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ORIGINAL RESEARCH

Health experiences and inequalities across intersecting social identities in health research: a scoping review

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Abstract

Background and Objective: Intersectionality provides a framework to help enable critical thinking about how sociodemographic factors interact. There is currently limited evidence on whether the overlap of multiple sociodemographic identities, typically associated with underrepresentation and being underserved in research (eg, minority ethnicity, lower socioeconomic status (SES)), affects health conditions and outcomes. Given the essential role that clinical trials have in the development of effective treatments, this makes it challenging to address whether intersectionality should be considered in trials. This scoping review aimed to map the existing literature on the impact of intersectionality on health experiences and inequalities in developed economies, and identify whether or not the overlap of two or more sociodemographic factors (eg, race/ethnicity and sex/gender and/or SES), is associated with poorer health.

Methods: Following the Arksey and O'Malley Framework and Joanna Briggs Institute methodology, the review adhered to Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews guidelines. Databases searched included Medline, Embase, Web of Science, International Bibliography of the Social Sciences, and Sociological Abstracts. Selection criteria were based on the Population−Concept−Context mnemonic, targeting studies that explicitly referenced intersecting sociodemographic factors and their impact on health experiences. Data were extracted from the Discussions section of the included studies, specifically any reports of the effects of intersectional sociodemographic factors, such as ethnicity, sex, gender, and SES, on health conditions and outcomes.

Results: Thirty-three studies met the inclusion criteria. The review found that people who belong to more than one sociodemographic group typically underserved in research (eg, minoritized ethnic and experience of socioeconomic disadvantage) tend to have poorer health. This review also found that context is an important component, with some traditionally more privileged groups (eg, White, male, and with a high socioeconomic background) having relatively poorer health outcomes depending on the context.

Conclusion: Overall, holding intersectional underserved identities is likely to lead to poorer health; however, there is no simple relationship, and context plays a role. These findings emphasize the need for inclusive clinical trials that account for intersectionality and the necessity of designing inclusive research that reflects diverse populations.

Keywords: Intersectionality; Health inequalities; Clinical trials; Scoping review

1. Introduction

Many health inequalities were highlighted by the COVID-19 pandemic, which showed the disproportionate impact of the virus on specific sociodemographic groups [1]. Some sociodemographic factors, which are the shared social or demographic characteristics held by a group, have been associated with more adverse health outcomes [2]. For example, minoritized ethnic groups were disproportionally more negatively affected by COVID-19 [3]. More attention is being paid to reducing these inequalities, and clinical trials provide a logical starting point, as they are responsible for much of the evidence to support effective and safe health care. Without adequate inclusion of all groups of people in trials, there is a risk that some findings will not

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What is new?

Key findings

- People who belong to more than one underserved group, such as those from minoritized ethnic backgrounds, minoritized gender identities, and individuals with experience of socioeconomic disadvantage, often experience poorer health. However, there is no consistent pattern, and context plays an important role in shaping how these factors interact.

What this adds to what is known?

- This review brings together current evidence on how intersectionality is being used to understand health experiences and inequalities in developed economies. It shows how multiple forms of power and disadvantage can combine to improve or worsen health in ways that single factor approaches may miss.

What is the implication?

- Intersectionality is more than a theory. It can help researchers better understand the real-world factors that shape health and should be considered when trying to tackle health inequalities.

What should change now?

- Researchers designing clinical trials should consider how overlapping forms of disadvantage influence both who takes part and how health is experienced. Adopting a broader and more inclusive approach during the design stage can help ensure research better reflects the needs of those most affected by poor health.

benefit those who may need it, because of issues such as low acceptance of treatments and unequal opportunity of access [4].

Different people's health can be influenced by factors related to their social identity and location, such as ethnicity, sex and gender, occupation, socioeconomic status (SES), disability, immigration status, geographical location, place of residence, and religion [5]. Their health can also be influenced by broader, structural societal systems, such as racism, sexism, and classism [6]. Differences in health status among groups of people underscore the unfairness and preventability of health imbalances, which are frequently rooted in social or economic disadvantage [7].

