PriMera Scientific
Medicine and Public Health
Volume 2 Issue 6 June 2023
ISSN: 2833-5627

PriMera Scientific Publications

The Influence of Personal and Environmental Factors on Participation in Wheelchair Basketball (WB)

Type: Case Report
Received: May 16, 2023
Published: May 29, 2023

Citation:
Bhekuzulu Khumalo., et al. "The Influence of Personal and Environmental Factors on Participation in Wheelchair Basketball (WB)". PriMera Scientific Medicine and Public Health 2.6 (2023): 37-49.

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Abstract

The objective of this study was to determine the influence of personal and environmental factors that affect the participation likelihood of athletes in wheelchair basketball. Convenient sampling was used. The Participation Likelihood Assessment Tool for Wheelchair Basketball (PLAT-WB), developed by Khumalo B, Van Heerden J, and Skalko T. was used to collect data. Data was analysed through the method prescribed for scoring the questionnaire. The T-test (SPSS version 20) was used to find the significance difference of how the influential factors affect males and females. A total of 38 questionnaires, of which 18 from women and 20 from men, were correctly completed. The results showed that there is a 92.11% moderate likelihood to participate, 2.63% very low likelihood to participate in wheelchair basketball. Males have 5% low likelihood, 90% moderate likelihood and 5% high likelihood to participate in wheelchair basketball. Females showed a 5.6% low likelihood, 0% low likelihood, 94.4% of moderate likelihood and 0% of high likelihood to participate in wheelchair basketball. There is no significant difference ($p = 0.215$) between men and women participation likelihood as affected by environmental factors and no significant difference ($p= 0.918$) by personal factors. Generally, men (92.11%) and women (92.11%) with a moderate participation likelihood are quite likely to play WB. The study revealed that the personal and environmental factors have the same influence in the participation likelihood levels for both males and females. Thus, the barriers that hinder the possible WB to participate affect both males and females in a similar way.

Keywords: Perception; Participation; Restrictions; Environmental Factors; Personal Factors

Introduction

The world report on disability [13] states that about 15% of the world lives with some form of disability. It also says that the people's environment has a huge effect on the prevalence and extent of disability. Major environmental changes such as those caused by natural disasters or conflict situations, will also affect the prevalence of disability not only by changing impairments but also by creating barriers in the physical environment. Estimates for the number of children (0-14years) living with disabilities range between 93million and 150 million, [13]. The Zimbabwe national survey on disability of 2013 [9], sates that in low-income countries, including Zimbabwe, there is inadequate information on disability, translating to limited information on which to base advocacy, policy development and effective resource mobilisation and utilisation. According to the Zimbabwe national survey on disability of 2013 the prevalence of disability in Zimbabwe is estimated to be 7%, this amounts to approximately 914 287 persons based on the total Zimbabwe population of 13 061 239 [14]. Twenty-six percent (26.2%) of all screened households had at least one member with disability. These estimates are less than the global estimate by the World Health Organization, which suggest 2.9% are persons with severe disability and 12.4% have moderate disability in the global population. Figure 1, below shows the percentage of male with walking difficulties as 39% and females with walking difficulties as 53.9%.

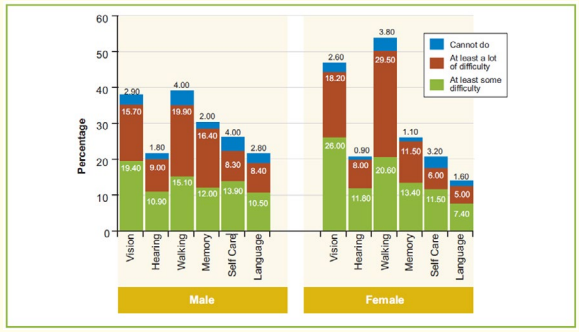
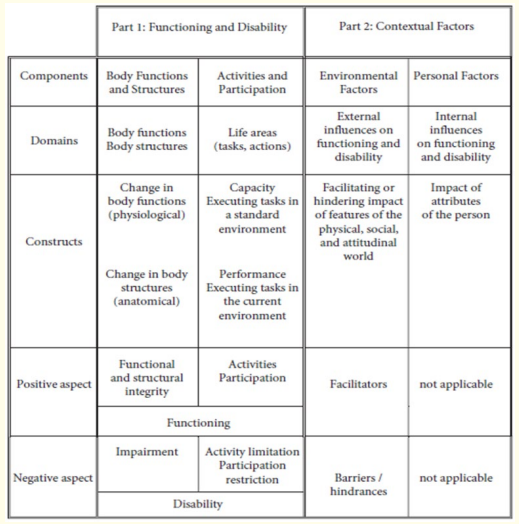


Figure 1: The extent of walking disability in the Zimbabwean population living with disability [10].

