

PCI Questionnaire for reviewers

I am grateful for this opportunity to read and review this manuscript entitled “Structural Vulnerability Factors Influence Gestational Weight Gain in a Broad Range of Contexts: A Scoping Review. Study authors conducted a scoping review with the aim of describing the extent, range and nature of studies reporting on the association between gestational weight gain (GWG) and structural vulnerability factors in high-income countries, specifically marginalized subgroups of those populations. The authors conducted a thorough review producing a final set of 157 articles. Results show an over-representation of studies conducted in the United States as well as evaluating the association between ethnicity and GWG. Study sample sizes varied greatly between studies, as did methodological approaches. This review allows to highlight important gaps in the literature that must be filled to better promote gestational and developmental health in the target population.

General questions

- Did you read the “guide for reviewers”? (see the Help menu of the thematic PCI or [the dedicated blog post](#)) **YES**
- Is the manuscript well written? **YES**
- Is the description of the rationale and methods clear and comprehensive? **YES**
- Are there flaws in the design of the research? **NO**
- Are there flaws in the analysis? **NO**
- Are there flaws in the interpretation of results? **YES**
- Do you have concerns about ethics or scientific misconduct? **NO**
- Did you detect a spin on the results, discussion or abstract? (a spin is a way of twisting the reporting of results such that the true nature and range of the findings are not faithfully represented, <https://doi.org/10.1073/pnas.1710755115>) **NO**
- Is something critical missing? **YES**

As stated above, the manuscript reports on an important topic and allows to contribute to existing literature in a significant manner. The manuscript reads very well and presents few grammatical or spelling mistakes. The study methods are diligently described. Minor improvements to results reporting and major improvements to their interpretation in the discussion are suggested below.

Evaluation of the various components of the article

Title/abstract/introduction

- Does the **title** clearly reflect the content of the article? **NO**

I feel the title isn't coherent with the study aim or results. Authors did not set out to evaluate the degree of influence of SVFs on GWG. Furthermore, it is not clear to me that they assessed the range of contexts in which this association occurs. I would recommend reformulating the title to more closely represent the overarching goal to document the extent, range and nature of reviewed studies.

- Check that the **abstract** is concise and presents the main findings of the study.
- Does the **abstract** present the supported findings of the study concerned and no other? **NO**
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The abstract presents clear rationale and methods. It is not entirely clear to me how authors envisage this review will inform future methodological approaches (to research or to intervention). Given the study objectives, I feel informing future research is more appropriate. Some results are reported in total number (n) and some with proportion (%). A standardized reporting could be useful to readers. The last sentence of the abstract (conclusion) overreaches this study's scope, in my opinion, and should be reworded.

Line 30: I believe the sentence should read, "were affected by one OR more..."

Introduction

- Does the introduction clearly explain the motivation for the study? **YES**
- Is the research question/hypothesis/prediction clearly presented? **YES**
- Does the introduction build on relevant recent and past research performed in the field? **YES**

The introduction clearly states and details the motivation for the study building on lacunae in previous work. I have a few minor suggestions for its improvement.

I appreciate that authors provided a definition of SVFs. Given the complexity of how an individual variable such as age interplays with "socioeconomic, political and cultural/normative hierarchies (13)" for it to be considered structural rather than purely individual (biological), I think an example specifically related to GWG would be helpful.

At lines 56 and 76 as well as elsewhere in the discussions and conclusions, authors state their review exposes, "the intricate intersectionality of vulnerability factors." I am not in full agreement with this statement given the methods used to analyze study data. In my opinion, because such an analysis was not carried out in this study, the interpretation of study results can but suggest a deeper analysis is needed, as authors state in the discussion.

Given the gap between the results (study descriptions) and the interpretations that were drawn from them (potential intersectional ties between SVF and GWG), I would need a better understanding of "the stated overarching study goal" (line 81). What exactly is meant by respectively "extent, range and nature"?

More generally, it seems the study goal, aim and objectives are stated in the second and third paragraphs. It could be worthwhile to streamline limits in existing literature and current study objectives in the last paragraph of this section.

Line 41: Abstract reads insufficient then excessive gestational weight gain, here extremes are inverted, standardizing their presentation throughout the manuscript could increase readability

Line 42 epidemiological health concerns

Line 43: "GWG is notably higher in USA and Europe" perhaps consider expanding lightly = as opposed to other high-income countries such as...

