Reviewer's report

Title: Religiosity and teen birth rate in the United States

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Reviewer: John Santelli

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This is a well considered investigation, with a solid review of prior research literature, an appropriate methodology, and strong association between the key independent variable (religiosity) and dependent variable (teen birth rates in the 50 states). Increased religiosity (as defined by the authors and measured as an aggregate measure for each state) was strongly associated with the state’s rate of teen births. The correlation coefficient (r=.71) between these two variables suggests that about one half of the statistical variance in teen birth rates among states is explained by religiosity – an enormous level of correlation for statistical science research. The authors appropriate control for two other key independent variables: income and the teen abortion rate. Controlling for both of these reduced the correlation coefficient to r=.52 which suggests that the impact of religiosity is partially explained by family income and use of abortion. Moreover, this level of correlation suggests that one quarter of the variation in teen birth rates is explained by religiosity.

Religion can be a helpful or hurtful influence on adolescent and adult health behaviors. Religious influences on health are often described in terms of several separate dimensions: religious affiliation (e.g. Catholic, Jewish), religious involvement (i.e., attendance at services and other church-related activities), and subjective experiences (i.e., spirituality). Prior research on teen reproductive behaviors suggests that religious involvement may be the most important of these - although religious affiliation - particularly to certain fundamentalist groups may also be influential. The influence of religion is context- and culture-specific; for example, in Africa both Christian and Muslim affiliation has been associated with higher contraceptive among adolescent and adult women compared to traditional animist religions. The eight elements of the religiosity scale created by Strayhorn and Strayhorn reflect several aspects of religious experience including involvement (2 items) and subjective experience (1 item). The other 5 items appear to reflect religious fundamentalism (e.g., believing there is only one way to interpret the teachings of one’s religion and believing that Scripture should be taken literally). It would have been interesting for the authors to examine several of these dimensions separately. While the authors report a high level of correlation among the individual elements of their 8 item scale, it would be useful to subject the scale to a statistical technique such as Factor analysis. Factor analysis can both identify separate dimensions and suggest the strength of correlation among separate items.

There are two systems of abortion reporting in the United States, both of which
have specific strengths and limitations. The authors used data from CDC which is reported to state health departments and misses several key states including California. The alternative system is the Guttmacher Institute which uses reports from abortion providers but lacks characteristics about women receiving abortion. The authors might repeat their analysis using the Guttmacher data.

The authors note that their scale of religiosity correlates with both increased teen birth rates and decreased teen abortion rates. Both of these findings are remarkable. The authors appropriately suggest social mechanisms that may explain the increase in teen birth rates, particularly discouragement of contraceptive use among teens by conservative religious groups. Two of our recent papers suggests the importance of teen contraceptive use in explaining recent trends in teen pregnancy (Santelli et al 2009) and the differences in teen fertility between the U.S. and other western countries (Santelli et al 2008). I would note that no scientific data suggest one can help teens delay sexual initiation by discouraging contraceptive use.

Thanks to the Strayhorn family for a provocative and insightful paper!


Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I have no competing interests.