# A DELPHI PROTOCOL FOR DESIGNING A CULTURALLY APPROPRIATE INTERVENTION FOR NIGERIANS WITH EXCESS WEIGHT

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## ABSTRACT

***Background:*** *Studies have shown an exponential increase in the prevalence of overweight and obesity in the countries which is influenced by acculturalisation and unhealthy cultural habits and beliefs. The best approach to the prevention and management of overweight and obesity in these low-income countries is to come up with interventions that discourage those cultural beliefs and exported habits.*

***Objectives:*** *To design culturally appropriate intervention for overweight and obesity management in Nigeria.*

***Methods:*** *The e-Delphi protocol will be used to conduct this study in which experts in the management of overweight and obesity will be identified and recruited online. Multiple rounds of questions (four rounds) will be mailed to the experts after their consent is obtained. Consensus among experts will be considered when 65% agreement is achieved on each of the questions. Descriptive statistics and thematic analysis will be used to analyse the responses in each of the e-Delphi stages.*

***Conclusion:*** *This study is among the first to design interventions for the prevention of overweight and obesity in Nigeria. The study is expected to suggest an effective socially and culturally appropriate intervention for the prevention and management of overweight and obesity not only in Nigeria but also in other African contexts.*

***Keywords:*** *Obesity, overweight, e-Delphi, Nigerians.*

## INTRODUCTION

Prevalence and burden of overweight and obesity have been on the increase in low- and middle-income countries and obesity, especially, has been recognized as a global health problem because it affects individuals of all cadres. By the year 2030, there would be about 1.3 billion adults with overweight and

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obesity globally.[1] In the USA, it was reported that about 32% of adult men and 35% of adult women were obese.[2] A prevalence increase of 21% (from 27.8% to 33.6%) as well as about 200% (from 6.1% to 18.3%) in all classes of obesity was reported among the Canadian adults between 1985 and 2011 and it has been projected that by the year 2019, there would be 14.8%, 4.4% and 2.0% for low-risk, moderate-risk and high-risk classes of obesity respectively.[3] A prevalence of 27% obesity was recently reported among adults in England with 41% males and 31% females in overweight category.[4]

The prevalence of overweight and obesity in low- and middle-income countries appears to be on the rise and of concern. South Africa has the highest adult prevalence of overweight and obesity in sub-Saharan Africa, according to Ng *et al*.[5], between 1980-2013 with about 42% adults South African women were either overweight or obese while 39% adult men were overweight/obese within the same period. In Nigeria, the prevalence of overweight has been reported to be between 20.3%-35.1%, while that of obesity was 8.1%-22.2% in a systematic review.[6] Recently, Akindele, *et al* [7] in a cross-sectional study reported 25.1% and 17.3% prevalent rates for overweight and obesity respectively. The observed reasons for continuous increase in the prevalence of overweight and obesity include, but are not limited to, acculturation, urbanization, reduced physical activity levels and unsupportive built environment for physical activity.[8,9]

The debilitating health effects of overweight and obesity have been discussed extensively in the literature. Individuals with BMI an index of fatness, in excess of 23kg/m$^2$ are susceptible to cancer, diabetes, osteoarthritis, cardiovascular diseases and chronic renal disease.[5] The World Health Assembly (WHA) member states introduced a voluntary target to curb the rising prevalence of overweight and obesity by 2025 WHA, 2013 through employing some approaches and principles among which are human right approach, equity-based approach, multi-sectoral action, life-course approach, universal health coverage and community and people empowerment among others.[10] Earlier on, WHO (2000) had opined that an effective intervention for overweight and obesity management should be based on social, cultural, political, physical and structural factors.[11]

The cultural and social values that encourage an increase in excess fat should be taken into consideration while planning this intervention. The success of culturally appropriate intervention for the improvement of health behaviours towards weight reduction was reported by Bender *et al*.[12]in which Vida Saludable (Healthy Living) two-phase intervention was implemented for over 9 months among the Hispanic preschool Children.

