Are Barbie and Ken too cool for school? A case-control study on the relation between gender and dropout

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Background: As school dropout is an important public health problem that needs to be addressed, we set out to examine whether and how, beyond the well-known effects of sex, gender beliefs and self-reported masculinity and femininity are related to school dropout. Methods: The study used a case-control design, consisting of 330 dropout cases and 330 controls still attending school. The respondents, aged between 18 and 23 years, living in the south-east of the Netherlands, were sent a self-administered questionnaire. Separate logistic regression analyses for the male and female participants were used to explore the relation between dropout and gender, controlling for sociodemographic determinants. Results: As indicated by significant curvilinearity, young women were less likely to drop out when they occupied an intermediate positions on the gender variables. Odds of dropout were elevated among highly masculine women (odds ratio = 2.1, 95% confidence interval: 1.1–4.1), and, as indicated by significant interactions, also among highly masculine men with strong normative masculine beliefs and in feminine men who simultaneously considered themselves low on masculinity. Conclusions: Beyond sex, gender is important in the explanation of school dropout. To prevent dropout, public health professionals should assess, monitor and intervene on the basis of gender characteristics.

Introduction

School dropout is an important public health problem.1 Poor health might be implicated in the pathways leading to dropout, and dropout in turn might further compromise health.2 Dropout reduces the chances of finding a job and is also strongly linked to social exclusion. Although some countries have been able to reduce dropout rates, it is still a major problem for many countries and particularly for the individuals concerned.1,3 Sex differences in school dropout are consistent across cultures: boys drop out more often. However, sex and gender are seriously underinvestigated in public health research.4 To contribute to the prevention of dropout, further research is needed that looks beyond the ‘classical’ determinants of school dropout: being a boy, low socio-economic background, belonging to an ethnic minority and coming from a single-parent family. Finding new determinants might help public health professionals to intervene before further harm occurs. We therefore set out to examine whether, beyond the influences of sex and the other classical determinants, gender is related to school dropout.

Sex generally refers to the biological differences between women and men, whereas gender refers to the culturally determined beliefs, behaviours and characteristics that are associated with, but not determined by, sex. Gender differences are learned, may change over time and vary significantly both within and between cultures.1–6 Masculinity and femininity are often seen as separate dimensions, which allow an individual to be categorized as highly masculine, highly feminine, both or neither.7,8 Femininity refers to a person’s identification with stereotypical feminine gender role traits, such as compassion or sensitivity,9 and masculinity to identification with stereotypical masculine ones, such as self-reliance or ambition. Hegemonic masculinity is defined as the most widely accepted and normative beliefs about being a man in a given society. It implies a pattern of practice that allows the domination of men over women.10,11 Generally masculine characteristics have become more acceptable for women and stereotypes less absolute: masculine characteristics have increased in women, while maintaining feminine ones.12,13 This might give women a wider variety of skills and characteristics, enabling them to better cope with different situations and life’s difficulties.5,24

Gendered interactions, such as how to present and relate to peers, or beliefs about whether academic performance is considered masculine, may affect pupils’ perceptions of school.5,15,16 Men and women are expected to behave according to culturally prescribed behaviours and traits that dictate how males and females should act.17 Boys who hold stereotyped beliefs regarding these gender roles are more likely to engage in problem behaviour18 and might be more likely to drop out of school. Deviant behaviour might earn boys the respect of their peers, prove their masculinity and make them ‘too cool for school’.19–21 However, research on masculinity and femininity in the process resulting in school dropout is still scarce and limited to masculinity in boys and femininity in girls. Hyper-masculine boys are low on learning interests and school engagement and high on risk-taking behaviour. Similarly, hyper-feminine girls also tend to show little interest in school and career and to show antisocial attitudes and hostility towards other women.22

Using Dutch case-control data on 660 young adults, we set out to examine the effect on school dropout of both masculinity and femininity in separate groups of male and female young adults. To fully explore the gender effect, we also looked at whether there is a golden mean in gender, by analysing complex relations (in terms of curvilinearity and interactions), and studied whether the gender effect is independent of the classical determinants. The aim was to find out whether gender is a candidate characteristic for inclusion in the repertoire of public health professionals trying to reduce school dropout.
Methods

