agencies and industries (Jabbour et al., 2012). On the other hand, for some countries in the upper middle income countries, such as Turkmenistan, Kazakhstan and Russia, the life expectancy remained short at 60, 62 and 63 years, respectively. In Turkmenistan, this has been attributed to the political turmoil where healthcare funding and healthcare workforce declined resulting in reduced accessibility to health care (Rechel and McKee, 2007). In Kazakhstan and Russia, men's shorter life expectancy is mainly due to excessive alcohol consumption, heavy smoking, high-fat diets and sedentary lifestyle (Cockerham et al., 2002; McKee et al., 2002).

For communicable diseases in Asia, the male mortality rate (162.0 deaths per 100,000) is higher than that in Europe (50.9 deaths per 100,000), USA (29.8 deaths per 100,000) and Australia (15.4 deaths per 100,000) (WHO, 2008). Timor-Leste, Myanmar, Cambodia and Afghanistan have the highest mortality rate due to communicable disease for men in Asia (422.3 to 565.4 deaths per 100,000). Among

Fig. 4. Mortality attributed to injuries based on sex, countries and income groups in Asia (2008).
Asian countries, Timor-Leste has the highest male mortality due to tuberculosis and sexual transmitted infections; Myanmar has the highest male mortality rate due to HIV/AIDS; Afghanistan has the highest male mortality rates due to respiratory infection, hepatitis B and hepatitis C; while Cambodia has the second highest male mortality rate in hepatitis B, hepatitis C and sexual transmitted infections (Tan et al., 2013). The high mortality in these countries is likely to be attributed to poverty and less-than-effective health care system (Gupta and Guin, 2010).

This study found that majority of the higher-income countries faced transition toward chronic non-communicable disease while the middle- and low-income countries faced double disease burden of communicable and non-communicable diseases. The male mortality rate due to non-communicable diseases in Asia (759.7 deaths per 100,000) is higher than Europe (616.9 deaths per 100,000), the USA (485.9 deaths per 100,000) and Australia (385.2 deaths per 100,000).

Male mortality rate due to injuries is higher compared to female in all Asian countries. Among the highest in Asia are Iraq, Sri Lanka and Afghanistan, where the figures are contributed by war. For Russia and Kazakhstan, the main causes are accidental poisoning by and exposure to noxious substances and other intentional injuries. Thailand’s mortality rate due to injuries is notably high mainly due to road traffic accidents (WHO, 2008).

Most high-income countries in Asia are affected by non-communicable diseases. However, the prevalence of CVD risk factors is still lower compared to the USA, Europe and the world, except for smoking. Within Asia, men in high-income countries tend to smoke less compared to middle- and low-income countries but they drink more alcohol. Lower alcohol consumption in Asia is probably contributed by alcohol abstinence in Islamic countries. Higher-income countries often have higher prevalence of high

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**Fig. 5.** Comparison of the prevalence of risk factors in men across different income groups in Asia, Europe, USA and the world.

Note: H = High; UM = Upper middle; LM = Lower middle; L = Low for country income group

*The prevalence for alcohol consumer within 12 months for a specific year was recorded in each country. The year in which the prevalence was recorded for each country differ in the range of 1993 to 2007.*
total cholesterol and obesity, and this is contributed by their sedentary lifestyle and dietary factor (Tong et al., 2011). The drop in the mean systolic blood pressure in high-income countries might be contributed by wider anti-hypertensive drugs used, which may not be readily available in the lower-income countries (Danaei et al., 2011). Comparing to lower-income nations, people in high-income countries tend consume more added sugars and fats, which subsequently lead to higher mean BMI for high-income countries (Drewnowski, 2003).

This study has a few limitations. Although we extracted data from the WHO database, the quality of data reported by individual country may vary. Some of the data might not be updated and there is a limit to trend data. Summarizing the prevalence of risk factors in Asia by using a simple average might not accurately reflect the distribution of data across Asia. In addition, the use of arbitrary criteria for BMI ≥ 25 kg/m² (Asia: ≥ 23 kg/m²) may not be appropriate for the Asian population.

Conclusions

This is the first study that systematically documents the status of men's health in Asia which confirms that Asian men have a shorter life expectancy and higher mortality compared to Asian women. These findings are consistent with those found in the rest of the world. We found that in Asia, men in the middle-income countries are facing a double disease crisis and there is a rising trend in cardiovascular risk factors. This imposes a significant healthcare burden which calls for a concerted effort to find solutions to address men's health issues in Asia.

Conflict of interest
The authors declare that there is no conflict of interest.

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