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Facilitating the Barriers in Physical Activities of Students with Visual Impairment at Elementary Level Special Education in Pakistan

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Abstract:
Sports and physical activity tend to contributes in improving balance, posture, coordination,motor skills and quality of life among children with visual impairment (VI) (Bouchard &Tétreault, 2000; Ilhan et al., 2021).It promotes fitness, ensures health benefits (Haegele&Porretta, 2015) and positively impact on ability to perform daily live activities (Engel-Yeger&Hamed-Daher, 2013). This study intends to identify the barriers of physical activity for children with VI in Pakistan, and at the same time aims to explore the possible facilitators that may be in practice or are possible in the context of Pakistan to support inclusive sports and physical activity of children with VI in Pakistan. Using descriptive research, a sample of 200 special education teachers of students with VI (senior special education teachers (N=75), junior special education teachers (N=75) and orientation mobility instructors(N= 50)) was taken from special education department Govt. of Punjab, Pakistan by using simple random sampling technique. Two self-developed scales, Barriers Identification Scale and Facilitating Strategies Scale were used for the data collection. The collected data was analyzed by computing mean scores, ANOVA & t-test through SPSS.

Introduction

Physical activity (PA) being an essential component of human life ensures psychological, physical and social wellbeing (Biddle &Asare, 2011). There benefits of PA are multiplied for children with visual impairment (VI). Research indicates that sports and physical activity can benefit children with VI in several ways. It not only contributes in improving their balance, posture and coordination, but also improves their overall motor skills (Bouchard &Tétreault, 2000); but also, positively impact their ability to perform daily live activities (Engel-Yeger&Hamed-Daher, 2013). In addition, physical activity not only promotes fitness and ensures health benefits (Haegele&Porretta, 2015), but also is positive impact on overall quality of life (Elsman, et al., 2019; Ilhan et al., 2021).

Physicalactivity offers a platform for socialization of children with and without disabilities, helps to reduce biasness, promote social harmony, positive attitude and tolerance among the members for individual differences (Haegele, et al., 2015). It also supports equal participation of all in a society (Dane-Staples, et al., 2013). Additionally, physical activity has positive impact on health and development of children with VI as well as on overall quality of their life (Morelli, et al., 2011).

On the other hand, there are many harms of minimizing physical activity for children with visual impairment. Limited PA increases dependence on others for daily life activities and restricts autonomy (Skaggs & Hopper, 1996). In addition minimized PA in childhood deprives persons with VI from socialized, enjoyable, healthy and active life style in later adulthood (Kozub& Oh, 2004).

Despite numerous benefits of physical activity, children with VI tend to engage less in PA as compared to their sighted peers (Augestad& Jiang, 2015; Engel-Yeger&Hamed-Daher, 2013; Haegele&Porretta, 2015; Kozub& Oh, 2004). The reasons may include dependence on others for mobility, issues with orientation, limited provision of disability friendly sports, biasness, social exclusion or some other factors. Research indicates that children with VI lack expertise in motor skill and sometimes their fitness is also compromised (Haibach, et al., 2014; Haegele, et al., 2015; Wagner, et al., 2013), in spite of their potential of being fit and have good motor abilities (Haegele&Porretta, 2015; Lieberman et al. 2013). In addition to general deficiency in motor skills, children with VI tend to have poor balance, posture and coordination which may be interlinked with their orientation and mobility skills. This may hinder their desire to take part in physical activity.

The reasons for which children with VI are deprived from participation in PA, such as poor motor skills, fitness, balance and posture are actually a result of limited physical activity itself.

All these problems of children with VI are associated withlimited or inequitable opportunities to participate in PA or sports (Haegele, et al., 2015; Lieberman et al., 2010). Studies have indicated that barriers to PA for children with VI are environmental.

Among barriers is teacher's inability to adapt the equipment, activity and physical environment for PA of children with visual impairment (Haibach et al. 2014; Stuart, et al., 2006). Fear of VI student's safety, fewer and narrower variety of activities offered to children with disabilities, students fear of being bullied in PA and being mocked by nondisabled peers are also reported to be barriers of PA (Dane-Staples, et al., 2013; DeSchipper, et al., 2017; Engel-Yeger&Hamed-Daher, 2013).

