Author's response to reviews

Title: Equity of Access to Reproductive Health Services among Youths in Resource-limited Suburban Communities of Mandalay City, Myanmar

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Author's response to reviews: see over
Dear Editor,

Our responses to the reviewers are shown below, point by point. **Red** color indicates sections from the text that have been added or modified from the previous version. **Blue** color indicates sections from the text that have been copied as is simply to highlight an issue so the reviewers can understand more clearly.

Dear Reviewers,

Thank you for your comments to our manuscript. We appreciate the time and effort you have put in to improve our manuscript.

Authors

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**Reviewer's report**

**Title:** Equity of Access to Reproductive Health Services among Youths in Resource-limited Suburban Communities of Mandalay City, Myanmar

**Version:** 3  **Date:** 16 October 2012

**1st Reviewer's report:**

**Reviewer:** Elissa Kennedy

**Major Compulsory Revisions:**

#1.1 Please provide sex-disaggregated analysis of the data. Were the primary outcomes measures different for males and females?

**Response:** The differences of primary outcome measures between male and female were not our main objective, so we did not analyze the data separately for males and females. However, we have done this at the request of the reviewer and descriptive results are shown in Table 2, which has consequently been modified from the previous version. A comparison between males and females was assessed for accessibility and utilization outcomes only, not unmet needs. We found
that the differences in levels of accessibility and utilization were not statistically significant between males and females, and have added this result to the text on page 13-14.

**Results on pages 13**

The geographical, financial and overall accessibility and utilization levels for males and females are presented in Table 2. Most had a high level of geographical accessibility (79%) and a low level of financial accessibility (83%). Most had a low overall level of accessibility (66%). There was no difference between males and females in all three aspects of accessibility.

#1.2 Some indicators (unmet need for family planning, unmet need for maternal health services) appear to only refer to females but there is no analysis of differences between males and females which would be relevant.

**Response:** The standard definition from WHO of unmet need for family planning applies to females only. So we only included female respondents in the analysis of unmet need for family planning. We analyzed unmet need for maternal care only among female participants because we believed that among males there would be a high chance of recall bias and a high proportion of missing data. This information has been revised in the methods section on pages 9-10.

**Methods section page 9-10**

**Unmet need for family planning**

The standard definition given by WHO of unmet need for family planning applies to married and reproductive aged women only. [28] However, nowadays the need for family planning is discussed among women and their partners who are not ready to conceive, regardless of their marital status. As a result, unmet need for family planning in this study was defined as any currently non-pregnant, sexually active female youth (defined as having a current sexual partner and having sex with that partner) who did not use contraception, even though she did not intend
to conceive. Intention to conceive was determined by asking the following question. “Do you have a sexual partner?” Those responding in the affirmative were further asked, “Are you currently having sex with that partner?” Those responding in the affirmative were further asked the following two questions: “Do you use any type of contraception?” and “Do you want to conceive in the near future?” Youths who responded “no” to the last question were classified has not intending to conceive.

2. Please provide an explanation of how ‘sexually active’ was defined – was this based on a standard measure (sex within the last 4 weeks) or are the authors referring to ever had sex.

**Response:** We defined sexually active as “youths having a sexual partner and currently having sex with that partner”. To reduce confusion, we have revised in the methods section based on the questions we used in the questionnaire on page 9-10 as in the response to point #1.1.

3. Clarify the outcome “any SRH information service” – what does this include (school-based information, mass media, peer education, clinic-based education, etc)?

**Response:** A more detailed explanation on the definition is given in the methods section on page 9.

**Methods on page 9**

**Utilization**

Four essential components of RH services, namely SRH information services (any health education sessions/talks/classes that emphasized on SRH given in schools, clinics, or other places involving peer-based education excluding mass media), family planning services, comprehensive maternal care services (at least one antenatal care (ANC) visit, delivery by skilled
birth attendance (SBA) and at least one postnatal care visit) and STI/HIV testing services, were assessed.

4. Please clarify how the authors ascertained that a female did not intend to conceive – how was this defined or measured? Standard measures include want no more children or do not want to have a child in the next 2 years.

**Response:** Measure of intention to conceive in our study was based on the direct question to the respondents as shown in the methods section on page 10. (Please see response to point #1.2)

5. Please clarify how the authors defined “sex without any protection”

**Response:** The definition has been revised in the method section on page 10.

**Methods on page 10**

**Unmet need for STI/HIV testing**

In this study, unmet need for STI/HIV testing was defined as any youth who had ever had sex without using a condom and had never been tested for STI/HIV.

6. In reference to the reasons for non-utilization of services (Methods/Outcome measures/Unmet RH needs) how were these collected (answer recorded from a pre-determined list) and analyzed?

