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Factors affecting the participation of young adults with special sporting needs in physical activity: A systematic literature review

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Abstract: The purpose of this review is to systematically examine the factors that promote/hinder physical activity (PA) in people with "special physical activity needs". A systematic review of qualitative research on the PA perspectives of people aged 18-60 years with "special physical activity needs" was conducted. Two databases were searched to identify published studies from 2000 to 2022. A thematic synthesis was used to analyze the data. Finally, a total of 347 factors were extracted from 21 studies included, identifying three themes: "Intrapersonal", "Interpersonal", and "Physical". Integrating the themes into a theoretical model, it was found that the "core layers" (Self-perception, Self-actualization, Autonomy), located in the "Intrapersonal" theme, were the most frequent and most associated factors, and they were the key factors in promoting the participation of special populations in PA.

1. Introduction

I recognized the benefits of regular physical activity worldwide[1][2]. Someone well documented that physically active people are more likely to cope with stress and pain, have fewer illnesses, better relationships and a higher quality of life than inactive people[3]. The world is advocating for people to be active in sport[4]. In 2020, the World Health Organization updated the WHO recommendations issued in 2010, not only reaffirming the benefits of PA but also making specific recommendations for the first time for specific populations, including pregnant and postpartum women and people with chronic illnesses or disabilities, For adults aged 18-64 (including those with disabilities), "all adults should engage in regular PA "[5]. But the reality is that people with disabilities are 16-62% less likely to meet PA guidelines than people without disabilities, and the risk of serious health problems associated with inactivity is even greater than in the general population[6]. In the United States, 38.9% of people with disabilities are obese, compared to 26.1% of their non-disabled peers over the age of 18("Centers for Disease Control and Prevention. Disability Impacts All of Us."). The quantity and quality of research on PA in this population also

lags far behind that of PA in the general population[6].

2. Purpose

This study had two objectives: (a) to identify the factors that promote and/or hinder PA in people with special sporting needs; (b) to integrate the influencing factors into a theoretical model and to analyze the links between the themes (factors). This comprehensive report will serve as a reference for researchers, practitioners, and educators to not only identify the facilitating or hindering factors that influence PA participation in special populations, but also to link key factors and factors to develop intervention strategies.

3. Method

3.1. Search Strategy

The databases searched were PUBMED, WEB OF SCIENCE. The terms searched were divided into five categories: (a) the study population met the requirements of a "special sport needs population" (marked by "physical disability," "obesity," and other heterogeneity); (b) sport terms, including physical activity, exercise, and sports; (c) factors influencing participation in PA, including motivation, facilitation, and hindrance; (d) participants were at least 18 years old but no older than 60 years old, excluding include children, adolescents, and older adults; (e) article types were qualitative, including interviews, narratives, and rooted theory articles. Each article retrieved must contain at least one term index in each category (see Table 1 for search terms), with the search date set to 2000-present.

Table 1: Keyword search

Category	Search Terms
Physically disadvantaged	(Disability* OR Obesity* OR Injure* OR frailty* OR "Chronic Disease" OR "Disabled Persons")
Physical Activity	("physical activity" OR exercise* OR sport* OR "leisure activit*" OR fitness OR "Physical Education")
Factors	(Motivation*OR Factor OR influen* OR barrier*OR attitude OR interest*OR Feeling* OR intent* OR "behavioral intention*")
Young Adult	("Young Adult" OR Adults* OR young OR University* OR College)
Qualitative Research	(interview* OR qualitative OR "qualitative research" OR "semi-structured" OR "face-to-face" OR "Grounded theory")
Combination	1 and 2 and 3 and 4 and 5

3.2. Study Selection

The initial PUBMED, WEB OF SCIENCE search yielded 4795 articles and screened 1191 duplicates. Two researchers (XY ZD) independently screened titles and abstracts for inclusion and found 3328 articles with titles that were not relevant to the research question and 179 papers with unclear information from the abstract screening, leaving 97 papers for full-text reading, with 14 articles met the inclusion criteria. To ensure the comprehensiveness of the search the first author conducted a manual search of the reference list of included studies, 7 articles were retrieved, and a total of 21 articles were finally identified (Figure 1). Full-text articles were reviewed using standardized inclusion criteria: (a) review of the study population for inclusion of too many specific groups with the same particular heterogeneity (if too much of the same heterogeneity is included one will be screened by a third researcher (SZ) based on the content of the article); (b) qualitative data collection as well as analysis methods; (c) research objectives related to barriers and/or

facilitators based on PA (no particular barriers and/or facilitators, no major role of PA is highlighted); and (e) provision of full text.

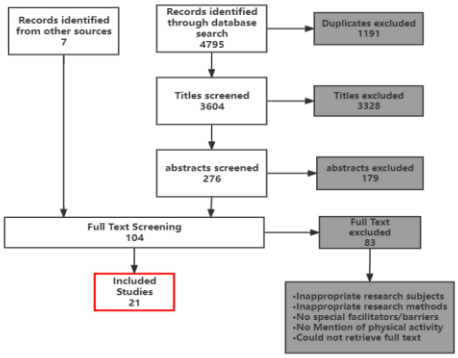

Figure 1: Systematic literature search and exclusion of papers.

