Reviewer's report

Title: Utilization of antenatal ultrasound scan and implications for the caesarean section: a cross-sectional study in rural Eastern China

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Reviewer: Xing Lin Feng

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Using cross sectional household survey data, this paper analyzed the association between maternal factors, uptake of ultrasound scan and Caesareans sections in two counties of China. The authors concluded that “A high utilization of antenatal ultrasound screening was observed... Maternal age, education level, parity, obstetric history and antenatal care were found to be associated with high ultrasound use. Antenatal ultrasound scan contributes to CS in rural China and social causes may explain more of the association…” My comments are as follows.

Major Compulsory Revisions

1. A recent systematic review and meta analysis as referred below concluded that ultrasound scan is safe for pregnancy outcomes. Therefore safety argumentation is not proper to support the motivation of this research. And the second paragraph in the introduction is abundant.


2. Guo et.al (2007), referred as 51 in the manuscript, reported the positive association of ultrasound scan in pregnancy and the rising Caesarean sections in China. Therefore it is unfair to motivate this research by saying that “there are limited data on the utilization of antenatal ultrasound scan in the general population, including its association with CS” as in the last paragraph of the introduction section.

3. The analysis needs major improvement. All the factors as specified in the structural equation model (figure 2) are maternal factors; while the authors totally ignored the supply side factors. However, both demand and supply side arguments have been put forward on why Caesareans sections have been rising so rapidly in China. The misspecification of the structural model may make the positive association of ultrasound scan and Caesareans section spurious. For example, if doctors just want to provide more ultrasound scan and Caesareans section to make money (as argued by Bogg et.al 2010 and Long et.al, 2011), the two variables are definitely associated. However, the association is spurious because ultrasound scan per se does not necessarily lead to Caesarean sections. I quote the argumentation of Guo et.al (2007) here for the authors'
information. “The availability and widespread use of ultrasound scanning indicates the extent of use (medicalization) of antenatal care services by women in the study area and could be either a marker for a type of patient who prefers medical intervention, or a marker for a type of medical behaviour whereby doctors might be inclined to offer both scanning and caesarean delivery.”

Minor Essential Revisions

4. In the data collection section, the authors stated that “there were no other maternal health care improvement programs ongoing in the counties at the time of the study”. The authors describe none maternal health care improvement programs, Thus I don’t understand why they say “other” here. If they really have some programs in the two counties, it seems that there are no counties in China fulfilling such criteria. It is reported (Long, 2010) that the New Collaborative Medical Scheme (NCMS) has covered more than 90 percent of rural population in China.

Discretionary Revisions

None

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests