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Gender Gap In Life Expectancy In The South Caucasus

Policy Brief

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Background: the gender gap in life expectancy around the world

Across the world, women tend to live longer than men. In more developed countries, such as within the OECD, women are expected to live to 83 years of age, on average 5.3 years longer than men.[1] The gender gap is similar for upper-middle-income countries (UMIC), with a life expectancy gap of 5.9 years,[2] and for low- and middle-income countries (LMIC), with 4.7 years of further life expectancy for women.

However, when one considers European and Central Asian (excluding high income) countries (EECA), the gender gap in longevity widens significantly. For example, women in the EECA were expected to live 78 years and men to only 69.9 in 2019, widening the life expectancy gap to 8.1 years.

A higher gender gap in life expectancy (GGLE), where it exists, is a worrisome demographic indicator, one which impacts the quality of life of both men and women. Since the retirement age for men is either the same or higher than for women in most countries,[3] it nearly always indicates that men enjoy fewer years of retirement. At the same time, the wider gap also implies that women potentially spend longer living alone in their old age and more years living with disabilities. OECD data,[4] for example, indicates that after the age of 65, both women and men in OECD-25 countries will enjoy around 9.8 and 9.7 years of healthy life, respectively, yet women also have additional years of "unhealthy" (limited mobility) life: 11.7 compared to 8.5 years for men.

[1] Life expectancy at birth in 2019. World Development Indicators: https://databank.worldbank.org/source/world-development-indicators.
[2] In upper-middle-income countries, women were expected to live somewhat less than in OECD nations (79.6 vs 83 years), whereas in LMIC the female life expectancy was significantly lower (73.9 years).
[3] Based on the data from https://tradingeconomics.com/country-list/retirement-age-men and https://tradingeconomics.com/country-list/retirement-age-women.
[4] Life expectancy and healthy life expectancy at age 65, OECD iLibrary: https://www.oecd-ilibrary.org/sites/82ca511d-en/index.html?itemId=/content/component/82ca511d-en.

Moreover, since women tend to earn less than men (by 12.7% in the EU[5] and by 18% in the US[6]) women are poorer in the last years of their life. This is especially true in those countries lacking survivor pension benefits or where other social protection mechanisms for the poor, including in old age, are relatively weak.[7]

Reasons behind the gender gap in life expectancy

Researchers have distinguished that the causes behind higher life expectancy among women are both biological and social.

For instance, evolutionary biologists hypothesize that women's bodies adapted to become more durable, as the survival of offspring was dependent on the welfare of the mother. Recent research has also revealed that higher survivability is also a characteristic of females in other species (Lemaitre et al., 2020). Certain scientists argue that differences in both DNA composition and the hormonal make-up of the human body is responsible for the variance in life expectancy across the genders.[8]

However, there are also behavioral factors that affect female and male longevity. A study by Rochelle et al. (2015) identifies several social and behavioral factors that predict the gender gap in life expectancy. These influences include tobacco use, social engagement, life satisfaction, GDP level and inequality (when predicting male life expectancy), as well as alcohol consumption and GDP level (in female life expectancy).

Some studies have also linked the perception of gender roles with health outcomes. A 2007 study in the UK found that men with higher "femininity" scores were less likely to die from coronary heart diseases, suggesting that men exhibiting traditional "masculine" behavior were at higher risk (Hunt et al., 2007; Okuzyan et al., 2008).

Further earlier research had argued that women have a higher propensity to use healthcare services, as cultural perceptions make it more "acceptable" for them to be sick (Wingard, 1984), although later studies found little to no evidence that women "over-report morbidity" (Macintyre et al., 1999). Nevertheless, differences in healthcare utilization rates do exist, and typically

[5] Eurostat (2021): https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Gender_pay_gap_statistics.
[6] Pew Research analysis (2022): https://www.pewresearch.org/fact-tank/2023/03/01/gender-pay-gap-facts/.
[7] OECD Pension Outlook (2018). Moreover, according to OECD research, "the death of one partner causes a drop in living standards of the survivor, even in couples where both partners earned the same own (50% of the couple's) pension income". Thus, in the absence of a survivor's pension benefit, the death of a spouse and loss of their pension income would leave women exposed to a sharp drop in living standards, even if their pension benefits were the same.
[8] Women have XX chromosomes, which typically carry copies of the same genes. This gives women an additional "back-up" pool of healthy genes, as opposed to men who have XY chromosomes and thus are more susceptible to genetic diseases (Cournil & Kirkwood, 2001). Estrogen is shown to have protective qualities against cardiovascular diseases (Xiang et al., 2021; Viña et al., 2005); in contrast, testosterone can make the body stronger although it can also have a damaging effect on the cardiovascular system later in life (Gems, 2014).

