

Coaching Needs for Badminton Players with Intellectual Disability

Selina Khoo

Faculty of Sports and Exercise Science, Universiti Malaya; selina@um.edu.my

Yuhanis Adnan

Faculty of Sports and Exercise Science, Universiti Malaya; yuhanis@um.edu.my

Mark Brooke

University Town Writing Programme, National University of Singapore; elcmb@nus.edu.sg

INTRODUCTION

According to the World Health Organization, about 15% of the world's population has a disability and 200 million people with intellectual disability (WHO Director-General, 2022). There are benefits to participation in sport for persons with intellectual disability (Bondar et al., 2020; Pejčić et al., 2019). Olvhøj et al. (2022) found that adults with intellectual disability who participate in team sports benefit from membership in a social community, communication skills development, and synchronised experiences with others facing similar challenges.

However, despite the physical, psychological, and social benefits of sports, sports participation among persons with intellectual disability is lower compared to the general population (Robertson et al., 2018). In Australia, 42% of adults with intellectual disability participated in sports/physical activity compared to 71% of the general population (Borland et al., 2020). A survey of adults with intellectual disability in England reported that 41% of participants participated in sports in the last month (Robertson & Emerson, 2010).

As there is limited opportunity for persons with intellectual disability to participate in sport, Special Olympics (SO) was established in the United States in 1968 "to provide year-round sports training and athletic competition in a variety of Olympic-type sports for children and adults with intellectual disabilities, giving them continuing opportunities to develop physical fitness, demonstrate courage, experience joy and participate in a sharing of gifts, skills and friendship with their families, other Special Olympics athletes and the community" (Special Olympics, n.d.).

SO recognizes the vital role that coaches play in supporting the development of athletes with intellectual disability. Part of the Special Olympics Strategic Plan 2021-2024 is focused on strengthening coach education and development frameworks. This involves better understanding the needs of coaches as well as the needs and wants of athletes with intellectual disability they are supporting. Coaches are crucial in providing more opportunities for persons with intellectual disability to participate in sport. However, coaching athletes with disabilities require additional skills related to the disability (Wareham et al., 2018). Coaching must be modified to match the unique and individual needs of persons with intellectual disability (McConkey et al., 2019). Turgeon et al. (2022) suggested investigating the needs of coaches for continued training.

One of the SO sports is badminton. It is an accessible sport and very suitable to be played by persons with intellectual disability. The popularity of badminton among persons with intellectual disability has increased. However, data from SO show that the growth of players has increased at a faster rate compared to coaches. Having more trained and qualified coaches for badminton players with intellectual disability is vital. Therefore, this research aimed to identify the needs of coaches and badminton players with intellectual disability.

METHODS

This research employed a mixed-method approach which consisted of interviews and a cross-sectional quantitative survey. The Universiti Malaya Research Ethics Committee approved this study (UM.TNC2/UMREC_1684).

Participants

Interview

Interview participants were Special Olympics badminton coaches and Special Olympics badminton players. The inclusion criteria for coaches were they had been coaching Special Olympics badminton players for at least one year. Special Olympics badminton players were recruited from Malaysia.

Survey

Survey participants were Special Olympics badminton coaches.

Measures and procedure

Interview

Badminton coaches from various regions were recruited through Special Olympics International. Online semi-structured interviews were conducted with coaches to explore their coach pathway, coach training, coaching needs, and experiences coaching Special Olympics badminton players. Badminton players were recruited through Special Olympics Malaysia badminton coaches. Interviews with players focused on their athlete pathway and development, their experiences with coaching, and ways to improve their badminton experience. All interviews were conducted online. Before each interview, we briefed participants on the procedure and answered any questions they may have before requesting their consent for participation in the study. Interviews with coaches were conducted in English whereas interviews with players were conducted in English or Malay. We recorded all interviews after obtaining permission from participants. Interviews were transcribed verbatim, and content was coded manually.

