

Enhancing inclusive physical activity for students with disabilities: Patterns and opportunities

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Citation: Mawena, J., & Sorkpor, R. S. (2024). Enhancing inclusive physical activity for students with disabilities: Patterns and opportunities. *Aquademia*, 8(1), ep24002. <https://doi.org/10.29333/aquademia/14430>

ARTICLE INFO

Received: 15 Nov. 2023

Accepted: 24 Mar. 2024

ABSTRACT

Physical activities and sports (PAS) participation primarily aim to contribute to enhancing the basic motor skills of students and their physical competencies to directly promote the behavioral, cognitive, and social skills of students to help enhance their future physical activity patterns. Regular physical activity participation among children with disabilities greatly fosters independence, coping abilities, competitiveness, and teamwork. Although active physical activities are beneficial, children with disabilities' participation in physical activities has been reported to be little as a result of students' disabilities and their lack of opportunities for participation. However, literature is yet to report on the types of PAS regularly participated in by students with disabilities, how frequently they engage in such activities, and how long a time they spend during their participation. This current study employed an explanatory sequential mixed method design that helped in the collection of both quantitative data (questionnaire) and qualitative data (interviews) from 194 (comprising 68.0% male and 32.0% female) students with disabilities and three teachers on types of PAS students with disabilities mostly participate in, how frequent and how long a time they spend during PAS participation. The findings of this study revealed students very often participate in physical activities in different activities for a long period as long as activities are made available, and opportunities provided. It is, therefore, recommended that not only should disability-friendly physical activities and sporting events be organized frequently and encouraged among students in special schools, but stakeholders should make opportunities available to students to participate.

Keywords: physical education, physical activity and sports, disability

INTRODUCTION

Although active physical activities are beneficial, children with disabilities' participation in physical activities has been reported to be little as a result of students' disabilities and their lack of opportunities for participation. A common misconception seems to suggest that students with disabilities are usually prone to further damage to their difficult physical conditions whenever they engage in rigorous physical activities, and this has become one of the common factors that prevent them from engaging in physical activities and sports (PAS) (American Academy of Pediatrics, 2006).

This misconception has become an attitudinal hindrance from the perspectives of individual (those with disabilities), family members and the society to students with disabilities participation in PAS. This, therefore, calls for immediate attention to help integrate students and individuals of all capabilities into sporting activities and recreation to promote inclusiveness.

According to Piff et al. (2018) and the World Health Organization (WHO, 2016), students' motor, social, and cognitive skills are quickly developed through participation in sporting activities. However, existing literature available is yet to report on the extent to which students with different disabilities participate in PAS and what kind of sporting activities they participate in, when a conducive environment is created and disability-user-friendly sporting equipment for sports participation are made available.

This study tends to examine the types of physical activities participated in by students with disabilities; how frequently students engage in these physical activities and how long (duration) of a time they participate.

LITERATURE REVIEW

PAS participation have greater potential to improve the body functioning and prevent the possible risk of further health conditions of its participants (US Department of Health and Human Services, 2010). According to O'Brien et al. (2016),

participation in PAS primarily aims to contribute to enhancing the basic motor skills of students and their physical competencies to directly promote the behavioral, cognitive, and social skills of students to help enhance their future physical activity patterns (de Bruijn et al., 2022). Similarly, regular physical activity participation among children with disabilities greatly fosters independence, coping abilities, competitiveness, and teamwork (Harlow et al., 2020), and students also experience a greater sense of coherence (Cseplö et al., 2022). Although PAS are basic human right and a tool that ought to be exercised by all children at school-going age for effective socialization to help place everyone including those with disabilities on equal social footing (Liu & Lachman, 2021) there are contradictory findings about students with disabilities participation in physical activities. The findings of these studies have on the majority side revealed an insufficient (Buljevac et al., 2011) if not rare (Martin Ginis et al., 2016) participation in sporting and physical activities among students with disabilities, despite their positive perception of PAS participation being beneficial to their health and well-being (Mawena & Sorkpor, 2023). Smith and Wightman (2021) asserted that very few people with disabilities decide to be physically active, perhaps due to social exclusion (Abbasi et al., 2020; Carty et al., 2021).

There are assumptions that daily physical inactiveness of students with disabilities are much higher than children without disabilities (Martin Ginis et al., 2016) as this could be due to negative societal discrimination and social segregation towards students with disabilities. These unacceptable perceptions and attitudes of the societies greatly contribute to student's unwillingness to participate in PAS, which in a larger extent render them with limited opportunities for participation leading to low performance when even provided the opportunities for participation (Piff et al., 2018). The results of these assumptions and societal attitudes should not in any way or form be accepted especially as physical education educators and researchers in this era of the 21st century, where the world has become a global village. Societal discrimination and social segregation of students with disabilities participation in PAS should be aborted completely and be replaced with social inclusiveness to help facilitate their (students with disabilities) physical body functioning for better healthy living, develop self-identity, foster meaningful life (Kartini & Aprilia, 2021) and psychological well-being (Van den Broeck et al., 2021).

A study by Buljevac et al. (2011) revealed societies perception and posture towards individuals with disabilities make it difficult for them to readily integrate into the larger community as though they (individuals with disability) are either ill or the cause of their disabilities. Disability as a condition of difficulties experienced by persons could happen to any member of the community be it gender (male and female), young and old, teachers and students. Even though level of participation in PAS by students with disabilities is low, males with disabilities mostly engage in PAS than females (Disabled World, 2016). In the light of this, study by Clemes et al. (2015) found physical inactiveness to be at the higher side more significantly among young individuals with disabilities, and this partly could be due to school- related sedentary behaviors. Based on this development, students with

disabilities find it difficult to integrate into the larger community (Aho et al., 2021) due to fear of neglect and segregation. However, the school environment, which should be the avenue for developing students self-development and improvements (Gullu, 2021) and for building students' competence (Rotolo et al., 2020) is to encourage and promote physical activeness rather encourages physical inactiveness due to the long periods of time spent in classrooms (Clemes et al., 2015).