The International Classification of Functioning, Disability and Health, known as ICF-DH [13], aims is to provide a unified and standard language and framework for the description of health and health-related states. It defines components of health and some health-related components of well-being. The domains contained in ICF can, therefore, be seen as health domains and health-related domains. These domains are described from the perspective of the body, the individual and society in two basic lists that is the Body Functions; and Structure and Activities and Participation. As a classification, ICF systematically groups' different domains for a person in a given health condition, for example; what a person with a disease or disorder does do. Functioning is an umbrella term encompassing all body functions, activities and participation; similarly, disability serves as an umbrella term for impairments, activity limitations or participation restrictions. ICF [13] also lists environmental factors that interact with all these constructs. In this way, it enables the user to record useful profiles of individuals' functioning, disability and health in various domains. The WHO family international classifications provide a framework to code a wide range of information about health, for example; diagnosis, functioning and disability, reasons for contact with health services and uses a standardized common language permitting communication about health and health care across the world in various disciplines and sciences (Figure 2).



	Part 1: Functioning and Disability		Part 2: Contextual Factors	
Components	Body Functions and Structures	Activities and Participation	Environmental Factors	Personal Factors
Domains	Body functions Body structures	Life areas (tasks, actions)	External influences on functioning and disability	Internal influences on functioning and disability
Constructs	Change in body functions (physiological)	Capacity Executing tasks in a standard environment	Facilitating or hindering impact of features of the physical, social, and attitudinal world	Impact of attributes of the person
	Change in body structures (anatomical)	Performance Executing tasks in the current environment		
Positive aspect	Functional and structural integrity	Activities Participation	Facilitators	not applicable
	Functioning			
Negative aspect	Impairment	Activity limitation Participation restriction	Barriers / hindrances	not applicable
	Disability			

Figure 2: A diagram showing an overview of ICF [12].

As a classification, ICF does not model the "process" of functioning and disability. It can be used, however, to describe the process by providing the means to map the different constructs and domains. It provides a multi-perspective approach to the classification of functioning and disability as an interactive and evolutionary process. It provides the building blocks for users who wish to create models and study different aspects of this process. In this sense, ICF can be seen as a language: the texts that can be created with it depend on the users, their creativity and their scientific orientation.

The figure 3 here shows the interaction or complex relationship of an individual's functioning in a specific domain between the health condition and contextual factors (i.e. environmental and personal factors). There is a dynamic interaction among these entities: interventions in one entity have the potential to modify one or more of the other entities. These interactions are specific and not always in a predictable one-to-one relationship.

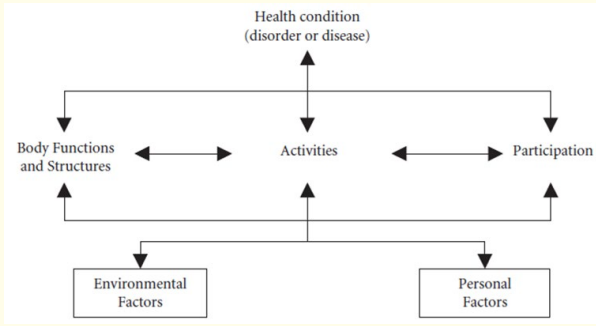


Figure 3: A diagram the interactions between components of ICF [12].