Survey

Based on the interview data, a list of coach and athlete needs were compiled into an inventory. The inventory comprised 34 statements on a 4-point Likert scale ranging from 1 (not important) to 4 (very important). After we pilot-tested the inventory, a survey with the inventory was distributed to Special Olympics badminton coaches through Special Olympics International. The survey was conducted online in Arabic, Chinese, English, and Spanish. Data analysis was conducted using IBM SPSS version 26 (IBM Corp. Armonk, NY).

RESULTS

Interview

Interviews were conducted with 15 coaches (12 male, 3 female) and five athletes (3 male, 2 female). The coaches, aged between 28 and 73 years, were from Bangladesh, China, Fiji, Guatemala, Ireland, Kenya, Malaysia, Nigeria, and Thailand. They have been coaching between two to 25 years. The athletes were aged between 19 to 25 years. Please see Table 1 for demographic profile of participants.

Table 1.

Demographic profile of interview participants

Role	Participant ID	Country of residence	Age	Gender	Years involved in SO badminton
Coach	C1	Malaysia	54 years old	Male	25 years
Coach	C2	Thailand	44 years old	Male	2 years
Coach	C3	Kenya	28 years old	Male	6 years
Coach	C4	Kenya	45 years old	Male	3 years
Coach	C5	Fiji	31 years old	Female	4 years
Coach	C6	Malaysia	51 years old	Male	3 years
Coach	C7	Bangladesh	Not stated	Female	15 years

Coach	C8	Nigeria	37 years old	Male	5 years
Coach	C9	Guatemala	38 years old	Male	8 years
Coach	C10	Kenya	25 years old	Female	5 years
Coach	C11	Ireland	73 years old	Male	23 years
Coach	C12	Ireland	64 years old	Male	19 years
Coach	C13	Bangladesh	45 years old	Male	14 years
Coach	C14	Malaysia	51 years old	Male	9 years
Coach	C15	China	46 years old	Male	4 years
Athlete	A1	Malaysia	23 years old	Female	Did not give exact number of years
Athlete	A2	Malaysia	24 years old	Male	Did not give exact number of years
Athlete	A3	Malaysia	Not stated	Male	1 year
Athlete	A4	Malaysia	19 years old	Female	1 year
Athlete	A5	Malaysia	25 years old	Male	3 years

Interviews with coaches and athletes fell into two broad themes: Badminton coaching and badminton players and families.

1. *Badminton coaching*

Coach pathways

Coach pathways are diverse but tend not to be structured or systematic. It seems common for coaches to start working with SO athletes before any training is provided. They either self-learn once involved or have no training and learn from their peer coaches during sessions. Therefore, the pathway tends to be very hands-on, and learned through experience and practice. Two coaches from Kenya studied to do a sport-related degree and were selected to do volunteerism. Two coaches from Bangladesh and one from Nigeria were elite badminton players before becoming SO badminton coaches. Other coaches were invited to join SO badminton because they were already badminton coaches for players without disabilities. Another coach started because someone in his family is has an intellectual disability. Other coaches started with intellectual disability athletes by volunteering on the Camp Shriver program at weekends.

Four of the interviewees are teachers. If teachers, they might get involved in SO by starting off working with the special needs children of the school they work in. Also, schools and teacher training colleges encourage involvement in special needs activities outside. Volunteering can help to develop leadership and coaching skills.

