The Mean Age at Menarche of Irish Girls in 2006

Abstract:

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 verified since 1986. A nationally representative sample of 3,201 girls who had reached menarche, 614 provided menarchal age in years only, therefore a standard 0.5 years was allocated to these participants. In addition to national data, specific results regarding geographical location (city, town, village, and country and Dublin City) were presented separately. Mean age at menarche and standard deviation were calculated using SPSS (version 15). One-way ANOVA (and Tukey HSD post-hoc tests) were used to test for significance between city, town, village and country data. Independent t-tests were used to test for the significance of differences between data from manual and non-manual groups and between national and Dublin City only data.

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 listed schools in the Republic of Ireland. The standardised World Health Organisation (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, 36% of invited schools responded to the survey and 63% of targeted students in those schools completed questionnaires; comprising 3201 girls. Mean menarchal age was calculated using the recall method; girls were asked to specify menarcheal age in years and months, providing the best estimate of their age at menarche. The proportion of girls asked to specify age and month at menarche was reported in the national sample. In the present study where social class or urban/rural dwelling was not controlled for, the total sample mean age at menarche of all girls was 12.53 ± 0.02 years with a standard deviation of 1.13 years. The Irish population has become more ethnically diverse over the last 20 years; as ethnicity has been shown to influence age at menarche 3,4. Therefore, to control for ethnicity, girl’s self-reported ethnicity was used in the present study. The mean age at menarche of Irish girls in 2006, as this has not been verified since 1986. A nationally representative sample of 3,201 girls who had reached menarche, 614 provided menarchal age in years only, therefore a standard 0.5 years was allocated to these participants.

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 = 3,015) mean 12.54 ± 0.02 (ed 1.121); immigrant (n = 186) mean 12.45 ± 0.08 (ed 1.11). No significant differences was found between children born in Ireland and immigrant children. At least 10 years ago, obesity has been shown to influence age of the menarche5,6,7,8. A strong link between genetics and mean age at menarche has been repeatedly9,10,11. In the present study the mean age at menarche of Irish girls in 2006 was found to be 12.53 ± 0.02 years, thus representing a decrease from 13.52 ± 0.08 years in the Irish study in 198611. This reduction in the age at menarche of approximately 3 years over 20 years is consistent with the trend identified in previous studies. Furthermore, a trend towards earlier age at menarche in the recent years in US and Spain19,20. However, the present study did not examine the health behaviours or outcomes of early maturing girls relative to their peers, therefore no inferences can be drawn from this study about the detrimental outcomes associated with early age at menarche.

In conclusion, this study found that the age at menarche of Irish girls has decreased from 13.52 ± 0.08 years over the last 20 years. Ongoing monitoring of this important biological milestone is warranted to identify a population average lower age limit in Ireland. Additional information regarding the health behaviours and outcomes of early maturing girls relative to their peers and to identify whether a national average decrease in the age at menarche will result in an increase in adolescent risk behaviour. Such data would assist clinicians, teachers and parents to provide appropriate care and integration of early maturing girls into society.

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Correspondences: S Nic Gabhainn
Health Promotion Research Centre, School of Health Sciences, National University of Ireland, Galway
Tel: + 353 91 493939
Fax: +353 91 493757
Email: snic.nicgabhainn@nuigalway.ie

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