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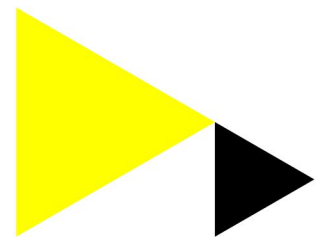
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Critical Health Communication in Kinesiology and Sports Science: A Scoping Review

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Abstract: Fields neighboring the disciplines of kinesiology and sports science have called for more interdisciplinary work, including the adoption of critical approaches to research. This scoping review explored the degree to which critically-aligned research has developed within these disciplines. The goal was to identify who this research studied, what methods were used, and which theoretical and conceptual frameworks were adopted. Publications between 2010-2022 in six top kinesiology and sports science journals using four databases were searched using keywords to identify critically-aligned research. A multi-step screening process was used to identify and sort articles that adequately fit the criteria of critically-aligned research. The scoping review identified 5666 entries of which 3300 were unique publications. 76 articles were assessed to be critically-aligned. Four themes regarding demographics emerged: Geographic area, gender, race/ethnicity/indigeneity, and inequality/inequity. Regarding methodology, three major theoretical and conceptual frameworks emerged: ecological, socio-economic, and cultural. Overall, a relatively small number of studies fit our search criteria, suggesting that critically-aligned research remains at the margins of the disciplines. For the studies that were critically-aligned, they often centered the Global North and were inconsistent in their application of categories such as race, ethnicity, inequality and equity. These studies were diverse in their methodological approach while relying on ecological, socio-economic, and cultural frameworks. To heed the calls for a more interdisciplinary approach, and to advance the disciplines more generally, kinesiology and sports science should expand their adoption of critical approaches to research.

Keywords: Critical, Communication, Theoretical Framework, Communication Science, Kinesiology, Sports Science

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Research Article, Sport History

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Highlights

- Sports science features some critically-aligned work that draws on constructivist/interpretivist traditions.
- 76 papers over the last 12 years in six top sports science journals were identified as critically-aligned. Methodologically, there were twenty-four qualitative papers, twenty-two quantitative papers, six mixed-methods papers, and nineteen papers that were either reviews, commentary, or theory.
- In asking who is included as a subject of study in sports science, four noticeable trends came to light: geographic area, gender, race/ethnicity/indigeneity, and (socio-economic) inequality/inequity.
- Despite calls from within and without for an increased interdisciplinary approach in sports science, a relatively small number of studies fit the search criteria, suggesting that critically-aligned research remains underrepresented in the discipline.

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Introduction

The discipline of kinesiology has long identified the importance of facilitating communication among researchers, practitioners, and the public (1,2), with some suggesting a more interdisciplinary approach (3). While kinesiology and sports science typically adopt positivist and post-positivist ontologies and epistemologies, their disciplinary neighbors in physical culture studies, the sociology of sport, and critical health communication, are likely to take a more critical approach. In some cases, these scholars have criticized kinesiology and sports science literature for being overly “(bio)scientized” by insufficiently attending to social determinates of health and questions of social power (3 p3). Concretely, these scholars have pushed for changes in health campaigns and research that move away from individual and cognitive approaches to health and behavior change (5,6), resulting in a definition of health as not only an individual state of physical, emotional, or mental well-being but also as “access to and control over the basic material and non-material resources that sustain and promote life at a high level of satisfaction” (13 p95).

However, the extent to which these calls have been adopted is uncertain. The purpose of this scoping review is to identify literature within the disciplines of kinesiology and sports science that have adopted some, but not necessarily all, characteristics of critical scholarship. We use the phrase “critically-aligned” to characterize this scholarship, which we define as research with a critical approach to either subject population, method, and/or theoretical framework. The analysis investigates critically-aligned research in these disciplines with the hope that increased critical scholarship will lead to broader social change (6). This review addresses the call of critical health and physical education scholars to map what is known about how critical scholarship manifests in kinesiology and sports science research (8).

This scoping review answers two research questions: “Who is being studied in critically-aligned kinesiology and sports science research (RQ1)?” and “How is critically-aligned kinesiology and sports science research conducted (RQ2)?” Although this literature often targets more diverse and marginalized subjects than normative or post-positive approaches, we were unable to identify a consensus on the composition of these diverse and marginalized communities. RQ1 categorizes the subjects of critical kinesiology and sports science literature. The findings suggest engagement with a broad array of categories that vary based on the context. Nevertheless, sampling plays a huge role in determining which communities are excluded by sports science and kinesiology scholarship. The adoption of critical approaches to research could promote nuanced conceptions of disadvantaged social groups or individuals at societal levels.

