



Early childhood predictors of early onset of smoking: A birth prospective study



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HIGHLIGHTS

- One in six participants first smoke cigarettes at or before 14 years.
- Maternal education and marital circumstances predict earlier onset of smoking.
- Maternal smoking or drinking are linked with earlier tobacco smoking in children.

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ABSTRACT

Objective: Early onset of smoking is associated with subsequent abuse of other substances and development of negative health outcomes. This study aimed to examine early life predictors of onset of smoking in an Australian young cohort.

Methods: Data were from the Mater Hospital and University of Queensland Study of Pregnancy (MUSP), a population-based prospective birth cohort study (1981–2012). The present study is based on a cohort of 3714 young adults who self-reported smoking status and age of onset of smoking at the 21-year follow-up. Of these, data were available for 3039 on early childhood factors collected between the baseline and 14-year follow-up of the study.

Results: Of 3714 young adults, 49.6% (49.9% males and 49.3% females) reported having ever smoked cigarettes. For those who had ever smoked, mean and median ages at first smoke were 15.5 and 16.0 years, respectively. In multivariate Cox proportional hazard analysis mother's education, change in maternal marital status, maternal cigarette smoking and alcohol consumption, maternal depression and child externalizing when the child was 5 years statistically significantly predicted early onset of smoking.

Conclusions: The data suggest that individuals exposed to personal and environmental risk factors during the early stage of childhood are at increased risk of initiation to cigarette smoking at an earlier age. Identification of the pathways of association between these early life factors and initiation to cigarette smoking may help reduce risk of tobacco smoking in adolescents and its adverse consequences.

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1. Introduction

Cigarette smoking remains the most common preventable risk factor contributing to illness, disability and death. In Australia, more than 13.0% of 18 and 19 year old adolescents smoked daily in 2010 (Australian Institute of Health & Welfare, 2011). Early age of onset of tobacco smoking is a predictor of lower academic achievement and behavioral problems at school (Ellickson, Tucker, & Klein, 2001), as well as later legal and illegal drug abuse (Grant, 1998;

Hanna, Yi, Dufour, & Whitmore, 2001). Research has also shown that earlier age of smoking onset is associated with increased risk of physical and mental health impairments, including anxiety and depression (Hanna et al., 2001; Jamal, Van der Does, Penninx, & Cuijpers, 2011), cardiovascular diseases (Hegmann et al., 1993; Planas et al., 2002), and respiratory problems (Henderson, 2008) and cancer (Palmer et al., 1991). Most research suggests that the rate of smoking initiation after age 21 is very low (Chen & Kandel, 1995), although there might be a subgroup of late-onset smokers who start smoking immediately after completing high school (Chassin, Presson, Rose, & Sherman, 1996). The identification of individuals at risk for early onset tobacco smoking is an important public health priority and should help prevent the development of wide range of associated health outcomes.

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In light of the high recidivism among adult smokers who try to quit (Chassin et al., 1996) and the evidence that most smokers begin smoking before the age of 21 years, preventive efforts need to target adolescents. Early childhood, the adolescent period have been described as sensitive or even critical periods (Bornstein, 1989), particularly in terms of psycho-social development. Knowledge of factors associated with the early initiation of smoking, and in particular early childhood factors, can help develop effective preventive programs (Coie et al., 1993; Hawkins, Arthur, & Catalano, 1995; Mrazek & Haggerty, 1994). There has been extensive research to investigate various interpersonal and intrapersonal factors that predict smoking behavior in adolescents and young adults (Becklake, Ghezzo, & Ernst, 2005; Choi, Harris, Okuyemi, & Ahluwalia, 2003; Conrad, Flay, & Hill, 1992; Milberger, Biederman, Faraone, Chen, & Jones, 1997; Voorhees, Schreiber, Schumann, Biro, & Crawford, 2002; Zhang, Wang, Zhao, & Vartiainen, 2000). Findings of the relevant studies indicate that children

who are exposed to lower socio-economic status, family problems, including family disruption and conflict, a family history of substance use, and parental antisocial behavior are more likely to smoke tobacco, in both adolescence and early adulthood (Conrad et al., 1992). They also suggest that a person's mental health and problem behaviors (Voorhees et al., 2002), including attention deficit hyperactivity disorder in childhood (Milberger et al., 1997; USDHHS, 1998), are associated with early initiation of cigarette smoking.

