Author's response to reviews

Title: Cesarean and VBAC Rates among Immigrant vs. Native-Born Women - A Retrospective Observational Study from Taiwan

Authors:

Jung-Chung Fu (ufifuh@yahoo.com.tw)
Sudha Xirasagar (sxirasagar@sc.edu)
Jihong Liu (jliu@mailbox.sc.edu)
Janice C Probst (jprobst@sc.edu)

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Author's response to reviews: see over
June 13, 2010

Rachel Neilan, MSc
Scientific Editor
BMC-series Journals
BioMed Central
Floor 6, 236 Gray's Inn Road
London, WC1X 8HL

Dear Ms Neilan:

Sub: MS:1999261700366219, Cesarean and VBAC Rates among Immigrant vs. Native-Born Women - A Retrospective Observational Study from Taiwan Jung-Chung Fu, Sudha Xirasagar, Jihong Liu and Janice C Probst

We thank you and your reviewers for the time and attention to provide us excellent review comments. We are happy to submit our revised version responding to all of the review comments by the reviewers. We have also carried out all the format changes requested in your email and ensured consistency with the BMC Public Health manuscript guidelines. The revised version in “track changes” mode to enable you to readily discern changes is uploaded.

Below we have presented the item-wise response to review comments. I hope you will find our revisions satisfactory. We will be happy to make any further changes as needed. Please let us know if you have any questions.

Thank you again for your time.

Best regards,

Jung-Chung Fu

Email: uffufuh@yahoo.com.tw

Reviewer: Eugene R. Declercq

Major compulsory revision:
Clarify discussion to eliminate references to maternal preferences as the influencing factor in differences.

**Response:** We have now provided a clarifying note to emphasize the consistency of the inter-ethnic differences in CS following multiple regression analysis of several subgroups stratified on risk factors. Based on the consistency ringing through all these subgroups we indicate that maternal mindset may be driving the observed differences in CS rates. We also note that the similarity of the rates of immigrants to their home countries suggests that maternal cultural mindset may be a major factor driving these consistent differences.

The opening paragraph in the discussion section is pasted in below.

> “The pattern of findings, particularly the consistency of the ethnic associations within risk-stratified sub-groups strongly support the hypothesis that cesarean delivery type, both primary and repeat cesarean may be influenced by maternal attitudes, which are likely shaped by the prevailing cultural attitudes in women’s country of origin. Taiwan’s Vietnamese immigrants show almost identical rates to immigrant Vietnamese in Norway [19] and to their home country [17]. Another validating finding in our study is that VBAC rates, which depend on maternal acceptability of a trial of labor follows the reverse pattern, although the magnitude of VBAC rates and differences are low. Collectively, therefore the evidence strongly suggests maternal cultural mindset as a major factor driving these consistent inter-ethnic differences.”

Later in the next paragraph we take cognizance of physician preferences driving CS and indicate how this is mitigated in our study as follows:

> “Cesarean delivery is, no doubt partly driven by physician preferences, particularly the predictable cost and timing of a cesarean delivery versus uncertain timing and the round-the-clock readiness and resources necessitated by waiting for spontaneous vaginal delivery. However, this is unlikely to be a factor in our findings as physician preferences would be expected to influence delivery type across all ethnicities.”

In addition, we have carefully revised the manuscript to change definitive attribution to maternal mindset/ cultural preferences to “may influence.” Further we note the limitation of our study in inferring “maternal preference” by stating the following on p. 14:

> “We are unable to conclusively infer maternal preference as the cause of differences between the three ethnicities because maternal preference is not recorded in claims data as it is not reimbursed by NHI.”

**Minor:**

1. Needs no response

2. I would like to see some discussion of the implications of the limitations of birth certificate dataset missing both socio-demographic variables and parity.

**Response:** We have now included a paragraph on p. 13:
“Birth certificate data lack information on healthcare coverage type, causing confounding by patients’ financial risk influencing prenatal care and selection of delivery type by both provider and patient. Our study, based in a single-payer, universal access system obliterates this source of confounding. Studies based on insurance claims data or chart reviews also lack information on key variables such as the plan benefit structure, payer type (insurance or self-pay), and affordability. Many birth certificate datasets also lack the variables of maternal and obstetric complications.”

