Author’s response to reviews

Title: Overweight and Obesity Prevalence among Public Servants in Nadowli district, Ghana, and associated risk factors: a cross-sectional study

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Author’s response to reviews:

September 30, 2016

The Editor,
BMC Obesity.

Dear Editor,

Point-by-point Response to Reviewers’ Comments

Please, find below a point-by-point response to reviewers’ comments on a manuscript we submitted for consideration for publication in BMC Obesity. The manuscript is titled ‘Overweight and Obesity Prevalence among Public Servants in Nadowli district, Ghana, and associated risk factors: a cross-sectional study’. 
In revising the manuscript, we have carefully considered and addressed all the concerns raised by the reviewers. We hope this point-by-point response will make it easier for you to identify the specific revisions we have made.

Yours Sincerely,

Dr. Margaret Atuahene,
Corresponding Author.

Point-by-point responses to the editorial comments

ASSOCIATE EDITOR

Comments from Associate Editor:

This study examines prevalence and risk factors of obesity in Ghana. The issue of obesity in developing nations is an important one but I think the authors have not done a sufficient job in justifying the need for this study. There are some data on prevalence of obesity in the country; what is the unique contribution of this study? Similarly, I think the authors need to justify their choice of the sample of public servants. How representative are they of the country and why choose this specific group? This is the major limitation of this study.

Our response to Comments from Associate Editor: We are encouraged by the largely positive comments from the Associate Editor and we have taken the criticisms the editor has made seriously. In the revised manuscript, we have extensively discussed previous studies in Ghana and the gaps in the literature, and why our current study is relevant. We have also provided a
justification for focusing on public servants. The relevant portions of our revision are reproduced below for your easy reference:

- Page 3-4 (lines 133-169 of the revised manuscript): the relevant revisions read:

‘The WHO has documented evidence that up to three quarters of NCDs can be prevented by addressing their risk factors [9]. However, these risk factors have not been adequately characterized in most developing countries that now have a large share of the burden of the disease. In Ghana for example, public servants over the past five years have been migrated onto a single spine salary structure, which has marginally improved on their salaries and ultimately their economic status. Skipping of breakfast and increasing dependency on prepared foods usually consumed away from home among workers form factors that can have a significant impact on average BMIs [8]. In addition, more sedentary work and general lifestyle among public servants potentially exposes them to chronic NCDs. Indeed, evidence elsewhere have clearly highlighted the problem of NCDs among civil servants. For example, a cross-sectional study that sought to determine the prevalence of Systolic blood pressure (SBP), diastolic blood pressure (DBP), body mass index (BMI) and fasting plasma glucose (FPG) among 280 staff of both government and private organizations in Ilorin, Nigeria, found that the prevalence of hypertension was 27.1% (28.4% in males and 22.9% in females) in the study population [10]. Mean SBP and DBP were significantly higher in females. Obesity prevalence was 13.2% while the prevalence of hypertension increased with age and BMI. Prevalence of diabetes mellitus was similar in both sexes at 1.5% [10].

In Ghana, although a number of NCDs-related studies have been conducted, including studies on the epidemiology of obesity in Ghana [11]; sociodemographic variations in obesity among Ghanaian adults [12]; healthy lifestyle behaviours among Ghanaian adults in the phase of a health policy change [8], and hypertensive target organ damage in Ghanaian civil servants [13], there are limited population-based studies in Ghana that have specifically characterized overweight and obesity prevalence among public servants - a potentially high-risk population - and the associated risk factors. We are aware of one cross-sectional self-completed survey that was conducted among 141 male and female faculty and staff of the College of Health Sciences, University of Ghana, in Accra [14]. Although this study provided important insights on healthy living behaviours, it was limited to only one city and also concentrated on respondents who largely work in the broad area of health, making it difficult to draw general conclusions in relation to the prevalence of obesity/overweight among public servants across Ghana. This could potentially hamper the design and implementation of evidence-based interventions. As some researchers have intimated, population-based research and initiatives are needed to identify prevalence and risk factors as well as effective educational, behavioral and environmental
approaches to control and prevent obesity [15, 16, 17]. The purpose of this study is therefore to determine the prevalence of overweight/obesity, hypertension and diabetes and associated risk factors among public servants in the Nadowli District of Ghana’.