An underserved group in research refers to populations that are not adequately represented or included in clinical trials when compared to population estimates. The National Institute of Health and Care Research has described these groups as those who face barriers to participation due to a variety of factors, including but not limited to ethnic minorities, low-income populations, and gender and sexual minorities [8]. Research needs to involve diverse populations to ensure that findings are generalizable and applicable to all. While related, representation and health differences need separate attention. Representation concerns who is included in trials, while health differences relate to how health varies across groups. We focused this review on the latter, examining whether overlapping sociodemographic factors are linked to poorer health experiences. While intersectionality also draws attention to the structural processes that drive inequality, our review focuses on health differences as an initial step to understand whether the overlap of sociodemographic factors is associated with poorer health.

Inclusion has become a policy priority in recent years to ensure clinical trials include a diverse range of participants. [9]. However, most approaches risk overlooking the multifaceted experiences of individuals at the intersection of multiple underserved identities, potentially neglecting their unique health experiences.

Introduced by Kimberlé Crenshaw in 1989, intersectionality challenges the focus on single axis approaches to understand health inequalities. As a theory, it advocates for a more nuanced and inclusive approach to research. According to Crenshaw, 'the focus of an intersectional approach is to highlight the need to account for multiple grounds of identity when considering how the social world is constructed' [10]. Intersectionality as a tool to address inequality is contested, with debate over its theoretical roots, scope, and practical application [11]. Our review adopts the position that intersectionality does offer a framework for understanding health differences and inequalities.

There is limited evidence to show whether people with multiple intersecting underserved identities experience worse health outcomes due to compounding disadvantage. This lack of understanding makes it difficult to design trials that account for the needs of diverse populations. In addition, the limited representation of these groups in trials further constrains the ability to investigate intersecting effects. This undermines efforts to explore intersectionality as a target for strategies to mitigate future health inequalities and ensure that trials are representative of the populations they aim to benefit. This review aims to bridge this gap by mapping the existing literature on the topic, to inform whether greater attention to these intersections is warranted in future research. This scoping review is the first step in a broader project exploring inclusion in clinical trials. Our aim here was to identify whether or not intersectionality, understood as the overlap of two or more sociodemographic factors (eg, race/ethnicity and sex/gender and/or SES), is associated with poorer health. This helps to inform whether it should be prioritized in future trial design.

2. Methods

A protocol was developed and prospectively shared via The Open Science Framework [12]. This review followed the Arksey and O'Malley framework [13], Joanna Briggs Institute (JBI) methodology [14] and Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-Scr) guidelines [15].

2.1. Search strategy

We developed a search strategy in collaboration with an Information Scientist at the University of Aberdeen. A three-step approach, based on JBI methodology, was followed. First, an initial search was conducted in Medline and Embase to identify relevant terms from titles, abstracts, and index headings. These terms were then used to refine and execute a comprehensive search across five databases: Medline, Embase, Web of Science, Sociological Abstracts, and the International Bibliography of the Social Sciences. A copy of the full electronic Medline search is available in Appendix 3. Finally, reference lists of included studies were hand-searched for additional literature. Given the volume of search results during the first stage of screening (titles and abstracts), we refined the eligibility criteria to focus on studies that included any 2 of the following 3 factors: race/ethnicity, sex/gender, or SES. These 3 factors were also some of the most reported. This was to improve the

Table 1. The eligibility criteria, based on the PCC mnemonic, applied to the literature search for the scoping review - Health experiences and inequalities across intersecting social identities in health research