women are more likely to use primary care and to visit diagnostic clinics more often than men (Bertakis et al., 2000; Redondo-Sendino et al., 2006). One Danish registry study suggested that, in comparison to women, men had lower rates of primary care use but higher rates of hospitalization, thus indicating their tendency to postpone healthcare (Juel & Christensen, 2005).

Other behavioral differences between men and women prove to be an important facet of GGLE. World Health Organization data shows that men have higher suicide rates than women in many countries around the world.[9] Equally, men tend to lead less healthy lifestyles (around 37% of men smoke tobacco globally, in contrast to only 8% of women).[10] Furthermore, men and boys tend to take more risks – for instance, WHO reports that they are more likely to die in traffic accidents than women and girls.[11]

The context of the South Caucasus

The regional context is certainly interesting as it is possible to observe large disparities in the GGLE between Georgia, Armenia, and Azerbaijan. In Georgia, the GGLE is the highest, while it is lowest in Azerbaijan. Overall, men in Georgia live significantly shorter lives than in Azerbaijan and Armenia, whereas women in Georgia live somewhat longer than in Azerbaijan, but significantly less than in Armenia.

While the differences in cultural-religious practices, relating to the acceptability of alcohol, can somewhat explain the gap between Georgia and Azerbaijan, the contrast in GGLE between Georgia and Armenia cannot be attributed to distinctions in religious practices. Therefore, it is important to review the empirical evidence to comprehend why differences in the GGLE exist between the countries of the South Caucasus. Within this policy brief, we discuss some of the evidence as to why the GGLE appears higher in Georgia than the other countries in the region and thereafter suggest areas for further policy research and intervention.

Gender gap in life expectancy in the South Caucasus

Figure 1 below illustrates the difference in life expectancy at birth for men and women, as well as the GGLE for Georgia, Armenia, and Azerbaijan in 2019 (a pre-pandemic year). It is apparent that men in Georgia have a substantially lower life expectancy than men in Armenia (by two years) and Azerbaijan (by one and a half years). Women in Georgia live somewhat longer than in Azerbaijan (by 0.4 years), but significantly less than in Armenia (by two years).

In 2019, the gender gap in life expectancy was not notably different for Georgia and Armenia, although it was significantly lower in Azerbaijan. Yet when evaluating trends over time (Figure 2),

[9] Estimated suicide rates, age-standardized, by country – WHO Global Health Observatory: https://apps.who.int/gho/data/node.main.MHSUICIDEASDR?lang=en.
[10] https://ourworldindata.org/who-smokes-more-men-or-women.
[11] https://apps.who.int/iris/bitstream/handle/10665/68887/a85576.pdf?sequence=1&isAllowed=y.

one can see that over the last three decades the GGLE has almost continuously been somewhat higher in Georgia than other South Caucasus countries.

Figure 1. Life expectancy at birth in the South Caucasus (2019)