Among facilitators of physical activity for children with VI is increased ability of teachers to adapt the activity, adapt the playground and physical environment, modify equipment, use modified equipment and awareness of the challenges faced by children with VI during physical activity (Lieberman & McHugh, 2001; Lieberman et al. 2013).

Where the advanced countries are still in the way of removing all barriers to sports and physical activity of children with VI, resource poor countries like Pakistan are far behind in this struggle. Planning for inclusive education being a recent agenda of the country is mainly focusing on providing single national curriculum for children with and without disability. But such initiative demands an insight into other relevant areas which should also be focused if a true inclusion is required, such as co-curricular and extra-curricular activities including sports and physical activity. Unfortunately, literature on sports and physical activity of children with visual impairment living in Pakistan is scarce. Even the barriers to physical activity are less researched area in Pakistan, no studies on facilitators of PA are found for this region. Therefore, this study intends to identify the barriers of physical activity for children with VI in Pakistan, and at the same time aims to explore the possible facilitators that may be in practice or are possible in the context of Pakistan to support inclusive sports and physical activity of children with VI in Pakistan.

Statement of the Problem

The study aimed at determining facilitating strategies for Barriers in Physical Activities of students with Visual Impairment at Elementary Level Special Education in Pakistan.

Objectives of the Study

Following were the main objectives of the study:

- To identify the barriers faced by the students with VI in their physical activities at elementary level special education in Pakistan.

- To determine the facilitating strategies for special education teachers to manage the barriers faced by students with VI in their physical activities at elementary level special education in Pakistan.

Hypotheses of the study

In consistent with the objectives of the study, following hypotheses were formulated and tested for the purpose of the study:

Ho:1 there is no significant difference between the perceptions of different teachers of students with VI (S.S.E.Ts, J.S.E.Ts & O.M.Is) on the statements of barriers identification scale (CIS) for students with VI in their physical activities at elementary level special education in Pakistan.

Ho:2 there is no significant difference between the perceptions of senior and junior special education teachers (S.S.E.Ts & J.S.E.Ts) of students with VI on the statements barriers identification scale (CIS) for students with VI in their physical activities at elementary level special education in Pakistan.

Ho:3 there is no significant difference between the perceptions of senior special education teachers and orientation mobility instructors (S.S.E.Ts & O.M.Is) of students with VIon the statements barriers identification scale (CIS) for students with VI in their physical activities at elementary level special education in Pakistan.

Ho:4 there is no significant difference between the perceptions of Junior special education teachers and orientation mobility instructors (J.S.E.Ts & O.M.Is) of students with VIon the statements barriers identification scale (CIS) for students with VI in their physical activities at elementary level special education in Pakistan.

Ho:5 there is no significant difference between the perceptions of different teachers of students with VI (S.S.E.Ts, J.S.E.Ts & O.M.Is) on the statements of Facilitating Strategies Scale (FSS).

Ho:6 there is no significant difference between the perceptions of senior and junior special education teachers (S.S.E.Ts & J.S.E.Ts) of students with VI on the statements of Facilitating Strategies Scale (FSS).

Ho:7 there is no significant difference between the perceptions of senior special education teachers and orientation mobility instructors (S.S.E.Ts & O.M.Is) of students with VI on the statements of Facilitating Strategies Scale (FSS).

Ho:8 there is no significant difference between the perceptions of Junior special education teachers and orientation mobility instructors (J.S.E.Ts & O.M.Is) of students with VI on the statements of Facilitating Strategies Scale (FSS).

Research Methodology

The study was descriptive in nature further it was survey research. A sample of 200 special education teachers ofstudents with VIi.e S.S.ETs (N=75), J.S.E.Ts (N=75) & O.M.Is (N= 50) was taken from special education department Govt. of Punjab, Pakistan by using simple random sampling technique. Two self-developed scales were used for the data collection. The i.eBarriers Identification Scale (BIS) &Facilitating Strategies Scale (FSS). The BIS comprised of 32 statements on three major barriers i.eSocial and Environmental Barriers, Family Barriers and Personnel Barriers. The FSS comprised of 32 statements on Facilitating strategies to overcome the barriers i.e General Facilitating Strategies for VIS and Special Facilitating Strategies for VIS (Music, Drama, Mobility and orientation training, Guidance and counseling of VI on benefits of sports/PA.The reliability & validity of these two scales were ensured through pilot testing, experts' opinion. The collected data was analyzed by computing mean scores, ANOVA & t-test through SPSS.

