

# Girls with highly educated parents have less somatic complaints

## Abstract

In Sweden, as in Western countries generally, somatic complaints are common in adolescents. These complaints are clearly connected with gender while the evidence of socioeconomic inequalities is less conclusive. The aim of this study is to analyse the combined relevance of gender and parental education for adolescents' somatic complaints, using national data with direct information from adolescents and their parents (n=7,393). Among girls, but not among boys, a graded association was found demonstrating less somatic complaints with higher parental education. Stress and coping are discussed as potentially important mechanisms.

*Keywords:* adolescence, health complaints, inequalities

A HIGH SHARE of adolescents reports suffering from health complaints in Western countries, with a clear and consistent gender gap to the disadvantage of girls (Ravens-Sieberer et al. 2009; The Public Health Agency of Sweden 2014). High levels of health complaints in adolescence are perhaps not surprising given that this life phase involves major changes and challenges (Arnett 1999), but the reporting has increased over time (Hagquist 2009; The Public Health Agency of Sweden 2014) suggesting that social context and circumstances matter. While the relevance of gender is clearly visible, differences by other dimensions of social stratification are less evident, although socioeconomic inequalities have been demonstrated in several studies.

A common type of health complaints are somatic, e.g., headache and stomachache. Somatic complaints are defined as symptoms without an organic pathological basis, and partly understood as a consequence of stress (Alfvén et al. 2008). Stress is often described as a process starting when the individual experiences an event or a more chronic situation that may act as a stressor, creating an imbalance between experienced challenges and the possibility to deal with these. The outcome of the process in terms of detrimental health effects depends on the individual's interpretation of the situation and possibility to cope with the stressor, i.e., the coping strategies employed and the coping resources available (Lazarus & Folkman 1984).

The gender gap in health complaints among adolescents has been subjected to various explanations. In addition to biological factors associated with sex and puberty, and

the possibility of a gender bias in reporting, the suggested explanations include gender differences in each part of the stress process. For example, the exposure to stressors, the interpretation of these stressors, and the available coping strategies and coping resources may differ between girls and boys. Some stressors may also be gender-specific, such as those stemming from societal norms for how girls and boys should be and act, and experiences of discrimination and appraisal tied to gender.

Other stratifying dimensions are also vital for the conditions of young people, such as the educational level of the parents. Similar to gender, parental education may create differences in every part of the stress process. This holds for potential stressors and coping resources directly linked with the family and the parents (e.g., risk of unemployment, financial strain, parental knowledge and support), but also for those in school (e.g., experiencing the school pace too high). Furthermore, the relevance of parental education and gender may intersect. Parental educational level adds a context in which the experiences tied to gender may vary, and inversely, the relevance of parental education may differ between boys and girls.

The study aim is to examine differences in somatic complaints by parental education in adolescent girls and boys using data with direct information from adolescents and their parents. To employ such data is advantageous since it is well-known to be difficult for adolescents to provide detailed and correct information on parental education.

## Methods

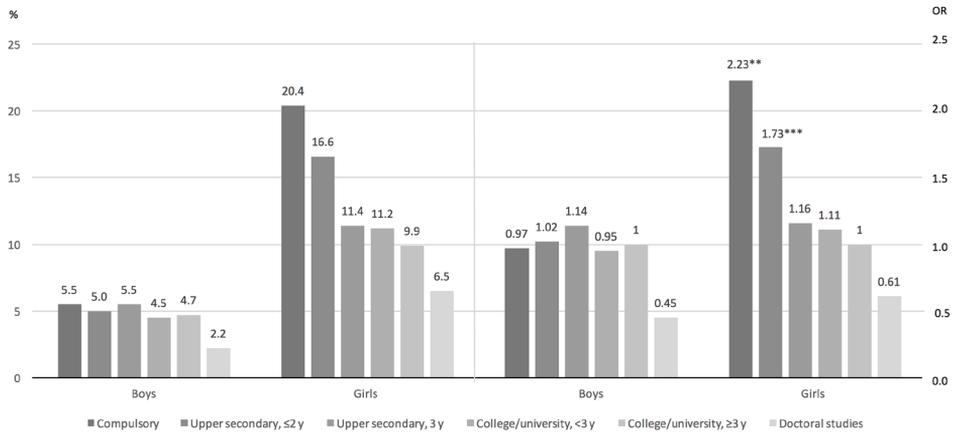
The material used is the Survey of Living Conditions (ULF) and its child supplement (Child-ULF) collected by Statistics Sweden. ULF is based on a nationally representative sample of adults who are interviewed about their living conditions in a broad sense. Children aged 10–18 years living in the adult respondents' household are also invited to participate and provide information about their living conditions. The interviews are conducted yearly and since 2007 by phone.

This study uses the surveys conducted in 2007–2014. The non-response has increased over time, from 27 to 44 percent among adults and from 34 to 44 percent among children. Non-response was higher among adults with low education and born abroad. In total, 7,508 children were interviewed (48 percent boys; 52 percent girls), with full information on all study variables for 7,393 (i.e. 98.5 percent) children distributed across 5,278 households. The research has been approved by the Regional Ethics Committee in Stockholm.

Parental education was based on the highest level in the household and coded into six groups (percentage of children within parenthesis): compulsory/elementary (2.3 percent); upper secondary,  $\leq 2$  years (21.0 percent); upper secondary,  $\geq 3$  years (19.5 percent); college/university,  $< 3$  years (19.6 percent); college/university,  $\geq 3$  years (35.2 percent); and doctoral studies (2.5 percent).

Somatic complaints were measured as the weekly co-occurrence of headache and stomachache (Alfvén et al. 2008).