Line 48: "greater risk of mortality" for carrier and child

Line 62: "Bourgeois" not spelled the same as in References

Lines 67 to 79 high use of the word "only". I see authors are highlighting a limit in existing literature. Perhaps it would be best to state that gap more explicitly and follow up with the study objectives the need to fill this gap

Line 73: space needed between scope and (16)

Line 77: "This approach enhances the interpretation of results...": according to whom?

Materials and Methods

- Are the methods and analysis described in sufficient detail to allow replication by other researchers? **YES**
- Is the experimental plan consistent with the questions? **YES**
- Are the statistical analyses appropriate? **YES**
- Have you evaluated the statistical scripts and program codes? **N/A**

I applaud the effort invested in building a valid and reliable search string as well as analysis strategy. Given that this study aims to explain intricate intersectional interfaces between SVF and GWG, it could be wise to expose the authors' positionalities (are they women, mothers, trained in such searches) and to reflect on how they could have influenced search string selection as well as data analysis and interpretation in the strengths and limits section.

Line 113: the rationale behind high-income country selection would be useful here.

Line 114: please provide a Reference for the World Bank 2018 high-income country list

Line 119: I would like more details on the information specialist, which of the authors does this refer to? Please specify in the Authors' contributions

Lines 144–145: Please detail what is meant by "Discrepancies among reviewers were resolved by the lead researcher"

Line 178: space between (12) and Other

Lines 177 to 180: these appear to be results (nature of studies, perhaps).

Results

- Have you checked the raw data and their associated description? **YES**
- Have you run the data transformations and statistical analyses and checked that you get the same results? **NO**
- To the best of your ability, can you detect any obvious manipulation of data (e.g. removal)? **NO**
- Do the statistical results strongly support the conclusion ($p < 10^{-3}$ or $BF > 20$)? **N/A**
- In the case of negative results, was a statistical power analysis (or an appropriate Bayesian analysis) performed? **N/A**
- Did the authors conduct many experiments but retain only some of the results? **NO**

- Inform the recommender and the managing board if you suspect scientific misconduct.

In keeping with the overarching goals of this study, results should address 1) what are the key SVFs related to GWG?; and 2) what is the extent, range and nature of existing research on this topic? The results present a large corpus of data in detail. It would be most helpful to provide an overview in table or figure format presenting for each SVF: how many studies, how many countries (and where), were results primarily S or N.S.

It is not clear to me why some results are reported as sum total (n) and some as proportion (%). It could be useful to systematically provide proportions for greater readability.

For the age section, I found it of note that some studies focused specifically on teens (as young as 14. To me, this is more relevant to report than the result stated at line 231 (17 y.o. teens being considered as adults). Although, the fact that we highlight both these elements says a lot about how we high-income country inhabitants and researchers may perceive, study and interpret such data.

Line 213 “with **some** studies specifying both a woman’s **ethnic** group and their...” a specific number would be most helpful here, given that authors state this study aims to expose intersectional interplay.

Discussion

- Do the interpretations of the analysis go too far? **YES**
- Are the conclusions adequately supported by the results? **NO**
- Does the discussion take into account relevant recent and past research performed in the field? **NO**
- Did the authors test many hypotheses but consider only a few in the discussion? **NO**

I believe the discussion could be vastly improved. The first paragraph presents a rather long summary of results that would in fact be better suited in the results section. Above I suggest presenting this information by way of a table or figure breaking down results by SVF.

Discussion sub sections 1 and 2 should present how study findings line up with previous work. Presently, not a single study is referenced. Furthermore, authors could present insights as to how to address the variable reporting or meta-analyzing of such studies. Are there previously reported innovation review techniques that have been used or suggested that could be applied?

In keeping with the overarching goals of this study, discussion should also address previous and present findings to answer the study research questions 1) what are the key SVFs related to GWG?; and 2) what is the extent, range and nature of existing research on this topic? It would be most interesting for authors to provide their interpretation (description) of the extent, range and nature of existing literature on the studied topic and to highlight similarities and differences between these interpretations and those documented in previous research. In their introduction, for example, authors refer to existing literature among more privileged groups of the high-income countries’ population. How do their results converge or diverge from these groups? Authors also address previous reviews reporting on the topic among marginalized subgroups. How do their own results confirm or infirm previous findings?