The implications of missing variables on parity and SES are presented on p. 15 as follows:

“Low SES and education are associated with lower cesarean rates internationally. To the extent that rural and less urbanized residence is associated with lower SES, our study partly controls for confounding by SES. Parity is another important missing variable, with grand multiparity being a risk factor for cesarean. Parity differences are possible across ethnicities which may confound our findings. However, the prevalence of grand multiparity is very low in Taiwan, rendering it unlikely to statistically influence and confound our findings.”

3. The authors do not cite validation studies on the Taiwanese birth certificate data …. fetal distress and dystocia the latter two of which are often problematic measures. The authors discuss in the Methods section the variables they chose to control for but it looks as if they simply chose all available variables;

Response: We chose all variables that are documented in the literature to be relevant for a cesarean decision. Regarding the validation studies and validity of some variables we have now included the following paragraph on p. 15:

“Another limitation is the low coding accuracy for maternal and obstetric complications in birth certificates, incomplete or misclassified data entry relative to medical claims data [51-53]. There are no validation reports on Taiwan’s birth certificate data. Therefore variables such as dystocia and fetal distress (particularly subject to over-diagnosis or misrepresentation) could be unreliable. However, underreporting, misclassification or over-diagnosis are likely random and therefore unlikely to be germane to the validity of our findings. Notably, our findings show significantly lower CS likelihood among Vietnamese, after controlling for these variables, suggesting that inter-ethnic differences in cesarean propensity are real, beyond the impact of the clinical need variables.”

4. Needs no response

5. a) Detailed questions regarding how we conclude about the possible role of maternal preferences, and about the role of physician preferences.

Response: Please see our response above to the Major Compulsory Revision.

b) Need to correct our references to studies from other nations, the need to qualify our statements that the documented rates were based on a single or few institutions, or provider surveys:

Response: This is now corrected. The last paragraph on p.5 going into p.6 now reads:
“Isolated hospital-based surveys of providers/medical record reviews suggest that maternal request was the reason for 24.9% of elective cesarean deliveries in the UK, 9% in Italy, and 7.6% in Norway [33-35], and about 50% in the highly urbanized areas of southeastern China which has very high CS rates [23].

**Minor points:**

1. The authors cite an unreasonably high breech rate of 8-12% but their own data in Table 1 reports a total complication rate of 8.5% including breach, dystocia and fetal distress among other complications.

**Response:** We have now clarified that this is due to under-documentation of all complications in the birth certificate data. On p. 15 we clarify as follows:

“(Our study rate of 8.5% covering all obstetric complications including breech is a consequence of widely prevalent under-documentation of maternal complications in birth certificate data as these variables are not statutorily required to be documented in birth certificate data, and such documentation in not linked to financial reimbursement. It is most likely however, that such under-reporting is random across ethnicities.)”

2. The overall rate of complications cited seems unreasonably low….

**Response:** The note provided about under-documentation (p. 15 shown above) takes care of this concern.

3. While statistically significant the absolute difference in VBAC rates are small.

**Response:** This is now noted on p. 11 in the following sentence:

“Another validating finding in our study is that VBAC rates, which depend on maternal acceptability of a trial of labor follows the reverse pattern, although the magnitude of VBAC rates and differences are low. Collectively, therefore the evidence strongly suggests maternal cultural mindset as a major factor driving these consistent inter-ethnic differences.”

6. …. To suggest there is no financial incentive for doing cesarean ignores the financial and lifestyle benefits for providers….

**Response:** This is now noted on p. 12-13 along with the mitigating factor relative to validity of our findings, as follows:

“Cesarean delivery is, no doubt driven partly by physician preferences, particularly the predictable cost and timing of a cesarean delivery versus uncertain timing, and the round-the-clock readiness and resources necessitated by waiting for spontaneous vaginal delivery. However, this is unlikely to be a factor in our findings as physician preferences would be expected to influence delivery type across all ethnicities.”
7. No response needed

8. No response needed

Reviewer: Wei C Yoong

1. Is there any evidence that Taiwanese women are ethnically and racially different from Chinese women?

Response: We acknowledge the difficulty in conceptualizing racial differences between Chinese and Taiwanese. Throughout the paper we have now worded it to state cultural rather than racial difference, and focus on ethnicity which is more a geographic-cultural construct. We have clarified this issue on p. 13: “Finally, the immigrants are of East Asian descent, though ethnically and culturally diverse.

No other comment needed a response.