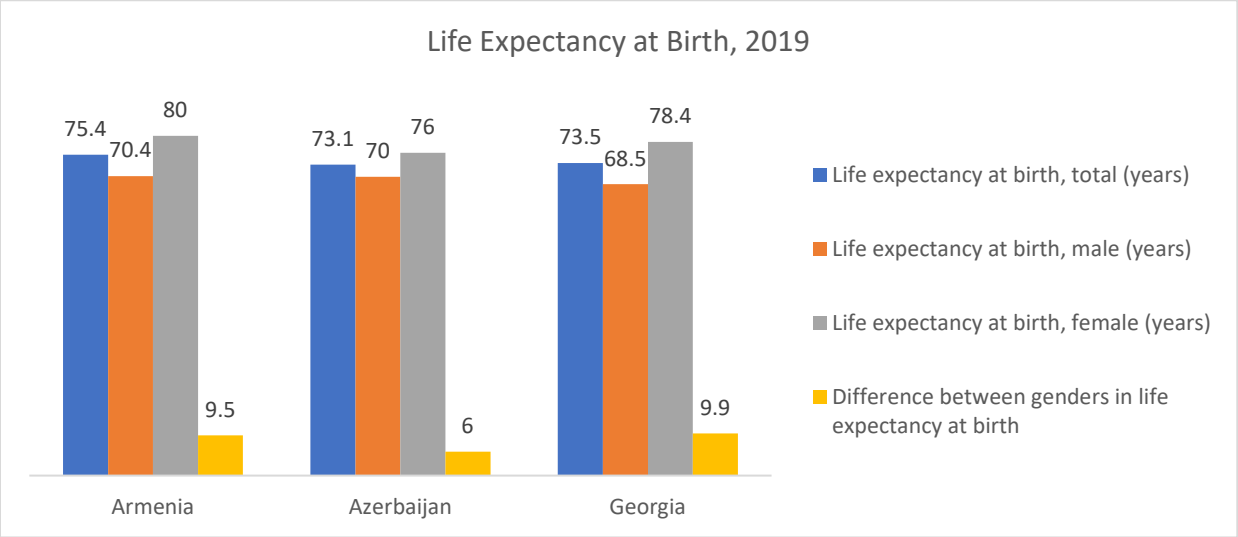
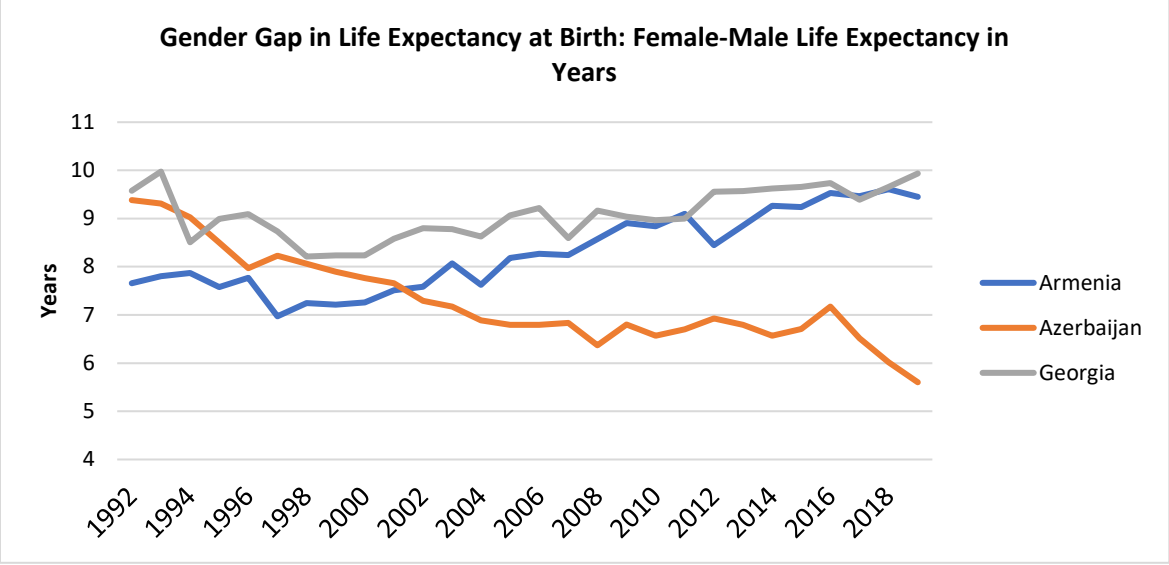


Figure 2 depicts the GGLE for the three countries between 1992 and 2019. Critically, it identifies that the situation is fairly dynamic, as the gap was widening considerably in Armenia, especially between 1997-2019, and falling significantly in Azerbaijan. While in Georgia the GGLE was high in 1992, fell to its lowest point in 1998, but then started rising again and remained ahead of the other South Caucasus countries for many years. Before the pandemic, Georgia's GGLE was 9.9 years, the highest in the region – the GGLE has since risen to 10.1 years, reflecting the impact of COVID-19 on male and female life expectancy.

