

Norwegian Institute of Public Health - Centre for Fertility and Health – impact case number 1

Institution: Norwegian Institute of Public Health
Administrative unit: Centre for Fertility and Health
Title of case study: Gender, education, and health
Period when the underpinning research was undertaken: 2017-2023
Period when staff involved in the underpinning research were employed by the submitting institution: 2017-2023
Period when the impact occurred: 2017-2023

1. Summary of the impact

Boys perform worse than girls in school, and men obtain lower education and have higher mortality than women. A group of researchers in our Centre has fundamentally changed how issues facing boys and men are viewed and discussed in the Norwegian society. They have brought attention to gender differences in school performance and education, created public awareness that biological differences in development contribute to these outcomes, raised concerns for health impacts of gender differences in schooling, and presented evidence-based solutions to the issues. The change has come about through wide-spread media participation, engagement with policymakers, and contributions to several government commissions and white papers.

2. Underpinning research

Boys perform worse than girls in school and men obtain lower education than women in Norway. This societal challenge has implications for health, one of many implications of which are the large and growing differences in male mortality by education and income.

Gender differences in school performance and education in Norway were well documented by the Stoltenberg commission (NOU 2019:3). Brandlistuen *et al.* (2021) in addition contributes with research on gender differences in early school performance, development, and behaviour among 5-year-old children. Using the Norwegian Mother, Father, and Child Cohort Study (MoBa), the researchers found gender differences favouring girls for all outcomes except internalising behaviour, including a .31 standard deviation difference in school readiness.

A second research endeavour has been to explore biological differences in development between the sexes. Using data on 13,477 British twins in the Twins Early Development Study (TEDS), Torvik *et al.* (2021) found that sex differences in pubertal maturation were important and accounted for up to half of the sex difference in academic achievement, whereas genetic influences on pubertal development explained 7-8% of the variation in academic achievement.

The third group of findings relates to impacts of gender differences in school performance and education on health and family formation. Beck *et al.* (2023) uses propensity score matching to study impacts of failing a final exam on mental health diagnoses in the following year. They find a 31% increased risk for boys compared to 11% for girls, and 64% of the impacted were male. Reme and Torvik (*forthcoming*) finds that males and females with low school grades have a three-to-fourfold higher mortality between ages 13 and 30 compared to children with high grades (0.06% vs 0.02%). Suicides, accidents, and overdoses are the main sources of excess mortality among males with low school grades. Bratsberg *et al.* (2023) find larger differences in fertility and childlessness by income for males than for females. Lack of family network may be one contributing factor to

excess male mortality. Taken together, this research suggests that school performance may affect men's health both in the short and the longer term.

Fourth, the group has been concerned with studying policies that can improve boys' performance in school. Flatø *et al.* (2023) evaluates effects of introducing school psychology offices in Norway, that promoted delayed school start for children based on a screening test in the 1960s and 1970s. They find positive effects of the offices during this period on adult income, and negative effects for male education when the practice was abandoned.

Key researchers:

- Camilla Stoltenberg, Director General NIPH (01.11.2017-01.07.2023)
- Fartein Ask Torvik, Senior Researcher (01.08.2018-today)
- Martin Flatø, Researcher (01.08.2018-today)
- Bernt Bratsberg, Senior Researcher II (29.06.2021-today)
- Thomas Kleppstø, Postdoc (01.11.2020-06.08.2023)
- Hans Fredrik Sunde, PhD Fellow (01.08.2020-30.09.2023), Researcher (01.10.2023-today)
- Magnus Nordmo, Postdoc (18.01.2021-today)
- Bjørn-Atle Reme, Postdoc/Researcher (01.11.2019-today)
- Jonathan Wörn, Postdoc/Researcher (09.12.2019-today)
- Kate Beck, PhD Fellow (15.08.2021-today)

3. References to the research

- Beck KC, Røhr HL, Reme BA & Flatø M. (2024). Distressing testing: A propensity score analysis of high-stakes exam failure and mental health. *Child Development*, 95(1), 242-260. <https://doi.org/10.1111/cdev.13985>
- Brandlistuen RE, Flatø M, Stoltenberg C, Helland SS & Wang MV. (2021). Gender gaps in preschool age: A study of behavior, neurodevelopment and pre-academic skills. *Scandinavian Journal of Public Health*, 49(5), 503-510. <https://doi.org/10.1177/1403494820944740>
- Bratsberg B, Kotsadam A & Walther S. (2021). Male Fertility: Facts, Distribution and Drivers of Inequality. *IZA Discussion Paper*, No. 14506.
- Flatø M, Bratsberg B, Kotsadam A, Torvik FA, Røgeberg O & Stoltenberg C. (2023). Ready for School? Effects on School Starters of Establishing School Psychology Offices in Norway. *CESifo Working Paper*, No. 10352.
- Reme BA & Torvik F. (forthcoming). School performance and mortality in young adulthood: a register-based population study. *Unpublished, available upon request*.
- Torvik FA, Flatø M, McAdams TA, Colman I, Silventoinen K & Stoltenberg C. (2021). Early puberty is associated with higher academic achievement in boys and girls and partially explains academic sex differences. *Journal of Adolescent Health*, 69(3), 503-510. <https://doi.org/10.1016/j.jadohealth.2021.02.001>