PCC component	Definition	Inclusion criteria	Exclusion criteria
Population	Groups of people that share more than one intersecting sociodemographic characteristic.	Intersecting sociodemographic factors, where authors have explicitly referenced that intersecting factors are being studied in the title/abstract. Factors defined as sociodemographic factors; any social or demographic feature that a group has in common. -Included factors are to fall under one of the following combinations of PROGRESS-PLUS factors: sex/gender AND race/ethnicity AND/OR socioeconomic status [16]. The term intersecting should refer to factors that a person/group possesses at the same time.	None.
Concept	Health inequalities	Research reporting the effect of intersecting sociodemographic factors on health inequalities/health outcomes. Research reporting on singular or multiple health conditions or inequalities. Research that uses the term intersectionality (or a variation of the term eg, intersecting factors) in the title or abstract. A health condition or disease that can be measured or demonstrated clinically or by self-report.	Research reporting the effects of intersecting sociodemographic factors on anything that does not directly relate to health outcomes. A mediating factor or proxy, such as a behavior or experience, that would only potentially lead to a certain health condition or disease.
Context	Developed economies	Research conducted in developed economies, according to the list of countries outlined by the World Economic Situation and Prospects (WESP) [17]. Full text available in English only, due to research team language limitations. Qualitative or quantitative, or mixed methods. Research published from 1989 onward to align with the coining of the term intersectionality. Empirical research studies.	Systematic reviews or any other type of review.

PCC, Population—Concept—Context.