Data Analysis

Table:1. *Reliability Indices forBarriers Identification Scale (BIS) &Facilitating strategies Scale (FSS)*

Sr. No	Scale	No of Items	Range of Score on Each Item	Cronbach Alpha
1.	Barriers Identification Scale (BIS)	32	1-5	0.746
2.	Facilitating Strategies Scale (FSS)	32	1-5	

Table 1 shows that the Cronbach's Alpha value for Barriers Identification Scale (BIS) was 0.746 which indicates a good reliability index. The Cronbach's Alpha value for Facilitating Strategies Scale (FSS)was 0.754which also indicates a good reliability index.

Table:2.*Scores of teachers of students with VI(N=200) on Barriers Identification Scale (BIS)*

S. No.	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
Social and Environmental Barriers						
1.	Limited opportunities of sports or physical activities (PA) for VI	0 (0%)	6 (3%)	6 (3%)	82 (41%)	106 (53%)
2.	Discrimination by the society	5 (2.5%)	25(12.5 %)	23 (11.5%)	73 (36.5%	74 (37%)

3.	Safety issue	5 (2.5%)	10 (5.0%)	40 (20.0%)	102 (51.0%)	43 (21.5%)
4.	Inaccessible environment	10 (5.0%)	0 (0%)	22 (11.0%)	131 (65.5%)	37 (18.5%)
5.	Limited access due to transportation	9 (4.5%)	6 (3.0%)	5 (2.5%)	140 (70%)	40 (20%)
6.	Lack of disability friendly PA area	5 (2.5%)	5 (20.5%)	27 (13.5%)	132 (66%)	31 (15.5%)
7.	Lack of disability friendly sports material	5 (2.5%)	5 (2.5%)	11 (5.5%)	140 (70%)	39 (19.5%)
8.	No adaptation for VI in Facilities	5 (2.5%)	5 (2.5%)	15 (7.5%)	133 (66.5%)	42 (21.0%)
9.	No adaptation for VI in practice/training	0 (0%)	5 (2.5%)	28 (14.0%)	130 (65.0%)	37 (18.5%)
10.	No availability of disability sports instructor	5 (2.5%)	5 (2.5%)	30 (15.0%)	135 (67.5%)	25 (12.5%)
11.	Lack of latest technology to facilitate PA of VI	8 (4.0%)	10 (5.0%)	31 (15.5%)	94 (47.0%)	57 (28.5%)
12.	Lack of support and acceptance from non-disabled peers	3 (1.5%)	11 (5.5%)	25 (12.5%)	104 (52.0%)	57 (28.5%)
13.	Sports are too competitive	3 (1.5%)	5 (2.5%)	22 (11.0%)	116 (58.0%)	54 (27.0%)
14.	Lack of cooperation from peers	3 (1.5%)	0 (0%)	17 (8.5%)	96 (48.0%)	84 (42.0%)
15.	Bullying from non-disabled fellows	3 (1.5%)	0 (0%)	35 (17.5%)	85 (42.5%)	77 (38.5%)
Family related Barriers						
16.	Low Socio-Economic status of Family (Income, occupation, Education).	3 (1.5%)	0 (0%)	20 (10.0%)	133 (66.5%)	44 (22.0%)
17.	Lack of Family Support for VIS in doing physical activities.	5 (2.5%)	0 (0%)	48 (24.0%)	104 (52.0%)	43 (21.5%)
18.	Cost of Equipment for physical activities.	5 (2.5%)	38 (19.0%)	36 (18.0%)	87 (43.5%)	34 (17.0%)
19.	Over protected and extra Conscious Parents of VIS.	5 (2.5%)	11 (5.5%)	5 (2.5%)	111 (55.5%)	68 (34.0%)
20.	Negligence and ignorance of VIS by family members.	5 (2.5%)	0 (0%)	36 (18.0%)	115 (57.5%)	44 (22.0%)