4. Details of the impact

The initiative started on 10 February 2017 with a newspaper column by Camilla Stoltenberg in Morgenbladet that highlighted the large gender differences in school performance and education at the disadvantage of boys and men, and launched the hypothesis that biological differences in development are contributing to these outcomes. It was followed up through two mutually reinforcing tracks. A *policy* track, in which the Ministry of Education on 25 August 2017 established a government commission on gender differences in school performance chaired by Stoltenberg, and a *research* track with the RCN-funded project "Health Gap: Health, Maturity, and Gender Gap in Education" which started on 1 May 2018. The research project was placed at the Centre for Fertility and Health (CeFH), which had several advantages. CeFH is an interdisciplinary centre, and

a combination of medical and social scientists were needed to properly address the research questions. Furthermore, it enabled studies of the role of reproductive maturation for school performance and impacts of education and income for male fertility.

Martin Flatø and Fartein Ask Torvik were hired in August 2018 and, together with Stoltenberg, the team worked closely with the Ministry of Education to contribute to the commission report and at the same time get input to develop research that would be relevant for policy. The close connection between policy and research has been key to achieving the impact in this case. The report made top headlines in most Norwegian news outlets when it was published, and the team gave more than 100 presentations on the work. This included dissemination to an audience outside Norway through Stoltenberg's presentations to Unesco and OECD, and her TED talk in 2019. The impact of changing the awareness in the general public as well as among policymakers can be dated to the 2017-2019 period.

After the turn of the decade, initial results and publications emerged from the group. Additional funding was secured, including the projects "Reproduction of socioeconomic differences and mental health across generations (REMENTA)" led by Torvik and "Lost in transition? Uncovering social and health consequences of sub-optimal transitions in the education system" as well as "Pubertal Timing and Inequalities in Education" led by Flatø. We were also partners in the project "Determined to Succeed? Maturation, Motivation and Gender Gaps in Educational Achievement" led by the Institute for Social Research. Kate Beck, Thomas Kleppstø, Magnus Nordmo, Bjørn-Atle Reme, Hans Fredrik Sunde and Jonathan Wörn were recruited, and the group expanded.

The findings from the Health-Gap project was presented at an open seminar attended by the Minister of Health and Social Affairs Ingvild Kjerkol on 16 March 2023, and followed up with a newspaper article in Morgenbladet on 17 March 2023 and with a presentation for all staff in the Ministry of Education on 3 May 2023. In addition to documenting the gender differences in school performance and their preschool origins, the group's research showed that differences in pubertal timing could partially explain the gender differences. The results also showed strong associations between school performance, boys' mental health, and mortality among young men. This widened the policy debate beyond the education sector and triggered interest within the health authorities in the school problems that are facing many boys. The group has also provided research on potential policies for a more maturity-sensitive and male-friendly school system.

The research is continuously being referred to and acted upon in policymaking. The Stoltenberg commission's report was followed up by Reports to the Parliament on early learning (Meld. St. 6 (2019–2020)) and upper secondary education (Meld. St. 21 (2020–2021)). Research from the group was presented in a parliamentary hearing on lower secondary school reform in 2022 and has thus uniquely impacted policies for all levels of education in Norway. The group has successfully managed to also communicate the gaps in current knowledge and called for further research that uses person-identifiable register data. This has been instrumental for a new government enquiry on improved data collection from schools and kindergartens, to which the group has contributed with expert advice. The group has also conveyed the research to the government commission on male equality where Stoltenberg is an appointed member, and the government commission on social differences in school performance where Torvik is member. Our research was cited by the Commission on quality assurance and development in schools (NOU 2023:27).

CeFH has spearheaded research and dissemination on gender, education, and health through leading several research projects, engaging in policy dialogue, and hosting several events. The research has been conducted in collaboration with other research organisations, in particular the Institute for Social Research and the The Ragnar Frisch Centre for Economic Research. The end

beneficiaries of our impact are boys in the Norwegian educational system, and girls who face similar problems as those that on average are affecting more boys. However, it will take years before any tangible impacts may be measured for boys, and it may not be likely that researchers will be able to identify research from the group as its cause. Nonetheless, the group has over a relatively short time period managed to fundamentally change public discourse on males in the education system and has engaged with policymakers to improve male equity in education and reduce adverse health consequences.

To our knowledge, no other country has had a similarly broad and balanced public debate and high number of policy processes addressing gender differences at the disadvantage of men. Nearly all OECD countries, and an increasing number of other countries, are facing similar gender differences in schools and education, family formation, health, marginalisation, and socioeconomic differences. At the moment, Norway appears to be at the forefront, however, the need for research and policies on these issues will hopefully soon be acknowledged internationally.

5. Sources to corroborate the impact

- Camilla Stoltenberg, CEO, Norce Research
- Ingvild Kjerkol, Minister of Health and Social Affairs
- Håkon Kavli, Deputy Director General, Section for Analysis and Research, Ministry of Education and Research
- Inga Bejer Engh, the Ombudsperson for children in Norway
- Claus Jervell, chairperson of the Men's Equality Commission, Ministry of Culture and Equality
- Richard Reeves, President, the American Institute for Boys and Men
- Arne Børke, president of MannsForum, a male rights NGO
- Are Saastad, president of Reform – resource center for men, a male rights NGO
- Omar Mekki, CEO, Guttas Campus, an educational programme for boys