PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Utilizing Community Based Geographic Information System (GIS) to Recruit Older Asian Americans in an Alzheimer's Disease Study
AUTHORS	Lee, Haeok; Ha, Hoehun; Yim, Sejung; Yang, Hyun-Sik; Lee, Veronica; Hong, Eunju; Chow, Tiffany; Park, Van; Wang, Li-San; Jun, Gyungah; Choi, Yun-Beom

VERSION 1 – REVIEW

REVIEWER	Albanesi, Beatrice University of Turin
REVIEW RETURNED	02-May-2023

| GENERAL COMMENTS | Dear authors,
thanks for the opportunity to review this paper which I found very interesting to read. However, there are some major issues that make the manuscript suitable for publication in bmj open.
First of all, the abstract is unclear. I suggest that you review and rewrite it; especially the objective and the methods. Please check to have specified all the acronyms used (e.g. NIA), also in strength and limitations. Most of the introduction is fine; however, it is not understandable the sentence from lines 27 to 29 "These characteristics may act as facilitators or barriers to participation in clinical studies, including ADRD". What type of clinical studies? Based on my experience data providing by Geographical Information Systems (GIS) are more useful to produce research or intervention for communities, to map population or evaluate the level of providing interventions. So why GIS are useful for recruitment strategies is not completely clear. The descriptive component of the manuscript is clear, but it is not clear if you performed a first piloting and then a general mapping throught GIS, or not. Results could be present better, in particular pay attention to the presentation of figures and reporting. Furthermore, provide a better presentation of overall data. It is not clear how much AD you have included, what are their main characteristics and concretely what are the factors that you previously evaluated as useful for you analysis (i.e. facilitators or barriers to participation in clinical studies). Discussion. No very critical reflection are provided. As I can see from WHO or CDC, GIS enables spatial representation of data to support better public health planning and decision making (WHO); Furthermore, the global health and medical applications of GIS are numerous and many countries currently lack the benefits of GIS to strengthen their health information system. No reference was made to that possibility and to answer to you main objective. I suggest the author to cite or read some reference such as Firouraghi, N., Kiani, B., Jafari, H.T. et al. The role of geographic information system and global positioning system in dementia care and research: a scoping |

		review. Int J Health Geogr 21, 8 (2022). https://doi.org/10.1186/s12942-022-00308-1 I really think that the manuscript could benefit from a better and more deeper evaluation of GIS potentiality and by a better fitting within the authors aims.

REVIEWER	Rolandi, Elena Golgi Cenci Foundation
REVIEW RETURNED	04-May-2023

GENERAL COMMENTS	The present communication article describes a novel recruitment strategy using community-based Geographic Information System (GIS) to enroll minority population in study on Alzheimer's disease and related dementias (ADRD), which are usually underrepresented. Specifically, the authors show a method to visualize the characteristics of the target population to be enrolled (Korean Americans, KA) compared to other race/ethnic groups (White and Chinese) and reached the goal of recruiting 60 KA within the proposed period. The topic is of interest and the work offers useful insights to address the methodological issue of representativeness of study sample within clinical studies on ADRD. I have some minor suggestions to improve the manuscript presentation. General comment: please define each abbreviation at their first occurrence. For example in the abstract: ACAD, NIA. In the Introduction: AD, ACAD (name of the study which is only defined in the Acknowledgments section). Method: NJ, CA, CBPR, ad campaign. Some of these may be intuitive for Americans, but not for all of the readers. Please add a brief description of the study context. I only notice from the text that this work is part of the ACAD study, but no information of the overall study aim is reported. Please further include trial registration number and more specific information on institutional review board approval. Please add a description of the limitations of the study in the discussion.

VERSION 1 – AUTHOR RESPONSE

	Reviewer 1	Responses
1	First of all, the abstract is unclear. I suggest that you review and rewrite it; especially the objective and the methods.	We considered your comment as valid, and we revised the abstract. (on pages 1-2)
2	Please check to have specified all the acronyms used (e.g. NIA), also in strength and limitations	All acronyms were explained and tried to use them sparingly.

