



Risk of Early Marriage in Adolescence and Hypertension and Hyperglycaemia in Adulthood: Evidence from India

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Introduction

Adolescence (10-19 years) is an important period for physical and psychological development that lays the foundation for good health. During this transition, individuals experience many changes, including physical, social, emotional, cognitive, and sexual development. Environmental effects and stress during this sensitive period have lasting effects in adolescence and can lead to health problems in later years [1]. However, little is known about the significant difference in the risk of adverse health effects from exposure to adverse health effects at various stages of puberty. Puberty can be divided into early (10-14 years), middle (15-17 years), and late (18-19 years) puberty, each characterized by unique physical and psychological development markers. Each stage may include a variety of experiences that are unique to the trajectory of one's emotional and social development. Marriage in early and middle adolescence (that is, under the age of 18) is defined as child marriage. Children's brides, in particular, are disproportionately vulnerable to the collapse of their families and couples and suffer from physical, emotional, sexual abuse and violence. It is also associated with emotional distress and depression. In addition, child marriage forces girls to take on adult roles such as sexual activity and childbirth before they become adults. Studies have shown that previous sexual experience (under 16 years of age) is associated with exposure to early childhood sexual and physical abuse [2,3].

Worldwide, 650 million women and girls who are currently alive have been married as children. In developing countries, about 40% of girls are married before they reach adulthood (18 years), and about 12% of these girls are married in early adolescence (under 15 years) [4,5]. Children's brides are affected by many socio-economic differences and various forms of physical and psychological abuse that can directly and indirectly affect their health in later years. However, apart from the reproductive consequences, the long-term health of a child's bride is an area that is often overlooked and has not received much attention in the literature. To date, only three studies have begun investigating the risk of hypertension and other chronic illnesses in later brides. However, as far as we know, no studies have examined the difference in risk of such consequences in adult women in relation to different marriage ages based on the stage of puberty.

Material and Methods

Data

We used wave data from the National Federation of State High

School of India (NFHS-5) from 2019 to 2021. NFHS-5 is a nationally representative survey that provides a variety of socio-demographic and health indicators for women aged 15-49 years with a response rate of 97%. Our analysis included data on 466,693 married women aged 20-49 years who reported effective systolic and diastolic blood pressure, as well as random blood pressure measurements. Participation in NFHS-5 was voluntary and informed consent was obtained from respondents prior to each interview. The research protocol has been reviewed and approved by the Institutional Review Board of the International Institute for Population Science and the ICF [6].

Statistical analysis

Individual logistic regressions were estimated to obtain the probabilities of hypertension and hyperglycaemia. The dependent variable in each case was a dichotomous variable indicating whether years. The risk of hypertension and hyperglycaemia was significantly higher in women married in early adolescence (10-14 years) and in mid-