21.	Least Concern of family with career of Visually Impaired Students.	5 (2.5%)	5 (2.5%)	37 (18.5%)	115 (57.5%)	38 (19.0%)
Personnel Barriers						
22.	Lack of interest and motivation.	5 (2.5%)	0 (0%)	58 (29.0%)	93 (46.5%)	44 (22.0%)
23.	Fitness issues.	5 (2.5%)	0 (0%)	12 (6.0%)	139 (69.5%)	44 (22.0%)
24.	Lack of self-efficacy in performing PA	0 (0%)	11 (5.5%)	40 (20.0%)	134 (67.0%)	15 (7.5%)
25.	Lack of information and awareness.	5 (2.5%)	11 (5.5%)	38 (19.0%)	93 (46.5%)	53 (26.5%)
26.	Inferiority complex.	5 (2.5%)	10 (5.0%)	26 (13.0%)	96 (48.0%)	63 (31.5%)
27.	Fear of injury.	11 (5.5%)	6 (3.0%)	17 (8.5%)	112 (56.0%)	54 (27.0%)
28.	Being dependent of others for PA/exercise	0 (0%)	5 (2.5%)	34 (17.0%)	109 (54.5%)	52 (26.0%)
29.	No/Insufficient Orientation and Mobility Training	5 (2.5%)	5 (2.5%)	26 (13.0%)	85 (42.5%)	79 (39.5%)
30.	limited mobility	0 (0%)	0 (0%)	22 (11.0%)	117 (58.5%)	61 (30.5%)
31.	Fear of ridicule	0 (0%)	5 (2.5%)	34 (17.0%)	109 (54.5%)	52 (26.0%)
32.	Less expertise in sports due to limited exposure to PA	5 (2.5%)	10 (5.0%)	26 (13.0%)	96 (48.0%)	63 (31.5%)
Overall Average %		**2.1%**	**3.8%**	**13.2%**	**55.3%**	**25.6%**

Table 2 indicates barriers faced by students with visual impairmentin sports and physical activity. Among social and environmental barriers, a strong barrier as reported by 94% respondents was limited opportunities of sports or physical activities. Lack of disability friendly sports material (reported by 89.5%), inaccessible environment(reported by 84%), lack of cooperation from peers (reported by 90%) were among few other reported barriers.

The family related barriers as reported by respondents were Over protected and extra conscious parents of VIS (reported by 89.5%), low socio-economic status of family including income or education of parents(reported by 88.5%). Personal barriers as reported by participants were less expertise in sports due to limited exposure to pa (reported by 79.5%), limited mobility (reported by 89%), no/insufficient orientation and mobility training (reported by 82%), fitness issues

(reported by 91.5%), inferiority complex (reported by 79.5%), fear of ridicule (reported by 80.5%).

In average 2.1% participants strongly disagreed with the barriers indicated in the scale, 3.8% disagreed, 13.2% had neutral opinion, while, 55.3% agreed and 25.6% strongly agreed with the barriers reported in the BIS.

Table:3.*Scores of teachers of students with VI(N=200) on Facilitating Strategies Scale (FSS)*

S. No.	Statement	Strongly Disagree		Disagree		Neutral		Agree		Strongly agree	
		F	%	F	%	F	%	F	%	F	%
General Facilitating Strategies for VIS											
1.	Increasing engagement of VI in physical activities (PA)	0	0	6	3.0	6	3.0	82	41.0	106	53.0
2.	Ensuring equal access for VI to participate in sports and PA.	4	2.0	22	11.0	23	11.5	77	38.5	74	37.0
3.	Encouraging and motivating VI students	4	2.0	9	4.5	39	19.5	105	52.5	43	21.5
4.	Providing ample opportunities to engage in sports or PA with a sports buddy, disabled peers, as well as non-disabled peers.	9	4.5	0	0	22	11.0	132	66.0	37	18.5
5.	Promoting collaboration among VI and non-disabled students in PA.	8	4.0	6	3.0	5	2.5	141	70.5	40	20.0
6.	Using latest technology to assist VI in sports.	4	2.0	3	1.5	26	13.0	136	68.0	31	15.5
7.	Providing adapted materials and equipment.	5	2.5	3	1.5	12	6.0	141	70.5	39	19.5
8.	Ensuring disability friendly environment	5	2.5	3	1.5	15	7.5	135	67.5	42	21.0
9.	Creating awareness about VI in school and among community.	5	2.5	0	0	45	22.5	105	52.5	45	22.5
10.	Acknowledging and appreciating the efforts of VI	4	2.0	0	0	36	18.0	90	45.0	70	35.0