The term culturally appropriate intervention portends the application of therapeutic care/intervention that meets the sociocultural and norms of a group of individuals. Responsibilities lie on public health practitioners and healthcare providers and experts to avail overweight

and obese individuals' interventions that are culturally appropriate and discourage those norms and values that make them susceptible to overweight and obesity. Studies on weight-related interventions for overweight and obese Nigerians are scarce. A recent study by Thomas *et al*[13] reported the effectiveness of nutritional counselling in the management of overweight and obese Nigerians in a hospital setting. However, the study lacks methodological qualities regarding sampling technique, inadequate sample size as well as the duration of the intervention. Therefore, the involvement of excess body weight management experts in developing an appropriate intervention for overweight and obesity can be achieved using the Delphi Consensus Method.

The Delphi method is a means of structured group communication medium for requesting experts' opinions about an issue, ideas or overarching problems by sending questionnaires to these experts, a couple of times, and collating feedbacks until a consensus is reached regarding the problems[14]. The Delphi Method is characterised by employing multiple iterations that are designed to develop a consensus of opinions concerning a specific topic (Ludnow, 1995) the ability to provide anonymity to the respondents or experts, a controlled feedback process which enables the experts to reassess their responses and the suitability of a variety of statistical analysis techniques to analyse and interpret the data.[15-17] The objective of this study is to design a culturally appropriate intervention for overweight and obesity prevention and management among Nigerians using e-Delphi technique.

## MATERIALS AND METHODS

This involves identification/nomination of the experts involved in weight management, contacting and getting the demographic and professional details of the experts as well as seeking their consent of the experts. The purposive samples of experts to be contacted for this study are dieticians and nutritionists, physiotherapists, physicians, exercise physiologists and psychiatrists. The participants for this study will be experts in the management of overweight and obesity in different parts of Nigeria. Overweight and obese individuals will not participate in this study because they are not involved in the management of overweight and obesity.

Professional associations like the Nigeria Society of Physiotherapy (NSP), Association of Clinical and Academic Physiotherapy in Nigeria (ACAPN), Dieticians Association of Nigeria (DAN), Human Kinetic Association of Nigeria and Endocrine and Metabolism Society of Nigeria (EMSON) will be asked to nominate experts for this study. Also, experts in the universities and teaching hospitals will be identified and contacted to participate in the study. Only experts who must have had, at least, five years post-graduation experience and are duly registered with their respective professional bodies will be recruited to participate in this study.

Since Nigeria is a country of multi-ethnic affiliations, experts from the six geopolitical zones of Nigeria will be contacted for this study. According to Linstone,[18] reported that a Delphi study of seven-man panel has been reported to be suitable for Delphi study, however, a minimum of 20 experts who consented will be recruited for this study.

Details of this study will be sent to the experts while seeking their consent and voluntariness of the study will also be highlighted in the consent form (Appendix 1). In providing healthcare services, healthcare providers are encouraged to find the highest level of evidence in guiding their clinical decisions. We are hopeful that the experts who would be participating in this study will be guided by highest level of evidence while responding to each of the questions that will be sent to them. This study will commence first week of July, 2018 and will run until when 65% consensus is reached at Round 3.

**The Delphi Study:** This is the phase in which questions for rounds 1, 2 and 3 will be prepared using Google form and sent to the consented experts using their email addresses.

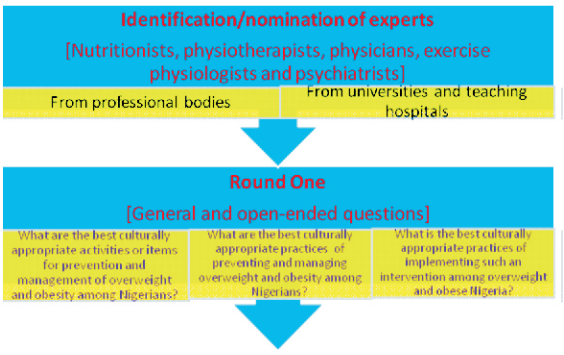
**Round 1 Questions:** these are going to be general and open-ended questions:

a. In your opinion, what are the best culturally appropriate practices (supported by empirical evidence) of preventing and managing overweight and obesity among Nigerians?
b. In your opinion, what are the type of best culturally appropriate activities or items (supported by empirical evidence) that should be included in an intervention that is culturally appropriate for the prevention and management of overweight and obesity among Nigerians?
c. In your opinion, what are the best culturally appropriate practices (supported by empirical evidence) of implementing such an intervention among overweight and obese Nigerians?