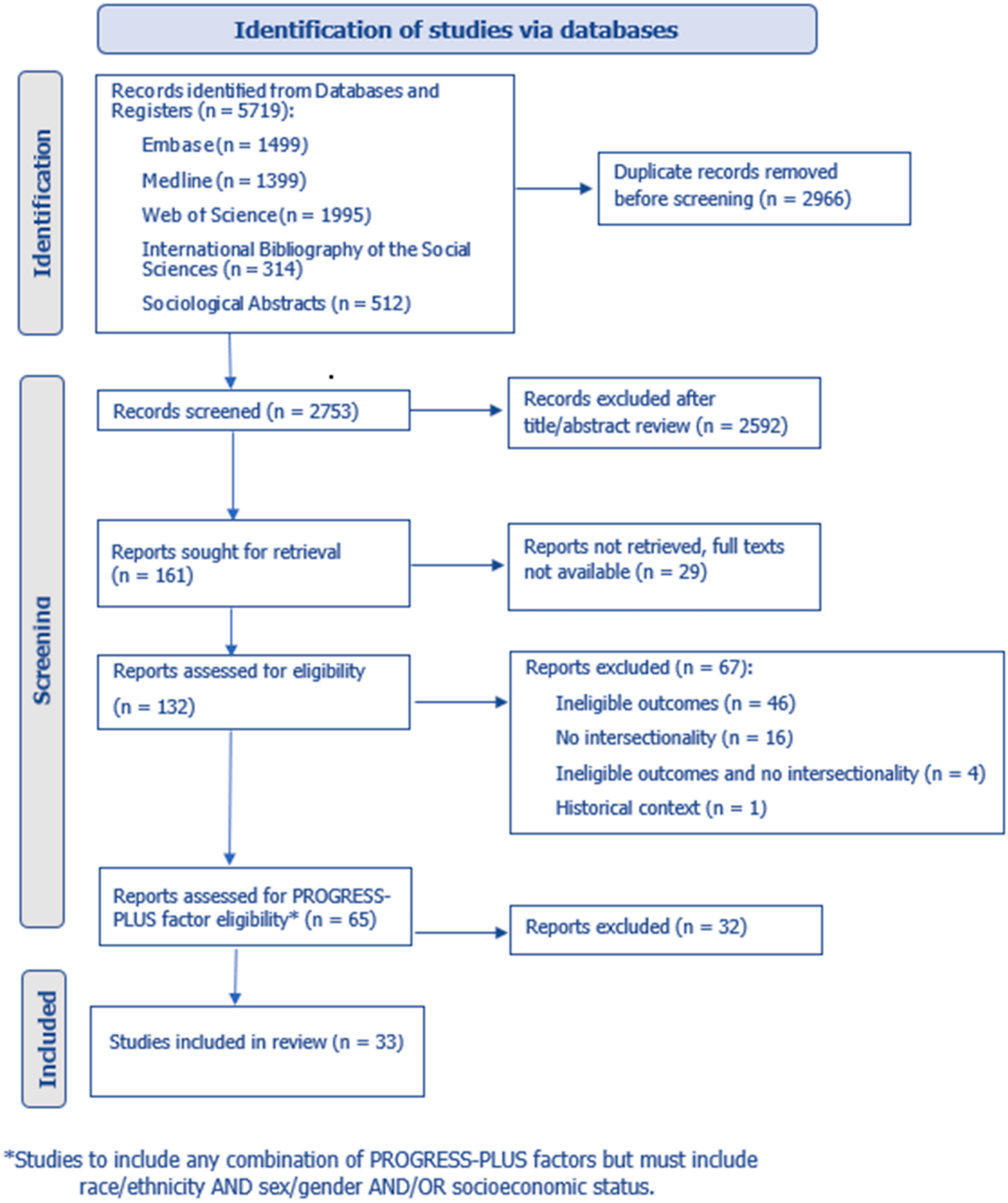

Figure. PRISMA flow diagram representing identification, screening, and selection of studies for the scoping review. Adapted from [19]. PRISMA, Preferred Reporting Items for Systematic reviews and Meta-Analyses.

depth and quality of analysis possible in the time available and to ensure a richer synthesis.

2.2. Selection criteria

Eligibility criteria are shown in Table 1. The selection criteria were organized based on the Population–Concept–Context mnemonic [18].

2.3. Literature selection and data charting

We completed all searches on February 15, 2023. Duplicate citations were removed, and the remaining records were imported into Rayyan for screening. One member of the author team conducted title and abstract screening in a staged process, with 10% independently screened by a second member in each round. Disagreements were resolved through discussion, and where needed, a third member was consulted. The same process was followed for full-text screening. Reasons for exclusion at the full-text stage were documented. The overall selection process is presented in a PRISMA-ScR flow diagram (see Figure). In line with Arksey and O'Malley's framework and JBI guidance, no formal quality appraisal was undertaken. We charted data using a collaboratively developed extraction form, piloted by two author team members and refined through discussion. In this review, we defined 'health outcomes' broadly as any reported health condition, risk, or status associated with intersecting sociodemographic factors. This operational definition of health outcomes was developed through author discussions and aligns with our eligibility criterion that a health condition or disease is measurable clinically or by self-report. We extracted 'findings' as author-reported interpretations and insights on whether the overlap of two or more sociodemographic characteristics influenced these outcomes. We focused on extracting 'findings' from the Discussion sections, as these often include reflective commentary where authors link their results to broader social and structural issues. This allowed the review to capture how researchers interpret and explain the influence of intersecting social characteristics on health. Where relevant findings were not present in the Discussion, we also reviewed Results sections to ensure important data were not missed.

Table 2. Overview of some of the intersectional insights from the included studies that focused on the intersection between two factors, specifically ethnicity/race and sex/gender

Study	Some takeaway insights
Kanchi et al (2018)	Black women have higher hypertension rates than Black men and other ethnic groups
Kanchi et al (2018)	White men have higher hypertension rates than White women
Veenstra et al (2016)	Among Latino and Asian populations, women are more likely to be diagnosed with hypertension than men
Robertson et al (2021)	Transgender individuals, especially White or Native American, have higher odds of depression
Rushovich et al (2021)	Black men have a significantly higher risk of COVID-19—related death compared to other groups
Madera et al (2023)	Black and Native American women have a higher likelihood of tooth loss (edentulism) compared to men and other racial groups
Curry et al (2021)	Black individuals and males of minority ethnic groups have higher nonremitting asthma rates

2.4. Analysis

We used a narrative synthesis approach to collate and present findings descriptively [20]. Findings were grouped by the main combinations of sociodemographic factors and summarized by the type and direction of reported health outcomes. This approach described patterns in author-reported intersectional statements; it did not pool estimates or quantify effects.

2.5. Patient and public involvement

Patients and the public contributed to components of the larger project but were not involved in this review.