Figure 2. GGLE in the South Caucasus



While the focus of this policy brief is not the causes of dynamic changes in GGLE, it is still notable that in Armenia we have detected a faster rise in female life expectancy at birth since the early 2000s, while for males this indicator rose more slowly, especially since the economic crisis of 1998.[12]

In Azerbaijan, a lower life expectancy can be observed for both men and women, although this was also paired with a faster rise in male life expectancy from 1992 to 2004, and then again between 2017 and 2019. Similarly, the 2017-2018 period was characterized by some stagnation in the life expectancy of women. The cause of the stagnation during these years is difficult to pinpoint without further empirical research, although one probable cause is the economic crisis experienced in the region from 2014-2016. This crisis, caused by a drop in oil prices,[13] would invariably have had an impact on the overall wellbeing and health of the population, and it may have placed a greater burden on women than men.

In Georgia, there has been relative inertia in the male life expectancy since 2009 – rising at a slower rate than female longevity. A slight decline in both female and male life expectancy can also be detected between 2016-2019. This, once again, could have been caused by the 2014-2016 economic crisis in the region.

Male life expectancy at birth: the differences between countries in the South Caucasus

The relatively high GGLE in Georgia and partly in Armenia, coupled with the lower life expectancy of men, warrants a closer look at the gender gaps within behavioral indicators and health outcomes between the three nations in the South Caucasus.

Harmful behaviors

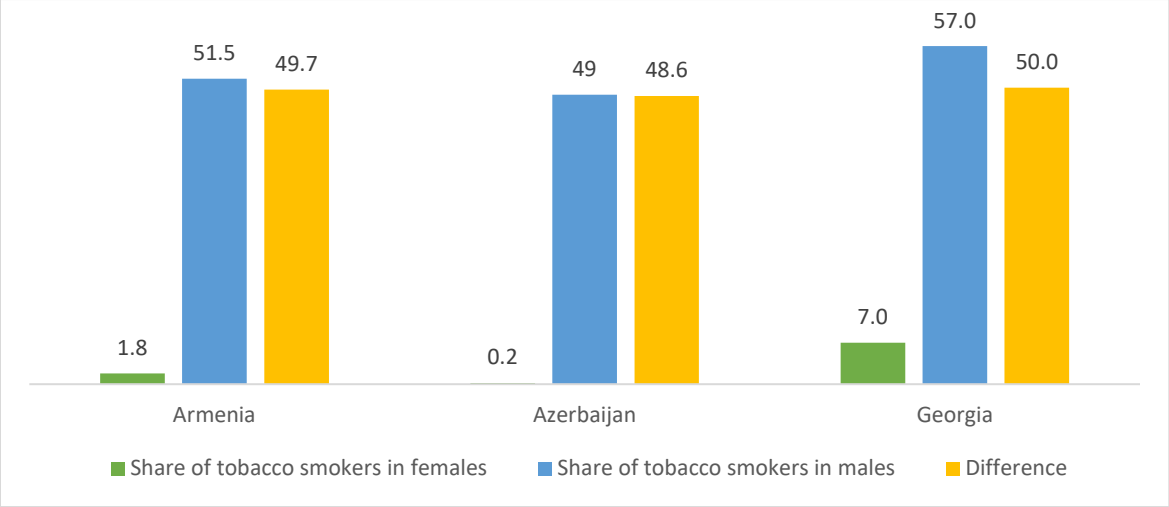
There is a consensus in the literature that smoking is one of the largest identifiable factors contributing to GGLE, although it cannot alone explain the notable life expectancy gap.

The figure below illustrates the share of tobacco smokers among men and women in the region, based on the WHO STEPS surveys for 2016 and 2017. It is clear from the data that there is a substantially higher share of male smokers in Georgia than in Armenia or Azerbaijan. However, the gap between male and female smoking rates is similar for all three countries, largely due to the higher share of female smokers in Georgia.

[12] In 1998, there was a significant economic and financial crisis in Russia, which affected the entire region. Many Georgian and Armenian migrants worked in Russia at the time.

[13] In 2014, oil prices started to decline causing economic problems and a recession in Russia, Armenia's largest regional trading partner. The Armenian GDP suffered as a result, causing real GDP growth rate to drop to 0.2% in 2016.