Scholarship in critical health communication engaged in mapping the field suggests that concepts are not always used uniformly (9). As critical research has a diverse theoretical background, we anticipated a wide variety of methods and frameworks in critical kinesiology and sport science literature. Findings for RQ2 identified several methodological approaches, as well as three main theoretical and conceptual frameworks: ecological, socio-economic, and cultural. This suggests that

critically-aligned research within the disciplines of kinesiology and sports science research does exist, despite not self-identifying as such. We hope that this scoping review helps bridge the gap and facilitates consensus-building between the critical and post-positivist sides of scholarship that focuses on health, sports science, and physical culture.

Materials and Methods

This scoping review was conducted to identify and describe critically-aligned scholarship in the disciplines of kinesiology and exercise science. The literature search was conducted to identify relevant articles that incorporated a critically-aligned approach. The following four databases were searched: PsycINFO, Medline, Embase, and SportDiscus, using the search terms “critical” or “communication” or “cultur*” or “race” or “racial*” or “racis*” or “gender” or “indigen*” or “ethnicit*” or “inequalit*” or “inequit*”. The search in the databases was limited to the following journals: *Medicine and Science in Sports and Exercise*, *European Journal of Sport Science*, *Journal of Science and Medicine in Sport*, *Sports Medicine*, *American Journal of Sports Medicine*, and *International Journal of Behavioral Nutrition and Physical Activity*. To ensure uniformity in our approach, we followed the six-stage framework of scoping review proposed by Arksey and O’Malley (10) presented in Table one. Finally, the scoping review was pre-registered with the Open Science Foundation at <https://osf.io/65mru>.

Inclusion Criteria

We conducted a scoping review of articles in the kinesiology and sports science literature that took a critically-aligned approach which we defined via subject population, method, and/or theoretical framework. To fulfil the subject population criteria, articles needed to align with the PROGRESS framework which was validated to identify demographic-based equity criteria in human subjects research (11). For critical method and/or theoretical framework, this meant scholarship that identifies non-individual level factors that impact health outcomes, or what Dutta-Bergman refers to as “structures and basic capabilities” (10 p114). In addition, this scholarship challenges structural inequalities, as well as normative theoretical assumptions, methods, and subjects (13,14)

To provide as broad of a scope of the literature as possible, we included papers that fulfilled some, if not all, of the above criteria for critical scholarship, hence our use of the term critically-aligned. Furthermore, the literature search for this review was not limited to works that were self-described as critical. This not only helped expand our sample, but aligned with our contention that self-identification is not a necessary precondition for conducting critical scholarship.

Additionally, we selected the timeframe following the identification of a “critical turn” in health communication (15). This point was preceded by critical turns in fields such as education (16), intercultural communication (17) as well as social science research more generally (18). In our attempt

to better understand and facilitate communication between critical and post-positivist scholars, we wanted to see if there was a similar critical turn after 2010 in the disciplines of kinesiology and sports science. From this basis, we selected critically-aligned articles from 2010 until 2022.

Screening and Selection

The details of the search and screening process are in figure one. The literature search identified 5,666 articles, including 3330 unique articles after removing duplicates. After the title and abstract screening using Rayyan, an assistive review screening software, the dataset was reduced to 357 articles by the first two authors. After multiple deliberative discussions, including a tie-breaking round by the third author, seventy-six articles were included in the final dataset according to the inclusion criteria listed above. It is important to note that fourteen of the articles included in the review were extended abstracts. After consulting an expert panel of two senior professors (one in sports science, and the other in health communication), these abstracts were included to demonstrate the breadth of extant research but were not included in RQ2 due to the inability to fully assess the methods and framework of the paper.

Table 1. Search method, following the six-stage framework outlined by Arksey and O’Malley (2005)

Stage 1: Identifying the research question	The main research questions of this review are “Who is being studied in critically-aligned kinesiology and sports science research?” and “How is critically-aligned kinesiology and sports science research conducted?” The research questions were based on a hypothesis that kinesiology and sports science are limited in their application of critically-aligned research.
Stage 2: Identifying relevant studies	An electronic database search was conducted on the databases of PsycINFO, Medline, Embase, and SPORTDiscus with the assistance of a university librarian. The literature search was focused on six peer-reviewed journals: American Journal of Sports Medicine, European Journal of Sport Science, International Journal of Behavioral Nutrition and Physical Activity, Journal of Science and