3. Findings

Thirty-three studies met the inclusion criteria. All included studies were observational, with the majority being cross-sectional surveys, cohort studies or secondary data analyses. No interventional studies met the inclusion criteria. Intersectional findings refer to any finding reported by the authors of included studies that considers the impact or effect of two or more sociodemographic factors on a health condition.

We grouped reported intersectional author-reported insights from included studies according to the main sociodemographic factors they were relevant to. To avoid misinterpretation, we followed authors' own descriptions of sociodemographic factors, which may vary across cultural and social contexts. See Appendix 2 for this scoping review's definitions of sociodemographic factors. Tables 2, 3 and 4 provide some takeaway insights to provide a quick overview of the types of intersectional relationships the included studies reported.

Included studies looked across the following health conditions and outcomes: 6 on cardiovascular conditions, 2 on asthma, 8 on mental health, 5 on COVID-19, and 13 across other areas. See Appendix 1 for a full list of included studies.

3.1. Intersection between two factors: 'race or ethnicity' and 'sex or gender'

Intersectionality between two factors was widely explored in studies on cardiovascular outcomes. Kanchi et al [21] found that Black women had a higher prevalence of hypertension compared to men of the same ethnic group and other ethnic groups such as White, Latino, and Asian. Among White individuals, men had higher hypertension rates than women. Patterson and Veenstra (2016) reported that Black—White inequalities in hypertension were further compounded by gender, with Black women more likely to report the condition compared to Black men and White men or women. In contrast, Veenstra et al (2020) revealed comparable prevalence of diabetes and

Table 3. Overview of some of the intersectional insights from the included studies that focused on the intersection between three factors, specifically ethnicity/race and sex/gender and socioeconomic status

Study	Some takeaway insights
Veenstra (2013)	Higher income increases hypertension risk among men, especially Black men, while higher income reduces risk for Black and South Asian women
LoSchiavo et al (2020)	Low-income ethnic minorities, particularly Latinx and Native American women, had significantly higher depression scores when compared to high-income White men
McClendon et al (2021)	African American women with low income reported significantly higher pain levels than other demographic groups
Assari (2015)	Education lowered chronic medical conditions in Black men more than in Black women or White men and women

hypercholesterolemia between men and women across racial/ethnic groups, with White women having a higher diabetes diagnosis rate than White men. Asian men and women, however, reported lower hypertension and diabetes rates than White men and women [22]. Veenstra et al [23] found that among Latino and Asian populations, women were more likely to be diagnosed with hypertension than men. Black and Asian men were more frequently diagnosed with diabetes than women, though data on this was limited. Lett et al [24] found that the Hispanic population, across all gender identities, had a lower prevalence of cardiovascular disease and hypertension compared to non-Hispanic Whites.

In the asthma-related studies, Curry et al [25] found that Black individuals and males of other minority ethnic groups had higher rates of nonremitting asthma, while Hispanic/Latinx females experienced significantly lower rates compared to White females. Patterson and Veenstra [26] also reported that native-born Black women were less likely to report asthma compared to native-born White women after adjusting for socioeconomic factors.

In mental health studies, Robertson et al [27] reported that transgender individuals, especially those who were White or Native American, had higher odds of being diagnosed with depression compared to cisgender White adults. Another study found that females and ethnic minorities generally exhibited greater likelihood to experience clinical depression than males and White individuals [28].

In COVID-19 studies, Rushovich et al [29] found that men, particularly Black men, had a significantly higher risk of COVID-19-related death compared to women and other racial groups. While Pal et al [30]found that Native Americans exhibited higher mortality and kidney injury risks from COVID-19, with Black individuals facing the highest risks for acute kidney injury and hemodialysis.

In studies reporting across various health outcomes, such as Madera et al [31] who looked at oral health, it was reported that Black and Native American women had a higher likelihood of tooth loss (edentulism) compared to men and other racial groups. Millard et al [32] found that being Asian lowered mortality risk compared to White individuals, but the gap between men and women in survival rates was wider in Asian and Pacific Islander populations than in any other group. Lett et al [33] found gender minority Black individuals faced worse health outcomes than both cisgender Black and gender minority White individuals.