Figure 3. Share of tobacco smokers



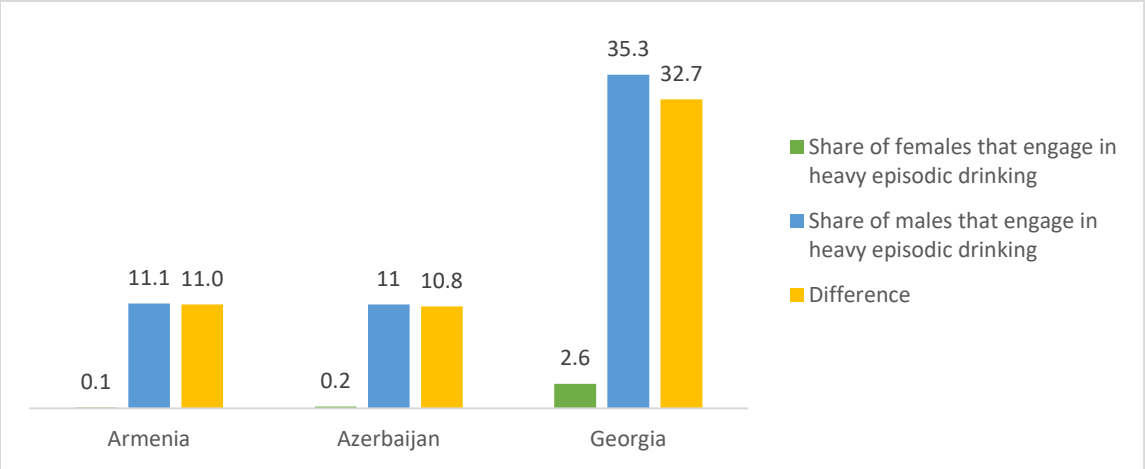
Source: WHO STEPS Survey (2016, 2017)

One must note that this data does not indicate the intensity of smoking, and it may well be that women are more likely to be occasional smokers, while men are likely to chain smoke, thus contributing to notable differentials in health outcomes.

Drinking alcohol is another factor that contributes to life expectancy. Research consistently links heavy episodic drinking with adverse health, and some studies even consider occasional drinking to negatively impact health.

The findings in Figure 4 highlight the share of females and males engaging in heavy episodic drinking (defined as six or more drinks on any single occasion in the past 30 days). Remarkably, in comparison to the two other countries, *three times the number of men engage in heavy episodic drinking in Georgia* (35.3% versus 11%). Consequently, the difference between males and females is also more pronounced – standing at 32.7 percentage points. Remarkably, the reported rates of heavy episodic drinking are very similar for Armenia and Azerbaijan.

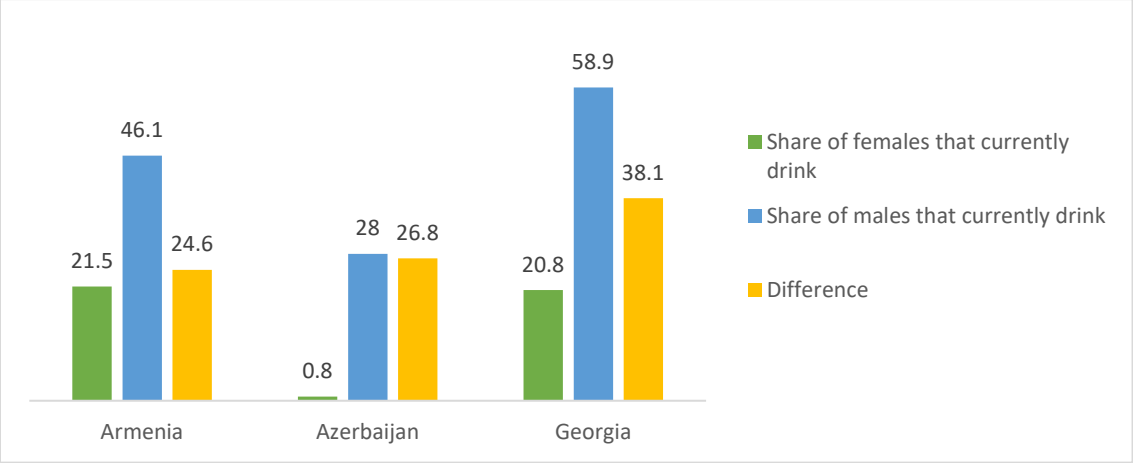
Figure 4. Share of females/males that engage in heavy episodic drinking



Source: WHO STEPS Survey (2016, 2017)

However, when one reviews the share of males and females that currently drink (have consumed alcohol within the past 30 days), the gender gap becomes larger for both Georgia and Armenia, standing at 38.1% and 24.6%, respectively, while for Azerbaijan the gender gap is predictably lowest (Figure 5 below). This gap could also be a contributing factor towards the larger difference observed in the life expectancy of males and females in these countries relative to Azerbaijan.