Study population

This study was part of the Dutch SIODO (stay in or drop out) study, a sequential mixed-methods study focusing on the early identification of risk factors on the pathway to school dropout. The current article is based on the quantitative case-control data from SIODO. In November 2011, the municipal compulsory education department of the city of Eindhoven (the Netherlands), selected all young adults aged 18–23 years who had not yet met the Dutch minimum educational requirement (which is equivalent to general secondary education, pre-university education or intermediate vocational education, Level 2) at the start of the 2010–11 school year. At this age, they normally should have obtained the required ‘starting qualification’. A proportion of these young adults remained in school during the 2010–11 school year to obtain this qualification (the controls), while others dropped out of school during that year without qualification (the cases). Cases and controls being so similar at the start of the 2010–11 school year was supposed to avoid selection bias. We sent a self-administered questionnaire with an informed consent form to the selected participants. A power analysis indicated that 290 cases and 290 controls should be sufficient; we eventually were able to include 330 cases and 330 controls. Approval for conducting this study was granted by the Medical Ethics Committee of Maastricht University (METC 11-4-099, decision 22 August 2011). More details can be found elsewhere.

Measures

Gender variables

The Adolescent Masculinity Ideology in Relationships Scale (AMIRS) is composed of 12 belief statements about appropriate behaviour for males within interpersonal relationships among peers (e.g. ‘Guys should not let it show when their feelings are hurt’). The range for each item is from 1 (completely disagree) to 4 (completely agree). Negatively worded items receive a reversed score. Composite scores are calculated by taking the mean across items when seven or more items have been completed. Higher scores reflect greater alignment with norms of hegemonic masculinity within the context of interpersonal relationships. Internal consistency as measured by Cronbach’s α was 0.83 (reported Cronbach’s α 0.67–0.71).

The Inauthentic Self in Relationship (ISR) subscale from the Adolescent Femininity Ideology Scale (AFIS) reflects the internalizing conventional femininity ideologies of inauthenticity in relationships (e.g. ‘I worry that I make others feel bad if I am successful’). The ISR is a 10-item scale using a five-point Likert scale (1=completely disagree, 5=completely agree). Composite scores are calculated by taking the mean across items when seven or more items have been completed. Higher scores indicate more inauthenticity. Internal consistency as measured by Cronbach’s α was 0.70 (reported Cronbach’s α 0.67–0.81).

We also asked the respondents ‘how feminine/masculine do you think you were at the age of 16’, exemplified by ‘helpful, sensitive, shy, caring, understanding, friendly’ as feminine traits and ‘acting as a leader, ambitious, dominant, independent, aggressive, tough behaviour’ as masculine traits, asking them to rate their femininity/masculinity on a 1–10 scale. A higher score for the separate femininity and masculinity items indicates assigning oneself more feminine or masculine traits, respectively. Both indicators are valid indicators of gender identity.

Covariates

Age was assessed on 1 August 2010. The respondents’ own country of birth and that of their parents was used to categorize the young adults into Western [born in the Netherlands or originating from a country in Europe (not including Turkey), North America, Oceania, Indonesia or Japan] and non-Western ethnicity [originating from a country in Africa, South America, Asia or Turkey (not including Indonesia and Japan)]. We asked participants about their family composition at the time when they attended primary school. The answers were categorized as living with both parents or living in a one-parent family. The highest education completed was classified, for both parents separately, into low (no education, primary education, lower vocational education or pre-vocational theoretical program), intermediate (secondary vocational education, higher general secondary education or pre-university education) and high (higher professional education or university education).

Statistical analyses

Descriptive statistics, including frequencies, means and standard deviations (SD), were calculated for all variables. Differences in gender variables between male and female participants and between cases and controls were determined using chi-square tests for categorical variables and t-tests and one-way between-group analysis of variance for continuous variables. To investigate the association between gender and dropout, we performed logistic regression analyses with dropout as dependent variable and self-reported femininity, self-reported masculinity, mean AMIRS scores and mean AFIS scores as independent variables. Age, ethnicity, family composition and parental education were controlled for. Separate analyses were conducted for men and women. To improve the power of our study, we initially conducted the analyses with the continuous gender variables, estimating odds ratios (ORs) of quadratic terms (curvilinearity) and product terms between gender variables (interactions). In the case of a curvilinear relationship, the gender variables were categorized into tertiles to examine the shape of the curve. In the case of interactions, the (continuous) effect of one gender variable was estimated separately for the groups with high (mean + 1 SD) and low (mean – 1 SD) scores on the other gender variable. All analyses were performed using SPSS 20.0.