	in sports and PA.										
Special Facilitating Strategies for VIS											
A.	**Music**										
11.	Improves coordination among VI and non-disabled students.	7	3.5	8	4.0	31	15.5	99	49.5	55	27.5
12.	Improves self-confidence of VI.	4	2.0	11	5.5	25	12.5	105	52.5	55	27.5
13.	Promotes inclusive activities	3	1.5	5	2.5	22	11.0	115	57.5	55	27.5
B.	**Drama**										
14.	Improves communication skills of VI.	3	1.5	0	0	17	8.5	99	49.5	81	40.5
15.	Teaches empathy to non-disabled students	3	1.5	0	0	36	18.0	87	43.5	74	37.0
16.	Reduces inferiority complex of VI.	3	1.5	0	0	20	10.0	131	65.5	46	23.0
17.	Promotes inclusive activities	5	2.5	0	0	46	23.0	103	51.5	46	23.0
C.	**Mobility and orientation training**										
18.	Facilitates with awareness of surrounding	6	3.0	33	16.5	36	18.0	91	45.5	34	17.0
19.	Provides techniques to self-orientate with any unfamiliar area	5	2.5	11	5.5	18	9.0	107	53.5	59	29.5
20.	Enhance familiarity with environment.	3	1.5	13	6.5	32	16.0	115	57.5	37	18.5
21.	Ensures independence in mobility	3	1.5	5	2.5	32	16.0	126	63.0	34	17.0
D.	**Guidance and counseling of VI on following benefits of sports/PA**										
22.	Improved overall health/physical fitness.	3	1.5	1	0.5	62	31.0	93	46.5	41	20.5
23.	Means of fun/relaxation	3	1.5	0	0	18	9.0	142	71.0	37	18.5
24.	Increased strength	0	0	22	11.0	36	18.0	129	64.5	13	6.5
25.	Increased social contacts	5	2.5	9	4.5	38	19.0	103	51.5	45	22.5
26.	Increased self-confidence	3	1.5	6	3.0	30	15.0	104	52.0	57	28.5

27.	Means of learning new skills	10	5.0	5	2.5	28	14.0	109	54.5	48	24.0
28.	Learning better use of sports material and assistive device	0	0	5	2.5	45	22.5	106	53.0	44	22.0
29.	Means of competition/winning	4	2.0	18	9.0	24	12.0	85	42.5	69	34.5
30.	Increased independence	0	0	0	0	34	17.0	112	56.0	54	27.0
31.	Acceptance of disability by peers and society	0	0	18	9.0	30	15.0	111	55.5	41	20.5
32.	Personal growth	5	2.5	10	5.0	26	13.0	96	48.0	63	31.5
Overall Average %		**1.9%**		**3.6%**		**14.4%**		**54.8%**		**25.3%**	

Table 3 shows facilitators to sports and physical activity of students with visual impairment.Increasing engagement of VI in physical activities(reported by 94%), Promoting collaboration among VI and non-disabled students in PA(reported by 90%), providing adapted materials and equipment (reported by 90%), Ensuring disability friendly environment (reported by 88.5%) were among few facilitative strategiesreported by the participants. Drama, music, orientation and mobility training as well as guidance and counseling of students with visual impairmenton benefits of sports or PAis found to be useful facilitator as reported by more than 60% of respondents.

In average 1.9% participants strongly disagreed with the facilitators indicated in the scale, 3.6% disagreed, 14.4% had neutral opinion, while, 54.8% agreed and 25.3% strongly agreed with the facilitative strategies highlighted in the FSS.

Table:4. *Mean Scores of teachers of students with VIi.e S.S.E.Ts (N=75), J.S.E.Ts (N=75) & O.M.Is (N=50) on Barriers Identification Scale (BIS)*

Sr. No	Teachers	No of Prospective Teachers	Standard Deviation	Mean Score
1.	S.S.E.Ts	75	0.29	4.01
2.	J.S.E.Ts	75	0.26	3.99
3.	O.M.Is	50	0.29	3.95

Table 4 shows that there were 75S.S.E.Ts, 75 J.S.E.Ts and 50 O.M.Is who participated in the study and responded on Barriers Identification Scale (BIS). The mean score of S.S.E.Ts on Barriers Identification Scale was 4.01, the mean score of J.S.E.Tson Barriers Identification Scale was 3.99 and the mean score of O.M.Is on Barriers Identification Scale was 3.95. These mean scoreswere above the cut and median score which was 3. It means that all respondents were

agreed about the barriers for visually impaired students in their physical activities as identified in the scale.i.eSocial and Environmental Barriers, Family Barriers and Personnel Barriers.

