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Sex differentials in adult life expectancy and mortality in Sri Lanka

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Introduction

Sex differentials in adult life expectancy is a pervasive phenomenon. “At the global level, women live longer than men on average. A female survival advantage exists in virtually all regions and countries” (United Nations,2019). “However, expectation of life at birth was even higher for females than for males” (Keyfitz and Flieger, 1971). “Since the first life tables were constructed in the mid-18th century it is a well-established fact that women, on average, live longer than men” (Luy, 2003). “While the gender-gap, defined as female excess life expectancy, was first observed in the now developed countries, in the 21st century it is basically a universal phenomenon. Women are now on top everywhere” (Barford et al., 2006). In consideration of global context, it can be highlighted 4.2 years of gender gap in life expectancy, with men have experienced average life expectancy of 68, while women have experienced average life expectancy of 72.2. Meanwhile, in the more developed countries, there is 6.2 years of gender gap in average life expectancy (United Nations, 2019). When considering the Sri Lankan context, in the 1920-22 period life expectancy was higher among males than females. Men have experienced over 2 years of life expectancy compared to women during that time period. After that period, the pattern has reversed. The life expectancy of females is higher than the life expectancy of males with a gap of about 7 years in the 2011-2013 period. However, the gap has reduced by 1.8 years between 2000-2002 to 2011-2013 (Department of Census and Statistics, 2013). Sri Lanka had higher male than female life expectancy until about 1960. But more recently this has been reversed (Langford and Storey,1993). During the 1960s, however, the sex differential in overall mortality in Sri Lanka began to shift away from a pattern of higher female than male mortality. Equality in the overall level of mortality for the two sexes was observed in the early 1960s. Since then, the sex differential has favored females and has continued to widen (Nadarajah,1983). When considering the above factors and data, sex differentials in life expectancy can be seen worldwide. This is a global phenomenon. Hence it is important to emphasize sex differentials in adult life expectancy and mortality in Sri Lanka.

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Research objectives

The main objective of the study is to identify sex differentials in adult life expectancy and mortality in Sri Lanka. Further, the study explores effect of age and sex specific mortality rates to the changing gender differences in life expectancy.

Methodology

The study is based on secondary data. Data related to mortality and life expectancy were obtained from the Department of Census and Statistics in Sri Lanka. More data were obtained from the Registrar General Department in Sri Lanka, World Bank database, United Nations database and various online and offline secondary sources. The sex difference was analysed by decomposition method, containing age sex specific decomposition.

Result and discussion

Changes in levels of mortality by age and sex can be identified as a major effect on changes in life expectancy. “According to the history of life expectancy in Sri Lanka, it has gradually increased from 32.7 to 72.0 years for males and from 30.7 to 78.6 years for females from the period of 1920-1922 to 2011-2013” (Department of Census and Statistics, 2011).

According to Table 1, up to 1952, males have experienced higher life expectancy than females. But after 1952, the pattern has changed and females have experienced higher life expectancy than males. Table 1 revealed that a significant gap can be seen between life expectancy at birth among females and males. In 2000-2002, the gap was 8.4 years and when it comes to 2011-13 the gap has reduced to 6.6 years.