3.2. *Intersection between three factors: 'socioeconomic status,' 'race or ethnicity,' and 'sex or gender'*

Several studies considered the role of SES alongside race or ethnicity, and sex or gender. For cardiovascular outcomes, Veenstra [34] found that higher income increased hypertension risk among men, particularly Black men, while higher income reduced the risk for Black and South Asian women. Another study noted that while household income was associated with a lower likelihood of hypertension in men, the opposite was true for women. Among Black women, lower income was strongly linked to a higher risk of both hypertension and diabetes, suggesting that race, gender, and income together create significant health vulnerabilities. Hall et al [35] identified a strong link between higher socioeconomic vulnerability and increased type-2 diabetes prevalence among Hispanic youth.

Socioeconomic disadvantage was also linked to higher asthma prevalence. Hall et al [35] found that Hispanic

Table 4. Overview of some of the intersectional insights from the included studies that focused on additional intersections that did not fall under 'ethnicity/race and sex/gender' or 'ethnicity/race and sex/gender and socioeconomic status'

Study	Some takeaway insights	Intersecting factors
Assari et al (2017)	Being unmarried is associated with major depressive disorder risk in all Black gender groups, except in Caribbean Black men	Social capital and ethnicity/race and sex/gender
Bostwick et al (2014)	Combined racial, gender, and sexual orientation discrimination significantly increases mental health disorder odds	Sexuality and ethnicity/race and sex/gender

children from economically disadvantaged backgrounds had the highest asthma burden, while Native American and Asian children exhibited the lowest prevalence of asthma. Curry et al [36] reported lower asthma likelihood in Hispanic/Latinx females compared to White females, with sexual minority status increasing asthma odds among Hispanic/Latinx females.

In mental health outcomes, Evans and Erickson [28] found that low-income ethnic minorities, particularly Latinx and Native American women, had significantly higher depression scores when compared to high-income White men. Bergey et al [37] found that the neurotype ADHD was more prevalent in low-income, non-Hispanic Black children compared to their White peers, with economic disadvantage amplifying the likelihood of a diagnosis. LoSchiavo et al [38] found lower depression odds for college-educated, higher-income, exclusively homosexual individuals.

In COVID-19 mortality, Lin et al [39] found that counties with higher COVID-19 mortality had larger Hispanic and uninsured populations, particularly in urban areas. Meanwhile, non-Hispanic White populations in rural areas also faced higher mortality due to limited access to health care.

McClendon et al [40] explored the role of perceived discrimination in osteoarthritis-related pain and found that African American women with low income reported significantly higher pain levels than other demographic groups. In addition, Weiss [41] found that lower SES contributed more to dementia incidence than lifestyle factors, especially among non-Hispanic Black men and women. Assari [42] found education lowered chronic medical conditions in Black men more than in Black women or White men and women, and Shariff-Marco et al [43] found high education and advantaged neighborhoods reduced mortality in non-Latina White women, while disadvantaged neighborhoods increased it.

3.3. Further additional intersections

Various findings were reported that included less common sociodemographic factors. Curry et al [25] found that sexual identity, when considered alongside ethnicity and gender, led to more pronounced disparities. Hispanic/Latinx females who identified as sexual minorities had much higher odds of developing asthma compared to their heterosexual counterparts, a pattern that was reversed for nonminority females. The same study also found gay males had an increased chance of nonremitting asthma compared to heterosexual males [25]. Ahmed et al [44] found that language and education level influenced diabetes risk differently across ethnic groups. White females with lower income and who spoke Spanish had higher rates of diabetes compared to their English-speaking counterparts. Black females in the same income bracket, however, faced the highest risk of developing diabetes regardless of language. Interestingly, having higher education or income did not necessarily correlate with improved health outcomes for Asian, Black, or South Asian men, further highlighting the complex interaction between SES, ethnicity, and health outcomes. Assari et al [45] found that in all Black gender groups being unmarried is associated with the risk of major depressive disorder, except for Caribbean Black men, further underlining the gendered nuances in mental health. Bostwick et al [46] found that combined racial, gender, and sexual orientation discrimination significantly increased the odds of mental health disorder.