**Response:** Whenever a respondent replied that they did not use any RH services, they were asked, using an open-ended question, why they did not use it. Some youths gave more than one reason. The responses were analyzed by coding, categorizing and summarizing. This information was added in the outcome measure section on page 10.

**Outcome measures on page 10**

In addition, youths who did not use any RH service were asked, using an open-ended question, for their reason(s). The reasons were presented descriptively after coding and summarizing.
#7.1: In reference to community characteristics (Methods/Outcome measures/Independent variables) please review the classification of knowledge of RH services and exposure to mass media as a ‘community characteristic’. These would be more appropriately classified as individual characteristics.

**Response:** We agree with the reviewer. These variables have been reclassified as individual characteristics.

#7.2: Were any other measure of knowledge measured (knowledge of family planning methods, STI symptoms, etc)?

**Response:** Apart from the types of RH services and providers, we did not measure any other aspect of knowledge.

**Minor Essential Revisions:**

8. Methods / Utilization – please clarify whether measures such as utilization of family planning, STI/HI or maternal care were only collected for youths who report ever having had sex. While it I conceivable that a young person might access family planning services prior to sexual debut the same is not true of maternal health and STI testing. Perhaps these outcomes could be analyzed only for those youths who report having ever had sex.

**Response:** Questions on utilization of contraceptives and HIV testing services were asked only to youths who ever had sex. Questions on maternal care were asked only to youths who had ever been pregnant.

9. Please explain the significance of ‘waste recycler’ and why this indicator of employment is singled out while other types of employment (self-employed, paid, etc) are not.
Response: Two of the 10 study communities are located near the previous municipal garbage dumping grounds, which have now been relocated to another part of the city. However, the so-called “waste recyclers” remained in the area and continued collecting used material to sell to the recycling factories. Because they are so common, their occupation was singled out. Explanation of the classification of each type of occupation has been added to the methods section on page 11.

Methods on page 11
Occupations were classified into 3 categories: unemployed (dependent/housewife/jobless), waste recycler and other employed (shopkeeper/municipal worker/labourer). Waste recyclers are people who wander and collect used material all over the city and sell them to the recycling factories. Because they are so common, their occupation was singled out.

10. I am not convinced that Table 3 adds any useful information as it does not reflect how likely youths were to access or use RH services – it simply reflects the geographical and financial accessibility which is adequately covered in Table 2.

Response: We have modified Table 2 by separating males and females (as requested in point #1), but would like to keep Table 3 as it is since it presents the significant factors associated with overall accessibility to RH services – one of our main objectives.

11. Discussion – some of the important findings are that adolescents (15-19), unmarried young people and youths not currently in school had the lowest utilization and highest unmet need. This could be highlighted and discussed in more detail in the discussion – including possible explanations and recommendations to overcome barriers

Response: We have now discussed those important findings in detail with possible explanations and recommendations in the discussion section, page 20.

Discussion on page 19-20
In our study, adolescents and out-of-school youths had a significantly lower utilization and higher unmet needs for SRH information. SRH information is usually obtained in the regular school-based SRH education classes in Myanmar, thus out-of-school youths have fewer opportunities to access this information. [51] In addition, adolescents’ own embarrassment and negative attitudes of their guardians have been shown to be common barriers to access SRH information services [14,19,52], findings which were similar to ours.

Youths who had never been married had a significantly lower utilization and higher unmet needs for family planning. A concern about confidentiality by unmarried youths was the main barrier for them to access the service in our study, a finding similar to many other studies [53-55]. The perception on society’s and providers’ negative attitudes on receiving the service is also an important barrier [55,56]. Fulfilling the need for family planning services among unmarried youths is critical since the rate of unwanted pregnancy and unsafe abortion among unmarried young girls each year is alarmingly high [53,57].

12. Discussion - the relevance of comparisons with studies in USA and rural areas of Africa are not clear and require more explanation.

Response: We would like to emphasize that there are large differences in the definitions used to measure utilization of RH services among published studies. Some studies measured just one RH service as its utilization while others measured multiple aspects. However, even when combined aspects were used, the details of RH services might have been different. Some references have been removed. In order to clarify this section, we revised some of the discussion on page 18.

Discussion Page 18

The measurement of utilization of RH services varies widely. Some studies used just one aspect of RH services [39-42] while others used multiple aspects of RH [43-45]. However, very few studies assessed all four aspects of RH services as we did in our study. Even among few
studies which considered multiple aspects of RH, the services assessed varied. In 3 studies conducted in the USA [43-45], the level of utilization was found to be similar to our study; however, the American studies included utilization of RH services that were not assessed in our study, such as PAP smear, pelvic examination and abortions services.