*Figure 1.* Self-reported somatic complaints in adolescents (aged 10–18 years) by parental education. Unadjusted percent and odds ratios from binary logistic regression analyses using "College/university education,  $\geq 3$  years" as the reference group (OR=1), controlling for grade group, survey year, immigrant background and family structure, with robust standard errors clustered at the household level. Sweden, 2007–2014.  $n=7,393$ .



\*\*\* $p < 0.001$  \*\* $p < 0.01$

Prevalences (percent) and odds ratios (OR) from binary logistic regression analysis were calculated. The regression models were adjusted for grade/age group (grades 3–6; 7–9; and upper secondary school), survey year, foreign background (i.e., both parents born abroad versus at least one in Sweden), and family structure (i.e., living with two parents; a single parent; one parent and a step-parent). One important reason for including family structure is that it is connected to differences in sampling probabilities (e.g., children living with two adults had twice the probability of being sampled compared to children living with one adult). Since the children are clustered within households, robust standard errors were computed.

## Results

The overall prevalence of somatic complaints was 8.6 percent (girls 12.1 percent; boys 4.9 percent). Among girls, a graded association with parental education was found (see Figure 1 showing percent on the left and OR on the right side): the lower the parental educational level, the higher the odds for somatic complaints. Compared with the reference group ( $\geq 3$  years of university education), the excess odds for those with the lowest parental education (compulsory school) was more than twofold (OR=2.23; 95% CI 1.2–4.0). Compared to the reference group, the odds for the second lowest educational category ( $\leq 2$  years in upper secondary school) was 73 percent higher (OR=1.73;

95% CI 1.3–2.3). The lowest prevalence was found in the highest educational category, namely parents with doctoral studies. This difference was, however, not statistically significant. Among boys, no clear association between parental education and somatic complaints was found.

## Discussion

In this study, somatic complaints were clearly patterned by parental education among girls but not among boys. The family is a source of both stressors and coping resources that are likely to affect adolescents. That the degree and/or type of stressors and resources may vary with parental education does not seem far-fetched. However, why parental education would be relevant specifically for girls is less straightforward. One possibility may stem from a stronger focus on school achievement among girls. To view school work as important (Låftman & Modin 2011) and school achievement as vital for future prospects seems more linked with being a girl than a boy (Östberg et al. 2015, Wiklund et al. 2010). If school achievement generally is of greater importance to girls, and if parental education is linked with resources effective when dealing with school stress (e.g. support with homework, knowledge of the educational system, etc.) (cf. Jonsson & Erikson 2000), this would be consistent with the pattern seen here. Thus, the availability of support relevant for coping with school demands may be more important for girls' than boys' stress-related health.

The data material used involves a biased and high non-response rate which limits the possibility to transfer the conclusions to the general population. The attrition is higher among adults with low education (and thus among their children). If non-responders suffer more from health complaints, this study may have underestimated the association. A strength of the data is, however, the direct information from parents and children in the same families.

In accordance with earlier studies, the gender difference in somatic complaints was substantial. This was true also within each of the six educational groups studied here. However, due to the graded association among girls only, the size of the gender gap varied between educational groups. This shows that the gender difference is not unalterable but dependent on social context. In order to unravel social causes of relevance for the high and increasing levels of health complaints among adolescents in Western countries, this study illustrates the importance of a combined focus on gender and other dimensions of social stratification.

## References

- Alfvén, G., V. Östberg. & A. Hjern (2008) "Stressor, perceived stress and recurrent pain in Swedish schoolchildren", *Journal of Psychosomatic Research* 65 (4): 381–387.
- Arnett, J. J. (1999). Adolescent storm and stress, reconsidered. *American Psychologist*, 54(5), 317–26.
- Hagquist, C. (2009). Psychosomatic health problems among adolescents in Sweden – are the trends gender related? *EJPH*, 19(3), 331–6.
- Jonsson, J. O. & R. Erikson (2000) "Understanding educational inequality: the Swedish experience", *L'Année sociologique* 50 (2): 345–382.
- Lazarus, R. & S. Folkman (1984) *Stress, appraisal, and coping*. New York: Springer.
- Låftman, S. B. & B. Modin (2011) "School-performance indicators and subjective health complaints: are there gender differences?" *Sociology of Health and Illness* 34 (4): 608–625.
- The Public Health Agency of Sweden (2014). Health behaviour in school-aged children in Sweden 2013/14. Basic report [In Swedish]. Stockholm/Östersund: The Public Health Agency of Sweden.
- Ravens-Sieberer, U., T. Torsheim, J. Hetland, W. Vollebergh, F. Cavallo, H. Jericek, M. Alikasifoglu, R. Välimaa, V. Ottova, M. Erhart & the HBSC Positive Health Focus Group (2009) "Subjective health, symptom load and quality of life of children and adolescents in Europe", *International Journal of Public Health* 54 (Suppl 2): 151–159.
- Wiklund, M., C. Bengs, E.-B. Malmgren-Olsson & A. Öhman (2010) "Young women facing multiple and intersecting stressors of modernity, gender orders and youth", *Social Science & Medicine* 71 (9): 1567–1575.
- Östberg, V., Y. B. Almquist, L. Folkesson, S. B. Låftman, B. Modin & P. Lindfors (2015) "The complexity of stress in mid-adolescent girls and boys. Findings from the multiple methods School Stress and Support Study", *Child Indicators Research* 8 (2): 403–423.

## Corresponding Author

Viveca Östberg  
Mail: [vostberg@chess.su.se](mailto:vostberg@chess.su.se).

## Authors

*Viveca Östberg* is a Professor in Sociology at Stockholm University. She conducts studies within the field of welfare research, health inequalities and social determinants of health focusing on children and youth.

*Sara Brolin Låftman* is a PhD/researcher in Sociology at Stockholm University. Her research focuses on the living conditions of children and young people, especially within the family and the school, and adolescent health.