	Medicine in Sport, Medicine & Science in Sports & Exercise, and Sports Medicine. In all of the journals, the key words were: critical, communication* cultur*, race*, gender*, indigen*, ethnicit*, inequalit*, inequit*. These terms were informed by the PROGRESS framework (11)
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Stage 3: Study selection	Following the call for a critical turn in health communication, the time frame chosen was from January 1, 2010 – August 23, 2022 (15) (Dutta, 2010). To set up the inclusion criteria, an abstract screening criterion was developed based on the understanding of the literature. The main focus of the criteria was whether the conceptualization of body or health was at the level of the group, whether the methods used were critical, qualitative, or community-based, and if there was any advocacy for critical or communal interventions.
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Stage 4: Interpreting and synthesizing the data	The full text of the included articles were carefully read by the authors. The demographic characteristics of the data were synthesized as themes and the major frameworks were identified.
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Stage 5: Summarising and reporting the results	The findings were organized and synthesized to offer an overview. The analysis identified significant themes in the literature and potential gaps that provide a basis for future research. These findings are presented below.
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Stage 6: Consultation (optional)	Consultation was conducted with an expert panel of senior professors from relevant disciplines. Additionally, this paper forms the basis of an ongoing research project on the topic of critical health and fitness studies that involves various stakeholders, for whom the work will be summarized.
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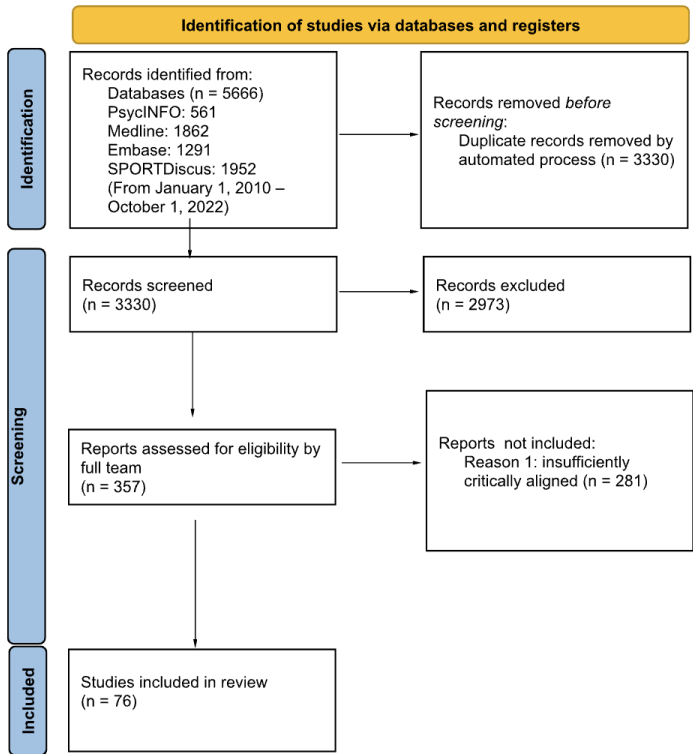


Figure 1. Prisma Flow Diagram of the selection process

Results

First, according to RQ1, “Who is being studied in critically-aligned research,” four demographic themes emerged: Geographic area, gender, race/ethnicity/indigeneity, and inequality/inequity. The findings of RQ2, “How is critically-aligned kinesiology and sports science research conducted?,” identified three dominant theoretical and conceptual frameworks: ecological, socio-economic, and cultural. Some frameworks had strong conceptual homogeneity, such as the ecological framework, while others were quite heterogeneous, such as the cultural framework. Articles varied in their singular or overlapping use of frameworks.

Who is being studied in critically-aligned research?

Diversity Categories

This scoping review identifies the diverse demographics present within the disciplines of kinesiology and sports science and emphasizes the extent to which critical communication impacts how these categories are conceptualized and operationalized. The first category entails the geographic region in which the research was conducted. The second entails how participants were constructed in terms of gender. The third category involves how racial and ethnic categories were employed, with an emphasis on how indigenous people were researched. Finally, the operationalization of inequality and inequity as (often conflated) variables was prominent among the articles selected.

