Structural vulnerability factors and gestational weight gain in high-income countries

Paquito Bernard (ID) *based on peer reviews by* **Kadia Saint-Onge** (ID), **Kelsey Dancause** *and 1 anonymous reviewer*

Cite this recommendation as:
Bernard, P. (2024) Structural vulnerability factors and gestational weight gain in high-income countries. *Peer Community in Health and Movement Sciences*, 100116. 10.24072/pci.healthmovsci.100116

This manuscript presents a compelling scoping review examining the structural vulnerability factors associated with gestational weight gain. The topic is highly relevant because excessive gestational weight gain is prospectively associated with an increased risk of gestational diabetes and perinatal mortality.

The authors employed excellent search strategies to address an area that is often overlooked, as structural vulnerability factors are generally understudied or not the primary focus in many existing studies.

A total of 157 academic articles were included in the scoping review. The authors identified eight frequently studied structural vulnerability factors: race/ethnicity (58% of articles), age (55%), parity (31%), education (28%), income (25%), marital status (18%), immigration (12%), and experiences of abuse (physical, psychological, or sexual) (8%). Most studies were conducted in the United States of America, employed retrospective designs, and examined diverse populations in which a subgroup or the entire sample experienced one or more structural vulnerability factors.

This work makes a significant contribution to understanding the role of structural vulnerability factors in gestational weight gain. It highlights the critical impact of systemic inequalities on the health of pregnant women and underscores the importance of addressing these disparities. Furthermore, the manuscript thoughtfully discusses the methodological challenges and limitations in the current literature, particularly in considering interacting structural vulnerability factors and social identities.

From my perspective, this work provides a more detailed and nuanced analysis of structural vulnerability factors in the context of gestational weight gain than previous reviews. This review will undoubtedly serve as a valuable resource for clinicians and researchers, inspiring them to adopt an 'intersectional lens' in their future practices and research projects.

References:

Labonté JM, Dumas A, Clark E, Savard C, Fournier K, O'Connor S, Morisset AS, Fontaine-Bisson B (2024) Structural vulnerability factors and gestational weight gain: a scoping review on the extent, range, and nature of the literature. Research Square, ver.4, peer-reviewed and recommended by PCI Health & Movement Sciences. https://doi.org/10.21203/rs.3.rs-3060015/v4

Reviews

Evaluation round #2

DOI or URL of the preprint: https://doi.org/10.21203/rs.3.rs-3060015/v3
Version of the preprint: 3

Authors' reply, 28 October 2024

Dear Recommender,

Thank you for your valuable feedback on our revised manuscript. We have made the suggested changes and hope that they meet your expectations. You will find below our response the to the reviewer and recommender's comments.

Sincerely,

Bénédicte Fontaine-Bisson, RD, PhD

Reviewer's comments:

1. I find it important to note in the amended discussion that "systematic differences in definitions, categorization, and representation not only inevitably compromise the ability to generate clear comparisons between studies and subsequently to determine the association between each SVF and GWG, but - most importantly - also contribute to perpetuate systemic inequalities in health."

Response: We have made the suggested changes.

2. Lines 89-91 "These narrative (Campbell), systematic (O'Brien), and scoping (Athar) reviews were limited in scope, covering from four to 16 articles each and focusing on publications from 2000 to 2020." Perhaps emphasize the limitation by noting "only four to sixteen articles".

Response: We have made the suggested changes.

3. Authors have provided a thorough description of previous reviews. This new section could be tightened up for article brevity, but given that it provides important context, it is a most relevant addition.

Response: We have provided more details on the reviews to address reviewer 1's comment but agree that it could have been tightened up. We have thus removed some information from this paragraph in the introduction.

Recommender's comment:

The intersectional paradigm presents methodological challenges, including selecting appropriate statistical methods, in the study of inequality. I believe it would be beneficial to provide a concrete example of a quantitative approach utilizing an intersectional framework. This example could encompass aspects such as

research design, variable selection, and statistical analyses. Including such an illustration would greatly enhance the manuscript's value for future readers, offering practical insights into the application of intersectional approaches in quantitative research.

Response: We have removed one general example of Holowko et al. to replace it with a more relevant example by Vedam et al. and emphasized the aspects relevant to the intersectional approach in the design, variable selection, statistical analysis, and results.

'For example, Hoang and Wong conducted a scoping review on intersectionality in maternal health equity (38). While none of the 11 quantitative studies fully met intersectionality criteria, Vedam et al.'s study stood out by addressing most of them (38,39). They used a cross-sectional community-based participatory approach to investigate the associations between risk factors such as race, socio-demographics, mode and place of birth, and context of care on mistreatment during pregnancy and childbirth in a large sample (n=2,138) of women in the U.S. (39). Univariate and bivariate logistic regressions were used to quantify the relationships between risk factors and likelihood of mistreatment, with the intersectional analysis conducted by stratifying the associations between race and mistreatment by various categories of other risk factors. The study exposed variations in maternal mistreatment across individual, social, and pregnancy-related factors and their intersectional approach demonstrated that the likelihood of mistreatment increased when certain risk factors were combined (e.g., women of color with low SES, social risk factors, or pregnancy complications). The researchers also analyzed open-ended responses and provided representative quotes to ensure the voices of mothers were included.'