Coach training

All coaches point out that they need special training with SO athletes, and all report that they would like to have more training. According to C1, trainee SO coaches can learn the three coaching courses based on divisioning according to age, ability, and gender to move from Sports Assistant, Coaching Assistant to Coach online ([Online Coach Education \(specialolympics.org\)](https://www.specialolympics.org/online-coach-education)). However, these courses are not badminton specific. There is also a Shuttle Time course of 22 lessons ([Developmental-Sports-Shuttle-Time-Lesson-Plans-English.pdf \(specialolympics.org\)](https://www.specialolympics.org/developmental-sports-shuttle-time-lesson-plans-english)) offered by the Badminton World Federation for SO children aged 5 to 15 years of age that coaches can employ. This course can be used as a basis for coach training to help to take recreational badminton players through to more competitive levels but it is not sufficient to train athletes to elite level. C11 says that the majority of the coaching at beginner level 1 focuses more on fun with children than building elite performance. Moreover, very often, because coaching is predominantly for recreational badminton, coaches are trained to teach more than one sport. For example, C3 is a coach for SO football, netball, volleyball, handball, swimming, and softball. This lack of specialised coach training means that coaches tend not to be able to observe and try to correct athlete problems related to badminton techniques. C11 states: “unless you know something about coaching, you’re

not going to correct them. You have to be able to recognize what the problem is and then try to sort it out for the player". He confirms that if there were a salary in SO coaching, training could be more focused on elite badminton.

Despite these reports of a minimal level of coaching, interviewees also had positive responses about funding for training for elite purposes. Kenyan coaches state that there is some support for SO in their country. C10 has completed Levels 1 and 2, which is specialisation in developing competitive badminton athletes. He also has certificates in coaching soccer and gymnastics. C3 has first aid and motor skill training from SO. He also completed a Shuttle Time Coaching Course over six months to become a specialised badminton coach. Now he trains badminton coaches. C4 also reports that the Kenya Badminton Federation give some equipment as he has been trained by the Badminton World Federation. C1 reports how funding from the Lions Club International Foundation ([Lions Clubs International Foundation \(specialolympics.org\)](http://LionsClubsInternationalFoundation(specialolympics.org))) has helped him to train over 60 coaches. His plan is to organize the badminton Level 3 lead coach course for more experienced coaches. To complete the training, coaches first sit a theory course online through the SO portal ([Online Coach Education \(specialolympics.org\)](http://OnlineCoachEducation(specialolympics.org))).

Coaching needs

In countries like Bangladesh, Fiji, Guatemala, Kenya and Thailand, there is very little infrastructure available for badminton coaching. From the interviews with coaches, the SO work tends to be self-funded and equipment is severely lacking. The SO Kenya coaches report that they need more funding for equipment, and to be better able at scouting for SO athletes, as well as to form clubs for SO children when they leave school. They report how they have only five coaches to train 47 children. Equipment if available, is often borrowed from local schools. However, according to C4, getting equipment from schools can also be a challenge because badminton is not in the national curriculum in schools. Similarly, C5 reports how badminton is not popular in Fiji unlike rugby, and consequently, access to equipment is problematic. She states that they do not have a court, and possess only one badminton set of racquets, net and shuttlecock to play with. They have to use cones to mark the court and play outside. She hopes SO Fiji will build a court in the future. C9 also states that more money is required from the government. There is only one coach who was a national team player in Guatemala and badminton is only played in one of 14 districts with SO sports. In Bangladesh, nutrition for participants is a problem. According to C13, players are often hungry because they are so poor. Transport to the training events is also very expensive constraining training sessions. C8 states that, as there are no monetary rewards for coaches, he has not recently been able to afford to go for training.

2. *Badminton players and families*

Athlete pathway and development

Coaches are all sure that SO athletes can learn to play badminton at very high levels of achievement with good coaching. C5 reports how athletes have an excellent attitude and will work very hard. Moreover, C11 argues that SO athletes should be pushed athletically. Despite this potential for elite performance, all coaches report how unique coaching is required for SO athlete development. C5 conveys how SO children need a great deal of physical, mental and social support. Indeed, several of the coaches interviewed reported how hugs, smiles and love amongst SO athletes, parents and coaches are very common during sessions. Athletes often build very strong friendships with other players. Additionally, fun and games during training are important so activities such as using balloons for badminton are common. A2 enjoyed everything about the sport, including learning new techniques, making friends with the other players, and playing together.