Geographic Area

Unsurprisingly, the majority of the articles in the review conducted empirical research in countries in the so-called “Global North” (**i.e. countries that are considered developed by sociopolitical and economic standards by the UN**)(19). Most of the empirical studies performed took place in the United States, with other countries being the United Kingdom, Australia, and other countries in Europe. This is likely due to the geographic location of the journals that were identified because of their prominence in the field, as well as the institutional location of the authors that are typically published in those journals. One caveat is that six articles were published outside of the Global North: two in Latin America/The Caribbean (20,21), two in Asia (22,23), one in Africa (24), and a sixth that was an international study that took place in Latin America, Asia, and Africa (25).

Gender

In the dataset, gender as a salient theme was quite well represented. Fifteen articles thematized women as being specifically marginalized in their social contexts, as well as interrogating the structural issues for these power imbalances (20,21,23,26–37). Within this category, the articles highlighted women as an exceptional category within sports science as a whole, suggesting the need for more female scholars in senior positions, as well as more analysis of women in elite sports.

While most articles featured a mixed-gender dataset, four articles presented men as the center of analysis in specific contexts (38–41). This strand of research within this dataset suggested men have special needs regarding holistic notions of health, particularly mental health. Finally, beyond a single literature review (42) and two extended abstracts (43,44), there were no articles that acknowledged the existence of transgender or non-binary people.

Race/Ethnicity/Indigeneity

Race, ethnicity, nationality, and migration status were thematized in nineteen articles. However, there was significant analytical slippage in how these terms were employed. For example, the studies that took place in the United States divided research subjects into the categories White, Black, and occasionally Hispanic and/or Latino, with little consideration to the difference between people of Latin American that are phenotypically White but in some contexts perceived as racially Other. Ultimately, this sample demonstrated a common theme developed in other social science literature: racial and ethnic categories are complex, necessary, and not without nuance (45).

Additionally, one particular trend that emerged was the thematization of indigenous groups. Three articles specifically highlighted indigenous groups as worthy of examination (46–48). Notably, all of the articles that thematized indigeneity took place in Australia or New Zealand. These studies highlighted community aspects of collective health and thematized the importance of culturally-centered interventions.

Inequality and Inequity

Inequality and inequity emerged as popular themes. Almost exclusively, inequality and inequity were used explicitly in socio-economic terms. Ten articles demonstrate this trend; these articles explicitly use the term socio-economic inequality to describe differences within their study respondents (2,35–37,39,49–53). Additionally, income- or income-related inequality was used in five articles (29,54–57). Finally, two articles referred to disadvantaged or socially disadvantaged groups (58,59).

The terms inequality and inequity were often used interchangeably in the dataset. This indicates a potentially troubling trend in the literature, in which authors do not acknowledge the structural aspects of equity, in favor of the less incisive (and less structurally difficult) formulation of equality. While many authors note the importance of equitable outcomes, the findings of this review indicate a misapplication of the terminology. For example, one article arguing against equity understood the concept as equality of outcome (60).

How is critically-aligned research being conducted?

Methods

Our sample was divided into twenty-four qualitative papers (21,22,24,25,28,31,32,35,39,40,44,46,49,55,56,58,59,61–70), twenty-two quantitative papers (2,20,23,26,29,36,37,41,50,51,53,54,57,71–80), six mixed-methods papers (34,38,59,81–83), and nineteen papers that were either reviews, commentary, or theory (27,30,33,42,47,52,60,84–95). The most popular qualitative method was semi-structured interviews, followed by focus groups. For quantitative methods, surveys were the most popular, followed by experiments. In our fourth category,

the majority of papers were reviews of literature. This reflects a valuable degree of diversity in methodological approaches to critically-aligned research.

Theoretical and Conceptual Frameworks

The articles in our sample relied on three main theoretical and conceptual frameworks: ecological, socio-economic, and cultural. These frameworks were not mutually exclusive, and many articles relied on more than one. As theoretical and conceptual frameworks are not often fully developed in extended abstracts, the analysis in this section only pertains to the full articles in our sample. Not all articles in the sample were coded as employing an explicit theoretical and conceptual framework. In the cases where no framework was coded, scholars relied primarily on the findings of empirical studies in their introduction and literature review sections. Ecology, socio-economics, and culture were sometimes present in articles without a designated framework, but in these cases, their presence was not justified by an explicit theoretical or conceptual framework.

Ecology Framework

Twenty-three articles in our sample considered environmental context a contributing factor to physical health and function (35,36,49,52,54–57,61,66,67,71–76,80,82,84,86–88). Over half of these articles stated an explicit use of an ecological or socio-ecological model. Despite the difference in language, these articles took similar approaches to the definition of an environment at the level of infrastructure and social perception. These articles were also aligned in their approach toward improving health outcomes, which focused either on changing environments or community-level interventions that would impact an individual's relationship to their environment. The popularity of this approach is in line with Spencer et al. (33), who conducted a scoping review on gender norms, nutrition, and physical activity. However, while their review found only one quantitative paper using the socio-ecological model, our review found seven quantitative papers relying on an ecological or socio-ecological model (36,54,57,71–73,76).