Figure 5. Share of females/males that currently drink



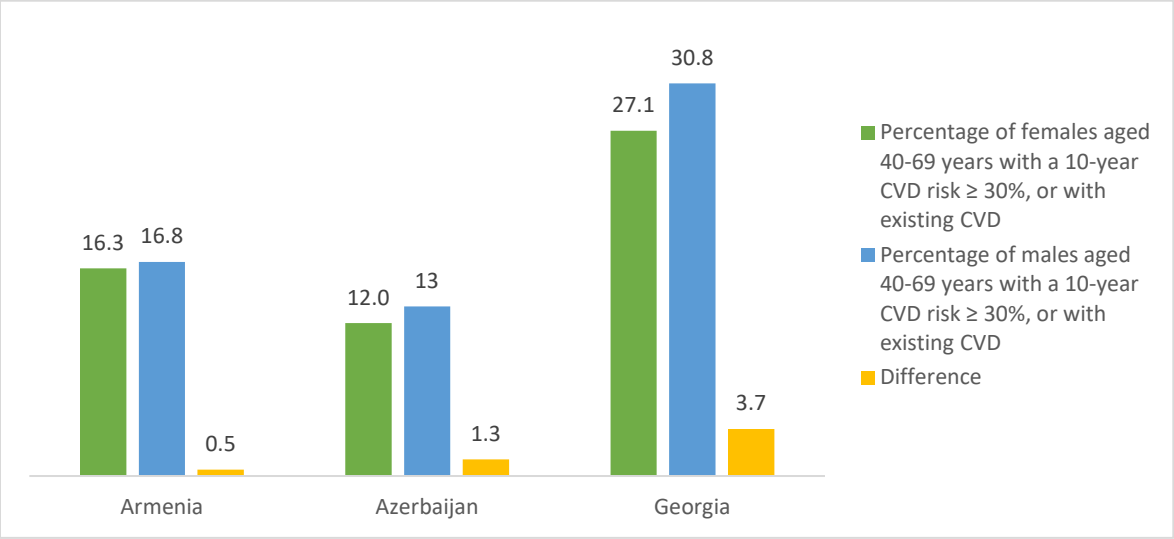
Source: WHO STEPS Survey (2016, 2017)

Risks of cardiovascular diseases

The aforementioned factors also influence the likelihood of individuals having cardiovascular diseases (CVD). It naturally follows that Georgia may have the largest gap in CVD between males and females in the South Caucasus. In Armenia, the risks of CVD are also fairly high for both men and women, and significantly higher than in Azerbaijan. This may be driven by the differences in smoking and drinking patterns between these countries. The data below (Figure 6) shows the

percentage of men and women aged 40-69, with existing CVD, or with a 10-year CVD risk equal to or larger than 30%.

Figure 6. Percentages of females/males aged 40-69 years with a 10-year CVD risk ≥ 30%, or with existing CVD



Source: WHO STEPS Survey (2016, 2017)