Consequently, PAS is the only tool that can be used to modify and eliminate these negative societal mindset, feelings and attitudes towards people with disabilities (Abbasi et al., 2020). It was opined by Cairney et al. (2019) that continuous physical activities participation help improve learners learning abilities and their general health conditions for proper body functioning, and also well-coordinated PAS enhance social inclusion, character building and socialization (Dasso, 2019; Rotolo et al., 2020) among students with similar disabilities to facilitate interests in PAS participation. This indicates that when students with disabilities are encouraged to participate in PAS, not only will their physical well-being improve but also facilitate their academic performances. It is, therefore, important to support and encourage students to participate in PAS to enjoy its benefits.

Certain sustainable development goals can be met when people especially those with physical disabilities are encouraged to gradually engage in some essential PAS (WHO, 2016). Engagement in these PAS helps promote the physical conditions and body functioning of the participants without any adverse effects (Barbosa et al., 2020) on their health. According to Olin et al. (2017), involvement in moderate physical exercise help reduce certain disabilities such as difficulty in movement, frequent fatigue experienced in children suffering from autism and those with developmental disabilities.

Subsequently, severe obesity and sedentary lifestyles are less reported among adults than seen in young people (Pellegrini & Hesla, 2018), perhaps could be due to less PAS engaged in by young people than other adolescents (Moll, 2017). Pellegrini and Hesla (2018) asserted that the incidence of severe obesity and sedentary lifestyles are associated with diseases, and such could be prevented through frequent PAS participation. Benefits of PAS participation are enormous including reduction in cardiovascular diseases, prevention of diseases such as osteoporosis, diabetes (National Association for Sport and Physical Education [NASPE], 2004; US Department of Health and Human Services, 2002) and improvement in mental health (Ma et al., 2014). According to Center for Disease Control (CDC, 2002) and Hagger and Hamilton (2021), PAS participation has negative correlation with age, that is, PAS participation declines as one ages. Ma et al. (2014) found incidence of obesity to be much prevalent especially among children with disabilities with one of the major reasons been lack of PAS participation.

Currently, there are variety of PAS activities available and accessible to children with disabilities to be involved in (American Academy of Pediatrics, 2001), unfortunately, this study did not report details of what physical and sporting activities available and accessible to students with disabilities to participate in schools and how often (that is how frequent)

these students participate in these physical and sporting activities. We, therefore, seek to address the research gap that exist in the literature regarding PAS participation by students with disabilities. This study will help put the matter of whether students with disabilities participate in PAS (that is, what, and how frequently it takes to participate in PAS) and if not, what are the possible reasons for their non-participation to rest. Findings of this study will be very valuable as there is paucity of research undertaken in Ghana about students with different kinds of disabilities in PAS participation.

Children with different kinds of disabilities mostly find it very difficult to integrate into society, not alone to actively participate in different activities or to take part in physical activities that their abled peers participate in (Clemes et al., 2015). Unfortunately, findings of Augestad (2017) posited that children with disabilities are often regarded as ill or in need of constant care and are therefore not provided with equal opportunities to participate in sporting events in their societies as compared with their counterparts without disabilities. This, according to Chen et al. (2018), are due to lack of opportunities provided for students with disabilities to participate in these sporting activities. Chen et al. (2018) however, pointed out lack of disability-friendly special adaptive sporting aids as one of the major reasons behind little or no sporting and physical activities participation by students with disabilities. We want to speculate that these children with disabilities when given the opportunity with favorable conditions due to their physical limitations would participate in PAS so much to their capabilities.

According to Ghana's Persons with Disability Act, 2006, Act 715, the state is mandated for the establishment of special schools for children under school going-age with disabilities to attend such schools for free without any cost. Perhaps, this Disability Act 2006 is to help students who because of their disability cannot be enrolled in formal schools due to their physical conditions. It is also stipulated in the same Act mentioned that persons with disability shall not be deprived of the right to participate in social, political, economic, creative or recreational activities and any necessary sporting facilities and equipment that help promote and provide the conducive environment for persons with disability to participate in PAS to fully benefit from the school or institution to enhance their involvement or participation in those activities should be provided.

There is an indication that PAS participation are globally recognized due to well-structured organization of elite disability Sporting events under the doctrines of International organizations such as International Paralympic Committee, which develops policy and supervises the conduct of disabled sporting activities. Currently, there are four disability groups globally accepted under the direction of international sports organization for the disabled: Cerebral Palsy International Sports and Recreation Association, International Blind Sports Federation, International Federation for Sport for Persons with an Intellectual Disability, and International Wheelchair and Amputee Federation. In the light of this, there is a need to encourage and promote PAS participation among school children, especially those with disabilities.

Furthermore, benefits of PAS participation have been underscored, which extends to the development of cognitive

and brains of children at the early stages (Basch, 2011), unfortunately, findings of a study by Carlon et al. (2013) found numerous students with various disabilities such as those with visual or intellectual disabilities are either excluded in PAS participation or least participate in PAS than that of their counterparts without disabilities. In the light of all these benefits students living with disabilities stand to gain in PAS participation, it is therefore, reasonable and essential that maximum sports participation are encouraged at the basic schools especially among students with disabilities to help them integrate into the community to experience strong sense of coherence and inclusiveness rather than societal discrimination and social segregation. For the purpose of this study, operational definitions for participation is any active engagement such as games and athletics; sports is any formal competitive physical activities usually involved in by participants (students), and physical activities as any movements made by the body mostly produced by skeletal muscles that require certain quantum of energy including activities such as walking, playing of games, or planned exercise (WHO, 2016).