Table 1: Life expectancy at birth, Sri Lanka by sex, 1921-2012

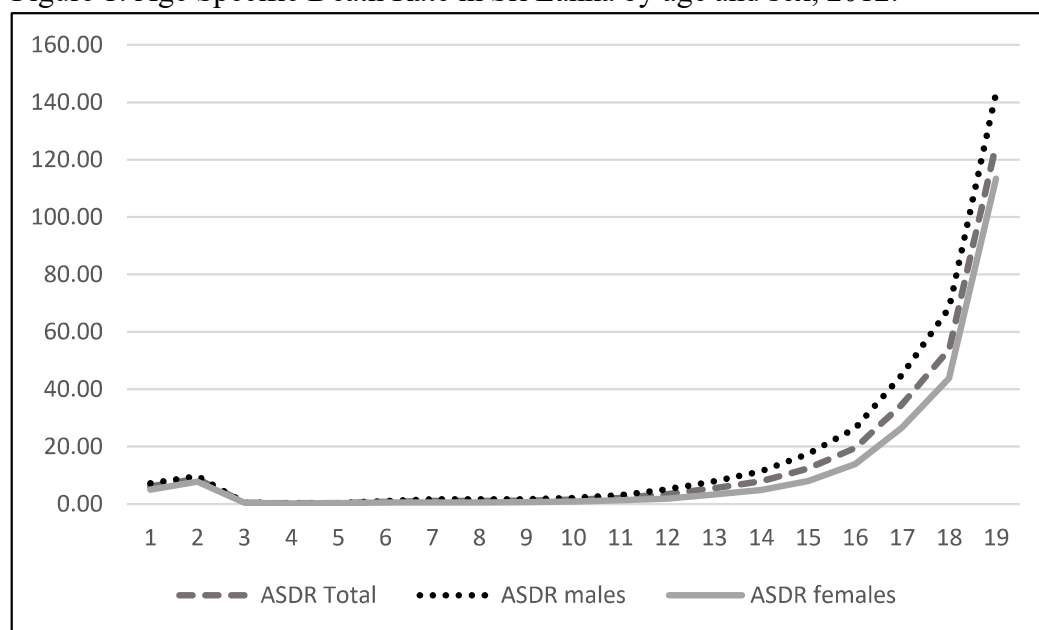
Year	Male	Female	Average increase in years per annum		Difference Male-Female
			Male	Female	
1920-1922	32.7	30.7			-2.0
1945-1947	46.8	44.7	0.6	0.6	-2.1
1952	57.6	55.5	1.8	1.8	-2.1
1962-1964	63.3	63.7	0.5	0.7	0.4
1970-1972	64.0	66.9	0.1	0.4	2.9
1980-1982	67.7	72.1	0.4	0.5	4.4
2000-2002	68.8	77.2	0.1	0.3	8.4
2011-2013*	72.0	78.6	0.3	0.1	6.6

Source: Department of Census and Statistics (DCS)

*Number of deaths used for this period corresponds to usual residence

Figure 1 clearly depicts Age Specific Death Rate was higher among male adults than female adults. The gap indicates a significant increase in Age Specific Death Rate in adult males. Female Age Specific Death Rate in Sri Lanka, indicates an increasing trend, but always at a lower level than male Age Specific Death Rate in Sri Lanka. For instance, 11.37 (per 1000 person) death rate can be seen in the 55-59 male age group while 4.90 (per 1000 person) death rate can be seen in the 55-59 female age group. Male age-specific death rates are generally higher than female rates (Nadarajah, 1983). Since the largest reversals in sex mortality differentials in Sri Lanka have occurred in the age range 15-44 years, it is likely that progress made in reducing the maternal death rate has been an important factor in the transition (Nadarajah, 1983).