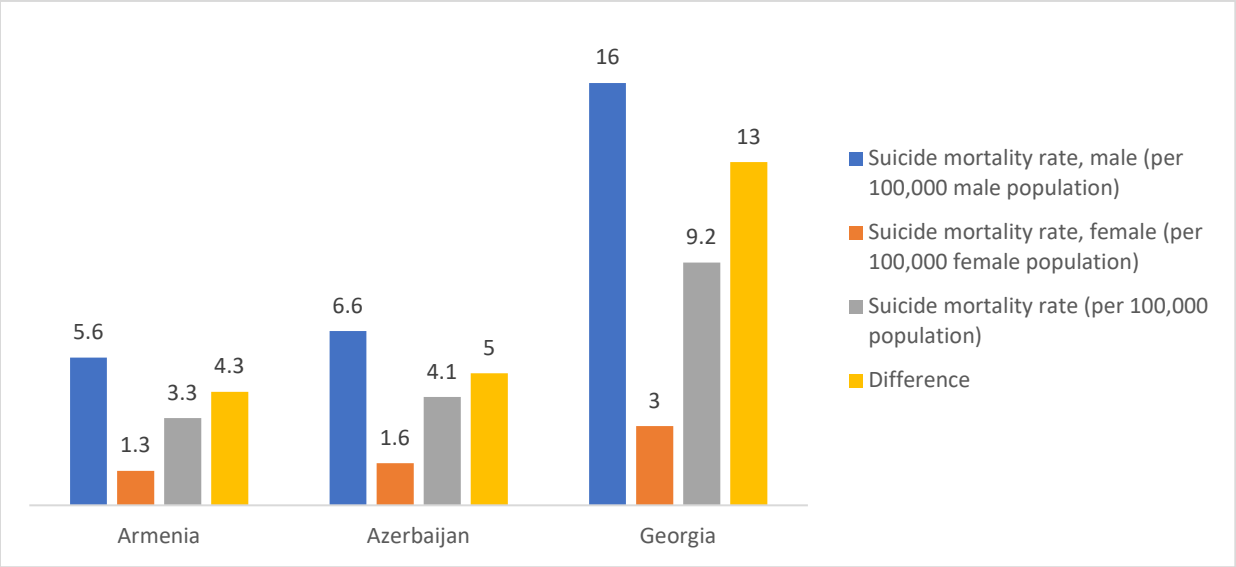
In regard to this data, one can clearly observe the correlation between harmful behaviors, such as drinking and smoking, and the risk of CVD.

Mortality rates from suicide

Suicide rates directly contribute to the life expectancy metric. *There is an unusually high difference in suicide mortality rates among males and females in Georgia*, while in Armenia and Azerbaijan this mortality rate is much lower, and the distinction between the genders is also notably smaller than in Georgia.

In Georgia, there is a 13 percentage point (pp) difference in the suicide mortality rate between males and females. This is more than three times larger than Armenia (4.3 pp) and over two and a half times greater than the difference in Azerbaijan (5 pp).

Figure 7. Suicide mortality rate per 100,000 population (2019)



Source: World Bank, World Development Indicators

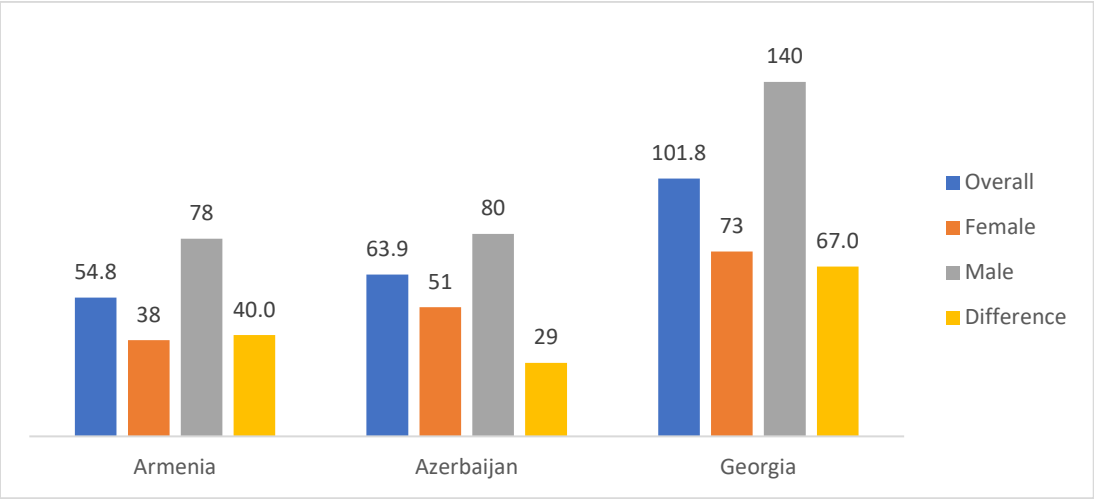
Environmental factors

Georgia has the largest gender gap for the mortality rate attributed to household and ambient air pollution. Figure 8 reveals that Georgia has the overall highest mortality rate in this metric within the South Caucasus (102 deaths per 100,000 population, vs. 55 in Armenia and 64 in Azerbaijan). Air pollution is, undoubtedly, a significant contributor to life expectancy, although it is less clear why this large gap in mortality exists between men and women in Georgia. It may be that higher smoking rates are a contributing factor to higher mortality from air pollution.