THEORETICAL FRAMEWORK

The theory underpinning this study is self-determination theory (SDT), which is a theory that explains how human motivation and personality greatly depend on the interaction with his/her social environment (Deci & Ryan, 1985). SDT is a conceptual framework that best fit the study of students' participation in PAS (Redman, 2016; Ryan & Deci, 2017), and is uniquely placed among theories of human motivation to examine the differential effects of different types of motivation that can underlie behavior (Redman, 2016). Emerging from a humanistic theory perspective, SDT is basically centered on the accomplishment of human needs, self-actualization, and the realization of human potential, SDT is a comprehensive and evolving macro-theory of human personality and motivated behavior (Ryan & Deci, 2017). Furthermore, SDT proposes that people have dispositional tendencies, named causality orientations (Deci & Ryan, 1985) that describes the way people preferentially orient towards their environments, resulting in characteristic motivational and behavioral patterns. Although some people may be more inclined to seek out and follow their internal indicators of preference in choosing their course of action, others may more naturally tend to align with external directives and norms. Ryan and Deci (2017) indicated that SDT extensively explains how individuals' fundamental psychological needs, performance, well-being and their sense of self-direction are either facilitated or thwarted in context by their social and cultural phenomena.

Consequently, Ryan and Deci (2017) suggests that every individual has three basic and inherent psychological needs that should be achieved in order for their psychological well-being to be maximized (Van den Broeck et al., 2021). These three psychological needs are autonomy, relatedness and competence, and their necessary role in self-determined motivation, well-being, and growth (Imms et al., 2017). The first need is to feel autonomous in performing any activity.

Autonomy involves being volitional and acting in such a way to represent one's integrated sense of self and feeling in-charge of one's action (Van den Broeck et al., 2021). Autonomy refers to behaviors being self-determined or freely initiated by the individual (Cooke et al., 2016). The second need is to perceive relatedness with others in the community of involvement and appreciating the need to be included as part of the group (Imms et al., 2017). The third fundamental need is competence perceived in relation to the activity. Competence to Reinboth and Duda (2006) viewed as fundamental to the expression of motivation within the context of sport. Competence also indicates what the individual beliefs and feels that they have the ability to perform any task/activity adequately and control the outcome. A study by Van den Broeck et al. (2021) revealed that individuals who experience higher levels of coherence and satisfaction of the three fundamental needs express more self-determined forms of regulation. This theory, to a large extent, seeks to help examine how students with disabilities at their own (volitional) approach PAS participation when conditions such as availability and accessibility of physical activities are made available. Findings of this study, based on the position of SDT, would reveal whether students lack PAS participation is borne out of students' inherent refusal to participate or otherwise. In this regard, participation is characterized by an internal locus of causality and students with disabilities will consider their actions to be self-determined and volitional.

Literature reviewed appreciate the fact that students with disabilities either completely refuse to participate in PAS or participate very little in PAS which could probably be due to their exclusion from their immediate society or their unwillingness to participate or could also be due to other factors. Previous studies (Carlson et al., 2013; Cohen et al., 2018) have reported that students with disabilities lack of participation in PAS could be as a result of lack of opportunities and exclusion or prevention. However, it is still unknown whether when the opportunity to participate in PAS is provided to students with disabilities, they will utilize it and how well will such opportunity be beneficial to these students.

To date, limited body of research have sought to uncover the types of PAS available for students with disabilities to participate in and how frequent they participate, especially at the developing countries like Ghana. It is against this backdrop that this current study sought to use an explanatory sequential mixed method design to establish the types of PAS available to students with disabilities, and how long a time they spend during such PAS participation as this approach of enquiry is missing in literature.

Purpose of the Study

The intent of this current study was to examine the type(s) of physical activities and sporting activities students with disabilities do participate in; the frequency at which such activities are engaged in, and how long (duration) these physical activities participation take place from the pragmatist worldview. To be able to accomplish the purpose of the study, the following answers were sought for as:

1. What type(s) of PAS do students with disabilities do participate in?

2. How frequent (often) a time do students participate in these physical and sporting activities?
3. How long a time do students participate in physical and sporting activities?

METHODS

Research Design

To help answer the research questions raised, an explanatory sequential mixed methods design was employed. This design was used because, it allowed for collection of both quantitative data and qualitative data in a single study. This was to help give a better picture and obtain a piece of an in-depth information (Creswell, 2012) for more understanding on students with disabilities participation in PAS. This research design first, collected and analyzed the quantitative data, then subsequently followed it up with a qualitative data (Ivankova et al., 2006). With the help of a cross-sectional survey, the explanatory sequential mixed method design enabled the collection of both quantitative data (using a questionnaire) and qualitative data (using interviews and observations) to help examine the type(s) of physical and sporting activities students with disabilities frequently participate in and how often their participation occur. The first phase (quantitative) of the design was followed by the collection and analysis of the second (qualitative) phase. The second phase of the study was designed so that it followed the outcome of the first phase.

Population

There were 80 public basic schools in Cape Coast Metropolis in the Central Region of Ghana for the 2022/2023 academic year. Of the 80 schools, three were special schools in Cape Coast Metropolis. Of the three, two were segregated special schools and the other an inclusive school. The population for this study was students with different disabilities (such as deaf, visually-impaired, and intellectual and developmental difficulties) in the three special schools within Cape Coast Metropolis in Central Region of Ghana.

Sample & Sampling Procedures

The three special schools made up of two special segregated schools and the other inclusive school were purposively selected due to their unique characteristics. Purposive sampling technique was adopted to select more matured students (Shields & Synnot, 2016) as such students helped to obtain a more reliable data for the study to help answer the research questions raised.

Again, purposive sampling technique followed by a census sampling technique were used to select students with disabilities from the schools to participate in the study. A census sampling procedure was further employed to collect data from all the selected students with disabilities.

In all, 194 students were selected to participate in the study. Furthermore, three physical education teachers were purposively selected from the three participating schools for interviews. This was to obtain qualitative data to triangulate with that of students to provide more insights into the findings from the quantitative data.

Data Collection Instruments & Procedure

This study used four instruments: a self-developed questionnaire (disability students participation in physical activities and sports) (DSPPAS) to collect quantitative data, students with disability interview guide on participation in physical activities and sports (SDIGPPAS), teachers interview guide on students with disability physical activities and sports participation (TIGSDPASP), and observation checklist on students with disability participation in physical activities and sports (OCSDPASP) to collect qualitative data.