Results

Figure 1 shows that there were 8630 eligible young adults, 5381 of whom were dropouts and 3249 controls. Twelve percent of this group responded: 7.2 and 20.4% of cases and controls, respectively. Table 1 shows that, compared with the control group, the case group comprised more participants of non-Western ethnicity both male (14.0 vs. 6.2%) and female (15.0 vs. 4.5%), and were on average 0.5 years older. Female participants who dropped out of school were more likely to have lived in one-parent families when in primary school (25.6 vs. 8.0%), considered themselves less feminine and scored higher on the AMIRS compared with female participants in the control group. Among the female participants, there was a consistent pattern of curvicurlinear effects of all four gender variables, with intermediate values having protective effects against school dropout. The curvilinear relationship reached statistical significance (P<0.05) for AFIS and masculinity (not tabulated). Table 2 shows the lower odds of dropout for the female young adults with intermediate values on all four gender variables. Simultaneously, the ORs show that a high self-reported masculinity increased the odds of school dropout for female participants [OR 2.1, 95% confidence interval (CI) 1.1–4.1]. We found no significant interaction effects between the different gender variables on school dropout for the female participants (not tabulated).

As regards the male participants, figure 2A shows that a high AMIRS score significantly increased the odds of dropout for men who considered themselves highly masculine and also for men who
scored low on both gender variables ($P = 0.04$ for interaction). The interaction effect between the AMIRS and AFIS scores was marginally significant (figure 2B): a high score on AMIRS increased the odds of dropout when the AFIS score was low ($P = 0.06$). Figure 2C shows that male participants who considered themselves low on masculinity had significantly higher odds of dropout when they also considered themselves highly feminine ($P = 0.01$). Male participants who considered themselves highly feminine and scored low on the AMIRS also had higher odds of dropout ($P = 0.08$) (figure 2D). Interactions between masculinity

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**Table 1** Gender and covariates in relation to dropout status, separately for male and female young adults

<table>
<thead>
<tr>
<th>Gender and covariates</th>
<th>Total</th>
<th>Male 260 (39.4%)</th>
<th>Female 400 (60.6%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n (%)</td>
<td>600 (100)</td>
<td>130 (50.0)</td>
<td>130 (50.0)</td>
</tr>
<tr>
<td>AMIRS (mean/SD)</td>
<td>1.6 (0.5)</td>
<td>1.9 (0.5)</td>
<td>1.9 (0.5)</td>
</tr>
<tr>
<td>AFIS-ISR (mean/SD)</td>
<td>2.7 (0.7)</td>
<td>2.6 (0.6)</td>
<td>2.6 (0.7)</td>
</tr>
<tr>
<td>SR femininity (mean/SD)</td>
<td>6.6 (2.4)</td>
<td>5.1 (2.5)</td>
<td>5.0 (2.2)</td>
</tr>
<tr>
<td>SR masculinity (mean/SD)</td>
<td>5.0 (2.6)</td>
<td>6.8 (2.2)</td>
<td>6.6 (1.7)</td>
</tr>
<tr>
<td>Age (mean/SD)</td>
<td>19.1 (1.2)</td>
<td>19.5 (1.5)</td>
<td>19.0 (1.0)</td>
</tr>
<tr>
<td>Non-Western background</td>
<td>65 (9.9)</td>
<td>18 (14.0)</td>
<td>8 (6.2)</td>
</tr>
<tr>
<td>One-parent family</td>
<td>103 (15.6)</td>
<td>20 (15.4)</td>
<td>16 (12.3)</td>
</tr>
<tr>
<td>High-educated mother</td>
<td>120 (18.7)</td>
<td>23 (18.4)</td>
<td>32 (24.6)</td>
</tr>
<tr>
<td>Intermediate-educated mother</td>
<td>222 (34.6)</td>
<td>47 (37.6)</td>
<td>47 (36.2)</td>
</tr>
<tr>
<td>Low-educated mother</td>
<td>300 (43.5)</td>
<td>55 (44.0)</td>
<td>51 (39.2)</td>
</tr>
<tr>
<td>High-educated father</td>
<td>169 (27.1)</td>
<td>37 (28.9)</td>
<td>49 (39.5)</td>
</tr>
<tr>
<td>Intermediate-educated father</td>
<td>183 (29.4)</td>
<td>38 (28.6)</td>
<td>38 (30.6)</td>
</tr>
<tr>
<td>Low-educated father</td>
<td>271 (43.5)</td>
<td>49 (39.5)</td>
<td>41 (32.9)</td>
</tr>
</tbody>
</table>