3.3. Data synthesis and analysis

Each study that met the inclusion criteria was analyzed and summarized in a standardized form, including the following categories:(a) author and year of publication; (b) study purpose; (c) population addressed ("Heterogeneity" category; characteristics); and (d) design of the study. This study used a thematic synthesis to synthesize the findings[7], Specific factors for each article were read multiple times and analyzed article-by-article by the researcher (XY) to summarize the main barriers and facilitators that identified the article's impact on PA.Two researchers (XY ZD) then coded each of the factors, grouping similar factors and creating new themes to summarize them. Two researchers reread all included studies to ensure that relevant factors were captured and appropriately incorporated into the initial themes and subthemes. All authors were involved in the retrospective analysis as well as the discussion of themes to ensure that there was an interaction between themes. We also conducted a stratified analysis, dividing the themes into three levels, mapping relationships based on correlations between elements, and having a third-party researcher (SZ) review the map for its ability to clearly reflect specific factors and associations between factors.

3.4. Quality assessment

Some auditors use standardized or validated assessment tools in their assessments[8]There is also another group of reviewers who believe that there is not enough consensus today on the terminology of the types of comments to be generated, and that the overlapping nature of the different scopes of comments may limit any such attempts[9]. Garside suggests that papers in qualitative systematic reviews should be evaluated based on the criteria of trustworthiness (epistemological aspects), theoretical considerations, and practical (technical) considerations[10]. This review will evaluate each article against these three elements to assess their relevance to this review and their contribution to the theoretical or practical understanding of factors relevant to PA.

4. Results

The 21 articles cover "spinal cord injury" (SCI), "lower extremity amputation" (LEA), "visual impairment "(VI), "VI & obesity", "rheumatoid arthritis" (RA), "psoriasis ", "obesity", "Autism spectrum disorder" (ASD), "Individuals with intellectual disabilities " (ID), "Type 1 diabetes" (TIDM), "multiple sclerosis" (MS) "HIV & multi-morbidity." and 13 other heterogeneous types.

4.1. Intrapersonal level

All concepts in this domain are mainly related to the physical "heterogeneity" of special groups. This domain deals with their perceptions of PA and how they see themselves, how they deal with their specificity and participation in PA.

4.1.1. Physical challenge

The term "physical challenge" refers to the physical heterogeneity that prevents the performance of PA. For example, arthritis, joint pain, stiffness, and weakness during PA in overweight patients as well as SCI patients, participants identified "having RA, SCI, and being overweight"[11][12][13][14]as well as chronic disease complications from physical heterogeneity as major barriers to PA[15][16][17].Physical challenges associated with heterogeneity are mostly considered to be externally visible markers of the disease.

4.1.2. Self-perception

"Self-perception" here refers to a person's feelings and self-perceptions about participating in PA. Positive perceptions and feelings about PA were perceived to contribute to participants' participation in PA, while those who discussed negative perceptions commented on how these feelings and beliefs limited their PA. Differences in self-awareness, appearance, and body size have emerged in studies of specific groups with disabilities and other chronic health conditions[18][19][13], and have been identified as producing negative emotions toward participation in PA[20][21].

4.1.3. Self-actualization

Maslow described self-actualization in his 1954 hierarchical motivation theory as individuals' expression of their full potential and desire for self-fulfillment. His growth-focused actualization model emphasized individual strengths towards a growth-oriented approach rather than a pathology-oriented approach focused on individuals' deficiencies[22]. Self-actualization" in this context refers to the ability to find one's way forward, including self-acceptance, self-esteem, and self-worth. If there is a lack of acceptance of the heterogeneity of one's body, one chooses to avoid the appropriate PA[23]. But special groups that accept themselves say they tend to promote PA by actively setting exercise goals[11][23][24]

4.1.4. Autonomy

"Autonomy" refers to the will and the experience of having contro[25]. This refers to whether people with physical "heterogeneity" have the opportunity and experience to participate in PA normally or have the power to choose PA on their own. More than 12 articles mentioned that they had bad sports experiences.

In other texts, it is also mentioned that a participant tried various sports or volunteered in sports programs, attended sports camps, made appropriate adjustments to skills and thus increased autonomy to participate in PA.

4.2. Interpersonal level

A total of four key target factors (parents/primary caregivers, peers, teachers, others) emerged from the data." others" (Associations, public, managers, others in the gym) are discussed together because there are fewer factors corresponding to each goal. Mary Ann Devine[25].The study emerged with a theme of "physical activity and disability culture", The essence of this theme was

dichotomous in that, on one end, participants experienced a culture where PA was discouraged or not expected of them and, on the other end, engagement was viewed as heroic.

4.2.1. Parents and primary caregivers

Many participants indicated that family and primary caregiver support was an important factor influencing the participation of "special groups" in PA[11][23][26][27][28][29], And this support assists PA in different ways, such as encouragement and facilitation of PA by the PC (primary caregiver) [26] or effective support in terms of family resources to be able to be around to help participants with daily life or other activities[11][29][30]. Finally, some of the participants also mentioned that the lack of knowledge of health care professionals regarding PA for health may also influence the focus on PA as a key treatment method[12].