Table:5 *Mean Scores of teachers of students with VIi.e S.S.E.Ts (N=75), J.S.E.Ts (N=75) & O.M.Is (N=50) on Facilitating strategies Scale (FSS)*

Sr. No	Teachers	No of Prospective Teachers	Standard Deviation	Mean Score
1.	S.S.E.Ts	75	.27	4.00
2.	J.S.E.Ts	75	.25	4.01
3.	O.M.Is	50	.28	3.89

Table 5 shows that there were 75S.S.E.Ts, 75 J.S.E.Ts and 50 O.M.Is who participated in the study and responded on Facilitating strategies Scale (FSS). The mean score of S.S.E.Ts Facilitating strategies Scalewas 4.00, the mean score of J.S.E.Tson Facilitating strategies Scale was 4.01and the mean score of O.M.Is on Facilitating strategies Scale was 3.89. These mean scores were above the cut and median score which was 3. It means that all respondents were agreed about the facilitating strategies to overcome the barriers of students with VI in their physical activities as identified in the scale. i.eGeneral Facilitating Strategies for VIS and Special Facilitating Strategies for VIS (Music, Drama, Mobility and orientation training, Guidance and counseling of VI on benefits of sports/PA.

Table:6 *ANOVA Statistics for HO:1*

Comparison on BIS	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.090	2	.045		
Within Groups	15.569	197	.079	.571	.566
Total	15.659	199			

POST HOC (Tukey HSD) for Multiple Comparisons

Designation		Mean Difference	Std. Error	Sig.
S.S.E.Ts	J.S.E.Ts	.01375	.04591	.952
	O.M.I.s	.05396	.05133	.546
J.S.E.Ts	S.S.E.Ts	-.01375	.04591	.952
	O.M.I.s	.04021	.05133	.714
O.M.Is	S.S.E.Ts	-.05396	.05133	.546

	J.S.E.Ts	-.04021	.05133	.714

Table 6 shows the ANOVA statistics to compare all participants' mean scores, such as S.S.E.Ts, J.S.E.Ts and O.M.Is on the Barriers Identification Scale (BIS). The value of F is .571, with a *p*-value of .566 is greater than the .05 alpha levels. A Tukey post hoc test showed similar results when comparing the respondents with each other. Therefore, the Null Hypothesis *H0:1 statingno significant difference between the perceptions of different teachers of students with VI (S.S.E.Ts, J.S.E.Ts & O.M.Is) on the statements of Barriers Identification Scale (BIS) was accepted.*

Table:7 *t-test statistics for H0:2.*

Sr. No	**Designation**	**No of Prospective Teachers**	**Standard Deviation**	**Mean Score**	**df**	**t-value**	**p-value**
1.	S.S.E.Ts	75	.28	4.01	148	.306	.760
2.	J.S.E.Ts	75	.26	3.99			

Table 7 indicates a non-significant difference between the mean scores of S.S.E.Ts and J.S.E.Ts on Barriers Identification Scale (BIS). The value of t is .306, with a *p*-value of .760which is greater than *α*= .05.Thus null hypothesis, *H0:2 showingno significant difference between the perceptions of senior and junior special education teachers (S.S.E.Ts & J.S.E.Ts) of students with VI on the statements of Barriers Identification Scale (BIS)*wasaccepted.

Table:8 *t-test statistics for H0:3.*

Sr. No	**Designation**	**No of Prospective Teachers**	**Standard Deviation**	**Mean Score**	**df**	**t-value**	**p-value**
1.	S.S.E.Ts	75	.28	4.01	123	1.011	.314
2.	O.M.Is	50	.29	3.95			

Table 8 indicates t value of1.011, with a *p*-value of .314which is greater than α= .05.This means H0:3 showing no significant difference between the perceptions of senior special education teachers and orientation mobility instructors (S.S.E.Ts & O.M.Is) of students with VI on the statements of Barriers Identification Scale (BISwas accepted.