According to the International Wheelchair Basketball Federation, Official Classification Manual, [2], to be legible to play Wheelchair Basketball (WB), a player must have a measurable permanent physical disability in their lower limbs, which prevents them from running, jumping and pivoting as an able-bodied player. By having a system of player classification, and a rule of team balance, the IWBF equalizes the team's functional potential and ensures that the outcome of any game is directly related to the athletic ability and skill of players. Observed trunk movements and stability during actual basketball participation, not medical diagnosis, forms the basis of player classification. Wheelchair basketball is a game played by 2 teams of 5 players each. The aim of each team is to score in the opponents' basket and to prevent the other team from scoring. The game is controlled by officials, table officials and a commissioner, if present. The basket that is attacked by a team is the opponents' basket and the basket which is defended by a team is its own basket. The team that has scored the greater number of points at the end of playing time shall be the winner.

The playing court shall have a flat, hard surface free from obstructions with dimensions of 28 m in length by 15 m in width measured from the inner edge of the boundary line (Figure 4). A team's backcourt consists of its team's own basket, the inbounds part of the backboard and that part of the playing court limited by the end line behind its own basket, the side-lines and the centre line. A team's frontcourt consists of the opponents' basket, the inbounds part of the backboard and that part of the playing court limited by the end line behind the opponents' basket, the side-lines and the inner edge of the centre line nearest to the opponents' basket.

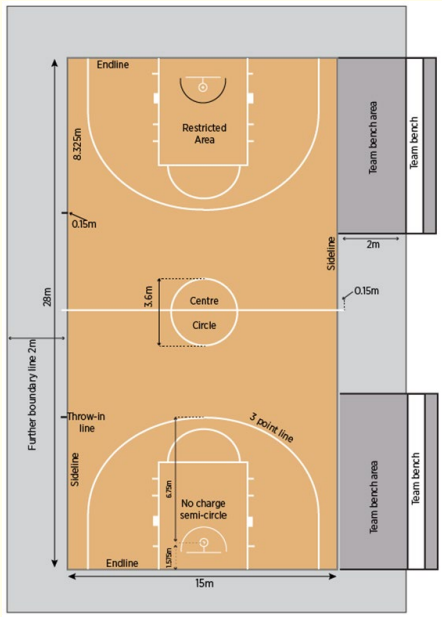


Figure 4: A diagram showing a wheelchair basketball court [3].

The wheelchair shall have either 3 or 4 wheels that is 2 large wheels at the back and 1 or 2 small wheels at the front of the chair (Figure 5 and Figure 6). The large wheels, including the tyres, may have a maximum diameter of 69 cm. Wheel hubs must be of round outer construction with no sharp points, edges or protrusions. In the case of the 3-wheel wheelchair, the small wheel (or castor) must be located at the centre and inside of the horizontal bar at the front of the wheelchair. A second small wheel (or castor) may be added to the single small wheel at the front of the wheelchair. Lighting that reflects or flashes, is not permitted on the wheels, the chair or the castors. No steering devices, brakes or gears are allowed on the wheelchair.

Figure 5: The WB Chair with 2 small wheels at the front. (https://www.wickedwheelchairs.com.au/basketball.html).

Figure 6: The WB Chair with 1 small wheel at the front. (https://www.wickedwheelchairs.com.au/basketball.html).

Any tyre or castor(s) that marks the floor is not permitted. Exceptions may be made where it can be demonstrated that the marks can be easily removed. Arm rests and other upper body supports that are attached to the wheelchair should not project beyond the line of the player's legs or trunk in the natural sitting position. The padding of the horizontal bar located at the back of the backrest of the wheelchair must be of a minimum thickness of 1.5 cm (15mm). It must be sufficiently flexible to allow a maximum indentation of a third of its original thickness and may have a minimum indentation factor of fifty percent (50%). This means that when a force is applied suddenly to the padding, the indentation on the padding cannot exceed 50% of its original thickness. The padding is required to prevent injury to the other players.

Key Features

- Two-piece construction for optimal fit and performance.
- Improved fit and connection maximise response and performance.
- Airtech and neoprene cover with cushion foam inserts for effective support and heat dissipation.
- Integrated Pelvi-Loc strapping.
- Clamp mounting onto new design Elite frame allows fine tune adjustments and easy removal for transport.
- Athlete and equipment in perfect harmony.

