Does early age of menarche lead to an early age of coitarche? Reproductive health experience, behavior and pregnancy among adolescents in the Philippines

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Recent studies on the onset of puberty in girls and boys are suggestive of earlier entry to reproductive maturation (Herman-Giddens et al., 2012). Mean ages of the beginning of pubic hair growth, rise in testicular volume and genital development for boys and breast development, pubic hair growth and menstruation for girls were recorded and compared over time (Weil, 2012).

The rapid decrease in the age of onset of secondary sexual characteristics may be related to environmental factors, including exposure to chemicals, changes in diet, less physical activity, and other modern lifestyle changes and exposures and may not reflect healthy conditions (Sprinkle, 2001; Golub et al., 2008; Herman-Giddens et al., 2012). Psychological, emotional, and behavioral considerations of earlier sexual maturity may be important, given the current phenomena of social and emotional delay in achieving adulthood (Herman-Giddens et al., 1997; Goldstein, 2011; Herman-Giddens et al., 2012). For girls, the most important indicator of reproductive readiness is menarche or the onset of first menstrual period.

In the paper of Gilette (2010), she discussed that the average age of a girl at menarche is decreasing worldwide; sexual maturity is reached by girls now at a significantly younger age than their grandmothers. She also reported drop in age at menarche in several countries like in the United States the average age at menarche dropped from 14 years in 1900 to 12.8 years (Chumlea et al., 2003; Pinyerd and Zipf, 2005). Average age at menarche in Israel has also declined from 13 to 11 years (Chodick et al., 2005); from 14 to 12 years in Poland (Hulanicka and Waliszko, 1991); in Scotland from 13.2 to 12.7 years (Okasha, 2001); in Northern Europe, age at menarche is about three years earlier than it was 100 years ago (Parent et al., 2003); and in South Korea, girls reach menarche four years earlier than their grandmothers did (Hwang et al. 2003).

Predisposition to cancer and heart disease and early participation in risky behaviors, such as cigarette smoking, alcohol abuse, and sexual activity are among the identified biomedical, emotional, and socio-cultural consequences of early menarche (Chodick et al., 2005). Other studies found that early-maturing females tend to become pregnant at younger ages than do later-maturing females (Udry 1979; Udry, 1988; Sisk & Foster, 2004; Carel et al., 2006; Dunbar et al., 2008). Additionally, Dunbar et al. (2008) speculated that early physical maturation is not an important antecedent of early childbearing among Black Americans because the prime mediator of the relationship between early menarche and early pregnancy, early age at coitarche (age of sexual debut), is more normative among Black than among White American girls. Accordingly, they posited that coitarche explains the association between menarche and first pregnancy among White girls, but fecundity (i.e., fertility) at coitarche underlies the association between these two events among Black and Hispanic girls.
Given the observed trend toward earlier menarche and the desirability of preventing adolescent childbearing, a better comprehension of the interconnections of the reproductive health experience (age at menarche), reproductive behavior (age at coitarche) and early pregnancy could provide valuable information that can feed into improved pregnancy prevention interventions for young adolescent girls. It is along this line that this paper examines the reproductive health experience (represented here as age at menarche) of adolescents in the Philippines from 1993 to 2008 and determines if they have earlier entry into the reproductive phase. It also explores the reproductive behavior or coitarche experience of these adolescents and evaluates the association between early reproductive health experience, reproductive behavior and early pregnancy. The analysis is extended across socio-demographic variables such as birth cohort, type of residence and religion. This study aims to provide valuable information to the understanding of the complexity of the adolescent pregnancy in the country.

The data used in this study are drawn from the 1993 National Demographic Survey (NDS), the 1998, 2003 and 2008 National Demographic and Health Survey (NDHS) collected by the Philippine National Statistics Office in partnership with ORC Macro International. The 2008 NDHS is a nationally representative sample of 13,594 women, aged 15 to 49 years old from 12,469 households. The overall response rate is 98 percent. It is the ninth in a series of demographic and health surveys conducted to assess the demographic and health situation of the Philippines.

The 2008 NDHS collected detailed information on fertility levels, marriage, fertility preferences, family planning, nutrition and other health related data including violence against women. The sample used in this study is limited to women who are currently in either a marital or cohabiting union with the final sample comprised of 8549 respondents.

Explanatory variables used in this study are socio-demographic factors such as birth cohort, place of residence and religion. Birth cohort is the grouping of women across time with the following categories: 15-19 (1988), 15-19 (1993), 15-19 (1998), 15-19 (2003). On the other hand, Place of Residence is the current resident which is a dichotomous variable with Urban and Rural as categories. Religion was recoded into two categories – Roman Catholic and Non-Roman Catholic.

Age at menarche and age at coitarche serve as both dependent and explanatory variables for this study. Both are continuous variables and are used as dependent variables when examining its determinants and serve as explanatory variables when evaluating its effect on teenage pregnancy. On the other hand, teenage pregnancy can be explores with two variables namely age at first pregnancy and categorical variable of whether or not the respondent had teenage pregnancy which has two categories, yes or no.

Bivariate analyses will be performed and appropriate test for association and correlation between the dependent and independent variables will be employed. Regression will be done to examine the interrelationships between the variables under study.