4. Discussion

Intersectionality as a theoretical framework has gained attention in health, particularly in understanding health disparities and inequalities [47]. While this review was not designed to provide direct guidance on trial design or redressing inequalities, identifying patterns in how overlapping sociodemographic factors relate to health differences offers an important first step for informing more inclusive research practices. Findings highlighted complex interactions between sociodemographic factors such as ethnicity, sex, gender, and SES and the current landscape of research addressing their impact on health experiences and outcomes. The findings underscore the interplay of sociodemographic factors and the context-specific approaches needed to address health inequalities. There are two key takeaways from this review:

1. People who belong to intersectional sociodemographic groups that are typically associated with being underserved in research tend to have poorer health experiences. In the UK, such examples include minoritized ethnic groups, women, and people with experience of socioeconomic disadvantage. However, there was no single pattern—although belonging to multiple underserved groups may be more detrimental to health, this was not always the case.
2. To fully understand the relationship between sociodemographic factors and health inequalities, findings must be examined in light of the specific social, political, and economic settings in which they occur. While we did not examine underlying mechanisms in depth, the review found that across conditions, intersectionality between certain identities generally contributed negatively to health outcomes. Predominantly, the studies found a relationship between poorer health and holding more than one ‘disadvantaged’ or ‘underserved’ identity.

Health inequalities manifest along various axes, including sex and gender identity, age, ethnicity, socioeconomic experience, geographic location, sexual orientation, religion, and disability. Intersectionality sheds light on how these disparities compound and are shaped by systemic discrimination and historical power imbalances. For instance, it provides some explanation for why it was found in this review that Black women with low income have a higher prevalence of hypertension [34], or why females who hold both an underserved sexual and ethnic identity are more likely to have asthma [25], or why a combination of racial, gender, and sexual orientation discrimination can increase odds of mental health disorders [46]. This review underscores the notion that various forms of discrimination can compound, intensifying the effects of multiple broad social and structural influences simultaneously, like racism, sexism, and classism. The combined effects of these disadvantages may therefore be what is leading to greater health inequalities.

This review revealed nuanced patterns of disparities. In the context of the United States, general health indicators often show better outcomes for White people compared to Black, Native Americans, and Hispanic/Latinx people [48]. Men are also generally seen to hold a more advantageous social status than women [49]. Yet, this review found instances where being part of traditionally advantaged groups, such as being White and identifying as a man, was associated with poorer health experiences. These findings must be interpreted carefully, as social pressures vary across groups. For instance, Hispanic/Latinx people may be less likely to report mental illness due to perceived stigma in their communities [50].

Most included studies were published from 2019 onward, which may reflect growing interest in intersectionality following major global events such as the COVID-19 pandemic and the murder of George Floyd in the US. This shift may have influenced the types of patterns and populations prioritized in recent research. However, this research did not address whether any specific intersecting factors have a greater influence on certain health conditions and therefore require more focus in research design. Although the sociodemographic factors of race or ethnicity, sex or gender, and SES emerged as more commonly studied intersections, this does not necessarily indicate they are the most impactful or that they should always be prioritized. The context of the study is particularly important, as the unique social, and demographic conditions surrounding each study may better inform which intersections deserve closer attention.

The significance of intersectionality in addressing health inequalities, as emphasized in this review, cannot be overstated. Clinical trials generate the evidence that underpins the effectiveness and safety of health care; they need to therefore include diverse participants if they are to contribute to health care for everyone. Inclusive research helps address health disparities by acknowledging the interplay of sociodemographic factors. This review included only observational studies, such as cross-sectional surveys and cohort designs. No interventional studies met the inclusion criteria, which reflects a gap in the existing evidence base. Through intersectionality, researchers can design trials that are better tailored to the needs of underserved groups, who often face compounded health challenges. Interventional studies would add important insight into how different intersectional groups respond to treatments and remain an area for future research.