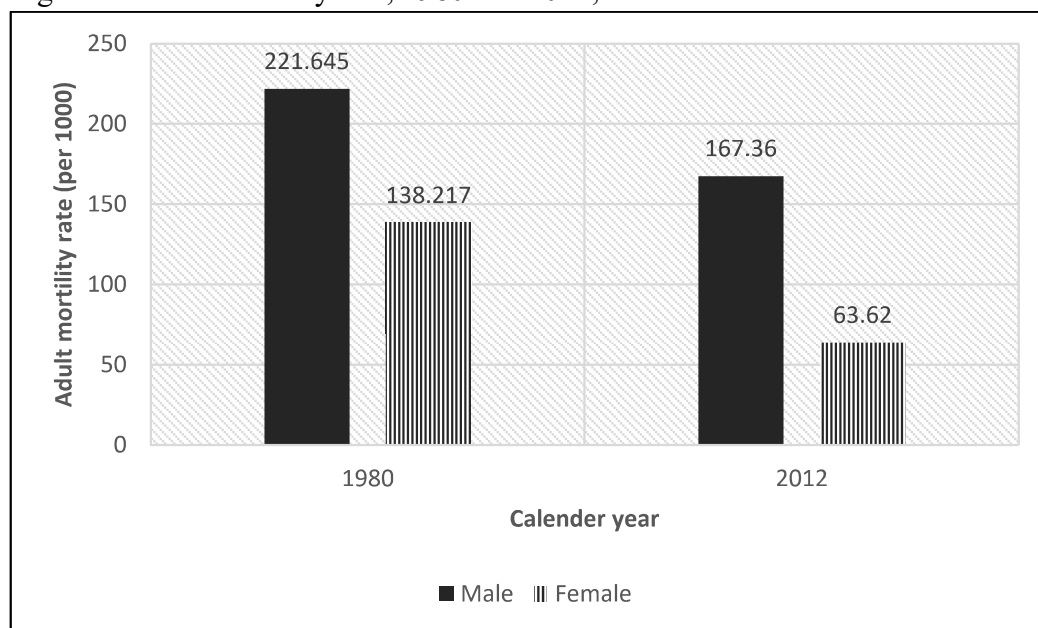
Figure 1: Age Specific Death Rate in Sri Lanka by age and sex, 2012.



Source: Department of Census and Statistics, 2012

“Adult mortality rate in males is the probability of dying between the ages of 15 and 60; that is, the probability of a 15-year-old male dying before reaching age 60, if subject to age-specific mortality rates of the specified year between those ages” (World Bank, 2018). As shown in Figure 2, Mortality rate of male adults (per 1,000 male adults) in Sri Lanka was reported at 221 in 1980 and 167 in 2012. When compared with the 1980 and 2012 data, a significant decrease can be seen in both male and female adult mortality rates. Although 83 more male adults have died in 1980 than female adults, when it comes to 2012, 104 more male adults have died than female adults. A tentative conclusion can be drawn by looking at Figure 02 that the male adult mortality rate has increased over time.

Figure 2: Adult mortality rate, 1980 and 2012, Sri Lanka



Source: World Bank Data, 1982 and 2012

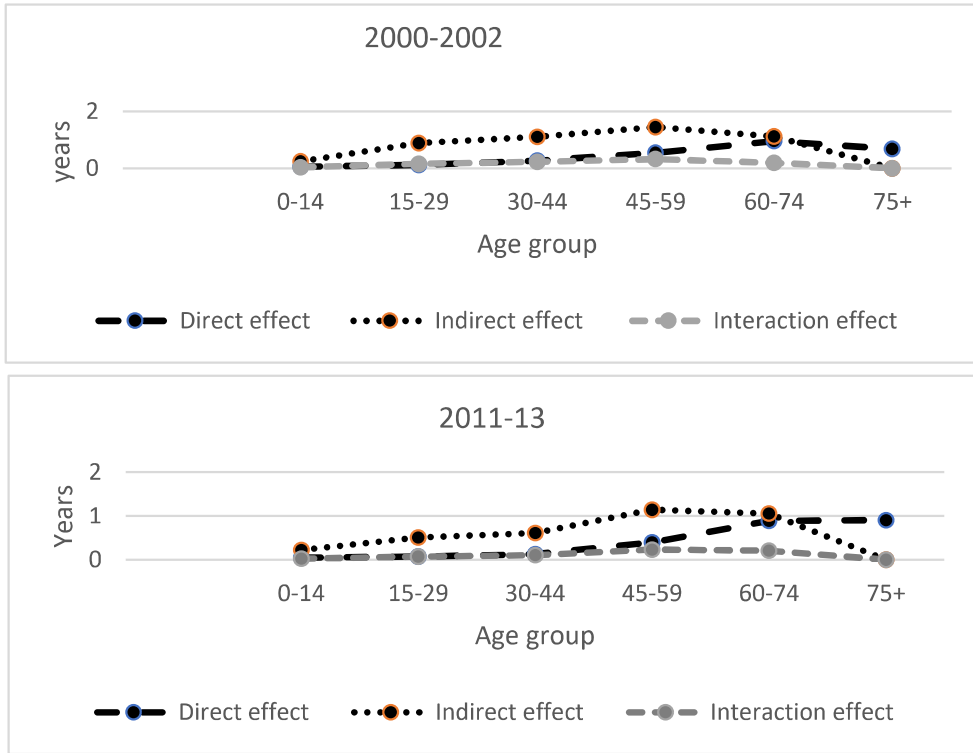
It can be decomposed the gap between male female life expectancy by their ages. There are three methods can be identified in decomposition method such as direct indirect and interaction.