13. Discussion – the authors state that there is a current definition of unmet need for family planning; however this does not appear to be the definition used in this study.

Response: The definition of unmet need for family planning has now been revised in the methods section according to the reviewer’s comments (Methods Page 9). Please see the response to point #1.2

14. Discussion – in general there could be more discussion of the reasons for low utilization and high unmet need, including exploration of the reasons captured by this study (provider and spouse perceptions, embarrassment, etc)

Response: We have added more discussion of the reasons for low utilization and high unmet needs in discussion section on page 19.

Discussion Page 19
Possible explanations are that the communities in these areas are newly settled, and have poor road conditions, especially in the rainy season, compared to other areas. This fact was supported by the youth’s stated barriers for utilization of RH services, i.e. difficulties with transportation. (More discussion of this issue is given in the response to point #11.)

15. Limitations – were there any potential biases introduced by relying on community leaders to provide lists of youths in each community (might some young people have been excluded)?
**Response:** We added potential biases as one of the limitations in the Discussion section on page 23.

**Strengths and Limitations page 22**
Second, the results cannot be generalized to all youths living outside resource-limited communities because the demographic and socio-economic characteristics of youths living outside our study area may be different. Third, even though the community leaders, with the help of municipal authorities, provided a list of all youths living in their communities, it is possible that some youths may have not been included in the lists. Lastly, the level of unmet need for STI/HIV testing services was not assessed according to the youth’s risky sexual behaviours since sexual behaviour is a culturally sensitive issue in Myanmar.

16. Attention needs to be given to the language throughout the manuscript. While the manuscript is generally adequately written some phrasing is unclear and word choice not appropriate. There are too many to list here, but examples include “….access to RH services has been vigilant..” (Background para 3) and “….the availability of RH services is ascertained…” (Method para 1). There are numerous other examples throughout.

**Response:** The language has been rechecked thoroughly in the revised version.
Discretionary Revisions:
17. Background - consider providing a more explicit description of the disproportionate burden of poor reproductive health suffered by adolescents globally.

Response: We added a more explicit description of the burden of poor RH suffered by adolescents in the background section, page 4.

Background on page 4

Low accessibility and utilization of RH services creates a universal concern since unintended pregnancies, unsafe abortions, and sexually transmitted infections (STIs) have been shown to contribute to high morbidity and mortality rates, especially in developing countries [6-10]. Globally, approximately 16 million adolescents become pregnant every year of which three million undergo unsafe abortions [11]. Adolescents are more likely to die from the causes related to pregnancy and childbirth compared to reproductive aged women [11-13]. Likewise, the stigmatization of premarital sexual relations among young women deters them from seeking information about RH, engaging in safer sex and fulfilling their RH needs [14]. Those disparities of access to RH care affect not only the individuals but also their families, society and health systems as a whole at both national and global levels [15,16].

18. Data collection/Preparatory phase - with reference to the structured questionnaire more explanation could be given as to how the questionnaire was developed and whether it was based on standardized tools.

Response: We added more explanation of the questionnaire development in the method (data collection) section, page 7.
Data collection

Preparatory phase

The focus of the study was to estimate accessibility, utilization and unmet needs for RH services among youths. The study participants were interviewed using a structured questionnaire which was separated into five sections: socio-demographic characteristics and four main aspects of RH services (sexual RH (SRH) information, family planning, maternal care, STI/HIV testing). The questionnaire was developed based on several literature reviews on measuring accessibility [21-26], and the 2007 Indonesia Demographic and Health Survey (IDHS) which was undertaken as part of the international Demographic and Health Surveys project. The questionnaire from the IDHS is designed to collect data on fertility, family planning and maternal and child health [27].

19. Results/Socio-demographic characteristics – history of sexual activity is very relevant to this study so consider including this in the text not just in Table 1.

Response: The result of history of sexual activity shown in Table 1 has now been included in the text in the Results section, page 13.

Result Page 13

Nearly one-third had never accessed any type of mass media (books/magazines, TV, radio or internet) for information on RH. More than half (53%) had a history of sexual exposure and less than half (44%) had ever been married. The majority (70%) of the youths, or their spouses, had never been pregnant. One-fourth of the youths had one deceased parent (mostly their fathers, who passed away before age fifty). Parental education level was mostly low. The average household income was US$ 178.
20. Discussion – are there any comparisons that can be made to adults’ access, utilization and unmet needs in Myanmar?

