Authors’ response to reviews

Title: Temporal and regional variations in use, equity and quality of antenatal care in Egypt: A repeat cross-sectional analysis using Demographic and Health Surveys

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Author’s response to reviews:

Dear Dr Massar and reviewers,

Thank you very much for looking into our manuscript in detail and coming with feedback to make it stronger and more relevant. We appreciate your time and effort.

Please find below, as required, a point-by-point response for the reviewed manuscript. This response is also attached as supplementary material to our revised submission and is framed in a comment matrix, which may provide an easier way to compare our response to reviewers comments. Both in our matrix and below, we provide a detailed response to each reviewer/editorial point raised, describing what amendments have been made to the manuscript text and where these can be found.

Kind regards,

Miguel Pugliese and colleagues

Response to reviewers:

Reviewer 1:
This manuscript is well written, informative and has relevant implications and application. The statistical analysis was appropriate and well described with useful discussion and conclusion. The reference list is thorough and all links are active, however several are not yet checked. A few grammatical recommendations are suggested:

- We thank the reviewer for their time and comments, which have helped us improve the manuscript.

Line 300: please change the sentence structure to be, "replicated to inform others of the benefits for which they are entitled."

- Line 298. Thank you for this helpful suggestion, text reads better now.

Line 343: please change the wording to "in target communities (37), to educate women to be aware of the care they should receive."

- Line 339. Thank you, change was included as suggested

Line 360: Please change the wording to "no studies have been conducted that examine mothers' recall of ANC in Egypt, results from

- Line 355. Thank you, we rephrased the line as suggested

Line 363: Please add the word: "ability of some women to accurately recall whether the…"

- Line 358. Many thanks, the word accurately was included

Line 367: Please delete the word either at the end of the sentence, "performed correctly was not available either."

- Line 362. Thanks for identifying this detail. The word either was deleted from the phrase.

Reviewer 2

Thank you for this interesting study; I believe you have adequately addressed all of the potential limitations, including recall bias, generalizability of the findings, and the lack of inclusion of women who had poor pregnancy outcomes. Of particular interest is the increased uptake of private providers, and how this may be specific to the health care system in Egypt, and how women are encouraged to participate. It is alarming to realize that an increased uptake of ANC has been accompanied by an increase in the Cesarean birth rate! A deeper investigation into this phenomenon would also be reflective of the role of private vs. public providers in Egypt.
We thank the reviewer for their time reviewing this manuscript. Their feedback is greatly appreciated by the study team. We agree that further research into the high levels of caesarean rate and the role of private vs public providers in Egypt can be interesting for future projects.

Reviewer 3

Thank you for providing me an opportunity to review this manuscript. This manuscript describes one of the important SDG agenda in health. Overall, the manuscript is well organized and comprehensively describes the ANC and its use in Egypt based on five DHS Surveys. Importantly, this manuscript describes quality issues and equity gaps providing an evidence base for forthcoming policies. My review comments appear below.

-We thank the reviewer very much for their detailed feedback and comments on our manuscript. We appreciate very much their interest in it.

I find the following statement unclear. I suggest authors to rewrite for clarity or break the sentence into two:

“In the same period, 24% of ANC users received all seven care components; from 10% of women reporting fewer than four ANC visits, to 29% of women reporting eight or more.”

- Abstract, lines 38-40. Thank you for your suggestion. We have broken the sentence in two to improve clarity.

Background, lines 83-87

How does it make a difference for an 'excellent opportunity to formulate policy...' when Egypt (or any other country) is a 'regionally and globally important middle-income' country? It is also not clear in which issues this 'regional and global importance' based, especially with reference the area of this research (ANC).

“Egypt is also a regionally and globally important middle-income country with a growing population and pressures on the provision of public healthcare, evidenced by a growing proportion of care provided by the private sector (18,21,22). As such, it provides an excellent opportunity to formulate targeted policy interventions to ensure quality of care and further improve maternal and newborn health.”

-Lines 83-87. We appreciate the points highlighted by the reviewer and provide here some further explanation to improve our mutual understanding of the Egyptian context.

Egypt presents an excellent opportunity for policy formulation due to its near-universal coverage for 1+ANC visits, high coverage for 4+ANC, its regional and global relevance, its growing
population pressure on the public healthcare system and the need for a new focus on quality and equity. These elements make Egypt urgently require new policies targeted at quality of services and also at those most in need.

The use of regionally and globally important was used in more general terms, referring to the country’s relevance (e.g. economic, in population, in size, in cultural influence, a large exporter of doctors…) in the region and, to a lesser extent, in the world. Within ANC, Egypt is a good example of a middle-income country that has achieved good levels of coverage and must focus on the populations most in need and the quality of its service. It also presents an example of a country where ANC and other maternal health services have been increasingly provided by private for-profit providers. The policies and regulations that are adopted by Egypt in this area can be used to inform other low to middle-income countries that will reach similar situations within the next decade.

In lines 85 to 89, we have clarified the paragraph to ensure the information provided is more explicit, in line with the reviewer comments.

Methods

Please describe the limitations (and strengths) of your study. E.g. what could be the implication of taking data as far back in past as five years? Likewise, you have mentioned that those that used both public and private sector were categorized as private sector (lines 127-28). Why so?

-Methods

Thank you very much for checking on this key methodological point. Kindly find our study limitations and strengths on lines 353 to 363. In this paragraph we mention the implications of a five-year long recall and other limitations of the DHS surveys. Given the DHS surveys wide use and recognition and the fact that their strengths and limitations have been studied and discussed elsewhere (such as McCarthy et al 2016, Liu et al 2013 and Tomeo et al 1999, all included in our references) we considered appropriate to limit the amount of detail provided in our article.

We also kindly refer to Reviewer 2 who commended the detailed elaboration of the Limitations.

-Lines 127-128

We chose to categorize the few women accessing both public and private providers for ANC as private sector as the DHS does not ask how many visits were at each type of provider nor what services they obtained at each. These women constitute a very small proportion of ANC users (2.77%), and we felt that their experience of care was probably more similar to users of only private sector ANC than to users of only govt/public sector ANC. Thus we chose to combine
mixed sector users with private sector users. To improve the clarity of our methods, we have also included this more elaborated explanation in lines 130-134 of the manuscript.

Discussion

The authors have mentioned improving ANC coverage were characterized by decreasing reliance in public services. Please discuss why and how.

-Discussion, lines 275-284. We thank the reviewer for this question in the discussion.

Our discussion around decreasing reliance can be found in lines 275 to 284. In this paragraph we summarize our first results: a progressive increase of private care use in time, from two thirds of all users up to nine out of ten. This increase in private care use is accompanied by a proportional decrease in the use of public ANC.

We then discuss our results in relation to the context in Egypt, as reported by other studies. This includes high cost of private ANC, the low cost of public ANC (sometimes even free), high access to public facilities and the poor quality of ANC services provided. These factors are likely to motivate increased use of private providers (UNFPA report, 2016), and decreasing public reliance on public ANC.