Table:9 *t-test statistics for H0:4.*

Sr. No	Designation	No of Prospective Teachers	Standard Deviation	Mean Score	Df	t-value	p-value
1.	J.S.E.Ts	75	.26	3.99	123	.795	.428
2.	O.M.Is	50	.29	3.95			

Table 9 indicates t value of .795, with a *p*-value of .428which is greater than α= .05. ThusH0:4 showing no significant difference between the perceptions of Junior special education teachers and orientation mobility instructors (J.S.E.Ts & O.M.Is) of students with VI on the statements of Barriers identification scale (BIS) was accepted.

Table:10 *ANOVA statistics for H0:5.*

Comparison on BIS	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.544	2	.272		
Within Groups	14.608	197	.074	3.665	.027
Total	15.152	199			

POST HOC (Tukey HSD) for Multiple Comparisons

Designation		Mean Difference	Std. Error	Sig.
S.S.E.Ts	J.S.E.Ts	.00970	.04447	.974
	O.M.I.s	.12485*	.04972	.034
J.S.E.Ts	S.S.E.Ts	-.00970	.04447	.974
	O.M.I.s	.11515	.04972	.056
O.M.Is	S.S.E.Ts	-.12485*	.04972	.034
	J.S.E.Ts	-.11515	.04972	.056

Table 10 shows the ANOVA statistics to compare all participants' mean scores, such as S.S.E.Ts,J.S.E.Ts and O.M.Is on the Facilitating Strategies Scale (FSS).F value of3.665, and a *p*-value of .027which is less than α= .05 illustrates a statistically significant difference between the

means of the different teachers of visually impaired students on Facilitating Strategies Scale by ANOVA. A Tukey post hoc test also reflected similar results on multiple comparisons of all respondents with each other. Therefore, the Null Hypothesis H0:5 was rejected.

Table:11 *t-test statistics for H0:6.*

Sr. No	Designation	No of Prospective Teachers	Standard Deviation	Mean Score	df	t-value	p-value
1.	S.S.E.Ts	75	.27	4.01	148	.223	.824
2.	J.S.E.Ts	75	.25	4.00			

Table 11 indicates a non-significant difference between the mean scores of S.S.E.Ts and J.S.E.Ts on Facilitating Strategies Scale (FSS) witht value of.223, *p*-value of .824at α= .05. The null hypothesis, *H0:6 showingno significant difference between the perceptions of senior and junior special education teachers (S.S.E.Ts & J.S.E.Ts) of students with VI on the statements of Facilitating Strategies Scale (FSS*)wasaccepted.

Table:12 *t-test statistics for H0:7.*

Sr. No	Designation	No of Prospective Teachers	Standard Deviation	Mean Score	df	t-value	p-value
1.	S.S.E.Ts	75	.27	4.01	123	2.43	.016
2.	O.M.Is	50	.28	3.88			

Table 12 indicates a significant difference between the mean scores of S.S.E.Ts and O.M.Is on Facilitating Strategies Scale (FSS) with t value of2.43, *p*-value of .016at α= .05. Therefore null hypothesis, H0:7 wasrejected.

Table:13 *t-test statistics for H0:8.*

Sr. No	Designation	No of Prospective Teachers	Standard Deviation	Mean Score	df	t-value	p-value
1.	J.S.E.Ts	75	.25	4.00	123	2.33	.021
2.	O.M.Is	50	.28	3.88			

Table 13 indicates a significant difference between the mean scores of J.S.E.Ts and O.M.Is on Facilitating Strategies Scale (FSS) with t value of 2.33, *p*-value of .021 at α= .05. Thus null hypothesis, H0:8was rejected.

Discussion

Pakistan, a country with limited resources, is far behind the developed countries when it comes to removing all obstacles to sports and physical activity for children with visual impairment. When it comes to inclusive education, the country's recent focus is on providing all children with and without disabilities with a single national curriculum. Co-curricular and extra-curricular activities, as well as sports and physical activity, must also be considered if true inclusion is to be achieved through this initiative. This study aims to identify the barriers to physical activity for children with visual impairment (VI) in Pakistan, as well as to explore the possible facilitators that may be in practice or are possible in the context of Pakistan to support inclusive sports and physical activity for children with VI in Pakistan.

