

Research Letter

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The male–female suicide ratio in Denmark plateaus at 2.7: an opportunity for targeted intervention?

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Introduction

According to the World Health Organization, more than 700,000 people die from suicide every year, making it an important public health priority (WHO, 2022). The development in the number of suicides over the past decades varies substantially between countries (WHO, 2022). In Denmark, this development represents a success story. In 1981, the number of suicides in Denmark was 1535, which dropped – rather dramatically – to reach a level of approximately 600 suicides per year over the following four decades (see Fig. 1A). It has previously been reported (Østergaard, 2018) that this drop in suicides coincided with a marked increase in the male preponderance of suicides – as the male–female ratio in the number of suicides went from approximately 1.7 to 2.7 over the period from 1981 to 2015 (see Fig. 1B). The aim of this study was to bring this knowledge up-to-date by determining the development in the male–female suicide ratio in Denmark since 2015.

Methods

Data on the number of male and female suicides in Denmark from 2016 to 2021 were obtained from the Danish Health Data Authority and the male–female ratio for each year was calculated. Data on the number of suicides in Denmark are publicly available (<https://www.esundhed.dk/>), and hence, no ethical review board approval was required for this study.

Results

In the period from 2016 to 2021, the number of suicides in Denmark was as follows: 2016: 580 suicides (435 males and 145 females), 2017: 585 suicides (420 males and 165 females), 2018: 585 suicides (425 males and 160 females), 2019: 605 suicides (450 males and 150 females (and 5 without recorded sex)), 2020: 580 suicides (410 males and 170 females), and 2021: 545 suicides (395 males and 150 females). The resulting male–female suicide ratio from 2016 to 2021 (mean = 2.7, range 2.4–3.0) is shown in Fig. 1C.

Discussion

This analysis establishes that the male–female ratio in the number of suicides in Denmark has plateaued at 2.7. Thus, it seems that women have benefitted relatively more than men from the public health initiatives succeeding in reducing the number of suicides in Denmark over the past four decades, which have included the increasing capacity to treat mental disorder, establishing suicide prevention centres, and restricting access to lethal means (Nordentoft, 2007).

The clear male preponderance in suicides offers an opportunity with regard to further reduction of suicides in Denmark, and in other countries with a similar sex distribution with regard to suicide. Specifically, increased emphasis on the mental health of males seems warranted. As previously pointed out (Østergaard, 2018), improved detection of so-called “male depression”, as operationalised by the Gotland male depression rating scale (GMDRS) (Zierau *et al.*, 2002) or the Male Depression Risk Scale (MDRS-22) (Rice *et al.*, 2013), may be part of the solution. According to the GMDRS and the MDRS-22, the male depression phenotype is characterised by symptoms such as irritability, restlessness, lowered stress threshold, low impulse control, substance abuse, and aggressive/acting-out behaviour, which differ from those of “classical” depression as defined by the major diagnostic systems, but may well be equally disabling and potentially even more risky with regard to suicide. Unfortunately, despite a strong theoretical/epidemiological rationale for its existence and importance, male depression has received relatively little attention. This calls for action (Sher, 2018). Specifically, more widespread use of the GMDRS and the MDRS-22, e.g., by general practitioners, could be a step towards reducing the number of suicides among males.



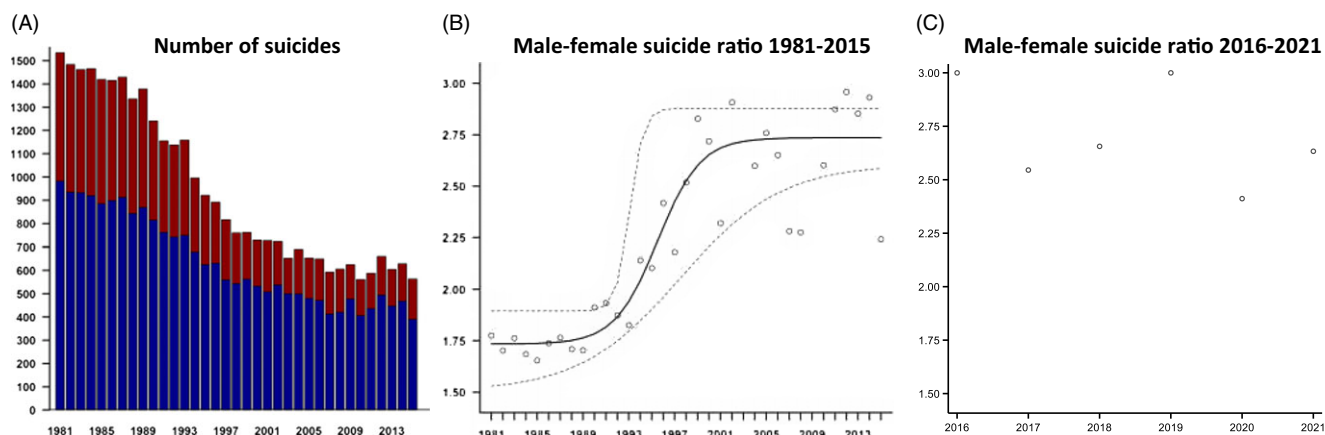


Fig. 1. Development in the number of suicides and the male–female suicide ratio in Denmark from 1981–2021. *A:* The number of completed suicides by males (blue) and females (red) in Denmark in the period from 1981 to 2015. Data source: Statistics Denmark (www.statistikbanken.dk). *B:* The male–female ratio in the number of suicides in Denmark in the period from 1981 to 2015 with 95% confidence bands. *C:* The male–female suicide ratio in the period from 2016 to 2021. Data source: The Danish Health Data Authority (www.esundhed.dk). The left and middle figures are reproduced from Østergaard (2018) with approval from the American Psychiatric Association.

Data availability. The data are publicly available at the Danish Health Data Authority: <https://www.esundhed.dk/>

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Conflict of interest. Østergaard received the 2020 Lundbeck Foundation Young Investigator Prize. Furthermore, Østergaard owns/has owned units of mutual funds with stock tickers DKIGI, IAIMWC, SPIC25KL, and WEKAFKI and has owned units of exchange traded funds with stock tickers BATE, TRET, QDV5, QDVH, QDVE, SADM, IQQH, USPY, EXH2, 2B76, and EUNL.

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