In Zimbabwe, [6] when they looked into the Participation Trends by Wheelchair Basketball Players at the Zimbabwe Paralympic Games: raised a concern that most of the participants in wheelchair basketball are well over the age of 30 years and there is negligible injection of new blood in the sports a situation that is worrying if one considers the future of the sport. They cite the low-income levels of the respondents as a factor likely to militate against sports participation, one of the interviewees actually pointed out that she had no source of income and relied on a friend for transport fares to and from training, while both lived about 5km from the training venue. During the interviews the respondents did point out that distance from the facility contributes to irregular attendance or eventually lead to no attendance to training sessions by some of their club members, leading to a loss of participants. The majority of the interviewees relied on street vending as a source of income. Due to the low income the players face challenges in the acquisition of adapted equipment for their sport participation. The two clubs, which participated in the research, were actually struggling through training sessions and to maintain player membership as players were sharing the wheelchairs during training sessions, meaning the chairs are not adapted to specific players. For those who make it to training the lack of equipment means long hours at the facility where most of the time is spent doing nothing (idle). As most of these people survive on one form or the other of self-employment, they end up relating this idle time to lost income (revenue).

While issues of access convenience and hygiene at the venues did affect some participants especially those who are wheelchair users the spirit was that they are more likely to be rectified in the not so distance future, [6]. These barriers, the participants felt, can in short to medium term be addressed through own efforts in collaboration with the responsible authorities, hence the spirit was let us move on as we work towards rectification. This is the spirit today, but one can see that in not so far, a future these barriers are going to impact negatively on Paralympic sports participation. Non-adapted transport system, attitudes of transport crews especially to wheel chair users, were cited as challenges faced by people living with disabilities, [6]. The crews, manning the public transport vehicles, usually view waiting for disabled person to manoeuvre his/her way into and out of the vehicle as time wasting in a highly competitive industry. These militating factors have led to difficulties in retaining and worse still recruiting new and younger players, hence one sees the same people representing the province time and again.

In Kenya, [1] discussed that schools could also take responsibility for providing children who are disabled with the correct clothes and equipment, as 35% indicated that this was lacking. Social support for physical activity and sport participation from friends and family members are strong predictors of physical activity levels. Social inclusion and acceptance were also influences for participation in physical activity by children who are disabled. According to Koetje in [12], wheelchair basketball in South Africa has shown an increase in new, young participants. She indicates that the total number of players has not increased, however, as there are many who retire from the game due to old age. Lepera in [12] affirms that there is not a noticeable increase in the total number of participants. Both Koetje in [12] and Lepera in [11] confirm that the majority of players that they have been involved in on a National team level are from a lower socio-economic environment, and many rely on sponsorships to move up to a more professional level. Koetje in [12] confirms that there is a great need for community reintegration for people who are wheelchair bound, especially within the rural areas. She further states that social exclusion due to disability is a daily encounter for many wheelchair users, and that she believes that activities should be used to assist wheelchair users to integrate better into the community.

A study carried out [4] to provide an overview of the literature focusing on barriers to and facilitators of sports participation for all people with various physical disabilities. The findings were that: Personal facilitators were fun and health, and the environmental facilitator was social contacts. The Zimbabwe National Paralympic games began in 2008 were only 4 provinces participated, however in the next year all provinces participated. In 2010 the project to promote sport for the people living with disabilities was launched through the national Paralympic games which include wheelchair basketball. However, wheelchair basketball in Zimbabwe has been facing challenges. According to the Chronicle newspaper report (25 July 2013), at first there were only men's wheelchair basketball in Zimbabwe but now there are national teams for both men and women as well as a U23 men team. On April 8, 2017 the same newspaper reported that instead of 160 athletes to participate in the national competitions only 66 attended due to lack of funding and no equipment such as the proper wheel chairs for the competition.

Research Objectives

1. To determine the influence of personal and environmental factors on the participation likelihood in wheelchair basketball, by athletes with physical disabilities.
2. To determine which of the two factors (personal and environmental) has more influence towards participation likelihood in wheelchair basketball.

Research Questions

1. How do personal and environmental factors influence the participation likelihood, in wheelchair basketball, by athletes with physical disabilities?
2. Which of the two factors (personal and environmental) has more influence towards participation likelihood in wheelchair basketball?

The research results are expected to help sports administrators identify factors to address so as to increase the number of athletes participating in wheel chair basketball and also help the athletes to find alternative ways which will motivate them to participate in wheelchair basketball. The researchers assumed that all the subjects have permanent mobility disabilities. The researchers also anticipate that the athletes will be aware of the factors which affect their level of participation and therefore be able to improvise and find ways which will aid their participation.