Regarding Armenia and Azerbaijan, we can see that ambient air pollution impacts female mortality in Azerbaijan more highly than in Armenia, while male mortality rates are similar between these two countries. This is an interesting discovery, which may partially explain why women in Azerbaijan have a lower life expectancy than in Armenia, despite having lower reported rates of drinking and smoking.[14]

[14] One must note that ambient air pollution can only be viewed as a contributor not the major cause of higher female mortality in Azerbaijan. For example, women in Azerbaijan have a substantially lower life expectancy than women in both Armenia and Georgia, and this cannot solely be explained by air pollution.

Figure 8: Mortality rate (per 100,000 population) attributed to household and ambient air pollution, age-standardized (2016)



Source: World Bank, World Development Indicators

Conclusions and recommendations

Almost everywhere in the world, including the South Caucasus, women tend to live longer than men. This gender gap in life expectancy appears to be due to evolutionary and biological as well as behavioral and social factors. However, the research suggests that trends in the GGLE are dynamic and may also be driven by economic and social changes. Large gender gaps in lifespan are problematic for countries because they decrease the welfare of both men (via fewer years of retirement) and women (via longer years spent in widowhood or reduced income in later life).

In the South Caucasus, the lifespan of men and women alike had been rising since the 1990s, but the trends in GGLE have diverged. Georgia historically had higher a gender gap in life expectancy, and this trend was increasing over time. Similarly, although Armenia's GGLE is lower than Georgia, an upward trend can be observed, and the country has been "catching up" with the Georgian GGLE over the last decade.

In this policy brief we provided certain key insights into why the GGLE may be higher in Georgia than in other South Caucasus countries, and why differences can be discerned between the GGLE in Georgia, Armenia, and in Azerbaijan. While further research is required in this area, the preliminarily analysis underscores several potential contributing factors:

- **Smoking:** Georgia is characterized by a substantially higher rate of smoking among men (and women) than Armenia or Azerbaijan. The gap between the male and female rate of smoking is somewhat larger in Georgia than elsewhere in the South Caucasus. In Armenia, smoking rates are substantially lower than in Georgia but still higher than in Azerbaijan, which can in part explain the differences in the GGLE between these countries.

- **Harmful drinking:** heavy episodic drinking rates are highest for Georgian men, relative to their Armenian and Azerbaijani counterparts, and the gender gap between men and women for this behavior is particularly large (32.7 pp). Drinking rates, especially among females, are also higher in Armenia than in Azerbaijan.
- **Suicides:** the difference between male and female suicide mortality rates are much larger in Georgia than in the other countries of the South Caucasus (15 pp vs. 4.3 and 5 pp in Armenia and Azerbaijan, respectively).
- **Pollution:** mortality rates for household and ambient air pollution are very high in Georgia (26% higher than in Armenia and Azerbaijan), and we detected a large gap between male and female mortality in this category. In Azerbaijan, female mortality from ambient air pollution is much higher than in Armenia (51% vs. 38%), whereas for males the two mortality rates remain similar (80% vs. 78%). This suggests that women are exposed to greater air pollution risks, which is a contributing factor to their lower life expectancy.

Overall, the current analysis suggests that further research is needed to expose the precise mechanisms and driving factors behind gender gaps in life expectancy within the South Caucasus. However, even after the preliminary research, it is important to recommend close monitoring of the smoking rates for both men and women; greater efforts to address heavy drinking among men; and attempts to tackle air pollution in big cities and urban areas. In particular, special attention must be paid to the suicide rate in Georgia. Policy interventions could therefore include increasing awareness of suicide helplines and carrying out more effective outreach and social advertisement campaigns to help potential victims. Finally, addressing the traditional gender norms and perceptions related to masculinity could potentially help reduce certain harmful behaviors and the suicide rate among men. Therefore, as the data from various countries suggest, gender gaps in life expectancy can and should be mitigated by social interventions and changes in behavioral patterns – including shifting societal gender norms and perceptions.

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