Decision by **Paquito Bernard** ⓘ, posted 11 October 2024, validated 11 October 2024

Dear Colleagues,

I would like to express my sincere appreciation for your diligent work on this manuscript. The updated version demonstrates remarkable clarity and nuance. Sections 1 and 4 of the discussion effectively highlight the most significant aspects of your research (in my perspective).

Regarding the peer review process, I have been informed that while one reviewer recommends acceptance of the manuscript, the second reviewer has proposed three minor revisions. I kindly request that you incorporate these suggestions into your manuscript to enhance its overall quality and address the reviewer's concerns.

Furthermore, I would like to propose an additional modification for your consideration. With reference to lines 449-450, which state: "The intersectional paradigm presents methodological challenges,including selecting appropriate statistical methods, in the study of inequality" I believe it would be beneficial to provide a concrete example of a quantitative approach utilizing an intersectional framework. This example could encompass aspects such as research design, variable selection, and statistical analyses. Including such an illustration would greatly enhance the manuscript's value for future readers, offering practical insights into the application of intersectional approaches in quantitative research.

Your attention to these points would further strengthen the manuscript and contribute to its scholarly impact.

Thank you for your continued dedication to this important work.

Sincerely,

Paquito Bernard

Reviewed by **Kelsey Dancause**, 20 September 2024

The authors have responded well to comments received. The modifications have improved the clarity of the manuscript, and I would recommend accepting the article for publication

Reviewed by Kadia Saint-Onge ⬤ **, 23 September 2024**

It was a pleasure to read the revised version of this manuscript. I commend the authors for the quick turnaround and vastly improved sections.

The revised version of the manuscript was indeed greatly improved and requires, in my opinion, only minor revisions. While the additions are insightful and relevant, those describing the previous reviews in response to Reviewer 1's comment could be more succinct.

I am disappointed that authors have chosen not to expose their positionality given that their work is based in intersectionality and that positionality can be a most useful tool in conducting such work (see Simandan, D. (2019). Revisiting positionality and the thesis of situated knowledge. Dialogues in human geography, 9(2), 129-149. `https://doi-org.acces.bibl.ulaval.ca/10.1177/1532708619829779`). Nevertheless, given that this was not noted by Reviewer 1, that authors have aptly incorporated most comments thereby improving it satisfactorily, and that the manuscript is lengthy as such, I respect their decision not to explore this mechanism.

There are three minor revisions I recommend incorporating before publication. The last of these is left for the editor's consideration given their more intimate knowledge of journal policy.

1. I find important to note in the amended discussion that "*systematic differences in definitions, categorization, and representation **not only** inevitably compromise the ability to generate clear comparisons between studies and subsequently to determine the association between each SVF and GWG**, but - most importantly - also contribute to perpetuate systemic inequalities in health.**"

2. Lines 89-91 *"These narrative (Campbell), systematic (O'Brien), and scoping (Athar) reviews were limited in scope, covering from four to 16 articles each and focusing on publications from 2000 to 2020."* Perhaps emphasize the limitation by noting "**only** four to **sixteen** articles".

3. Authors have provided a thorough description of previous reviews. This new section could be tightened up for article brevity, but given that it provides important context, it is a most relevant addition.

Congratulations to the authors of the study and best wishes.

Evaluation round #1

Authors' reply, 27 August 2024

Dear Recommender and Reviewers,

We would like to express our sincere gratitude for your thorough assessment of our manuscript, and for your constructive suggestions to enhance its content. We believe that the revisions we have made have significantly improved the manuscript.

In the attached rebuttal letter, we have detailed our responses to each of your questions, comments, and requests for revision. We hope that our changes meet your expectations and address your concerns.

Thank you for considering our revised manuscript for recommendation by PCI Health & Movement Sciences.
Kind regards,
Bénédicte Fontaine-Bisson, RD, PhD
Download author's reply
Download tracked changes file

Decision by Paquito Bernard ⓘ **, posted 09 July 2024, validated 10 July 2024**

Revision required

Dear Authors,

Thank you for submitting your preprint to PCI Health & Movement Sciences.

Based on the comments of the two reviewers who assessed your manuscript, I have decided that your manuscript requires major revision. Reviewers have pointed out some limitations (e.g., Discussion) and have provided constructive comments that should help you improve your manuscript.

Best regards,

Paquito Bernard

Reviewed by anonymous reviewer 1, 28 May 2024

Answers to PCI questions

-Does the title clearly reflect the content of the article? Yes

-Does the abstract present the main findings of the study? Yes

-Are the research questions/hypotheses/predictions clearly presented? Yes

-Does the introduction build on relevant research in the field? Yes, but see point about providing more information for three cited reviews.

