TIMING OF INFANCY-CHILDHOOD GROWTH SPURT IN HEALTHY TURKISH CHILDREN

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Introduction

The onset of the infancy-childhood growth spurt (IC spurt) is identical with the onset of the childhood component of the infancy-childhood-puberty growth model. The aim of this study was to determine the timing of IC spurt and to investigate the factors affecting it in healthy children.

Methods

The files of 231 healthy children who were followed up regularly (at 0, 2, 4, 6, 12, 15, 18, 24, 30 and 36 months) at the Istanbul University – Cerrahpaşa, Healthy Child Outpatient Clinic between January 2014 and December 2016 were retrospectively evaluated and the parents were asked questions about their socioeconomic and education status, family composition, condition of their houses, hygienic conditions, children's nutritional and infection histories, and sleep patterns through a questionnaire. Infancy component was determined by using an exponential function and the childhood component was determined by using a polynomial function. For each child, the age at onset of childhood phase of growth was determined as normal onset (6-12 months) or delayed onset (after 12 months) (Figure 1).
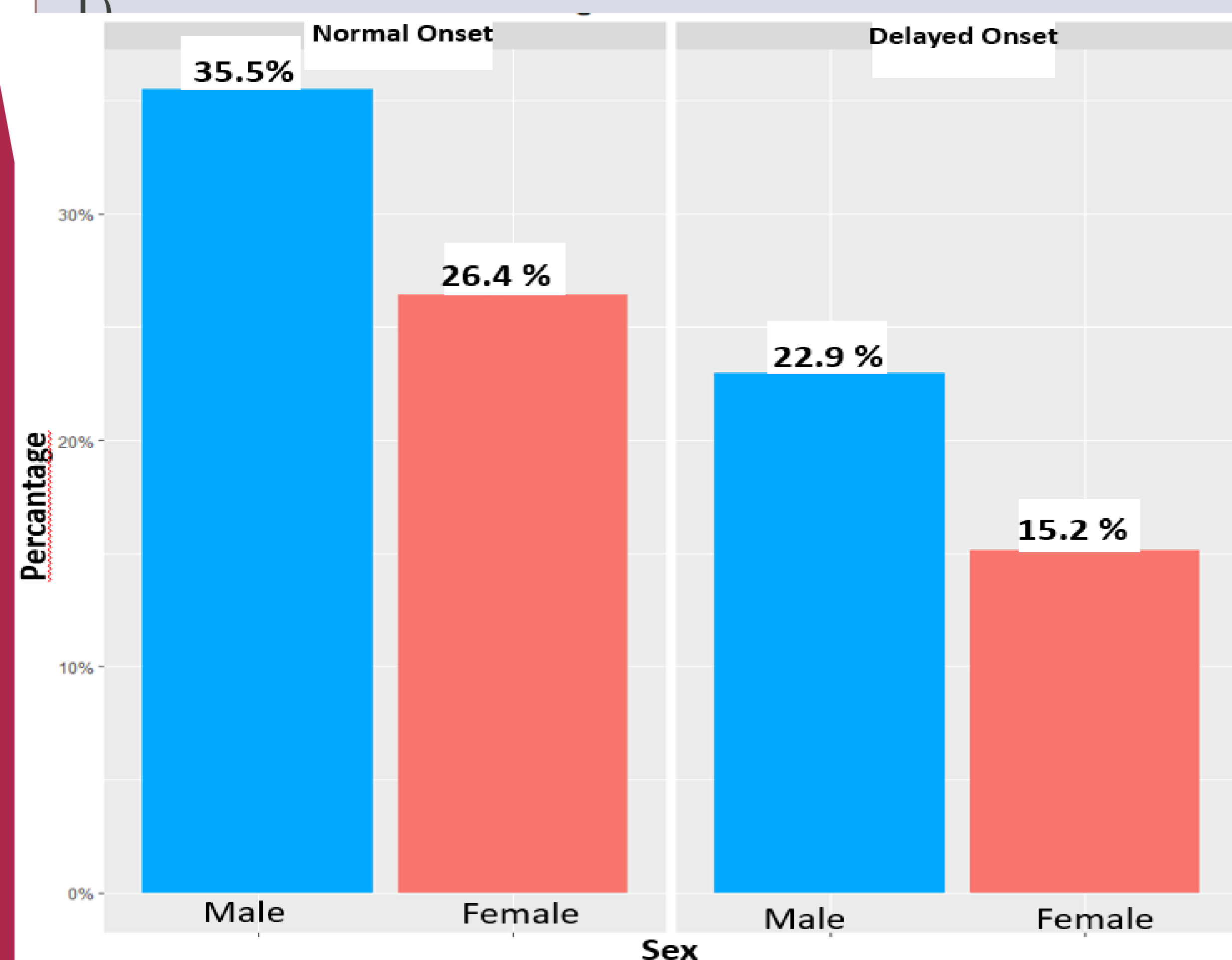