Methodology

This research was a descriptive, case study. Convenient sampling of seven educational institutions with students with disabilities, in Bulawayo, Zimbabwe, was used. Census sampling of people who have a measurable permanent physical disability in their lower limbs, which prevents them from running, jumping and pivoting as an able-bodied player within the institutions was used to get the study sample. The Participation Likelihood Assessment Tool for Wheelchair Basketball (PLAT-WB) questionnaire (see Appendix 1), developed by Khumalo, Heerden and Skalko T [7] was used to collect data from the study subjects. Questions 1, 2, 3, 4 and 5 on the tool were derived from the Perceived Accessibility to Facilities Questionnaire (PAFQ), a high score on these indicates a perceived ease of access of facilities. Questions 6, 7, 8 and 9 were derived from the Exercise Benefits Scale (EBS) where a high score indicates a perceived agreement to the benefit. Questions, 10, 11, 12, 13, 14, 15, 16, 17, 18 and 19 were derived from the Barriers to Exercise Scale (BTES) where a high score indicates that the respondent does not perceive the presented situation as a barrier. The researcher rephrased these to the negative (e.g. Family responsibilities prevent me from exercise is presented as Family responsibilities do not prevent me from exercise) for scoring consistency. For each of the statements presented on the tool, participants mark the numbers that indicate their views on the related items on a 5-point, Likert Scale; "1=Strongly Disagree (SD) 2= Disagree (D) 3=Not Sure (N) 4=Agree (A) 5=Strongly Agree (SA)". The instrument seeks to identify individuals who have the strongest likelihood for participation in wheelchair basketball (WB) based on their perception of personal and environmental factors. The development of the PLAT – WB is an effort to come up with an inexpensive easy to use tool to assess the probability that a person may or may not participate in the sport of WB. Informed consent forms were provided to the participants before the completion of the questionnaire. Participants were made aware that they are free to withdraw from the activity at any point they would feel like doing so. The questionnaires were then, distributed and collected when the participants were done.

Appendix 1: Participation Likelihood Assessment Tool for Wheelchair Basketball (PLAT – WB).

		SD	***D***	***N***	***A***	***SA***
1.	I am satisfied with public transportation station because it is located facility.	1	2	3	4	5
2.	It is inconvenient for me to use automatic door because of short closure.	1	2	3	4	5
3.	The quality of surface is convenient for me to use sidewalk.	1	2	3	4	5
4.	Public phone is located a proper height when I use it (1.20m).	1	2	3	4	5
5.	It is convenient for me to operate public phone in sports facility.	1	2	3	4	5
6.	Exercise increases my muscle strength.	1	2	3	4	5
7.	Exercising will keep me from having high blood pressure.	1	2	3	4	5
8.	Exercising improves functioning of my cardiovascular system.	1	2	3	4	5
9.	Exercise helps me decrease fatigue.	1	2	3	4	5
10.	My work does not prevent me from exercising as much as I would like.	1	2	3	4	5
11.	Exercise will not make my condition worse.	1	2	3	4	5
12.	It does not take a long time to receive the equipment after purchasing it.	1	2	3	4	5
13.	I do not lack information/knowledge on how to exercise.	1	2	3	4	5
14.	I am not afraid to leave my house.	1	2	3	4	5
15.	Health concerns do not prevent me from exercising as much as I would like.	1	2	3	4	5
16.	Exercising is not too difficult.	1	2	3	4	5
17.	I do have the time to exercise.	1	2	3	4	5
18.	Family responsibilities do not prevent me from exercise.	1	2	3	4	5
19.	I have interest in exercising.	1	2	3	4	5

A participant's likelihood to play the sport of WB is then scored as follows (based on a maximum possible score of 19 x 5 = 95):

