Author’s response to reviews

Title: Community attitudes and gendered influences on decision making around contraceptive implant use in rural Papua New Guinea

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Reviewer 1:

Greater discussion of LARC vs implant could aid reader (I accept the authors statement that implants might best serve this population) but at the same time the author talks about acceptance of depo by the community. Greater discussion around how implants are more appropriate as can be removed and normal menstrual patterns return much more quickly than depo may be relevant here especially around community attitudes. Irregular vaginal bleeding can result from progesterone only methods (depo and implants in this context) and maybe some reference should be made to this given that the author states (line 141) that menstrual blood, particularly after child-bearing, is considered 'dirty' and 'dangerous'. I think some reflection of this undesired side effect merits mentioning in this context.

Thank you for highlighting this important comparison. We have addressed this in the discussion as part of our appraisal of community attitudes towards contraception (see below, lines 506—515). We have also separated the discussion into sections to better sequence our appraisal.

Prior to the implant program Depoprovera (‘Depo’) was the most commonly used method of contraception on the island [11]. While Depo has the advantage of less irregular bleeding, our research shows that women were accepting of the irregular bleeding with implants and while 25% had this side effect, only 2% of these women discontinued use for bothersome bleeding at 12 months [16]. This may be because the personal and social consequences of having an unintended pregnancy are becoming more significant for women in PNG and despite cultural perceptions that menstrual blood is ‘dirty and dangerous’, individuals and communities are beginning to re-shape
their perceptions around irregular bleeding in preference for effective and reliable contraception [31,32]. The key advantage of the implants over Depo is that they are long lasting (reducing clinic visits and supply chain issues) but quickly reversible [2].

2. Community attitudes and influences on decision making might be a more appropriate title as I feel pathways to decision making weren't really articulated.

Thank you for clarifying this, we have altered the manuscript title accordingly. The title now reads ‘Community attitudes and gendered influences on decision making around contraceptive implant use in rural Papua New Guinea’

3. I think the difference between young and older male community members is of great interest and maybe could be highlighted more for the reader.

We have expanded on probable reasons why attitudes towards sexual and reproductive health may differ between young people and older men and women in the community as follows (lines 572—578):

By contrast, older men and women in the community remain relatively isolated from modern sources of information because they reported a fear of criticism from their peers if they were to access sexual and reproductive health resources via the internet or mass media. This mirrors findings from other similarly conservative Polynesian and South Asian communities where there is a tendency among older persons to remain sceptical of information from external sources until it were accepted and trusted by community influencers [45].

Reviewer 2:

1. Why was this site selected? Is it similar or different to other parts of PNG?

The population make-up and socio-cultural influences affecting Karkar Island are commonly representative of other rural communities in PNG. However access to healthcare on Karkar (particularly around pregnancy) is better than the rest of the nation due to its unique geography and continuous bitumen road that wraps all the way around the island and connects the major health facilities along the coastline. Relative isolation from the mainland also minimizes the effect of shifting populations on the location’s health profile which makes it a particularly useful population to study.

We have elaborated on these points in the Methods section as follows (lines 174—182):

The socio-demographic make-up of Karkar Island is similar to other rural communities throughout Papua New Guinea because there is a high proportion of reproductive aged women, an increasing number of adolescents, a strong religious presence in the community, the majority of families rely on subsistence income and population literacy rates are low [11,16]. However the unique geography of the island means that women have greater access by road to the major health facilities; because of this, engagement with antenatal services and the number of supervised birth
rates on Karkar is between 15—30% higher than the rural national average [11]. The population of Karkar Island is also relatively isolated from the mainland which minimizes the effect of shifting populations on the location’s health profile.

2. While there is a deeply engrained perception that family planning is 'women's business', men still seemed to have the final decision on contraceptive use. This is highlighted in the Discussion and the Abstract. This seems an intractable problem and challenge and I am not sure if the engagement strategies planned will really make a difference. I was surprised not to see much about access to education - more than primary school, as there seems to be global evidence that educating girls and boys may make a difference as a broader strategy. Perhaps the authors could reflect upon the issue of education as an approach?

Thank you for raising this concern. We recognise that using school based education programs to imbue a generational shift in community understanding and acceptance of health strategies, such as contraception, is an integral part of the process. We did not focus on this as a key strategy for Karkar however because overall literacy levels and school attendance on the island is low at present.

We have expanded on the important role of ongoing education in the Discussion (lines 587—595):

In isolation these interventions are unlikely to achieve significant shifts in the intractable gendered dialogues that influence decision making around family planning on Karkar Island and similar communities throughout PNG. Instead, enhancing education for young people is a broad and powerful strategy for improving community health because it helps to foster positive health seeking behaviours from a young age which then become trans-generational [49]. The Global Strategy for Women’s, Children’s and Adolescents’ Health (2016—2030) in line with the Sustainable Development Goals 2030 Agenda are focusing on retaining adolescents in school and relying on the associated improvements in literacy to enhance their understanding of contraceptive benefits [49,50].