Figure 1. Childhood growth spurt percentages of boys and girls

Results

The percentage of children with normal onset was %61.9 and %38.1 had delayed onset. Mean time of onset was 13.08 ± 5.68 months with no statistical difference between girls and boys. Among the factors investigated in terms of affecting the timing of IC spurt, only the education level of families was significant. A normal IC spurt was statistically more probable in the children whose father had a postgraduate degree than those who had not (p = 0.04). Besides, the longer was the total education years of both parents, the earlier was childhood growth spurt (p=0.003 R=-0.194) (Table 1). Height at 6, 9, and 12 months and height velocity between 6 - 9 months were greater in children in the delayed onset group compared to children with normal onset group (p = 0.008, p = 0.001, p = 0.001 and p = 0.032, respectively). There were significant differences between the onset periods of the children from our study and the children from Sweden, Shanghai and Pakistan (p<0.001, p=0.014 and p<0.001, respectively) (Figure 2).
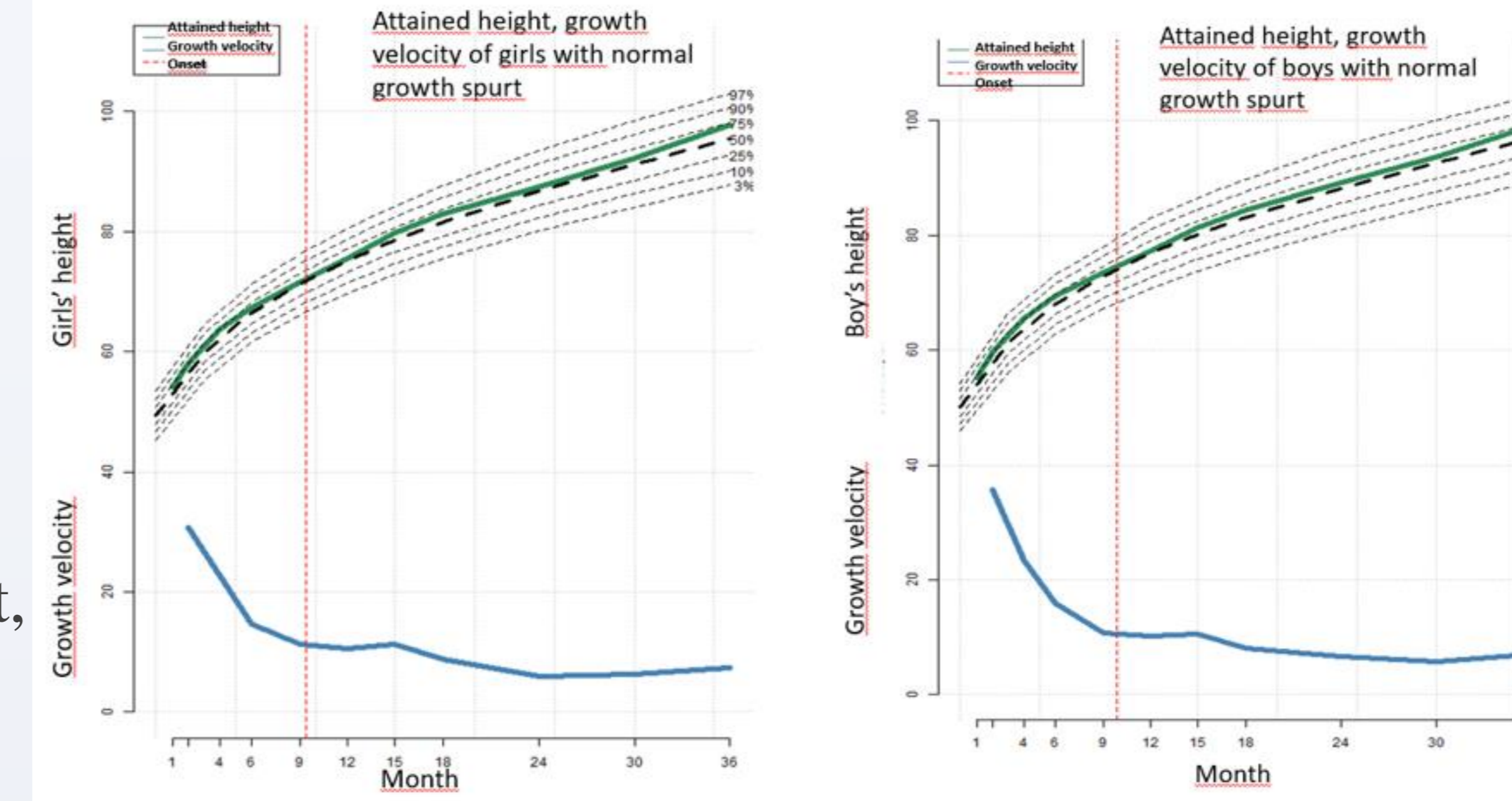

