

School grading, stress and health among adolescents: Evidence from a Swedish school reform

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Background

- A global trend towards accountability and assessment has characterized education reform leading to an increased focus on assessment and measurement of performance and achievement
- The most prominent practices emerging from this have been high-stakes testing, and a stronger emphasis on grading and marking of students
- The primary aim of accountability reforms has been to increase school achievement
- The vast majority of quantitative evaluations of the reforms looking at the consequences for academic outcomes



Unintended consequences of accountability reforms?

- Accountability reforms have been shown to have unintended side-effects on teaching practices, educational content, and the overall school experiences of pupils
- Critics have argued that accountability policies can increase stress and anxiety, and have detrimental effects on pupil's wellbeing
- Support for this critique comes from qualitative findings that these types of policies can have emotional consequences
- OECD however stated in the 2015 PISA report that at least testing frequency was not related to anxiety among pupils.
- Few large-scale quantitative studies have however examined health-related consequences of accountability reforms such as grading



The study

- Large scale reforms of grading systems in high income countries are uncommon
- The Swedish reform 2011 extended the use of grades from the 8th school year to years 6 and 7 with a concomitant increase of assessment and test-based teaching related to the new grades – creates a quasi-experiment
- In the study we investigate the implications of the reform for pupils:
 - School-related stress
 - Academic self-esteem
 - How this contributes to psychosomatic symptoms and life satisfaction
 - If these processes differ by gender.



Methods

- Data from the Swedish version of the international Health Behaviors of Schools-aged Children (HBSC) survey.
- Waves 2009/2010 and 2013/2014 (n=7000) used
- Identical questions were asked to pupils in year 5, 7 and 9 both 2010 and 2014



Analytical strategy

- The introduction of grading only directly affected some pupils (those attending year 6 and 7), while leaving the pupils above or below those grades unaffected.
- These 'untreated' pupils (in years 5 and 9) can therefore be used as a control group.
- We use difference-in-differences (DID) estimation techniques that utilize data for the outcome pre and post reform,
- Specifically, we compare the change over time (pre vs. post reform, or 2010 vs. 2014) in the respective outcome variables for the treatment group (year 7), with the change over time in the same outcome variables for the control group (years 5 and 9).



Results

- The introduction of grades was associated with increased school-related stress for both boys and girls in year 7. The increase in school stress in year 7 (0.268 scale points) is slightly larger than the difference between girls and boys (0.234)
- Both boys and girls in year 7 had on average lower academic self-esteem in 2014 than in 2010
- Psychosomatic symptoms increased, and life satisfaction decreased, for pupils in year 7 after grading was introduced, but similar deterioration was seen for pupils in year 9. The deterioration was clearly stronger for girls with both outcomes
- In the case of life satisfaction the gender gap increased significantly more in grade 7 than in other grades, indicating that this enlarged gender gap in life satisfaction reflects the reform and not a general time trend.



Results

- The increase in psychosomatic symptoms, and decrease in life satisfaction, in grade 7 was in turn significantly mediated by the increased stress and reduced academic self-esteem
- Changing levels of stress and academic self-esteem accounted for all of the increase in psychosomatic symptoms, and about half of the decrease in life satisfaction.



Conclusion

- The results of this study suggest that the way that assessment systems are designed can have important repercussions for the health and overall wellbeing of pupils including for the extent of gender-based inequalities in health.
- Educational reforms towards increased testing and grading might need to consider non-academic consequences of the policies when considering how assessment is implemented.