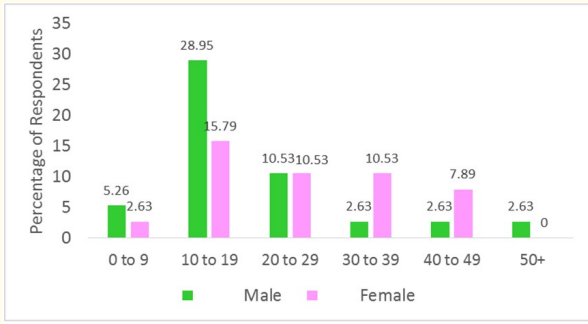
Scoring	***Likelihood Rating***
00.00 – 23.75	Very low likelihood
23.76 - 47.50	Low likelihood
47.51 – 74.2	Moderate likelihood
74.26 – 95.00	High Likelihood

The researchers scored the PLAT-WB and the scores were fed into excel to get the tables and graphs that show different aspects of the study like the total number of males and females who participated and their respective ages. The scores were also used to determine the participation likelihood rates according to the PLAT-WB scoring method. The data was then analysed using the IBM SPSS Statistics version 20 to bring out the normality of data, comparisons of means and the difference between the different factors affecting the participation likelihood in wheelchair basketball. A T-test was conducted using the SPSS version 20, to find if there is a significance difference of how the influential factors affect males and females to participate in WB.

Besides the sport of wheelchair basketball being a worldwide sport, which has benefited the lives of people with disabilities both psychologically and physiologically. Little is known on how personal and environmental factors influence the participation likelihood in wheelchair basketball, in Zimbabwe. It is for this reason that the purpose of this study, was to investigate the extent of the influence of personal and environmental factors on participation likelihood in wheelchair basketball in Bulawayo.

Results

Thirty-eight (38) participants took part in survey 20 males and 18 females, modal age group for both men and women is 10- 19 years (see Graph 1).

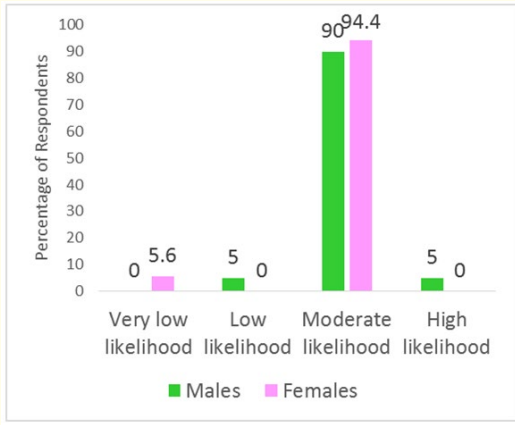


Graph 1: Number of males and females who participated and their respective ages (N = 38).

The results in table 1 shows that the majority of participants have a 35 moderate likelihood to participate, 1 of the participants have very low likelihood, low likelihood and high likelihood to participate in wheelchair basketball.

Likelihood	*Very low*	*Low*	*Moderate*	*High*
Percentage	2.63	2.63	92.11	2.63

Table 1: Participation likelihood rating scores (N = 38).



Graph 2: The participation likelihood according to gender. (N = 38).

Graph 2, shows that none of the males show a very low likelihood, 5% show a low likelihood, 90% show a moderate likelihood and 5% high likelihood to participate in wheelchair basketball. As compared to females who show a 5.6% of very low likelihood, 0% low likelihood, 94.4% of moderate likelihood and 0% of high likelihood to participate in wheelchair basketball. A total of 44% of women and 15% of men think exercise will not make their condition worse.

Test 1: Is there a significant difference between the influence of personal and environmental factors into participation likelihood in wheelchair basketball by men? The data was normally distributed as skewness and kurtosis range of environmental factors is 0.493256262 - 0.428802421 and of personal factors is -0.5278350515-0.4210526316. The results show that there is a significant difference between the two factors on men which affect the participation likelihood into wheelchair basketball. (p= 0.000 < 0.05).

Test 2: Is there a significant difference between the influence of personal and environmental factors into participation likelihood in wheelchair basketball by women? The data was normally distributed as skewness and kurtosis range of environmental factors is- 0.80844664555 – 1.947467167 and of personal factors is –0.434598055 - 0.715862069. The results show that there is a significant difference between the two factors on women which affect the participation likelihood into wheelchair basketball. (p= 0.000 < 0.05).