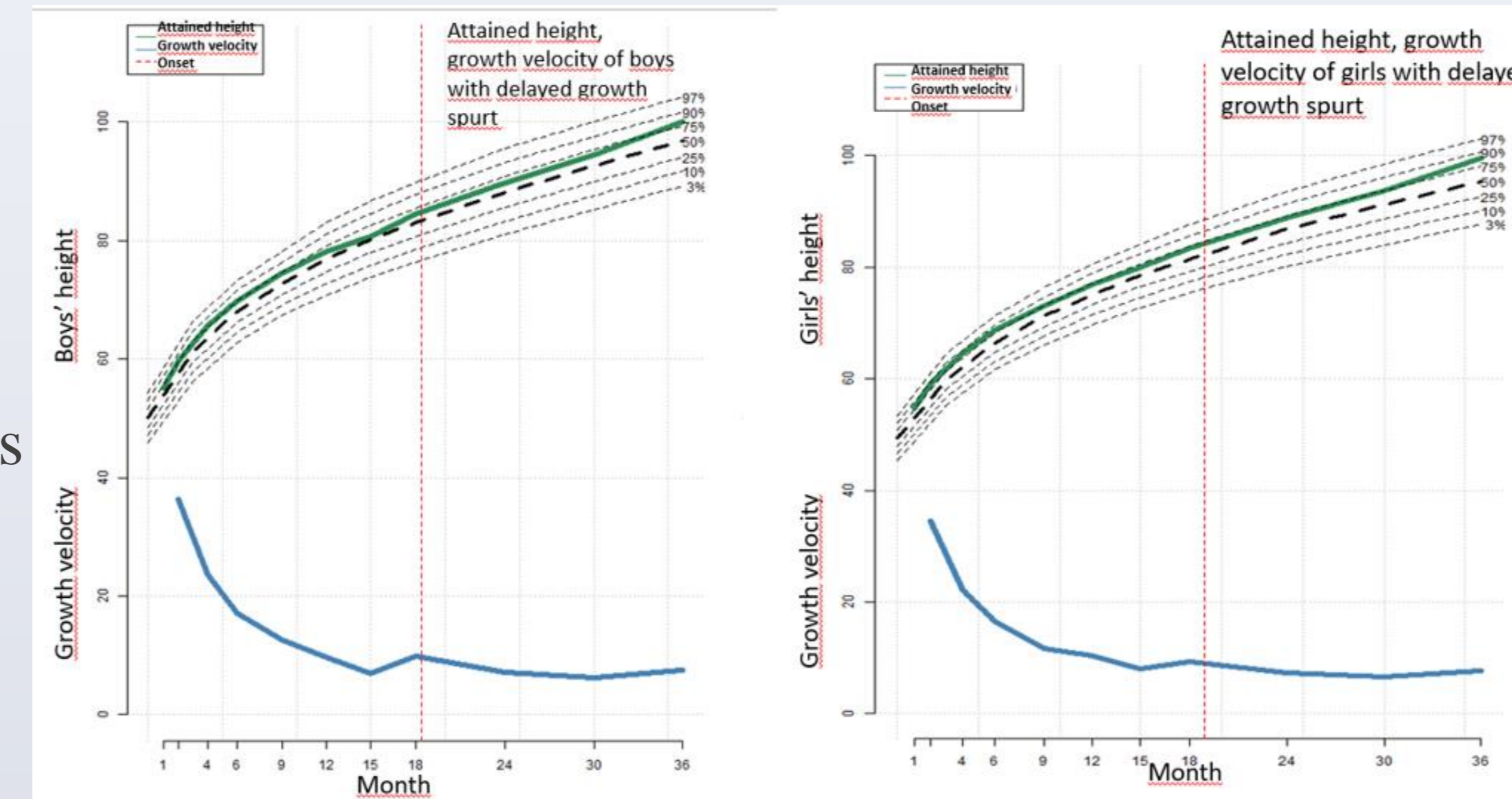Figure 3. Attained height, growth velocity curves of boys and girls with normal growth spurt