However, intellectual disability is often still viewed as a taboo. C1 reports how difficult it is to recruit athletes in rural areas because of taboo. He states:

“These special cases they always sideline by the communities. ... furthermore their parents they felt embarrassed because they couldn't show, they couldn't highlight their kids in public”.

The isolation and neglect are reiterated by C11. Talking of recent history, he says that people with intellectual disability

“were locked away... they were in homes... they did not go to school... I think we had a term for them in Irish. They were called God's children and God will look after them”.

C2 also says it is difficult to find children to play because of parental shame. A common response from interviewees was how the SO movement has been very important in raising parents' awareness about intellectual disability and the need for these children to have gateways to inclusion. SO helps to persuade parents who are often reticent to include their children in these activities. Several interviewees state that the coach can therefore help educate parents.

All interviewees state that parents are essential to the working of the athlete development system and that they need to invest a lot of time, energy and money. According to C5, SO training is held in Fiji on Saturdays because parents can be helpful during the sessions. C3 states:

“I can say that we have always rely on their parents because some of the instructions we get them passed to the children through their parents. And there's sometimes the parents they help us to simplify these things ... So that's the support. That kind of support that we have been getting from the parents”.

Moreover, C3 talks about how knowing the child's daily behaviour can help him to prepare his training sessions. He reports how athletes' parents regularly invite him to their house to thank him and how this enables him to talk about any developmental issues their child may have had between trainings. C12 reiterates that for effective coaching, developing trust with players is essential and this can be done by doing other activities such as cycling and walking with the athletes and their parents. He often has phone calls with SO athletes and their parents to speak to them about their day. On the other hand, as C11 shares, if you want to coach techniques, it can be problematic relying on the parents because they “don't understand or need help to work on how to achieve these aims you're setting for them”.

Athlete experiences with coaching

Coaches need to learn to be relaxed, patient and caring as SO athletes' cognitive state can be challenging. According to C4, for coaching to be effective it is important to build “a loving atmosphere”. A2 and A5 attested to the support they received from their coaches when learning badminton. A2 is improving her skills with the help of her coaches and teammates. A5 is committed to his training and loves his coaches. Athletes might forget training techniques and so a great deal of repetition every session is essential. C5 reports that athletes might “throw a tantrum” during training and, according to C8, sit down on the floor refusing to cooperate. Athletes might react strongly to coach anger. SO athletes can also have varying conditions such as brittle bones according to C10. Sometimes “they might poo themselves” says C8. To deal with these issues more effectively, several coaches state that It would be good if the teacher-student ratio could be reduced.

Survey

A survey of 34 items was sent out via Google Form (Arabic, English, and Spanish) and Survey Star (Chinese). A total of 76 participants (42.7 ± 11.7 years) from 26 countries completed the survey. Most of the participants (36.8%) of the participants were from China. More than half (63.2%) of the participants were male and only 5.3% identified as a person with a disability. About half (47.4%) had coaching certification for disability sports and half (52.6%) had coaching

certification for badminton. They have been coaching between one to 24 years with more than half (57.9%) having less than 5 years of experience. More than half (60.5%) were part-time coaches and 38.2% were paid coaches. The demographic information of the survey participants is shown in Table 2.

Table 2.
Demographic profile of survey participants (N = 76)

Demographic Characteristics	Frequency	Percentage
Sex		
Male	48	63.2
Female	28	36.8
Age group		
20 - 30 years	13	17.1
31 - 40 years	17	22.4
41 - 50 years	30	39.5
51 - 60 years	10	13.2
61 - 70 years	3	3.9
Over 70 years	2	2.6
Years coaching		
n < 5 years	44	57.9
5 ≤ n < 10 years	11	14.5
10 ≤ n < 15 years	7	9.2
15 ≤ n < 20 years	5	6.6
20 ≤ n < 25 years	6	7.9
Status		
Full-time (Paid)	17	22.4
Full-time (Unpaid)	3	3.9
Part-time (Paid)	12	15.8
Part-time (Unpaid)	34	44.7

Table 3 shows the results of the coaching needs inventory. The mean scores of the statements were all above 3 with the highest mean (3.86 ± 0.39) was for “To get to know your athletes?” and the lowest (3.11 ± 0.97) for “To have paid and full-time coaches for disability sports?”.