- Page 4 ((lines 180-188 of the revised manuscript): the relevant revisions on why we focused on public servants read:

‘We focused on public servants in this study for a number of reasons. First, previous researchers have observed that public servants are an important group of interest when it comes to NCDs because, they are naturally expected by the lay public to lead the way in practicing healthy lifestyles because of their relatively better access to information [14]. At the same time, this group is also at risk of leading sedentary and unhealthy lifestyles partly due to long periods of sitting in work places, and partly because of their relatively better socio-economic status which makes it easier for them to access less physically active modes of transportation such as cars. Second, we focus on this group because less attention has been paid to them in research across Africa and in Ghana, despite the recognition that they could be at heightened risk of NCDs’.

REVIEWER NO. 1

General Comments Reviewer #1: The study provides the results of a cross sectional study of 271 public servants in Ghana regarding socio-demographics, physical activity, dietary habits, and risk factors for overweight and obesity. The study provides a snapshot into the risk factors and prevalence of overweight and obesity in public servants in Ghana.

Our response to the reviewer’s general comments: We are encouraged by the largely positive comments from this reviewer and we have taken the suggestions the reviewer has made seriously.

Major concern 1: Although the study provided useful data on the risk factors and prevalence of overweight and obesity in public servants in Ghana, I found myself questioning the relevance and importance of the research. Perhaps the authors could make a better "sell" regarding the need
to know this information in developing countries. The data was cross-sectional and did little more than provide epidemiological data using a rather small sample size (271). The authors review past research of obesity in Ghana and do not clarifying the weaknesses of these previous reports (e.g., lines 73-77). Therefore I question whether it was "compelling" research. That said, if the authors could provide a stronger argument for the lack of data and why it is especially important to know these results in Ghana then I can support the publication of this paper.

Our response to major concern 1: In the revised manuscript, we have extensively discussed previous studies in Ghana and the gaps in the literature, and why our current study is relevant. The relevant portions of our revision are reproduced below for your easy reference:

- Page 3-4 (lines 133-169 of the revised manuscript): the relevant revisions read:

‘The WHO has documented evidence that up to three quarters of NCDs can be prevented by addressing their risk factors [9]. However, these risk factors have not been adequately characterized in most developing countries that now have a large share of the burden of the disease. In Ghana for example, public servants over the past five years have been migrated onto a single spine salary structure, which has marginally improved on their salaries and ultimately their economic status. Skipping of breakfast and increasing dependency on prepared foods usually consumed away from home among workers form factors that can have a significant impact on average BMIs [8]. In addition, more sedentary work and general lifestyle among public servants potentially exposes them to chronic NCDs. Indeed, evidence elsewhere have clearly highlighted the problem of NCDs among civil servants. For example, a cross-sectional study that sought to determine the prevalence of Systolic blood pressure (SBP), diastolic blood pressure (DBP), body mass index (BMI) and fasting plasma glucose (FPG) among 280 staff of both government and private organizations in Ilorin, Nigeria, found that the prevalence of hypertension was 27.1% (28.4% in males and 22.9% in females) in the study population [10]. Mean SBP and DBP were significantly higher in females. Obesity prevalence was 13.2% while the prevalence of hypertension increased with age and BMI. Prevalence of diabetes mellitus was similar in both sexes at 1.5% [10].

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there are limited population-based studies in Ghana that have specifically characterized overweight and obesity prevalence among public servants - a potentially high-risk population - and the associated risk factors. We are aware of one cross-sectional self-completed survey that was conducted among 141 male and female faculty and staff of the College of Health Sciences, University of Ghana, in Accra [14]. Although this study provided important insights on healthy living behaviours, it was limited to only one city and also concentrated on respondents who largely work in the broad area of health, making it difficult to draw general conclusions in relation to the prevalence of obesity/overweight among public servants across Ghana. This could potentially hamper the design and implementation of evidence-based interventions. As some researchers have intimated, population-based research and initiatives are needed to identify prevalence and risk factors as well as effective educational, behavioral and environmental approaches to control and prevent obesity [15, 16, 17]. The purpose of this study is therefore to determine the prevalence of overweight/obesity, hypertension and diabetes and associated risk factors among public servants in the Nadowli District of Ghana’.