-Are the methods and analyses sufficiently detailed to allow replication by other researchers? Yes

-Are the methods and statistical analyses appropriate and well described? Yes

-Are the results described and interpreted correctly? Yes

-Have the authors appropriately emphasized the strengths and limitations of their study/theory/methods/argument? Yes

-Are the conclusions adequately supported by the results (without overstating the implications of the findings)? Yes. Again, comparing in the context of other existing reviews would enrich the Discussion.

——————————-

Comments

The scoping review by Labonté and colleagues concisely presents the state of the evidence on several key structural vulnerability factors for inadequate gestational weight gain in high-income countries. The authors have done an excellent job of synthesizing a complex body of literature, in which results are not necessarily easy to categorize or to compare across contexts. Key directions for future research are well indicated.

Below are some suggestions to help clarify the review and perhaps to enhance its relevance for other researchers and health professionals.

Introduction

It would be helpful to see a definition/description of insufficient, adequate, and excessive GWG. I know that guidelines/definitions vary, but indicating the IOM 1990 and IOM 2009 guidelines (as they were the most commonly used) in the Introduction would be useful.

The authors cite three existing reviews of structural vulnerability factors and gestational weight gain, but provide little to no information regarding the conclusions of these reviews. Personally, I would like to see more details on the key results highlighted in these reviews and the authors' conclusions to better help to contextualize the importance of the current review, and also a return to these points in the Discussion - with a focus on similiarities and differences - to help to put the results of the current review into a broader perspective.

Methods

Minor revision: Line 116, "There was no restriction on the publication year of articles." To clarify or remove, given that articles published after 2019 are specifically excluded.

Results

The results would be much more informative if the authors integrated a synthesis of key results summarizing – in general – which groups have higher risk for insufficient and excessive gestational weight gain for each of the structural vulnerability factors assessed. This would provide a richer context for the interpretation of the results presented in detail in the tables. I understand that there is a lot of variability in results, but the authors are the best positioned to evaluate the general trends and to draw some summary conclusions to help contextualize for the reader.

Race & Ethnicity: "One of the least studied groups was Indigenous women." It would be helpful to have more details here. It's an important point, and merits contextualization. I'm curious because the reasons explaining the lack of studies among Indigenous women could highlight areas for future research. Is it that data for Indigenous participants are not collected, are not represented in analyses, are grouped with other racial or ethnic groups? For example (as the authors note), in the study by Headen et al. 2018, the "white" ethnicity group includes all other non-Black, non-Latino women in the sample, including those classified as Indian and Native American. So data are available, but not presented. If this is an important point for future research, providing more details to contextualize how many studies actually present results for Indigenous women, and some of the reasons why others do not, would be a priority.

I suggest reviewing to avoid causal language. For example, "Thirty-nine studies (25%) examined the effect of income on GWG..." There are a few other similar phrases in the Results and Discussion.

Discussion

I appreciated the discussion of intersecting vulnerability factors and the example of Huynh et al. regarding ethnicity, education, and socioeconomic status. I would love to see more context on studies that applied an intersectional approach. The importance of intersectionality is so heavily emphasized in research on structural vulnerability factors but it's a framework that's often hard to apply in practice. Adding a section to describe articles that successfully integrated intersectionality into their analyses or interpretation could provide examples for other research teams to follow.

As noted above, returning to the three existing reviews would help to enrich the Discussion. For example, regarding considerations for future research: to what extent are suggestions similar or different among reviews?

Reviewed by Kadia Saint-Onge ⬥, 24 June 2024

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.

Below is an overview of my review. Please find a more detailed account in PDF format and accept my best wishes for future endeavors.

Title and abstract

- Does the title clearly reflect the content of the article? [ ] Yes, [**X**] No (please explain), [ ] I don't know

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. 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.

- Does the abstract present the main findings of the study? [**X**] Yes, [ ] No (please explain), [ ] I don't know

Introduction

- Are the research questions/hypotheses/predictions clearly presented? [**X**] Yes, [ ] No (please explain), [ ] I don't know

- Does the introduction build on relevant research in the field? [**X**] Yes, [ ] No (please explain), [ ] I don't know

Materials and methods

- Are the methods and analyses sufficiently detailed to allow replication by other researchers? [**X**] Yes, [ ] No (please explain), [ ] I don't know

- Are the methods and statistical analyses appropriate and well described? [**X**] Yes, [ ] No (please explain), [ ] I don't know

Results

- In the case of negative results, is there a statistical power analysis (or an adequate Bayesian analysis or equivalence testing)? [ ] Yes, [ ] No (please explain), [ ] I don't know -> **N/A**

- Are the results described and interpreted correctly? [ ] Yes, [ ] No (please explain), [ ] I don't know

Discussion

- Have the authors appropriately emphasized the strengths and limitations of their study/theory/methods/argument? [ ] Yes, [**X**] No (please explain), [ ] I don't know

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. Discussion sub sections 1 and 2 should present how study findings line up with previous literature. The latter part of the discussion (subsections 3 and 4) appears to span beyond the scope of the conducted review.

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.). 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.

- Are the conclusions adequately supported by the results (without overstating the implications of the findings)? [ ] Yes, [X] No (please explain), [ ] I don't know

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.

Download the review