*a: Theoretical minimum and maximum for AMIRS (1, 4), AFIS-ISR (1, 5), self-rated femininity and self-rated masculinity (1, 10), age (18, 23).

*P<0.05 according to chi-square tests (dichotomous variables) and t-tests (continuous variables).
scores increased their odds of dropout. Performing well at school is protected women against school dropout, whereas high masculinity rather than increasing the dropout odds, 25 hyper-femininity may explain our finding that an intermediate score on masculinity girls might lead to social exclusion.16,33 Particularly, lonely girls contrast, antisocial behaviour and aggression in highly masculine to what others have found. 25 Highly masculine young men with a risk groups. First, young men who were hyper-masculine young women having higher odds of school dropout. and doing your homework is not cool, which results in hyper-masculine young women with both masculine and high masculinity score particularly increased the odds of dropout in young women. For young men, the gender effect was complex, as it especially presented itself in terms of interactions. The highest odds of dropout were found among highly masculine young men who simultaneously had strong normative beliefs about male peer relationships and among young men who considered themselves simultaneously high on femininity and low on masculinity.

For young women, the associations between gender and school dropout show a group who might be protected against school dropout and another one that has an increased risk. One potential explanation for this is that young women with both masculine and feminine traits may possess a wider variety of skills, enhancing their ability to cope with different situations and life’s problems. 5,14 This may explain our finding that an intermediate score on masculinity decreased the odds of school dropout for young women. Second, rather than increasing the dropout odds, 25 hyper-femininity protected women against school dropout, whereas high masculinity scores increased their odds of dropout. Performing well at school is considered feminine and increases popularity among girls. 16 In contrast, antisocial behaviour and aggression in highly masculine girls might lead to social exclusion. 16,33 Particularly, lonely girls with low self-esteem could more easily feel socially isolated and be more inclined to join ‘gangs’. 34,35 In the masculine street culture, young people base their self-worth and identity on performance and competition. Identifying with the masculine norms and values of street culture will result in tougher behaviour. 36 Going to school and doing your homework is not cool, which results in hyper-masculine young women having higher odds of school dropout.

The young men’s pattern of association can best be characterized as involving two risk groups. First, young men who were hyper-masculine were more likely to drop out of school, which is similar to what others have found. 25 Highly masculine young men with a normative view of dominance in peer relationships (probably providing them with peer status) had higher odds of dropout. Tough boys are popular, 16 and when they demonstrate deviant behaviour they might earn the respect of their peers. 15 However, striving for a masculine self-image is associated with antisocial behaviour, 33 which might underlie the higher odds of dropping out. 25 Second, young men with many feminine traits and at the same time few masculine ones are also at risk for school dropout. Men who do not conform to the normative male gender role run the risk of being stigmatized and bullied or even rejected by their peers or their family. 39 To avoid social exclusion, these men may tend to behave in a stereotypical masculine way, 33 which in turn may lead to problem behaviour. 18 Other studies have shown that people with a homosexual orientation are more likely not to conform to gender roles even at an early age.37,38 Our study yielded no information on whether homosexuality plays a role, but it is possible to experience difficulties if you do not meet heterosexuality norms. Besides, coming out is often a difficult decision with a risk of being discriminated, stigmatized or socially rejected. There is therefore a need for greater acceptance and understanding of variations in gender roles and beliefs. Future research should investigate in greater depth the role gender plays in relations with peers, parents and teachers.

Our findings underscore the importance of gender in public health research, but given the complexity of relationships between gender traits and gender beliefs (curvilinearity in women and interactions in men), the concept and assessment of gender require further refinement and research.