According to Table 1 differential mortality by sex translates into 8.4 years of higher life expectancy for women compared to men in 2000-02 and 6.6 years of higher life expectancy for women compared to men in 2011-13. When considering the decomposition effect of the differential mortality by sex according to according to Figure 3, 2.604 of years impact on contribution of sex differentials of mortality through direct effect can be seen in 2000-2002. 4.805 years have been contributed indirectly and 0.919 years have been contributed through interaction effect in 2000-02 life expectancies. A high proportion of years have been contributed through indirect effect.

When it comes to 2011-13 the difference between male and female life expectancy is 6.6 and a high proportion of years have been contributed through indirect effect at 3.531 years. According to Figure 4 when compared with the 2000-02 and 2011-13 life expectancies 45-59 age group has contributed a high proportion (2.315 years) of years in 2000-02 for the overall effect and 60-74 age group has contributed the highest proportion (2.148 years) of years for the overall effect in 2011-13. The data above indicates the age groups which contribute highest proportion of sex differential in mortality and life expectancy in Sri Lanka. Eventually, the important factor is that the

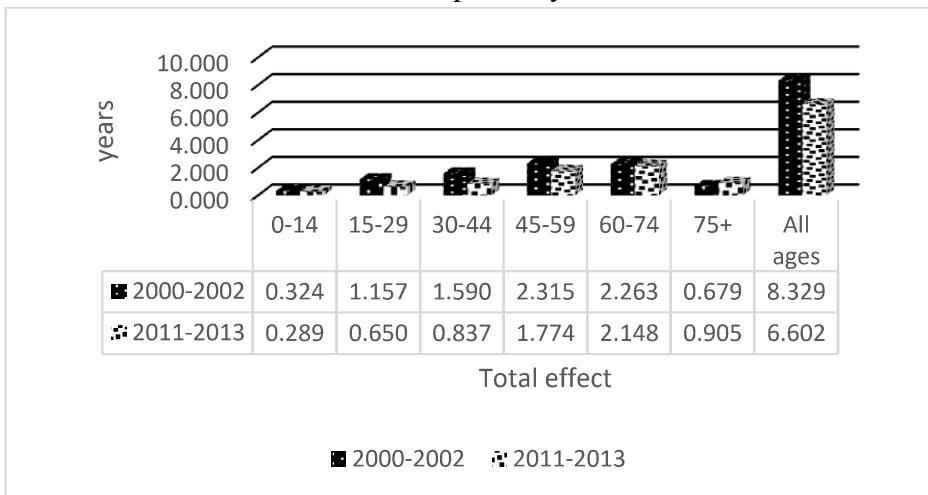
adult age group contributes a high proportion in the gap between life expectancy and mortality in males and females.

Figure 3: Exclusive age contribution of Sex Differentials of Mortality, 2000-02 and 2011-13.



Source: Author illustrations using data from Department of Census and Statistics

Figure 4: Contribution of Sex Differentials of Mortality at Each Age to the Total Sex Differentials in Life Expectancy at Birth, 2000-02 and 2011-13.



Source: Author illustrations using data from Department of Census and Statistics.

Conclusion

It was evident that adult females are experiencing higher life expectancy and mortality rates than adult males. When considering the decomposition method, a higher difference in life expectancy can be seen between adult females and males. In conclusion, it is speculated that public health efforts reduce mortalities among both adult males and females, especially male adults in Sri Lanka. Hence policy makers need to pay attention to health, social and education status among adult males, and need to implement policies to improve men's health.

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