DSPPAS instrument was in two sections. Section A sought for biodata of respondents: name of school, sex, and age. Section B was made of three subsections. These subsections sought to inquire from students: Subsection one contained a list of physical activities, which were eight in number. Respondents were to tick only one type of physical and sporting activities they frequently engage in. For subsection two, questionnaire items were presented in a three-point Likert scale from, 1=very Often (VO), quite Often (QO), and occasionally (O) to indicate how often (frequent) times students participate in physical activities and sporting events. The questionnaire items were all of closed-ended type. For subsection three, students were to choose from the responses, where applicable to statements provided by ticking the most appropriate column to indicate how long they spend during their activity participation.

Informed consent forms were given to all the three Heads of the participating schools for permission to allow their students to be involved in the study. A brief discussion with school authorities and teachers were held on different occasions to seek for their approval. Thereafter, three teachers explain to students the reason for the study and why they should participate. This helped as three teachers voluntarily assisted us in the data collection process through the use of sign language to communicate with students with hearing impairment. Assisting teachers helped to guide the students' response to the questionnaire items using sign language, which was effective. In all, we spent six days (two days in each school) for the data collection.

Reliability & Validity of Research Instrument

There was the need to establish validity and reliability of the items on the questionnaire. To establish validity, the self-developed questionnaire was given to two experts for its content and face validity. Their views after scrutinizing the items, helped improve the questionnaire as it ensured all ambiguities and wrong wording of the items were corrected. This helped to improve quality of the instrument as well. Thereafter, the improved questionnaire was pilot-tested with 50 students from schools with similar characteristics. This was to help determine the reliability coefficient and the instrument internal consistency. Cronbach's alpha reliability coefficient was used to determine the reliability of the instrument, which was established at .76. This helped to sharpen and fine tune the instruments as it corrected the weaknesses, inadequacies and ambiguities that characterized the items, and the instrument measured its intended purposes. The reliability coefficient of the research instrument with a value above .70 was deemed reliable.

SDIGPPAS and TIGSDPASP were semi-structured interview guides developed by the researchers to give more insights into findings from the quantitative data on students' participation in PAS. To validate the interview guide, two experts in physical education were made to critique the content of the items on the interview guide for honesty and clarity purposes. Suggestions from these experts helped to improve the quality of the instrument thereof. The interviews were audio-tape recorded as too many questions asked at a go was avoided. Before the interview, participants were briefly informed, and their consents were sought for as they were made aware that they could withdraw from participating in the study. However, participants were selected based on their willingness to participate in the study. During the interview section for students with hearing impairment, teachers teaching these students assisted us using 'sign language' as researchers were unable to communicate with these students directly. For purposes of data triangulation, experienced physical education teachers were also interviewed.

The observation checklist was designed after the quantitative data on the types of activities and how often these physical activities are frequently engaged in had been analyzed. The very main purpose of the observation checklist was to help confirm or otherwise the findings from the quantitative data and students and teachers interviews. This was to help determine the degree to which students with disabilities participate in physical activities and how often they have been engaged in these physical activities. For validity of the observation instrument, it was given to two experts in physical education for expert advice on its content, and their suggestions and comments helped to fine tune the instrument. Subsequently, to ensure the reliability of the checklist, the outcome of the observation was neither overstated nor understated, and also the outcome was not pre-empted prior to the observation process.

Data Processing & Analysis

The quantitative data collected using DSPPAS was analyzed using frequencies and percentages. The quantitative data obtained was analyzed and the emerging issues about students with disabilities participation in PAS discussed. The use of qualitative data using interviews (SDIGPPAS and TIGSDPASP) and an observation checklist (OCSDPASP) was important because the findings of the qualitative data provided more insights into students with disabilities participation in PAS about the types of activities engaged in and how often they engage in these activities.

The qualitative data gathered through interviews and observation were transcribed verbatim through open coding. The codes were reduced into patterns and themes through axial coding. This was done to ensure consistency to bring similar open codes together to form themes (categories). The themes formed were inductively obtained. That is, the themes were not imposed on the qualitative data or were not predetermined, but rather came from statements transcribed. Thereafter, the themes were analyzed thematically to give better explanations to the findings from the quantitative data. Statements from teachers and students were used verbatim to support findings from the quantitative data.

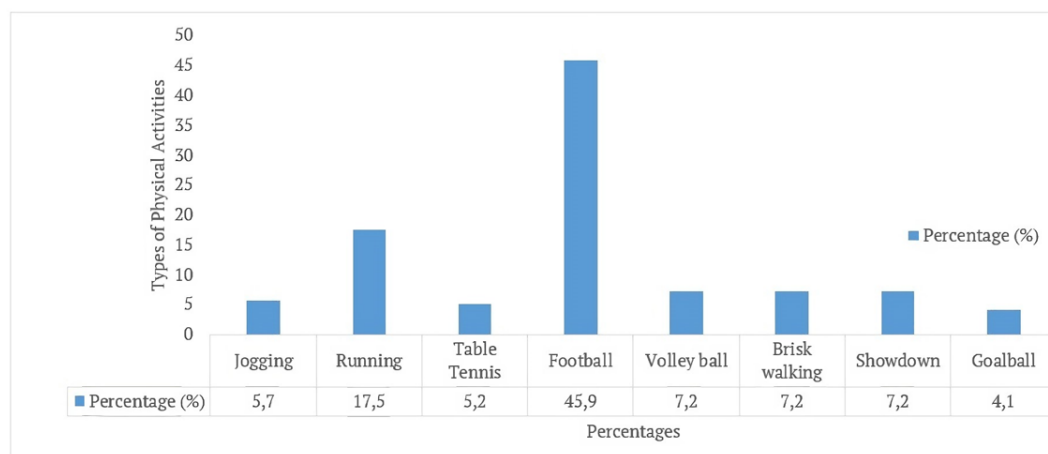


Figure 1. Type(s) of physical activities participated by students (n=194) (Source: Field Survey, 2023)

RESULTS & DISCUSSION

Types of Physical Activities & Sports Students With Disability Participate in

Research question one sought to identify the type(s) of PAS students with disabilities mostly engaged in. Students were asked to indicate the type(s) of physical activities they mostly participate in. To achieve this, responses from 194 students on the questionnaire items obtained were used. The results on type(s) of PAS mostly engaged in by students with disabilities are presented as in **Figure 1**.