I don't remember the authors addressing the majority of retrospective studies in discussing study nature. Could this methodological limit feasibly be addressed in future work? How do retrospective and prospective studies compare?

The latter part of the discussion (subsections 3 and 4) appears to span beyond the scope of the conducted review. I am not convinced that the reviewed studies allow to compare social contexts of vulnerability factors. Some studies report on small samples and others on whole populations. We could more easily compare, as authors suggest, within-country sub-populations, perhaps even whole populations. If the authors had applied an intersectional lens to data collection and analysis, a comparison of social contexts could potentially be feasible, but I don't currently see this in Methods and Results. In the manuscript's current form, I understand subsection 4 as more of a study limit than an interpretation of results.

I am very interested in the author's interpretations of why there would be so many more **countries** not just **studies** looking at specific variables as opposed to others? Marital status, for example, was investigated in only 28 studies. They were conducted in USA, Belgium, Canada and Sweden. Why wouldn't it have been studied more widely? Why would immigration status and abuse be even more rarely studied? These are sensitive issues touching on more highly politicized polemics. I wonder if study authors could address this as well as stigma in their discussion using previous work to expose how structural factors such as policies and social norms can affect GWG and thus health over a life course.

Concerning the Strengths and Limitations section, I consider the sample size and statistical methods used in the reviewed studies to be limits of the reviewed studies, outside of the author's control and thus not respective to the present study reported in this manuscript (lines 422 to 429). I encourage the authors to reflect on how their own choices could have limited study breadth, specificity, validity, etc. For example, though much effort and expertise were invested in developing the search string, it was informed by data subject to our own biases as researchers, biases that have been transferred to the algorithms that power our searches. Knowing the authors' positionality would be helpful, from an intersectional point of view, to assess whether their own perspectives could have affected their evaluation of which factors are important and what studies fit the selection criteria. To that point, authors state that such reviews contribute to exposing the intricate intersectionality of vulnerability factors, but I understand that the authors did not use an intersectional framework specific to GWG to analyze study data (perhaps such a tool has yet to be developed). I also understand that the final SVF list comprises the most documented factors, not necessarily the most impactful. Perhaps other indices would yield more informative data. Perhaps body image norms, sexual orientation, gender identity, health literacy, social mobility, social inequalities of health, relative general inequality, social discrimination, cultural integration of feminist/misogynist norms, or factors completely unbeknownst to researchers (especially given that women's health has been historically neglected). Perhaps more qualitative and participative research and more attention to women's health would prove to be useful as well.

Line 319: not clear to me if "and reported more significant associations" refers to all studies or specifically the ones conducted in the USA.

Line 337: I believe a word is missing in this sentence "while most of the remaining **studies** relied..."

Review by Kadia Saint-Onge

Concerning the conclusion, I encourage the authors to review Lines 437 through 440 and Lines 446 to 448. These sentences span outside of what was assessed in the current study.

Line 443: perhaps replace “toward weight gain” with GWG depending on intended meaning

References

- Are all the references appropriate? **NO**

References 14 and 15 do not appear in the right order in the list given that Campbell (2016) appears before O’Brien (2017) in the text.

As for references 25 and 26 and the discussion section they were used in, I wonder if the authors could find sources pertaining more specifically to an intersectional approach to experiences of GWG.

Tables and figures

- Are the tables and figures clear and comprehensive? **YES**
- Do the tables and figures have suitable captions such that they can be understood without having to read the main text? **YES**

All tables would be easier to read if the header repeated on each page.

General comments

- The term “vulnerable populations” can imply the individuals themselves are the issue rather than the systems that vulnerabilize them. Perhaps the authors would consider the term “marginalized”.
- To contribute to destigmatize language both in and outside clinical settings at a time when the general public has increased access to research information, I wonder if other terms could be found to replace “in/adequate weight”,
- The use of the words “race” and “racial group” throughout the manuscript suggests that different races exist as opposed to one human race. Please review, perhaps, “Ethnic and cultural groups”
- The word “individuals” is used in the abstract and I believe the beginning of the introduction as opposed to the word women. If authors prefer to use inclusive language, I encourage standardizing using “individuals” throughout the manuscript (and look for the use of pronouns).
- The authors use the term “Marital status” to describe a variety of statuses other than marriage. Perhaps “Civil status” would be a better alternative.

This manuscript was a pleasure to read, with great flow and much clarity. Best wishes for its dissemination.