Abstract:
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Abstract

Strong evidence exists of a downward secular trend in the age at menarche; which appears to be associated with improved health and nutritional circumstances over the past two centuries. The aim of this study was to determine the mean age at menarche of Irish girls in 2006, as this has not been examined in Ireland for 20 years. The (HBSC) International Health Behaviour in School Aged Children survey and mean menarcheal age was calculated using the recall method. Mean age at menarche decreased from 13.52 years in 1986 to 13.26 years in 2006. This study found that girls born in Ireland were maturing earlier than those born outside of Ireland, and those born in Dublin were maturing earlier than those born outside of Dublin. In general, children born in the city (or suburban areas) of Dublin were maturing earlier than those born in the more rural areas of County Galway. The aim of this study is to present the mean age at menarche of Irish girls in 2006.

Methods

Data from the 2006 Irish Health Behaviour in School Aged Children (HBSC) survey (www.hbsc.org) were used for this study. Self-completion questionnaires were distributed to a nationally representative sample of children aged 10-18 years, attending Department of Education and Science schools in the Republic of Ireland. The standardised World Health Organization (WHO) questionnaire was administered by teachers in the classroom and completed anonymously. HBSC Ireland 2006 was funded by the Department of Health and Children. Full ethical approval was granted by the Research Ethics Committee of the National University of Ireland, Galway. In total 63% of invited schools responded to the survey and 83% of targeted students in those schools completed questionnaires; comprising 5035 females. Mean menarcheal age was calculated using recall method in years and months, provided they had begun menstruating and menarche was not a result of medical intervention. Mothers of 15-16 year old girls included in this study, of which 15% reported not having menstruated yet. Of the girls aged 14-16 years of age in 2006, there was a slight reduction in the age at menarche, as a result of 15% not having menstruated yet, which was included in the study by adding 0.5 years to the age reported at menarche. In the 2006 HBSC Ireland dataset, girls and young women were asked if they had had a recent medical examination or whether menstruation was a result of medical intervention, as a result of this, 22% of girls who had not had menstruated were included in the study. In addition to national data, specific results regarding geographical location (city, town, village, county and Dublin City) were examined to assess the differences in the mean age at menarche. The manual group represented SC 2 (managerial/technical) and SC 3 (skilled non-manual). The manual group represented SC 4 (skilled manual), SC 5 (partly skilled) and SC 6 (unskilled).

Results

The mean age at menarche of all girls in the 2006 sample (including Dublin city) was 12.53 - 0.02 years with a standard deviation of 1.13 years; Irish-born (n = 3015) mean 12.54 - 0.02 (sd 1.12); immigrant (n = 186) mean 12.45 - 0.08 (sd 1.10). No significant difference was found between different geographical areas overall or within either the Irish-born or immigrant sub-samples; however age at menarche tended to be higher in more rural areas compared to the city (Table 1). The lowest mean age at menarche was found in Dublin City but this figure was not significantly different from the national data (Table 2). In all geographical areas, mean age at menarche was lower in the manual group compared to the non-manual group; however the differences were not statistically significant in the overall sample or in either the Irish-born or immigrant sub-samples.

Conclusions

In 1986, the mean age at menarche of girls in Ireland was found to be 12.53 - 0.02 years, thus representing a decrease from 13.52 - 0.08 years in 1986. The Irish population has become more ethnically diverse over the last 20 years, an ethnicity has been shown to influence age at menarche, this may have accounted for some of the difference between the data from 1986 and 2006. However, in the HBSC Ireland 2006 dataset only 15% of girls nationally and 64 in the Dublin City area were classified as immigrants. Furthermore, no significant differences were identified between girls born in Ireland and immigrants, in terms of either the mean age of menarche or in geographical or social class patterns in menarcheal age. Furthermore, the trend may be explained by the above diversity of the immigrant sub-sample, representing some 53 different countries. Of growing interest is whether or not the current epidemic in childhood obesity will fuel a trend towards earlier age at menarche. This may have accounted for some of the difference between the data from 1986 and 2006. However, in the HBSC Ireland 2006 dataset only 15% of girls nationally and 64 in the Dublin City area were classified as immigrants. Furthermore, no significant differences were identified between girls born in Ireland and immigrants, in terms of either the mean age of menarche or in geographical or social class patterns in menarcheal age. Particularly in the present study where social class or urban/rural dwelling was not significantly associated with menarcheal age. However, in 2006, although there were no significant differences between geographical areas and social class, a trend was identified. Mean age at menarche was lowest in the city and highest in the countryside, this is consistent with the Irish study in 1986 and studies in Poland, Kazakhstan, China and Spain. Furthermore, a trend towards earlier age at menarche in the manual group compared to the non-manual group was identified; although it was not 0.012 years was allocated to these participants. In addition to national data, specific results regarding geographical location (city, town, village, county and Dublin City) were examined to assess the differences in the mean age at menarche. The manual group represented SC 2 (managerial/technical) and SC 3 (skilled non-manual). The manual group represented SC 4 (skilled manual), SC 5 (partly skilled) and SC 6 (unskilled).
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