**Round 2 Questions:** these will be derived from responses to Round 1 questions. Responses from Round 1 will be collated, synthesised and summarised to prepare the questions for Round 2. Participants will be asked to review and rank the collated and summarised responses from Round 1. It is hoped that a consensus will start emanating from this round. For this study, consensus will be reached when there is a 65% agreement on each of the emanating theme[19].

**Round 3 Questions:** for the Round 3, each of the experts will receive a questionnaire that contains **a summary** of the Round 2 responses. Though an increase in the consensus is expected to be observed in this round, the e-Delphi study will progress to Round 4 if there are any ambiguities in any of the emerging themes.

**Round 4 Questions:** this will be the final round of the study. Round 4 provides a final opportunity for the experts to revise their responses regarding list of items that achieved consensus and those without consensus. The e-Delphi protocol flowchart is shown in Figure 1.



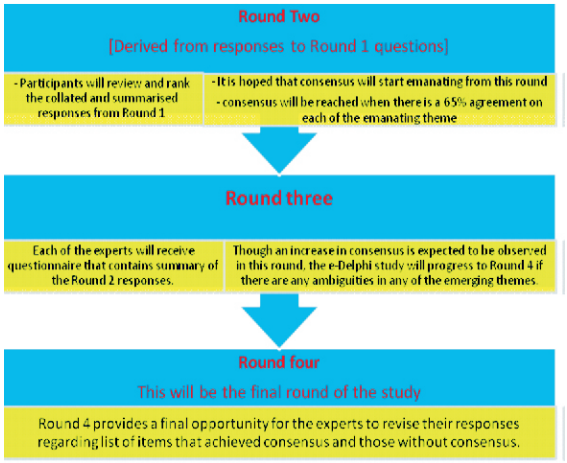



**Figure 1:** E-delphi Protocol Flowchart

### Data analysis plan

A descriptive statistical analysis method will be used for this study. Demographic and professional details of the experts will be reduced using frequencies and percentages. Since open-ended questionnaires will be sent to the experts, thematic analysis and percentages will be employed to analyse the data collected. Responses generated from the open-ended questions will be reduced and synthesised by MOA and other descriptive statistics will be carried out by FA.

## DISCUSSION

Prevention and management of overweight and obesity should be prioritized by healthcare practitioners in low- and middle-income countries. Globally, the epidemic of overweight and obesity is being piloted by complex forces that need to be thoroughly understood. This understanding will pave ways for conceptualization of effective strategies to prevent and manage overweight and obesity. An ideal intervention should be tailored towards eliminating those factors that promote excess body and other cultural values and norms. An ideal intervention for adverse excess management for the whites with excess body weight might not be the panacea for African Black overweight and obese individuals due to differences in culture, norms and beliefs. Puoane *et al*[20] advised that an efficient intervention for prevention of obesity epidemic should take into consideration the context in which unhealthy behaviours occur as well as understanding the details of the cultural values and norms which support an increase in body weight.

### Strengths and limitations

This study is among the first to design interventions for the prevention and management of overweight and obesity in Nigeria. Drawing of experts (healthcare providers) who are managers of overweight and obesity from different parts of the country can be considered as the strength of the study. Additionally, since this study will be e-Delphi protocol, we would not be able to influence the submission of the experts in each of the phases of this study, which is another strength of the study. However, a potential limitation of this study is the non-inclusion of overweight and obese individuals.

### Ethics and Dissemination

The ethical approval for this study was obtained from the Research and Ethics Committee of Ministry of Health, Kano State(MOH/Off/797/l1/650). The primary participants for this study are healthcare providers who are involved in the prevention and management of overweight and obesity.

The purpose of the study, their right to participate and withdraw from the study will be explicitly explained to the healthcare providers. The outcome of this study will be disseminated through publications in peer-reviewed journals, copy to the Research and Ethics Committee of Ministry of Health, Kano State and scientific presentations.

**Authors' Contribution**

This manuscript was conceived and the initial manuscript was written by MOA while FM, UU and AAI proofread the manuscript. During the data collection stage, all the authors will be involved in thorough censorship of the questions to be sent to the experts at each stage of the e-Delphi protocol. Descriptive analysis of the data will be done by FM and AAI while the thematic analysis will be carried out by MOA and UU respectively.

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**Competing interests:** None declared.

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