Table 3.
Results showing mean and standard deviation of the coaching needs inventory

Item	Mean	SD
To get to know your athletes?	3.86	0.39
To understand the nature of your athlete’s disability?	3.77	0.54
To understand how your athlete’s disability impacts their sport performance?	3.72	0.53
To understand the capability and ability of your athletes?	3.79	0.44
To know your athletes’ well-being?	3.75	0.49
To acquire physical skills knowledge?	3.55	0.7
To acquire technical skills knowledge?	3.66	0.53

To acquire tactical skills knowledge?	3.51	0.67
To acquire psychological skills knowledge?	3.55	0.64
To be able to have effective communication with your athletes?	3.82	0.45
To conduct testing and measurement for sport performance?	3.39	0.80
To be able to plan annual training (periodisation) systematically?	3.39	0.71
For your athletes to attend coaching workshops?	3.18	0.89
To receive coaching accreditation from sports organisations?	3.28	0.91
To receive coaching accreditation from sports federations?	3.34	0.84
To have facilities and support for disability sports?	3.64	0.69
To have paid and full-time coaches for disability sports?	3.11	0.97
To have a regulated and centralised education and training for coaches?	3.48	0.74
To have the National Badminton Association, sports organisations or local clubs involved in your coaching professional development?	3.47	0.72
To have knowledge in coaching methods?	3.64	0.63
That sport science research is conducted in disability sport?	3.37	0.81
To know about the assistive technologies in badminton?	3.43	0.83
To have formal expert mentoring programmes for coaches?	3.47	0.79
To interact with and learn from experienced coaches?	3.68	0.58
To have funding for other sports training programmes for athletes with disabilities (sports biomechanics, sports nutrition, sport psychology)?	3.46	0.74
To get advanced/competitive player coaching training?	3.45	0.76
To have a socially supportive environment in your coaching practice?	3.66	0.56
To take into consideration athletes' psychological needs?	3.7	0.49
To instil intrinsic motivation (such as personal achievement, enjoyment) among your athletes?	3.65	0.56
To reward your athletes for their effort?	3.64	0.58
To give feedback to your athletes' performances?	3.8	0.43
To have support volunteers in your coaching session?	3.38	0.77
To have talent identification for high-performance badminton athletes?	3.38	0.75
To have sufficient funding to ensure continuity of badminton training for the athletes?	3.57	0.70

DISCUSSION

This study aimed to identify the needs of coaches and badminton players with intellectual disability. Based on the coaching needs survey that we conducted, we found that the needs could be categorised as follows: *Awareness* (knowing the athletes, interpersonal and communication skills), *Continuous Professional Development* (accreditation and endorsement), *Education and Training* (formal, non-formal, and informal learning), *Infrastructure* (funding, facilities, accessibility), and *Social Support system* (environment and volunteers). The results of the coaching needs survey showed that coaches need more interpersonal and communication exposure. This is reflected in higher mean scores recorded on items such as getting to know their athletes ($\bar{x} = 3.86$), understanding the capability and ability of their athletes ($\bar{x} = 3.79$), understanding the nature of their athletes' disability ($\bar{x} = 3.77$), knowing their athletes' well-being ($\bar{x} = 3.75$), understanding how their athletes' disability impacts their sport performance ($\bar{x} = 3.72$). Coaches also deemed effective communication with their athletes essential ($\bar{x} = 3.82$), such as giving feedback on the athletes' performance ($\bar{x} = 3.80$), as well as considering their athletes' psychological needs ($\bar{x} = 3.70$).