Response: In Myanmar, the availability of data is very limited. The data that are available are often obtained from unpublished reports. In our study, we have already compared access to RH care between adults and youths (see discussion page 18 – pasted below). However, we can’t compare the unmet RH needs of youths (except unmet need for family planning/Discussion page 20) with adults in Myanmar because there has been no published study of adults unmet RH needs.

**Discussion/access to RH/ Page 17-18**

We found that geographical accessibility was satisfactory in our study compared to other studies [21-23,26]. To date, little information is available on issues of accessibility to RH services in Myanmar. However, a RH report from the Ministry of Health, Myanmar, which surveyed three townships during 1991 to 2001, mentioned that the distance and travelling time were not the main barriers of access to RH services whereas financial impoverishment hindered utilization of contraceptives among the poor [32]. These findings indicate that inaccessibility to RH services due to the financial aspects has been present for a decade. In contrast to our study, distance and travelling time from home to RH services remains an important barrier in rural areas of Nepal, The Philippines and Malawi [26,33,34].

**Discussion/unmet need for family planning/ Page 18**

In our study, the level of unmet need for family planning was higher than that among reproductive-aged women in Myanmar and other South East Asian countries [46,47] but lower than that in Pakistan [48]. Inability to pay was the main reason for youths in our study to have a higher unmet need for family planning compared to women from other South East Asian countries. Religious beliefs deterred women in Pakistan from using contraceptives causing them to have a higher unmet need for family planning.
Reviewer's report II

Reviewer: Marie Klingberg-Allvin

Minor Essential Revisions
This paper is well written and has an interesting focus of high importance in order to improve the SRH of young people. However, I have some comments that could improve the paper before publication. In general the balance (space) between the different parts (background, method) could be looked over.

1. Background: Is short and could be developed to some extent. The authors have used many references which content and findings that could be described more in detail.

Response: The background section has been expanded based on the comments of the 1st reviewer.

Background on page 4
Low access and use of RH services creates a universal concern since unintended pregnancies, unsafe abortions, the number of maternal deaths, and sexually transmitted infections (STIs) have been shown to contribute to high morbidity and mortality rates especially in developing countries [6-10]. Globally, approximately 16 million adolescents become pregnant every year of which three million undergo unsafe abortion [11]. Adolescents are more likely to die from the causes related to pregnancy and childbirth compared to reproductive aged women [11-13]. Likewise, the stigmatization of premarital sexual relations among young women deters them from seeking information about RH, engaging in safer sex and fulfilling their RH needs.
Those disparities of access to RH care affect not only the individuals but also their families, society and health systems as a whole at both national and global levels [15,16]. Therefore, the inequity of access to RH services between the rich and the poor, and those living in urban and rural areas are a global equity issue of high priority.

2. Method: Is comprehensive and could be condensed in order to give some space for background.

Response: Unfortunately, we could not shorten the methods section. More details were added at the request of the 1st reviewer. Please see red letter changes in methods.

3. Data collection: The sex of the 6 interviewers could be added.

Response: The sex of the 6 interviewers has been added in the Method/Data collection/Preparatory Phase Page 6.

Method/Data collection/Preparatory Phase Page 6
Six interviewers (3 females and 3 males) were trained on using a rapport approach and on how to conduct interviews.

4. Result is rich and well written.
Response: Thank you very much.

5. Discussion: Methodological considerations could be discussed more in depth in relation to validity concept.
Response: The methodological considerations have been expanded in discussion section.
Discussion Page 17
A limited level of accessibility to RH services due to financial aspects was found in our study although the geographical accessibility was adequate. Geographic and financial assessments are
commonly used for measuring accessibility to health care services; however, the methods of measurement vary [29,30]. Accessibility to health care is influenced not only by geographical but also by social, psychological, economic and organizational factors [22,23]. Geographical Information Systems (GIS) have been commonly used to measure physical accessibility [10,31]; however, financial considerations and client’s perceptions of their own access have been lacking. Even if geographical accessibility of health services is adequate, the youths won’t access them unless they know that they exist. Other studies have suggested that the perception of a client’s own geographical and financial access to health care is also important regardless of actual time or distance involved in reaching the service [22-25]. Therefore, accessibility in our study applied both geographical and financial considerations based on the youths’ own perceptions.

**Strengths and limitations Page 21-22**
The challenges and factors hindering access to RH services among youths living in hard-to-reach, resource-limited suburban communities were also highlighted. The questions used in the questionnaire were modified from the International Demographic Health Survey and we also used a multidimensional approach for accessibility to RH services, i.e. geographical and financial aspects. In addition, all outcome measures were based on either standard definitions or actual needs of the youths. The triangulation of factors associated with outcomes identified from regression analysis was consistent with youth’s own reasons.