Socio-Economic Framework

Thirty-seven articles considered socio-economic factors as contributing to physical health and function (2,21,26,34–37,49–57,59,61–64,71,73–80,82,84,85,88,93–95). Fifteen used the terminology “socio-economic status” (2,26,34,35,37,54,55,63,64,67,79,82,85,88,95), seven used “socio-economic position” (51–53,57,77,78,80), four used “socio-economically disadvantaged” (35,49,59,71), one used “low-income” without using “socio-economic” (56), one used “socio-economic group” (62), and one used socio-economic environment” (50). As with the ecological and environmental models, the socio-economic model emphasized social determinants of health that moved beyond an exclusive responsibility on the individual to improve health outcomes.

Cultural Framework

Nineteen articles considered culture as contributing to physical health and function (21,33–35,49,51,54–56,59,61–65,72,81,84,85). Among all of the theoretical models present, culture had the widest variety of approaches. The majority of these articles used specific theoretical approaches which included: Social cohesion, Social constructivism, Supersetting, PAR (participatory action research), CALD (culturally and linguistically diverse), Cultural capital, Sociocultural norms, Sociocultural division, Cultural adaptation, Acculturation, Social Marketing, and CBPR (community-based participatory research). Methodologically, only five quantitative research articles relied on a cultural framework (34,51,54,59,81), two of which were mixed-methods articles (34,59).

Discussion

Our review identified seventy-six critically-aligned articles in the top journals for kinesiology and sports science between 2010–2022. These articles were analyzed based on their subjects, methods, and conceptual frameworks.

Demographic Considerations

Results of our first research question regarding who is being studied in critically-aligned kinesiology and sports science research reveal a prevalence of countries in the Global North, a distinct emphasis on women, an ambiguous approach to race and ethnicity, and a somewhat unclear conceptualization of socioeconomic inequality. For the first demographic trend, it is unremarkable that studies in the US, the UK, Europe, and Australia form the majority of the dataset, as these places are viewed as “knowledge hubs” in the global academic system. Furthermore, the geographic locations of the journals that were identified as prominent in the field are also found in these regions. This concentration is a structural result of a self-perpetuating system in which academics are concentrated around these nodes of knowledge production. One encouraging counter-trend was the presence of studies that were conducted specifically with this imbalance in mind; a small portion of the articles was conducted in the Global South, illuminating a potentially fruitful inclusion of alternative perspectives.

The second demographic trend featured an emphasis on women as an under-represented group. This research highlights the inequalities between both the epistemological focus of research in sports science, and the ontological realities caused by a lack of female sports scientists. The inclusion of female research participants and scholars widens the scope of the literature, more accurately reflecting a world that is comprised of many genders.

However, research regarding gender did feature a notable absence of acknowledgment of transgender and/or non-binary people. This reinforces notions of gender as a binary, potentially impoverishing research. While it is important to acknowledge the barriers that cisgender women face

in health, it does not take away from the fact that, in terms of gender, those outside of a cisgender normative framework exist and are worthy of acknowledgment.

The third demographic trend illustrates the analysis of race and/or ethnicity as a factor in sports science and kinesiology research. Here, there was a notable inequality in how the terms were applied. Race and ethnicity, while interwoven, are distinct, contextual, and nuanced analytical categories (96). Contextually relevant definitions are a key driving factor in the appropriate operationalization of race/ethnicity as critical variables. For example, throughout the dataset, articles ranged on including Hispanic/Latino populations in either ethnic OR racial categories, resulting in an analytical slippage. Additionally, in the rare instances in which phenotypical differences were thematized in research conducted in Europe, race as an analytical category was completely absent. The debates on the complexities of race and ethnicity are far too extensive to elaborate here (96–98) but this trend in the data illustrates that kinesiology and sports sciences would benefit from a clearer theoretical framework of race and ethnicity from which to depart.