Our study has three strengths. First, sex and gender have rarely been examined in public health research. 39 Research on gender beliefs in the process leading to school dropout has been scarce and limited to masculinity in boys and femininity in girls. Our study emphasizes the relevance of additionally examining masculinity in females and femininity in males. Second, although categorizing masculinity and femininity is problematic, our study shows that neither male nor female young adults have a dichotomous perception of gender, but that they do assign masculine and feminine traits to themselves. Moreover, although on average boys assigned higher masculinity traits to themselves and girls assigned higher femininity traits to themselves, boys and girls seemed to have taken this question seriously and did not self-stereotype. Third, to avoid selection bias, we sought a control group, which was highly similar to the cases at the start of the school year 2010–11. The reported ORs thus only apply to an already initially disadvantaged population (at the age of 18–23 years, both cases and controls already should have attained their starting qualification). Simultaneously, we might have underestimated the associations compared with a study using all possible controls.

Three limitations need to be mentioned. First, the non-response rate was substantial. For both participants and non-participants, we had information on dropout status, age, sex and socio-economic status from external socio-economic data at zip-code level obtained from Statistics Netherlands. 40 Non-participants were more likely to be men, dropouts (cases) and living in areas with cheaper houses, and were slightly older than the participants. In the total group (including the eventual non-participants), men were more likely to have dropped out than women, indicating that the absence of a sex effect on dropout in the final sample is an underestimate. As we have no information on gender beliefs for the non-participants, it is unclear how the above pattern of non-participation might have affected the ORs. Second, the questionnaire was administered after participants had dropped out of school, so the answers may have been biased by recall. However, the questions about gender beliefs and gender traits were introduced by explicitly asking the participants to think of the period when they were 16 years old, which is before dropout. Third, gender ideologies may play a role in completing the questionnaire. For instance, if we had asked the respondents to rate the same beliefs without labelling them as masculine and feminine, male participants with strong normative beliefs could have assigned themselves more caring traits. 29 It is possible that such reporting

**Table 2** ORs (% CI) of dropout among female young adults, by gender, adjusted for age, ethnic background, educational level of the parents and family composition

<table>
<thead>
<tr>
<th>Gendervariates</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMIRS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Intermediate</td>
<td>1.0</td>
<td>0.6–1.6</td>
</tr>
<tr>
<td>High</td>
<td>1.5</td>
<td>0.8–2.6</td>
</tr>
<tr>
<td>AFIS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Intermediate</td>
<td>0.9</td>
<td>0.5–1.5</td>
</tr>
<tr>
<td>High</td>
<td>1.2</td>
<td>0.7–2.0</td>
</tr>
<tr>
<td>Femininity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Intermediate</td>
<td>0.3**</td>
<td>0.1–0.7</td>
</tr>
<tr>
<td>High</td>
<td>0.3**</td>
<td>0.1–0.7</td>
</tr>
<tr>
<td>Masculinity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Intermediate</td>
<td>0.7</td>
<td>0.4–1.1</td>
</tr>
<tr>
<td>High</td>
<td>2.1*</td>
<td>1.1–4.1</td>
</tr>
</tbody>
</table>

a: Reference group.

*P<0.05, **P<0.01.
bias may have led to underestimated odds of dropout for feminine men and masculine women in particular.

**Conclusion**

Our findings justify the inclusion of gender beliefs in the explanation of school dropout. There are some young men and women who are ‘too cool for school’. Therefore, preventive child and youth health-care professionals, who offer routine health examinations and anticipatory guidance to all children between birth and 19 years, should assess gender beliefs and behaviours in each adolescent and discuss whether this affects their parent and peer relations, school engagement or leisure activities. Subsequently, they should follow-up and monitor the adolescents’ interpersonal relations, behaviour problems and school engagement, and in case the adolescents are at risk for dropout, they should intervene.

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**Conflicts of interest:** None declared.

**Key points**

- In contrast to the findings on the influence of sex, it is unclear how gender beliefs relate to school dropout in both young men and women.
• Using Dutch case-control data, some young men and women appeared 'too cool for school', as they were highly masculine.
• Men who consider themselves high on femininity and low on masculinity are also more likely to drop out.
• Gender associations were complex, as curvilinearity was detected in women and effect modification in men.
• To prevent dropout, public health professionals might start considering to assess and monitor gender beliefs and to think about appropriate interventions.

References