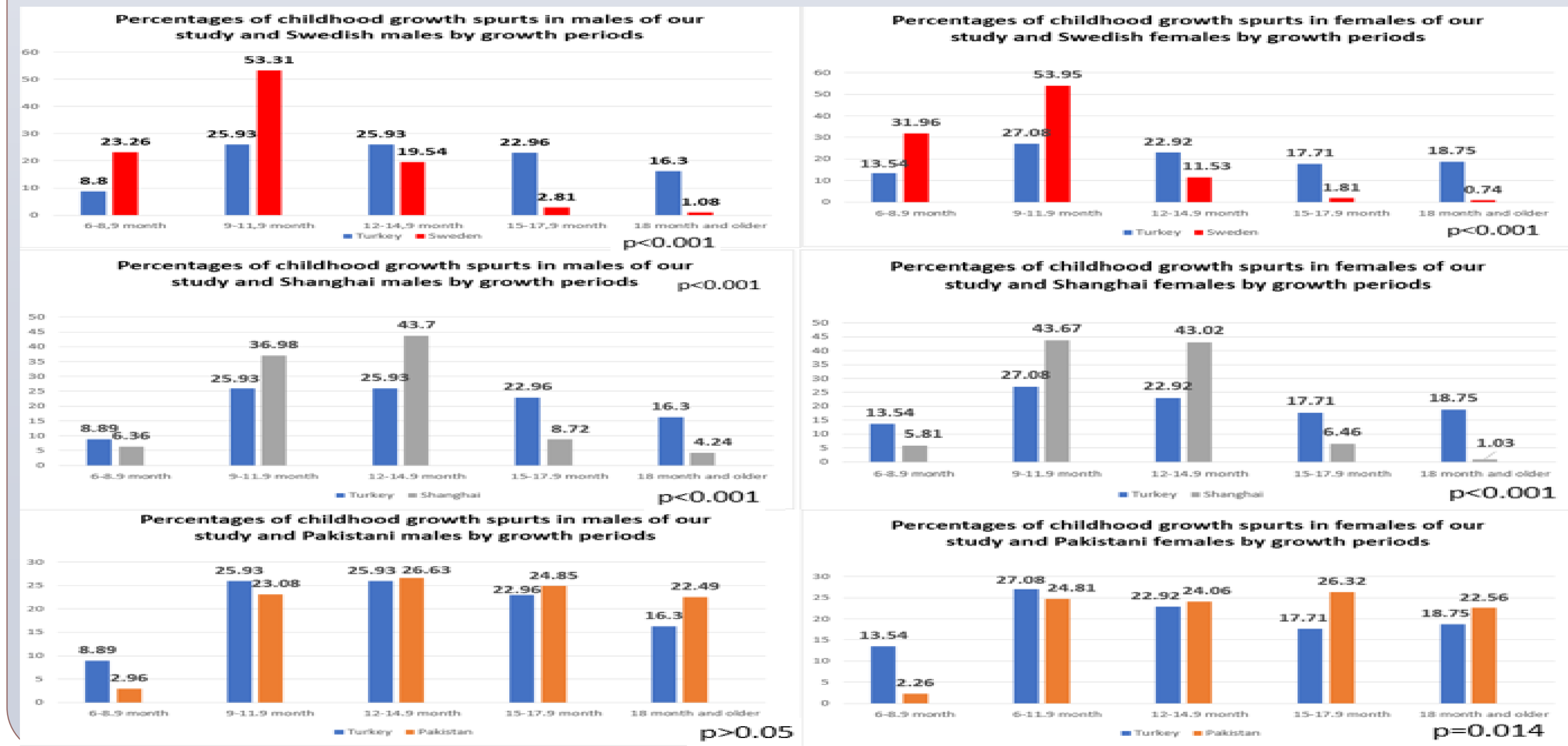Figure 4. Attained height, growth velocity curves of boys and girls with delayed growth spurt