Finally, the fourth demographic trend demonstrates inconsistency around notions of socioeconomic inequality. The articles featured the usage of the terms “inequity” and “inequality” interchangeably, despite long-standing discussions of the difference between equity and equality in the literature (99,100). The theoretical distinction between the two was flattened to support a more general appreciation of inequality. The one article that referenced inequity was highly critical of the term. This article is indicative of a greater trend in health and fitness literature of the conflation between equity of opportunity and equality of outcome (101). The focus on equality of outcome could potentially indicate an ideological investment in the structures that currently facilitate inequality, resulting in a self-perpetuating cycle. Scholars interested in integrating criticality in their work can and should reflect on these ideological investments.

Theoretical Frameworks

This scoping review suggests a diversity of methodological and theoretical approaches within critically-aligned kinesiology and sports science scholarship. Despite suggestions that most critical scholarship is qualitative or contributes primarily to theory building, our findings demonstrate that researchers have also successfully combined critical theoretical frameworks with quantitative methods. We see this as a positive development in kinesiology and sports science as quantitative methods are particularly valuable for developing ecological and socio-economic frameworks. We find the number of qualitative papers equally valuable as they offer a much-needed interpretive perspective to disciplines primarily known for their quantitative and post-positivist approaches.

The ecological model was the most consistent approach in articles that considered environmental factors, suggesting a strong influence in the disciplines more broadly. This might be due to the established theoretical impact of the ecological model in the health sciences as the majority of the articles relying on an ecological framework cited scholarship by the same author, James Sallis (102).

The socio-economic model was quite varied in the terms that were used, but the goals behind the terms were quite similar. For example, the difference between the use of socioeconomic status (SES) and socioeconomic position (SEP) seemed to have more to do with the literature on which authors relied rather than significant theoretical differences.

The cultural framework was the most diverse in its theoretical and conceptual origins and was found primarily in articles using qualitative methods. This diversity may be due to qualitative research being less established in kinesiology and sports science than quantitative research, producing a lack of consensus regarding theoretical and conceptual frameworks. It is also possible that this diversity in approach was due to the wide variety of theoretical and conceptual approaches to culture from interpretive and critical scholarship.

Limitations

We acknowledge the limitations of assessing a broad and heterogeneous collection of articles that come from multiple disciplines. Our search method excluded critically-aligned articles that did not use our search terms and were published before 2010. Our search terms were built from the PROGRESS criteria and the critical health communication field. It is possible that different search terms based on a different body of literature would have yielded different results. Additionally, we selected articles published in the “top” journals in kinesiology and sports science research which also meant that we only searched in English-language journals. As noted in the findings for geographic demographics, the tendency to center voices in the Global North is a noted limitation of academic research as a whole, not just these disciplines. Our research, however, suggests a basis for developing an alternative perspective. Lastly, given the nature of scoping reviews, the quality of the included articles was not assessed. We see these limitations as both inherent to the method of scoping reviews and as a pragmatic response to the size of our team and the qualitative component of assessing an article as critically-aligned. Despite these limitations, we feel confident that our research demonstrates a clear trend in critically-aligned research within the disciplines of kinesiology and sports science.

Conclusion

With calls from both inside and outside kinesiology and sports science to consider more interdisciplinary and critical approaches, this scoping review sought to understand the current state of critically-aligned research within these disciplines. We were primarily interested in who was being studied and how research was being conducted. Our findings suggest a growing interest in considering diverse populations in kinesiology and sports science that needs careful consideration regarding how demographic variables are operationalized. The findings also indicate that there is significant methodological diversity within the critically-aligned research and that this research frequently

coalesces around three theoretical and conceptual frameworks: ecological, socio-economic, and cultural.

Critically-aligned approaches remain unevenly employed in sports science and kinesiology research; only seventy-six out of an initial pool of 5666 met our criteria. More systematic engagement with the relationship between individuals and contexts is necessary to effectively implement critical research. As researchers, we must be cognizant of the implications our choices have on the disciplines and fields in which we publish. Understanding the characteristics of our research participants in all their complexities will lead to a proliferation of more accurate research. Furthermore, consistency in terminology when implementing theoretical frameworks must be considered a standard in all forms of research. We hope that this scoping review can help bridge the gap between the fields of critical health communication and critical sports scholarship and the disciplines of kinesiology and sports science for the advancement of all groups. As research institutions, governments, and other organizations interested in sports science and kinesiology call for more and more ground-breaking research, we must ensure that critical research is at the cutting edge.

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Declaration of Interest Statement

Ethics approval and consent to participate

Not Applicable

Consent for publication

Not Applicable

Availability of data and materials

All data generated or analyzed during this study are included in this published article and its reference list.

Competing interests

The authors declare that they have no competing interests

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