Test 3: Is there a significant difference between men and women participation likelihood into wheelchair basketball affected by environmental factors? The data is normally distributed as skewness and kurtosis range of environmental factors is- 0.1592689295- 2. 09733333. The results show that the Levene's test (p= 0.518 > 0.05) which states that the difference between the variance is not assumed and therefore the first line of Equal Variance assumed states that p= 0.215 > 0.05. Therefore, there is no significant difference between the men and women affected by the environmental factors in the participation likelihood into wheelchair basketball.

Test 4: Is there a significant difference between men and women participation likelihood into wheelchair basketball affected by personal factors?

The data is normally distributed as skewness and kurtosis range of personal factors is- 0.359801265 – 0.0004823151. The results show that in the Levene's test, there is no significant difference in the variances (p= 0.341>0.05). Thus the first line of Equal variance assumed states that there is no significant difference between men and women participation likelihood into wheelchair basketball affected by personal factors (p= 0.918 > 0.05).

Test	***Normality of data***	***P value***	***Significance***
Is there a significant difference between the influence of personal and environmental factors into participation likelihood in wheelchair basketball by men?			
1	Yes	0.000	Yes
Is there a significant difference between the influence of personal and environmental factors into participation likelihood in wheelchair basketball by women?			
2	Yes	0.000	Yes
Is there a significant difference between men and women participation likelihood into wheelchair basketball affected by environmental factors?			
3	Yes	0.215	No
Is there a significant difference between men and women participation likelihood into wheelchair basketball affected by personal factors?			
4	Yes	0.918	No

Table 2: Summary of T-test results.

Table 2 shows that there is a high significant (p=0.00) difference between the two factors on men which affect the participation likelihood into wheelchair basketball. There is no significant difference (p= 0.215; men, and p= 0.918; women) between the men and women as far as their likelihood to participate in WB is affected by both the environmental and the personal factors. This could be explained by that these people living with disabilities are affected by the same environment barriers such as transport, specialised sporting facilities and equipment, minimised trained human resources that could help them in attaining the skills and knowledge required to equip them for WB.

Discussion

The objective of this study was to determine the influence levels of personal and environmental factors in WB participation likelihood, differences between men and women were considered as a way of understanding the influence of these factors. Previous studies have looked generally on the factors that affect the participation trends into WB [6], but not from the point of view of the influence of the environment and personal factors into the participation likelihood. Generally, men are more likely to participate in WB than women. This could be that women are afraid of worsening their condition, this was shown in their response to the question that says, 'Exercise will not make my condition worse'. From the results women show 44% of being afraid of worsening their condition as compared to 15% men.

Different studies agree with these findings, such as the like of [5] whose study states that barriers of sports are mostly environmental, while facilitators are usually personal factors. [12] also highlights one of the environmental barriers as difficulty in accessibility into sporting facilities and buildings by participants. A study by [7] shows that the environmental level of barriers highly affects both participants and non-participants of WB, and these are closely related to transport, equipment cost, accessibility into sporting facilities and buildings, and delivery times. The study revealed that the personal and environmental factors have the same influence in the participation likelihood levels for both males and females. Thus, the barriers that hinder the possible WB to participate affect both males and females in a similar way. A study by [9] showed the predominance of low-income parathletes and that environmental factor as access to the benefits of public policies, it may be a barrier to participation in parasports. Also, the technology and the services provided should act as facilitators to parasport performance.

- Implications for rehabilitation.
- Understand the objectives of assistive technology in Paralympic sports.
- Identify the environmental factors present in parasports (attitudes, support, services, assistive technology, and policies).
- Analyze the relationship between environmental factors present in parasports (attitudes, support, services, assistive technology, and policies).
- Have access to the concurrent validation of the Assistive Technology Device Predisposition Assessment (ATD PA-Br).

One of the research questions aimed to find out how the personal and environmental factors influence the participation likelihood, in wheelchair basketball, by athletes with physical disabilities. The results show that there is no significant difference ($p= 0.215$; men, $p= 0.918$; women) between the men and women as far as their likelihood to participate in wheelchair basketball is affected by both the environmental factors and the personal factors. This could be explained by that these people living with disabilities are affected by the same environment barriers such as transport, specialised sporting facilities and equipment, minimised trained human resources that could help them in attaining the skills and knowledge required to equip them for wheelchair basketball. Different studies agree with these findings, such as the like of [4] whose study states that barriers of sports are mostly environmental, while facilitators are usually personal factors. [12] Also highlights one of the environmental barriers as difficulty in accessibility into sporting facilities and buildings by participants. A study by [8] shows that the environmental level of barriers highly affects both participants and non-participants of WB, and these are closely related to transport, equipment cost and delivery times.