While a variety of psycho-social risk factors have been studied previously including socio-demographic, environmental, behavioral, and personal factors, the available studies mainly focus on the relationship between a selected group of risk factors and tobacco smoking. In addition, in different studies, many of these factors are considered individually or in small groups, yet these factors are likely to be correlated and measure the same underlying cause. Specifically, there remains a paucity of knowledge to prospectively examine the association between early childhood factors

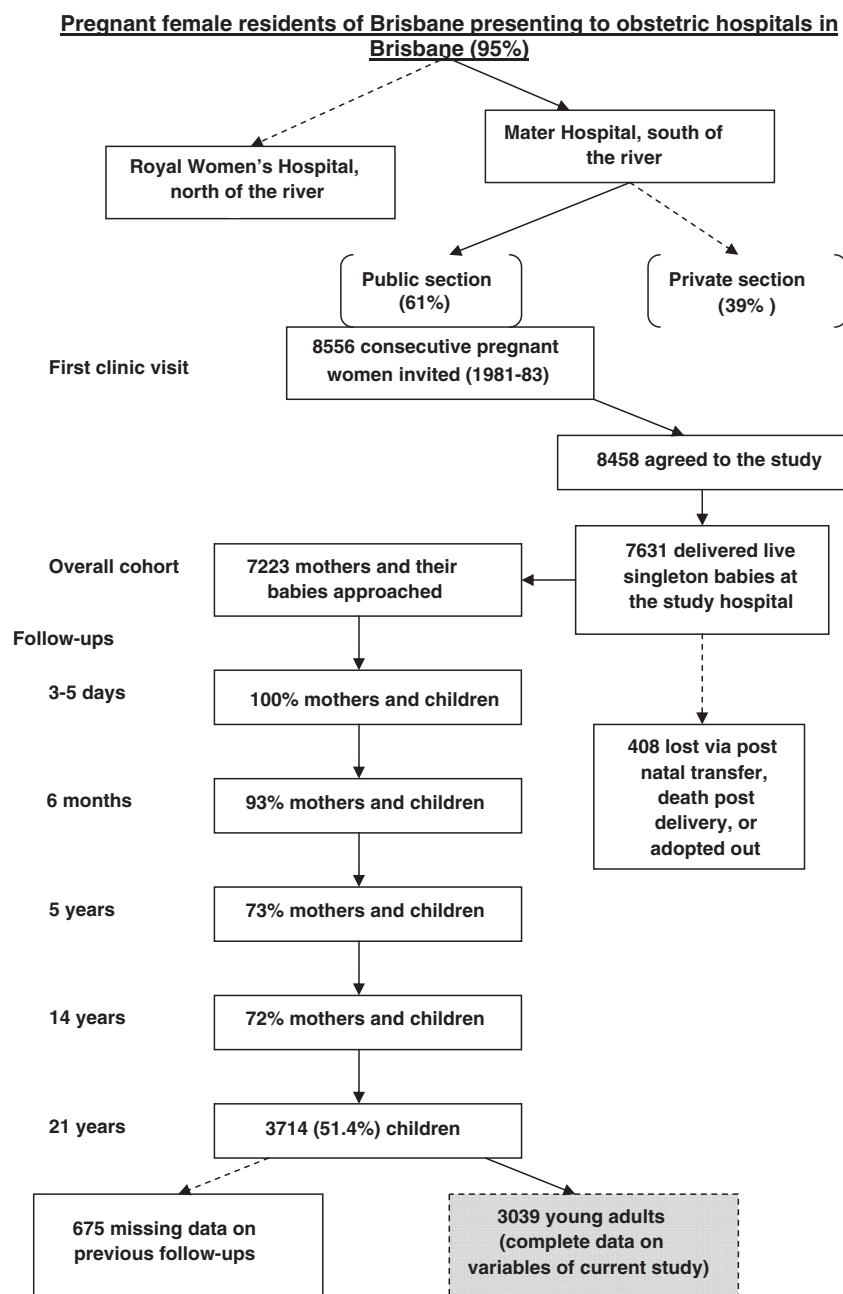


Fig. 1. Sampling frame and follow-ups of MUSEP.

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