4.2.2. Peer/Classmate

Evidence suggests that positive experiences with peers and friends can provide opportunities for young people to get physically active[31]. Many participants described how PA created a space for them to interact with others and how peers were perceived as a source of emotional and instrumental support.

4.2.3. Physical Education Teacher / Educators

Support from stakeholders such as teachers and coaches can increase participants' self-confidence to participate in sports activities[26]. If faculty members lack adaptive knowledge [25], experiences, and the ability to adapt course activities to meet the functional needs of special groups, they are not only not conducive to creating an autonomous learning environment, but also discourage students from participating in PA[4].

4.2.4. Other

"Other" indicates other types of people besides the key ones mentioned above. The focus is on people in Organization/ Associations/ Community situations, such as fitness professionals, association members, equipment maintenance personnel, managers, and any other strangers you may encounter in the community. Their support and perceptions are also factors that cannot be ignored when it comes to the participation of "special groups" in PA. The public's lack of knowledge about PA can also lead to one-sided perceptions about the participation of "special groups" in PA, and participants who value the views of others often perceive the public's views as a barrier[12].

4.3. Physical level

4.3.1. Information

"Information" refers to the lack of appropriate medical advice about PA, information about the benefits of doing PA, limited information about how to do PA activities, and lack of access to information about PA, which summarizes the participants' need and desire for information about PA. Concerns about the lack of clarity of PA treatment information among health care professionals resulting in the inability to incorporate key PA treatments were raised in the "Parents and primary caregivers" theme[11][32]. Similarly, the lack of professionals to provide information about the frequency, intensity type and duration of PA or how to use the equipment can prevent "special groups" from participating in PA[33]

4.3.2. Physical environment

Common themes in the final study were aspects of the physical environment that were barriers to participation in PA. These included lack of availability and accessibility of personal and public resources, location, physical configuration of buildings, transportation, sports equipment, and other factors. "Geographical/location" was used as a facilitator in outdoor activities (e.g., social or gym), whereas it was considered negative in hospitals or remote rural areas. Weather and traffic were also recognized as one of the factors[27][32][33].

4.3.3. Economic and Policy

Policy and economic factors mainly refer to the community or school's implementation plan for PA. Policy, age restrictions prevented them from choosing organized PA and recreational activities due to ID adulthood, and their caregivers highlighted concerns about the inappropriateness of some policies for age-based programs[29]. And the burgeoning Special Olympics program provides year-round activities for people with intellectual disabilities, which has become a key factor in PA for this population[34].

5. Discussion

This study coded these factors that influence particular groups to engage in PA to produce three main themes, and it was found that facilitating or hindering factors are not inherent to that heterogeneous type, they are dynamic and contingent, the same factors may produce opposites in different subjects or settings, different subjects produce the same factors, and these factors are interrelated. A model is a generalized and simplified representation that integrates a large amount of information. In view of this, the results of the study are synthesized into a theoretical model (see Figure 2)

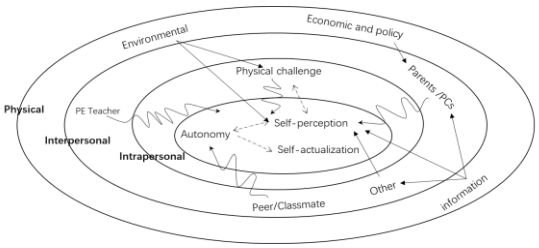

Figure 2: Theoretical model describing the relations between found concepts, based on the synthesis of the findings of the primary studies.

A model with three concentric circles, each representing a different layer of influence on physical activity (PA). These layers are described as "intrapersonal," "interpersonal," and "physical" and are arranged from the innermost (proximal) to the outermost (distal). The text emphasizes the interconnectedness and interplay between these layers in shaping an individual's physical activity behavior.

6. Study limitations

It is important to acknowledge some limitations of our review. First, our definition of "special groups" was intended to facilitate the literature search and to better describe this population, but it is not recognized by other fields and its scope may require more reliable theoretical support. Second, in our comprehensive study, although our search strategy covered many common special categories, we did not conduct an exhaustive review of all possible special categories. Additional studies of

different types of special populations were synthesized, with commonality in the influences of different populations.

7. Conclusion

This study compiled a list of factors relevant to special groups and integrated these factors using a model. Based on our comprehensive analysis, the following recommendations/priorities are proposed.

First, it was observed that the core layers of "self-perception", "autonomy" and "self-actualization" are key factors influencing participation in PA, and therefore these themes should be prioritized as targets for change when controlling for PA interventions for specific groups.

Second, because people with special physical needs tend to be more sedentary, obese, or chronically ill due to their "physical challenges," participation in PA is influenced not only by physical specificity but also by a variety of contingent specificity factors, requiring educators and staff to look beyond a single special need and bring an intersectional mindset that addresses the complex interrelationships between identities.

Finally, educators or staff should be aware that the level of influence that facilitates and hinders varies by specific type and by their background as well as experience, and that understanding their focus and level of influence is key to "targeting" the right questions.

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