Conclusions

People with a disability face greater barriers to sport participation than their able-bodied counterparts. From a high-performance perspective, these barriers may restrict the pathway to elite status for potential athletes with a disability. Environmental factors that influence the initial sport participation of wheelchair basketball athletes are social influences, access to sports programs, access to wheelchairs and financial factors. The findings offer practical applications to para-sport for sport policy-makers and organisations to consider how to increase awareness of sporting opportunities in para-sport and accessibility to para-sport programs. The study findings are in line with factors that consistently appear in the literature [6] as factors that consistently appear as negative or contributing to non-participation or dropout include:

- Excessive travel.
- The expense of training and competition.
- Inconvenient training times.
- Low levels of physical literacy or perceptions of competence.
- And an environment that is 'too competitive'.

As supportive of sports participation include:

- Parental and family support.
- Peer interaction.
- Positive environment.
- Venue accessibility.

Recommendations

People leaving with disabilities should be active and engage in physical activities so as to access the benefits of exercising especially on boosting confidence and being independent. Since the study have shown that possible basketballers are affected by both personal and environmental factors in the same way, sports administrators should adopt the following solutions and implement them to increase the number of people participating in wheel chair basketball:

- Do sports awareness programmes with the institutes to bring about knowledge and raise interest within the participants.
- Create small leagues to run the competitions regionally before they compete in the national Paralympics.
- Conduct coaching clinics for people to train, teach and coach specifically and specially WB.
- Reconstruct basketball courts in community clubs, halls and parks so that there is easy access to the facilities.

For future research, one can find out how the personal factors and environmental factors influence participation likelihood into WB by people who are not enrolled in any educational institution and are based at home. This could be because this study has shown that the high percentage in the moderate likelihood is because the participants are in educational institutions were exposed to different information about exercise and sport. This has been enforced by the school's curriculum which includes rehabilitation programs, sporting activities and guided physical activities.

References

1. Mlenzana NB., et al. "Barriers to and facilitators of rehabilitation services for people with physical disabilities: A systematic review". African Journal of Disabilities 1.22 (2013).
2. IWBF Player Classification Commission. "IWBF Official Classification Manual, IWBF – OCM". Version #1 2018, © Copyright: IWBF.
3. IWBF Executive Council. "Official Wheelchair Basketball Rules 2018". Hamburg, Germany (2018).
4. Jaarsma E., et al. "Sports Participation and Physical Disabilities: Taking a Hurdle". Scandinavian Journal of Medicine and Science in Sports, Chapter 3 (2014).
5. Jaarsma E., et al. "Barriers and Facilitators of sports in Dutch Paralympic athletes: An explorative study". Scandinavian Journal of Medicine and Science in Sports (2014).
6. Kean B and Driver C. "Environmental Factors Influencing Early Participation in Para-Sport". in the Book Human Factors and Ergonomics in Sport (2020).
7. Khumalo B., et al. "An investigation into participation trends by wheelchair basketball players at the Zimbabwe Paralympic games: A case study of Bulawayo". International Journal of Human Movement and Sports Sciences 1.1 (2013): 1-12.
8. Khumalo B, Heerden J and Skalko T. "State and status of wheelchair basketball facilities in Zimbabwe". in The Routledge Handbook of Disability in Southern Africa, Edited by: Tsitsi Chataika (2018): 278-289.
9. Marques MP and Alves AC. de Jesus Investigating environmental factors and paralympic sports: an analytical study (2021): 414-419.

10. National survey on disability and health (2013).
11. Phiri P. Wheelchair basketball provincial team selected (2013).
12. Wiggill W. Wheelchair Basketball and community reintegration of people with a spinal cord injury (2016).
13. World Health Organization (WHO). "International classification of functioning, disability and health: children & youth version: ICF-CY"., © World Health Organization (2007): 38-48.
14. World Health Organization (WHO) World Disability Report, WHO, Geneva (2011).
15. Zimbabwe population census (2012).