School performance in adolescent Jamaican girls: associations with health, social and behavioural characteristics, and risk factors for dropout

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Health, nutrition and behavioural determinants of school achievement, attendance and dropout were examined in 452 girls aged 13-14 years, randomly selected from grade 8 in nine schools in inner-city Kingston, Jamaica. Girls who were anaemic, sexually active or aggressive had worse achievement levels. Better achievement levels were associated with possession of school materials and access to reading material outside of school. Poor attendance, early sexual activity, and not living with both parents predicted school dropout in the subsequent year. Strategies to reduce anaemia, to improve sex education and reduce the levels of aggression may benefit school performance.

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Introduction

Poor levels of school achievement and attendance are major problems in many developing countries. This is partly the result of inadequacies in the school system such as low levels of teacher education, poor school facilities and unavailability of textbooks (Schiebelbein and Simmons, 1979; Fuller, 1985; Harbison and Hanushek, 1992). The home environment is also important. Parental characteristics, such as attitudes to education, and educational and occupational levels, (Wagner et al., 1985), socio-economic status (Clarke et al., 1991), and the degree of stimulation in the home (Irwin et al., 1978; Bradley et al., 1988) are all associated with children's school performance.

There is increasing recognition that health and nutrition may contribute to poor school performance among children in developing countries, either through effects on attendance, or by affecting children's ability to learn through poor attention and cognitive function (Pollitt, 1990). Health and nutrition variables which have been associated with poor school performance (achievement levels, classroom attention, failure rates) include low height-for-age (Moock and Leslie, 1986; Garwal et al., 1987; Florencio, 1988; Clarke et al., 1991), and weight-for-height (Popkin and Lim-Ybanez, 1982), anaemia (Popkin and Lim-Ybanez, 1982; Florencio, 1988; Clarke et al., 1991), missing breakfast or feeling hungry (Popkin and Lim-Ybanez, 1982; Clarke et al., 1991) and poor dietary intakes or food shortages (Sigman et al., 1989; McDonald et al., 1994). Most of the children in these studies were of primary school age and the impact of health and nutrition on school performance in adolescence has been largely neglected.

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Adolescent's behaviours may also influence their success in school. For example, in Jamaica, 14% of girls are sexually active by age 14 years (National Family Planning Board, 1987) and teenage pregnancy often leads to dropout. There is also considerable concern about aggressive behaviour among school children and the impact this may have on achievement and attendance, however few data are available on this. Increasing household work demands on teenage girls as well as work outside the home may affect school attendance. The aim of this study was to determine which social, health, nutritional, and behavioural variables were associated with the school performance of adolescent girls in Kingston, Jamaica and which variables predicted school dropout.

Methods

Study site
Jamaica is the largest island in the English speaking Caribbean with a population of 2.5 million, of whom approximately 750,000 live in the capital city Kingston and the surrounding parish of St. Andrew. The unemployment rate in Jamaica is 16% and about 28% of the population live in households with incomes below the poverty line (Statistical Institute of Jamaica, 1995; Planning Institute of Jamaica, 1996a). Forty-four percent of households are headed by women with the proportion of female headed households being greater in the poorest quintile (55%) compared with the wealthiest quintile (35%) (Statistical Institute of Jamaica, 1996).

Eighteen percent of the population is functionally illiterate and the Jamaican government Five year plan for education (1990-95) cites high levels of functional illiteracy as the main problem in schools. There are three main types of school within the secondary level system, all-age schools which continue from primary levels up to grade 9, new secondary schools (grades 7-11) and secondary high schools (grades 7-13). Entrance to the secondary high schools is limited by the number of places and is determined by an exam taken in the last grade of primary school (grade 6). Those children who do not gain entry to the high schools continue their education at all-age and new secondary schools and 68% of children from the poorest quintile of the population attend these schools compared with only 19% of children from the wealthiest quintile (Statistical Institute of Jamaica, 1996). All-age and new secondary schools were therefore selected for the study as they serve predominantly low income groups who were more likely to have nutritional or health problems.

Study population
Nine all-age or new secondary schools were identified in inner city Kingston which had at least 40 girls enrolled in grade 8. These were all the schools of these types in the study area except for one very small school and one with boys only. Enrolment in grade 8 is about 87% of children (Statistical Institute of Jamaica, 1989) and this is the highest grade at which the majority of children are still in school. A total of 1061 girls in grade 8 aged 13-14 years, and who had attended the study schools in September and October of that school year (1991/92), were eligible for the study. At the beginning of the school year, 475 girls were selected by proportionate random sampling of all nine schools; of these 23 moved to other
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