As seen from **Figure 1**, of the 194 students, 45.9% of the students were more engaged in football. This was followed by running as the second most participated activities with 17.5%. Three of the physical activities; volleyball, brisk walking and showdown were the third most participated activities with 7.2% each of the 194 students. As seen from **Figure 1**, of the 194 students, 5.7% frequently engaged in jogging and 5.2% of the students engaged in table tennis. The physical activities least participated in was goal ball 4.1% engaged by students with visual-impairment

Results of the study indicate that two physical activities; football and running making up 63.4% of a total of eight activities available dominates the kind of physical activities participated by students with disabilities. This could be due to how readily available and less-demanding materials needed to engage in such activities. With football and running been the most participated physical activity, could also be as a result of the number of participants needed to participate and perhaps, readily available and low cost (less expensive) of the materials (balls) used during the activity. This was made known from the interviews from both students and teachers:

... football is one of the games that are readily available to us ... so we only get some of the balls and send them to any of the school fields. We only have to share the balls and divide ourselves (constitute) into teams, then we play without looking for any referee ... you know you can play football without any referee (an officiating official) and we are okay (a student).

A teacher expressed similar opinions, which corroborated those of the students. The teacher explains, as follows:

... our students (those with hearing-impairment) especially the males easily participate in football ... because we do have quite a number of balls there, so they only have our permission then, they start to play without many difficulties ... You see we have a flat-levelled football pitches even though they are not standard but what they need to play on it is readily available and okay for them (Adamu, a teacher).

Another teacher also indicated why football is mostly participated by students with the reason been that it is not complex to organize and play among the students themselves.

... you can see football does not need so many things (sporting facilities unlike other ones) before you can engage in ... what is required mostly is the football and boots or any footwear that can reduce injuries to the feet and jersey (a dress to put on) ... (Dwamena, a teacher).

Jogging is also mostly engaged in among my students (students with hearing-impairment). Most of these students will jog around the school field before they engage in an activity like football. A teacher expressed his opinion regarding student's participation in jogging.

... students will always jog before we do any physical activities (such as football) on the school field. I will say they jog to warm-up towards other activity participation ... their joggings are mostly mild one and not vigorous ... perhaps due to fear of hurting further (Owusu-Sekyere, a teacher).

This result could be due to the nature of the activities (football and running) as it seems to be less tedious to participate in. All except three of the 123 students who participated in football and jogging activities were with hearing impairments, and the three with visual impairment (partial visual impairment). This study has revealed that the type of physical activity regularly involved in by students with disabilities was based on the kind of disability of the participants. For instance, majority of the students who participated in this study were those (students) with hearing

impairment, hence, were not limited to participating in activities like football, running, volleyball, brisk walking, table tennis, and jogging, whereas the visually-impaired students were mostly engaged in two of the activities, that is either showdown or goalball as this was due to their disability. Additionally, as seen from **Figure 1**, goalball was the least participated activity followed by showdown, and this was not surprising to us. This could be due to their availability (that is, they were very few in number) as this could be worrisome to students as they have to wait in a queue before it reaches their turn.

The findings of this study have revealed that students with disabilities do participate in different kinds of physical activities only on the condition that materials needed for those activities are adequately provided. This was evident as many of the students participated in activities such as football playing, jogging, brisk walking and running. This implies that students with disabilities would participate in a particular physical activity provided these activities are disability friendly and do not pose any threat or whatsoever to their health. This result, therefore, disconfirm the study conducted by Basch (2011) who asserted that almost all children living with disabilities hardly participate in physical activities.

Additionally, this study has shown that students with disabilities actively participate in physical activities as long as they are provided with the opportunities. This finding is consistent with a study by Jeffery et al. (2000) that availability of good sporting facilities enhances students' participation in physical activities including those with disabilities. However, on the contrary, this finding disagrees with study of Shields and Synnot (2016) that students with disabilities are more restricted in their physical activities' participation even in the presence of sporting facilities due to their disabilities.

Furthermore, this study is inconsistent with the findings of Buljevac et al. (2011) and Martin Ginis et al. (2016) who asserted students with disabilities rarely participate in PAS. Again, this finding is direct opposite of Smith and Wightman (2021) who asserted that very few people with disabilities decide to be physically active, perhaps due to social exclusion (Abbasi et al., 2020; Carty et al., 2021)

In addition, this study has showed that the types of PAS regularly participated by students with disabilities were based on the kind of disabilities participants were suffering from. This is because students with hearing-impairment and intellectual and development difficulties were mostly engaged in activities such as football, running, brisk walking, volleyball, as students got less engaged in jogging and table tennis. On the other hand, students with visual-impairment were frequently engaged in either showdown or goal ball or both. Students with hearing-impairment and intellectual and development difficulties were involved much in football, running, brisk walking, volleyball, table tennis as this could partly be due to less stressful and more relaxed form of these activities hence, found common among these students likewise showdown or goal ball to those with visual-impairment. Even though students with visual-impairment could engage in playing football as an adapted sport, however, such did not happen due to lack of necessary and needed ball to aid visually-impaired students in the special schools from participating.

Furthermore, this study has shown that the kind of disability suffered by students informs the type of physical activities and sporting exercises they will be engaged in. This finding confirms earlier study by Jeffery et al. (2000), who attested to the fact that kind of disability and environmental factors such as the geographical location and availability of materials influence the choice of exercise, and the form of physical exercise students engage in. Jeffery et al. (2000) revealed in their study that a person who has lost both legs will mostly engage in only spot exercises but not stressful and tedious ones. For instance, brisk walking was found among the third most frequently participated physical activity because it is a less stressful and more relaxed form of exercising hence, common among people, especially persons with disability (hearing-impairment).