The findings of current research highlighted several barriers faced by students with visual impairment in sports and physical activity. Among social and environmental barriers, limited opportunities of sports or physical activities,lack of disability friendly sports material,inaccessible environment and lack of cooperation from peers were highly reported barriers. This is in line with the research conducted by Haegele, et al. (2015),Jaarsma, et al. (2014) and Lieberman et al. (2010, 2013)who stated that dearth of friends and playmates, inequitable opportunities and transport are frequently mentioned environmental barriers for people with VI.However, Rimmer et al., (2004)have illustrated transport as a barrier in a study on sports among people with physical disabilities.

The research findings have revealed that theover protected and extra conscious parents of students with visual impairment (SVI), low socio-economic status of family including income or education of parents act as abarrier to participation in sports and physical activity for SVI.Similarly, Jaarsma,et al. (2014) have also found that the costs of participating in sports is a reported barrier to physical activity for people with VI. Similar results were reported in studies on people with physical disabilities (Scelza, et al., 2005; Wright, et al., 2019).

The findings of current research highlightedcertain personal barriers to participation in PA including less expertise in sports due to limited exposure to PA, limited mobility, no/insufficient orientation and mobility training, fitness issues, inferiority complex and fear of ridicule. The findings of the present study are streamed with other studies indicating disability, the costs, and lack of exercising with peers or buddies as barriers to sports and/or exercise(Dane-Staples, et al., 2013; DeSchipper, et al., 2017; Engel-Yeger&Hamed-Daher, 2013).Jaarsma, et al. (2014) reported that experiencing visual impairment is considered a personal barrier by people with VI. Similarly in a study on spinal cord injury, Jaarsma, et al.(2013)andKehn& Kroll (2009)illustrateddependence on others as personal barrier to PA. Other studies have found an

association in higher level of impairment with less participation in sports (Ramulu et al., 2012; van Landingham, et al., 2012).

The present study found no significant difference between the perceptions of senior special education teachers, junior special education teachers and orientation mobility instructors of students with VI on the statements of Barriers Identification Scale (BIS). However, there was a statistically significant difference between the perceptions of senior special education teachers, junior special education teachers and orientation mobility instructors of students with VI on the statements of Facilitating Strategies Scale (FSS).

For people with visual impairments, the most effective environmental facilitatorsto get and stay motivated in sports were fostering collaboration between those with and those without disabilities, providing adapted equipment and materials, establishing a disability-friendly environment, and increasing VI participation in physical activity.The findings here were in line with previous studies (Lieberman et al., 2013). According to Lieberman et al. (2013), PA of students with VI can be facilitated by teachers' ability to adapt sports or PA and the use of modified equipment.Even though a dearth of friends and playmates was seen as an environmental obstacle, forming social connections was recognized as a key personal facilitator for sustaining sport participation (Alcaraz-Rodrguez et al., 2021; Jaarsma, et al., 2014).

Aside from sports or PA, other important facilitators as found in this study included drama, music, orientation, and mobility training for students with visual impairments. Preserving overall fitness, health, fun, and social ties have been found to be the main reasons in fostering physical activity participation for people with special needs (Jaarsma et al., 2013; Lee, et al., 2008). Additional consideration should be given to barriers and facilitators when guiding individuals with visual impairments regarding participation in sports, as per Jaarsma, et al. (2014, 2016).

Conclusions

There are several barriers to physical activity for children with visual impairment in Pakistan, such as limited opportunities of sports or physical activities, lack of disability friendly sports material, inaccessible environment and lack of cooperation from peers, problems with transport, over protected and extra conscious parents and low socio-economic status of family. Personal barriers to participation in PA including less expertise in sports due to limited exposure to PA, limited mobility, no/insufficient orientation and mobility training, fitness issues, inferiority complex and fear of ridicule. Promoting collaboration among VI and non-disabled students in PA,providing adapted materials and equipment, ensuring disability friendly environment and increasing engagement of VI in physical activities, orientation and mobility training as well as guidance and counseling of students with visual impairment on benefits of sports or PA were the most important environmental and personal facilitators for people with visual impairments to become and stay motivated in sports and physical activity.

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