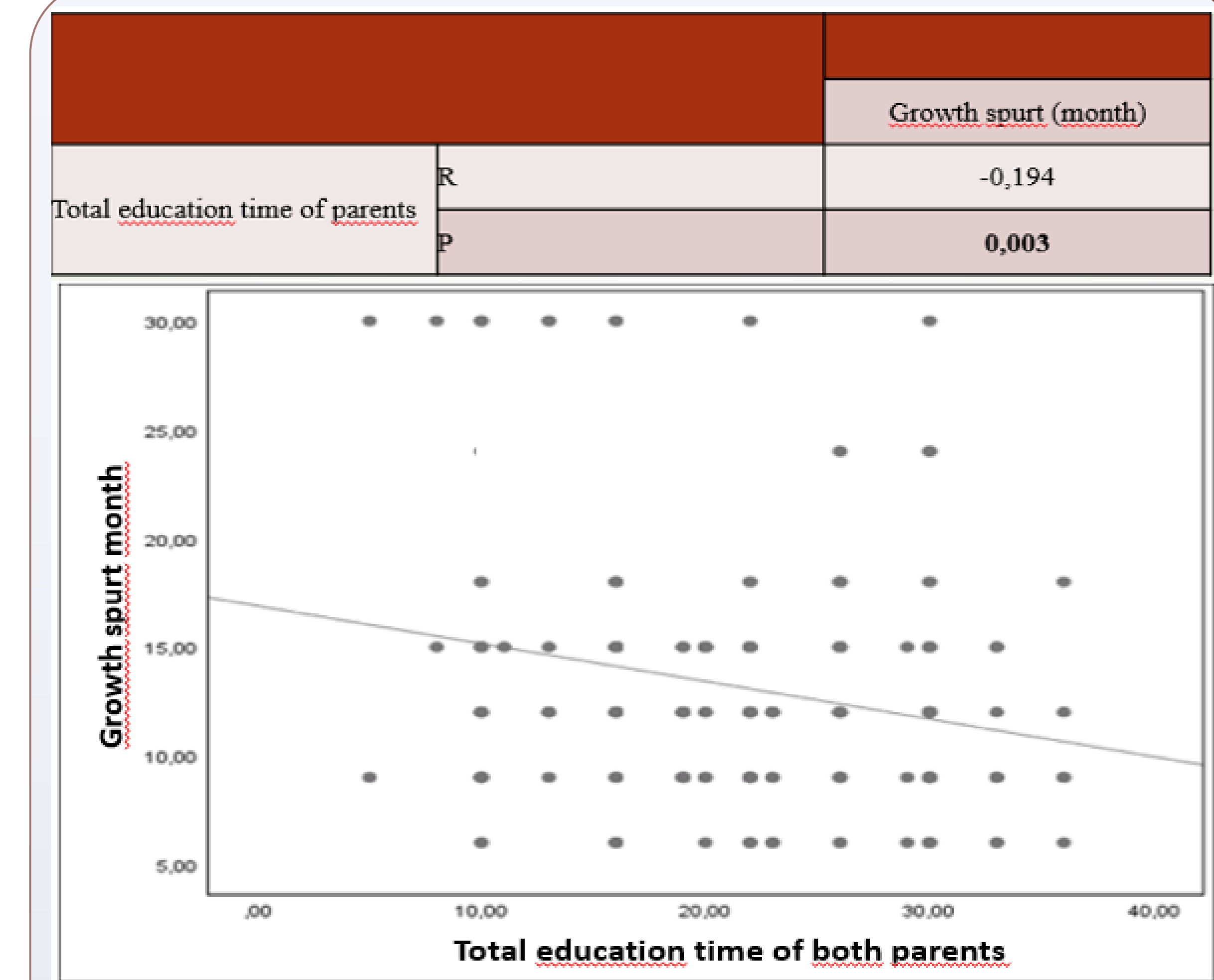Figure 2. Comparison of the growth spurt months of Turkish children in our study

		Growth spurt (month)
Total education time of parents	R	-0,194
	P	0,003

Table 1. The relationship between normal and delayed growth spurts and total education time of parents

Conclusion

Differences at the timing of childhood growth spurt were found between our study and the studies from different countries. The most significant finding of our study was that the education level of the parents had a statistically significant effect on the timing of IC spurt.

References

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