However, this study is inconsistent and disagrees with Martin Ginis et al. (2016) that students with disabilities do not participate in sufficient physical activities. On the other hand, findings of this study agree with study of Piff et al. (2018) that students with disabilities do not participate in physical activities because opportunities are not given to them to engage in. This finding, therefore corroborated the study of Van Dusen et al. (2011) that students with disabilities mostly engage in physical activities

In conclusion, the current study has not only expanded the frontiers of knowledge about students with disabilities participation in PAS but has also provided evidence that students with disabilities participation in PAS is based on the provision of conducive environment for participation; availability of materials needed to perform such activities and the kind of disability and severity of students disability.

Frequent Participation of Students With Disabilities in Physical Activities & Sports

Research question two sought to determine how often students with disabilities participate in PAS. The results on this research question were presented in two parts, first, on how frequent students were involved in physical activities per a week, and second, duration (that is how long in terms of time per week) students participate in these PAS. The results on how often students were involved in PAS, duration for students' participation and location of participation are presented in **Figure 2**.

Respondents were asked about how often they participate in PAS. Data presented in **Figure 2** revealed that of the 89 students who frequently engaged in football as their most participated physical activity, 52 (58.4%) participation were very often, 25 students (28.1%) participated quite often, and 12 students (13.5%) participate occasionally. The second most engaged physical activity involved in by students was running as indicated in **Figure 2**. It is revealed that of the 34 students, 15 (44.1%) participated very often, 16 students (47.1%) participation was quite often and only three (8.8%) of the students' participation was occasional.

Volleyball, brisk walking and showdown were the third most participated physical activities engaged in by students with disabilities with a total number of 14. For volleyball, 10 students (71.4%) participate very often, and two students (14.3%) participate quite often, and two students (14.3%) participate occasionally.

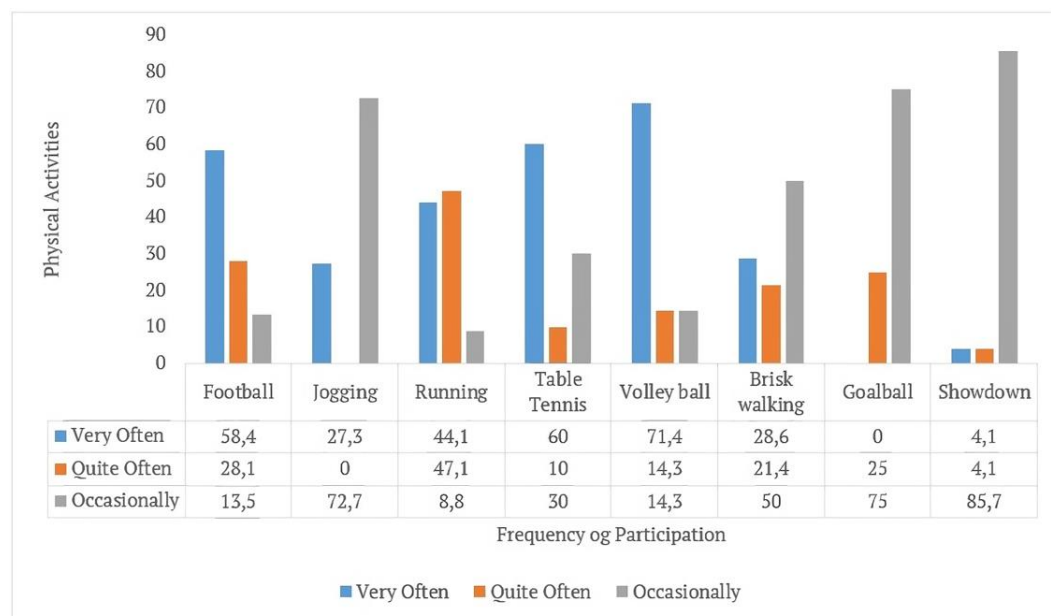


Figure 2. Students' frequency of participation in physical activities & sports (n=194) (Source: Field Survey, 2023)

Additionally, as seen from **Figure 2**, jogging around happened to be the next most participated physical activity engaged by students with disabilities with a number of 11. Of the 11 students, three (27.3%) of the students and eight (72.7%) of students' participation being very often and occasional, respectively. From **Figure 2**, it shows that only 10 students participate most frequently in table tennis. Of the 10, six students (60.0%) participation was very often, with a student (10.0%) participated quite often, whereas three students (30.0%) participation was occasional. The least most engaged physical activity as indicated in **Figure 2** is goal ball. This physical activity was always participated in by only students with visual impairment. As seen from **Figure 2**, only two students (25.0%) participation was quite often, and six students (75.0%) participated occasionally.

Generally, findings of the results regarding how often students with disabilities participate in PAS indicate that students very often participated in physical activities especially those of football, running and volleyball. This shows that students' level of participation in PAS is not low (Buljevac et al., 2011; Pellegrini & Hesla, 2018), less (Moll, 2017) or rare (Martin Ginis et al., 2016) as reported in literature, but more of these students are physically active (Abbasi et al., 2020; Carty et al., 2021; Mawena & Sorkpor, 2023). The rest of the physical activities saw majority of the students participating occasionally, especially showdown and goal ball. This could partly be due to the quantity and availability of the facilities. Through observation by the researcher, it was noticed that only one of the facilities for both showdown and goal ball were available and were even in a poor state. This was due to pressure on the facilities as all the students with visual impairment could only play and engage in these two physical activities.

Findings of this study agree with a study by Ryan and Deci (2017) that students with disabilities participation in PAS was to a large extent influenced by its social environment as this could either support or thwart students' motivation to participate in physical activities. However, this finding

disagrees with studies by Martin Ginis et al. (2016) and Pellegrini and Hesla (2018) that students with disabilities are associated with low level of physical activities and also disagrees with Moll (2017) that students with disabilities participate in sporting activities to a lesser extent.