By identifying which intersectional groups may be most affected by specific health issues, researchers can create studies that are reflective of real-world diversity, ensuring that medical treatments and health care services address the needs of those most impacted. We focused this review on race/ethnicity, sex/gender, and SES to offer a practical entry point for trial teams aiming to apply intersectional thinking. Some of these characteristics are already supported by frameworks designed to guide inclusive research [51], and centering them in this review helps build a clearer bridge between evidence and action. This approach does not capture the full spectrum of intersecting identities, but it highlights how even a focused lens can expose meaningful patterns that warrant attention in trial design.

4.1. *Strengths and limitations*

A strength of this review is the inclusion of studies spanning multiple health conditions and outcomes. This supports a broader understanding of how sociodemographic factors shape health, aligning with the growing use of intersectionality to understand disparities [47,52]. Furthermore, the review's focus on developed economies offers a context-specific approach to the effect of intersectionality on health inequalities. The decision to include only studies published from 1989 onward, postdating the coining of the term 'intersectionality,' ensures that the research is grounded in the contemporary application of this theoretical framework. Also, extracting insights from Discussion sections supported a more nuanced analysis of how intersectionality is interpreted and discussed within the published literature. This approach helped ensure that the findings reflected author interpretations and the wider context in which results were discussed.

However, a few limitations should be acknowledged. Firstly, the search strategy focused on databases and sources in English, potentially introducing language bias. The restriction to empirical research studies published from 1989 onward, aligned with the coining of the term intersectionality, may have excluded earlier relevant works. Thirdly, the decision to include only research conducted in developed economies, guided by the World Economic Situation and Prospects classification [17], will limit the applicability of findings to other socioeconomic contexts. This choice, driven by the intended application of results to the United Kingdom, might not fully capture the global landscape of intersectionality and health inequalities. Most studies in this review were conducted in the United States, which may limit the generalizability of findings to other contexts. For example, the US health care system's reliance on private insurance creates specific access barriers that are less common in countries with universal health care systems, such as the UK [53].

The eligibility criteria, while designed to ensure relevance to the scoping review question, might inadvertently exclude valuable studies that do not explicitly use the term "intersectionality." As the review was completed in 2023, it is possible that more recent eligible studies have since been published. A focus on Discussion sections may have introduced bias, as these reflect author interpretations rather than objective findings. This may have influenced which intersectional patterns were reported and how they were framed. Finally, the eligibility criterion requiring studies to include sex/gender and race/ethnicity, and/or SES may have excluded studies addressing other intersecting factors.

4.2. Implications and future directions

By summarizing the literature on health experiences and inequalities across intersecting factors, this review establishes why intersectionality cannot be ignored if we want to design research that reflects and responds to real-world inequalities. We recognize there are methodological challenges in applying intersectionality, including selecting which factors to address and how to explore their overlap without misrepresenting results. As this scoping review aimed to map existing patterns across multiple sociodemographic characteristics, it did not explore reasons for current evidence gaps. However, this remains an important area for future work. Researchers and trial teams should be encouraged to reflect on how structural and social factors shape health experiences and outcomes, as doing so can lead to better decisions in trial design and support research to be more inclusive and relevant to those most affected by health inequalities.

CRediT authorship contribution statement

Azar Alexander-Sefre: Writing – review & editing, Writing – original draft, Project administration, Methodology, Formal analysis, Data curation, Conceptualization. **Frances Sherratt:** Writing – review & editing, Supervision, Methodology, Conceptualization. **Heidi Green:** Writing – review & editing, Supervision, Methodology, Conceptualization. **Shaun Treweek:** Writing – review & editing, Supervision, Methodology, Conceptualization. **Victoria Shepherd:** Writing – review & editing, Supervision, Methodology, Conceptualization.

Declaration of competing interest

All authors declare no conflicts of interest.

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Supplementary data

Supplementary data related to this article can be found at https://doi.org/10.1016/j.jclinepi.2025.112112.

Data availability

Data will be made available on request. All information relevant to the review is included in the article or uploaded as supplementary information.

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