3	Most of the introduction is fine; however, it is not understandable the sentence from lines 27 to 29 "These characteristics may act as facilitators or barriers to participation in clinical studies, including ADRD". What type of clinical studies?	Excellent inquiry. We rewrote this: "These characteristics may act as facilitators or barriers to participation in clinical studies, research conducted with human subjects, for communities, including ADRD." (on page 5, 2nd paragraph)
4	Based on my experience data providing by Geographical Information Systems (GIS) are more useful to produce research or intervention for communities, to map population or evaluate the level of providing interventions. So why GIS are useful for recruitment strategies is not completely clear.	Thank you for your comments. We added more information about this: "GIS can quickly and accurately create visual representations of multiple complex data sets. This makes it a more effective tool for developing recruitment strategies than other methods, such as text, charts, or tables. GIS can be used for comparing spatial data on the relative concentrations of minority populations and identifying high-concentration areas or enclaves for small-sized study populations." (on page 5, 3rd paragraph & on page 6, 1st and 2nd paragraphs)
5	The descriptive component of the manuscript is clear, but it is not clear if you performed a first piloting and then a general mapping through GIS, or not. Results could be presented better, in particular pay attention to the presentation of figures and reporting.	Thanks for your comment. Yes, we performed a first piloting and then produced a general mapping. We used the GIS technique to display the heterogeneous distribution of minority populations and to emphasize the importance of community outreach efforts on dementia recruitment minorities. Also, we have revised the result section to better present figures throughout the manuscript. (on page 12, last paragraph & on page 13, 1st paragraph)
6	Furthermore, provide a better presentation of overall data. It is not clear how much AD you have included, what are their main characteristics and concretely what are the factors that you previously evaluated as useful for your analysis (i.e. facilitators or barriers to participation in clinical studies).	Though we did collect data about diagnosis categories including probable/possible AD, mild cognitive impairment, and normal control, and the locations where the most AD cases are identified and recruited, in this proposed article, we would like to share only findings and experiences in the recruitment of hard-to-reach populations. (on page 16, 2nd paragraph)

7	Discussion. No very critical reflection are provided. As I can see from WHO or CDC, GIS enables spatial representation of data to support better public health planning and decision making (WHO); Furthermore, the global health and medical applications of GIS are numerous and many countries currently lack the benefits of GIS to strengthen their health information system. No reference was made to that possibility and to answer to your main objective. I suggest the author to cite or read some reference such as Firouraghi, N., Kiani, B., Jafari, H.T. et al. The role of geographic information system and global positioning system in dementia care and research: a scoping review. Int J Health Geogr 21, 8 (2022). https://doi.org/10.1186/s12942-022-00308-1 I really think that the manuscript could benefit from a better and more deeper evaluation of GIS potentiality and by a better fitting within the authors aims.	Excellent inquiry: Thank you for your insightful suggestion: we added a detailed description of the methodology section as we responded to the editor above. Thank you for your suggestions for adding more references. We added more references including the reference you recommended (references 30-34) and added deeper discussion about the potentiality of GIS to enable spatial representation of data/population to promote recruitment of underserved and understudied populations and to support public health planning decisions. (on Page 5, 2nd paragraph & on page 17, last paragraph)
	Reviewer 2	
1	The present communication article describes a novel recruitment strategy using community-based Geographic Information System (GIS) to enroll minority population in study on Alzheimer's disease and related dementias (ADRD), which are usually underrepresented. Specifically, the authors show a method to visualize the characteristics of the target population to be enrolled (Korean Americans, KA) compared to other race/ethnic groups (White and Chinese) and reached the goal of recruiting 60 KA within the proposed period. The topic is of interest and the work offers useful insights to address the methodological issue of representativeness of study sample within clinical studies on ADRD.	Thank you for acknowledging the significance of the article and our novel approach to enroll a minority population in a study on ADRD who are usually underrepresented!!
2	I have some minor suggestions to improve the manuscript presentation. General comment: please define each abbreviation at their first occurrence. For example in the abstract: ACAD, NIA. In the Introduction: AD, ACAD (name of the study which is only defined in the Acknowledgments section). Method: NJ, CA, CBPR, ad campaign. Some of these may be intuitive for Americans, but not for all of the readers.	All acronyms were explained and tried to use them sparingly. Yes, you are right, and we appreciate your accurate comment reminding us that our readers (audience) are globally located.
3	Please add a brief description of the study context. I only notice from the text that this work is part of the ACAD study, but no information of the overall study aim is reported. Please further include trial registration number and more specific information on institutional review board approval.	Thank you for your insightful suggestion: we added a detailed description of the study context. This is a clinical study, but it is not a clinical trial. We added more information on institutional review board approval. (on page 6, last paragraph & on page 7, 1st paragraph)

4	Please add a description of the limitations of the study in the discussion.	We added the description of the limitations as you suggested. (on page 18, last paragraph)

VERSION 2 – REVIEW

REVIEWER	Albanesi, Beatrice University of Turin
REVIEW RETURNED	03-Jul-2023

GENERAL COMMENTS	Dear authors, thanks a lot for the changes made. I have only one suggestion: check if the required checklist as CONSORT or PRISMA was evaluated.

VERSION 2 – AUTHOR RESPONSE