Results from the qualitative data (interviews) corroborated with that of the quantitative data. For instance, a teacher indicated that students with disabilities are very active when provided with the opportunity:

... our students are very active ... sometimes they play (meaning they participate) in many physical activities for several times in-between times ... (Owusu-Sekyere, a teacher).

... when they (students) get the opportunity, they can play on the school field as many times as possible so far as they get the chance to play and when the environment is conducive for them ... just that most times because of their disabilities, we have to regulate their play and how frequent they play ... (Dwamena, a teacher).

About the opportunity to participate in PAS, some students corroborated the assertions made by their teachers. They are, as follows:

... when I get the opportunity or the time to play, I can play during every breaktime in addition to the time we get to play during physical education lessons at the school field ... because doing exercise is very good for me and I feel very satisfied and very fit whenever I finish playing ... (a student with hearing-impairment).

... doing exercise (playing showdown) is what I like doing and would like to do because I become fit and feel I am important among my friends ... so whenever I am free (not learning) in class, and I would like to play it as many times I get that opportunity because physical

activities participation make me feel very relieved ... And I become very active ... (a student with visual impairment).

... I like walking fast (brisk walking) when I get the chance to do so ... so I most often move freely on campus very fast than normal walking ... (a student).

A student indicated that he mostly participates in PAS during school-games because he feel very fit and happy. He asserted that

... when it comes to school-games, I wish I could participate in almost all the available games because I like sports and I feel I am more important and part of the school ... because it makes me feel active and energetic, which makes me not to get sick and also easily become free with my friends ... (a student with hearing-impairment).

An interaction with a physical education teacher about how frequent students with disabilities participate in PAS are, as follows:

Researcher: Are your students active?

Teacher: Yes, they are very ... very ... very active.

Researcher: Really?

Teacher: Indeed they are very active ... some are to the extreme such that they would like to participate in every physical activities and sporting events organized in the school.

Researcher: That's interesting to know ...

Teacher: Most of them are very active just that their active nature depends on many things ...

Researcher: Like what?

Teacher: Like availability of sporting disability user-friendly materials for that kind of sporting activity. For example, when the needed things like volleyball and nets are made available to students with hearing-impairment to play volleyball, they would play unless you stop them ... and is not like few of them ... and anytime one get tired he will ask for him to be replaced for the continuation of the game.

Researcher: That would be interesting to watch ... I wish I could witness such events.

Teacher: Least I forget, and when they are playing, they understand themselves to the extent of admitting when one fouls the other or violate rules governing that particular game. All what these students need is for the opportunity to be created and also been supervised by an adult (a teacher).

Researcher: That is very nice to know.

Teacher: And they will play as soon as the environment is conducive.

Researcher: Thank you sir for your time and sharing your experience with me.

Teacher: You are welcome ... anyway you can come and witness all by yourself tomorrow.

The teacher then, extended an invitation to me to observe and witness students with disabilities participation in games. We gladly accepted and honored the invitation. We went together the next day. We took field notes and used the observation checklist during the field observation. Results of the observation indicated as exact as the teacher reported earlier as majority of the students with disabilities (hearing-impaired) actively participated in volleyball and football on the school field.

Duration for Students Participation in Physical Activities & Sports

Research question three sought to determine how long a time do students participate in physical and sporting activities. Results from **Figure 3** reveals that the amount of time students spend during their participation in PAS. It is quite clear from the results that of the 89 students who participate in football, 37 (41.6%) of students spend more than 2hours participating, with 31 students (34.8%) and 21 students (23.6%) spending one-two hours and less an hour, respectively during their participation in football. Out of the 34 students who participate in running as their mostly engaged physical activity, 14 students (41.2%) indicated that they spend one-two hours during the running activity, whereas 10 students each (29.4%) spend less than 1hour and more than two hours, respectively during running activity.

As seen from **Figure 3**, three activities volleyball, brisk walking and showdown had 14 students frequently involved in these activities. As seen from **Figure 3**, time spent by students during volleyball participation, nine students (64.3%), spend more than two hours, while 3 (21.4%) and two (14.3%) spend one-two hours and less than 1 hour on volleyball, respectively. With regards to brisk walking participation by students, approximately seven students (50.0%) spend less than one hour, whereas four (28.6%) and three (21.4%) of the students spend one-two hours and more than two hours, respectively. Further, **Figure 3** reveals that five students each (35.7%) spend less than 1hour and one-two hours, respectively on showdown participation. It is also evident from **Figure 3** that of the 11 students who participate in jogging, six of the students (54.5%) spend less than one hour, and three (27.3%) and two (18.2%), respectively spend one-two hours and more than two hours during their jogging activity. Again, it is clear from **Figure 3** that out of the 10 students who participated in table tennis, four (40.0%) students each spend one-two hours and more than two hours, respectively on playing table tennis as their mostly involved physical activity. Regarding amount of time spent by students during their participation in the physical activities, goalball was indicated to be among the physical activities. Out of the eight students who participate, four students (50.0%) spend less than one hour whilst three