Major concern 2: The use of public servants also was not well justified. Could the authors better describe how this sample illustrates some of the issues of obesity in chronic disease (e.g., more sedentary work)?

Our response to major concern 2: In the revised manuscript, we have provided a justification for focusing on public servants. The relevant revisions on why we focused on public servants are found in Page 4 ((lines 180-188 of the revised manuscript). The revisions read:

‘We focused on public servants in this study for a number of reasons. First, previous researchers have observed that public servants are an important group of interest when it comes to NCDs because, they are naturally expected by the lay public to lead the way in practicing healthy lifestyles because of their relatively better access to information [14]. At the same time, this group is also at risk of leading sedentary and unhealthy lifestyles partly due to long periods of sitting in work places, and partly because of their relatively better socio-economic status which makes it easier for them to access less physically active modes of transportation such as cars. Second, we focus on this group because less attention has been paid to them in research across Africa and in Ghana, despite the recognition that they could be at heightened risk of NCDs’.
Major concern 3. The authors discuss that the relationship between SES and obesity may be different in developing countries. However, this question is not fully discussed or explored in their own data. Using their data to comment on or highlight some of the issues of developing countries as they encounter the burdens of chronic disease (e.g., reviewed in lines 96-97) would make the paper more compelling.

Our response to major concern 3: In the revised manuscript, we have discussed the question of SES and increasing overweight and obesity among formal sector workers and the implications for health policy and programmes interventions not only in our study context but across low-incomes settings in Africa. The relevant revisions are found on pages 7-8 (lines 497-532 of the revised manuscript). The revisions read:

‘The overall prevalence of overweight and obesity were found to be 29.9% and 4.8% respectively. The prevalence of obesity in this study is higher than the 13.2% reported in Ilorin, Nigeria [20]. The prevalence of obesity in our study population is similarly higher than the 4.6% prevalence reported among the general adult population in Ghana by [12]. Together with previous findings from other African urban settings such as Nigeria [10], the findings in this study suggests that public servants are indeed one sub-population at particular risk of overweight and obesity, and related the consequences of hypertension and diabetes. This result is however counter-intuitive because based on their education and opportunities for acquiring healthy behaviour change information, public servants could be expected to have better outcomes and lifestyle indicators than the general public [14]. However, the current finding that both overweight and obesity levels in our study population are higher than the general population in Ghana clearly do not support the assumption above. Rather, the finding lends support to previous research which suggested strong positive relationship between obesity and high socioeconomic status (SES) [7]. Indeed, although the link between SES and overweight/obesity was not directly investigated in the study, it is plausible to think that increased SES among public servants may be one of the factors contributing to the relatively high levels of overweight and obesity prevalence in our study population. As noted earlier, salaries of public servants over the past five years in Ghana have marginally improved. This has ultimately improved their economic status above the general population. In addition to the risks associated with sedentary work and general lifestyle among public servants, consumption of processed foods, unhealthy snacking, consumption of high fat diets away from home are all behaviours that are associated increasing purchasing power particularly in low-income settings [20]. Coupled with the fact that several of the public servants surveyed in this study did not engage in any vigorous physical activity or rode cars or public buses to work, our findings suggest the need for promotive health interventions (e.g. healthy eating) targeted at public servants not only in our study context of
Ghana but also in other low-income settings such as Nigeria where similar high levels of overweight and obesity have been reported among public servants’.

Minor concerns:

The authors use the term "eating habits" but it appears to be more about the timing of eating. I might suggest a term like "eating patterns" to better reflect the fact that the authors are not describing dietary choices but rather timing in this section.

Our response: We have changed ‘eating habits’ to ‘eating patterns’ in the revised manuscript in the revised manuscript.