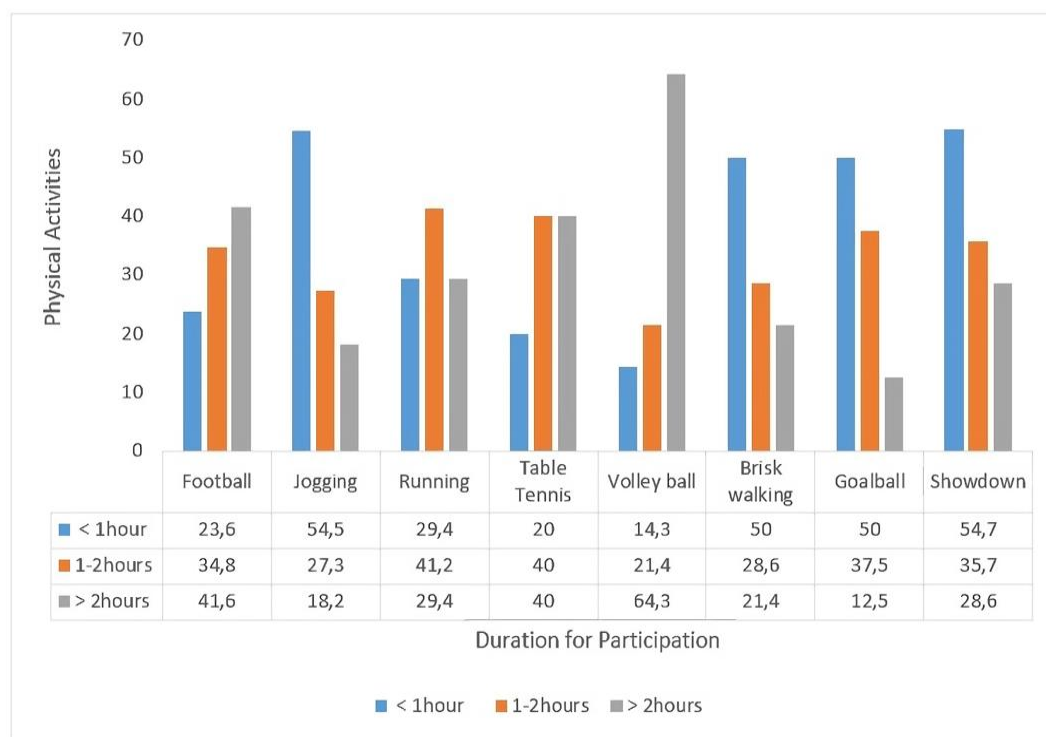


Figure 3. Duration for students participation in physical activities & sports (n=194) (Source: Field Survey, 2023)

students (37.5%) and one student (12.5%) spend one-two hours and more than two hours, respectively.

Furthermore, it is evident from **Figure 3** that most of the students with disabilities spend averagely between one-two hours during their participation in PAS whilst quite few a number of them spend more than two hours. This could partly be due to their disabilities and lack of stamina or fatigue. Students actively participated in PAS, however, the findings with regard to amount of time spent by students during their participation in PAS revealed majority of the students spend less than 1hour during their participation. Quite a number of students participated in physical activities but within one-two hours. Findings from the interviews on how long a time student spend on physical activities gave an insight to the quantitative data revealed. A teacher asserted that

... majority of our students especially those with hearing-impairment can engage in physical activities like football and volley for a very long period of time ... sometimes we have to communicate with them and sometimes even plead with them before they will bring their games into a close and ... at times we close them abruptly that is after they have spent more than 2hours playing. They are mostly unhappy, but we have to close them because of their disabilities ... (Dwamena, a teacher).

To students they should be given the permission to participate in their preferred physical activities as long as they want to participate without any limitation regarding time spent during participation.

... me I like playing so much because I become fit ... so we have to be allowed to play as long as we want ... they (teachers) should not restrict us on how long we spend

playing games ... I would like to play for a longer time for others to see that I can also play ... (a student).

The findings of this study have shown that students with disabilities through regular physical activity participation experience teamwork, coping abilities and fitness (Harlow et al., 2020), and they also experience a greater sense of coherence (Cseplö et al., 2022).

These benefits acquired by these students become the avenue for eliminating societal discrimination and social segregation as sports is a tool to end these social menace towards individuals with disabilities for societal inclusiveness.

CONCLUSIONS

This study examined the type(s) of physical activities and sporting events students with disabilities do participate in; the frequency at which such activities are engaged in, and how long (duration) they participate in these PAS participation. Generally, this study has shown that the kind of disability suffered by students informs and determines the type of physical activities and sporting exercises they mostly participate in. That is, the kind of disability and environmental factors such as the geographical location and availability of materials influence the choice of exercise and the form of physical exercise students with disabilities engage in.

This study has provided evidence that students with disabilities actively participate in PAS, and their participation is based on the provision of conducive environment for participation; availability of materials needed to perform such activities and the kind of disability and severity of students' disability. Again, the study showed that students with disabilities participation in PAS was to a large extent

influenced by its social environment as this could either support or thwart students' motivation to participate in physical activities. Again, findings have showed that regular physical activity participation among students with disabilities greatly fosters independence, teamwork, coping abilities, fitness and they also experience a greater sense of coherence. These benefits obtained through regular physical activity participation among students with disabilities could become avenue for the elimination of societal discrimination and social segregation mostly experienced by students with disabilities in their communities of abode.

Furthermore, this study has revealed that students very often participate in physical activities especially those of football, running and volleyball. This shows that students' level of participation in PAS is neither as low nor lesser but high if not higher. This study, therefore, recommend that not only should disability-friendly physical activities and sporting events be organized frequently and encouraged among students in special schools but stakeholders (such as teachers, educators, authorities) should make opportunities available to students to participate with ease without any hindrance.

Implications

Physical education educators should encourage and motivate students (people) with disabilities to participate in PAS to not only help improve their fitness, teamwork and coping activities among their peers but also help eliminate societal discrimination and social segregation among people with disabilities. Regular participation in PAS would also help students (people) with disabilities to integrate fully into their respective communities for inclusivity among all people living within a particular environment irrespective of their capabilities and disabilities. It is, therefore, important for policy developers and implementors to factor PAS as a relevant part of education policy, which help improves the physical fitness, health and well-being of all people for social inclusiveness.

Author contributions: The co-author was actively involved in all stages of this study while preparing the final version. He agreed with the results and conclusions.

Funding: No external funding is received for this article.

Ethics statement: The authors stated that the study was approved by University of Education, Winneba through head of department.

Declaration of interest: The authors declare that they have no competing interests.

Availability of data and materials: All data generated or analyzed during this study are available for sharing when appropriate request is directed to the author.

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