A lower coaching needs appeared in the Education and training domain, such as acquiring formal physical skills knowledge ($\bar{x} = 3.55$), technical skills knowledge ($\bar{x} = 3.66$), tactical skills knowledge ($\bar{x} = 3.51$), knowledge in coaching methods ($\bar{x} = 3.64$) and psychological skill knowledge ($\bar{x} = 3.55$). Conducting testing and measurement for sport performance and planning annual training systematically also recorded a modest mean score ($\bar{x} = 3.39$), as well as sport science research in disability sports ($\bar{x} = 3.37$).

For Continuous professional development, the results of the survey showed that this category is not the main concern among the coaches. Items such as receiving coaching accreditation from sport organisation and sport federation recorded a mean score below ($\bar{x} = 3.4$), however, having a regulated and centralized education and training for coaches have more impact ($\bar{x} = 3.48$), and involvement of National Badminton Associations, organisations and local clubs in coaches' professional development is also important ($\bar{x} = 3.47$). Coaches also see the need to have formal expert mentoring programmes for coaches ($\bar{x} = 3.47$), as well as the opportunity to interact with and learn from experienced coaches ($\bar{x} = 3.68$) as important.

For Infrastructure, facilities and support for disability sports are other factors that have a high means score ($\bar{x} = 3.64$), however, funding for infrastructure to run sport training programmes for athletes with disabilities (sport biomechanics, sports nutrition, and sport psychology) has a lower score ($\bar{x} = 3.46$), as well as knowledge of assistive technologies in badminton ($\bar{x} = 3.43$). Sufficient funding to ensure the continuity of badminton training for the athletes has a higher mean score of ($\bar{x}=3.57$).

Coaches acknowledged that having volunteers in the coaching session and a socially supportive environment in coaching practice is important. The mean score for both items is ($\bar{x} = 3.38$) and ($\bar{x} = 3.66$), respectively. Aside from interpersonal skills and communication, the athletes' psychological well-being was also a source of concern in their coaching practice. With a mean score of ($\bar{x} = 3.64$) and ($\bar{x} = 3.65$), rewarding athletes for their efforts and instilling intrinsic motivation such as personal achievement and enjoyment are important. It is worth noting that having paid and full-time coaches for disability sports is the least of the coaches' concerns ($\bar{x} = 3.11$). These results indicate that, in addition to the importance of skill development, the attributes of coaches play an important role. Based on the interview data, coaches' involvement in SO badminton is intrinsically motivated.

It is interesting to note that interpersonal skills and communication, as well as the psychological well-being of their athletes, are of greater concern to SO sport coaches than the coaching skills themselves. These findings imply that coaches must demonstrate a level of awareness and disability-specific knowledge in their practices. According to Townsend et al. (2021), there is a gap between research and the development of a disability-specific coach education programme. SO sports include the participation of all athletes with intellectual disability, of all ability levels, including children and adults. SO uses a divisioning system where athletes and teams are grouped into competitive divisions according to three criteria: gender, age, and ability level. The challenge for SO coaches is dealing with cognitive and physical ability levels.

According to Wareham et al. (2018), coaching athletes with disabilities may necessitate additional skills, such as recognising biomechanical adaptations, addressing accessibility issues, promoting independence, and providing social support, besides the functions that are shared by all coaches, such as goal setting, feedback, and skill development. These coaches may not be receiving the necessary development and support. Models of disability might be expected to be of particular interest to researchers interested in sports as the functions of the athletic body are a significant contributor to how its ability is defined. This context has a significant impact on SO sports.

Coaching education can be categorised as non-formal, formal, or informal. According to Wareham et al. (2018), the coaches' learning method involves the complexity of the social and interactive process as well as the changing environment. It is critical to distinguish between accreditation education and training. While formal education and training are important for accreditation purposes, coaches in this study indicated that the actual learning comes from the interaction between peers and experienced coaches, as well as learning how to communicate with their athletes in a socially supportive environment. Similar evidence that coaches learned primarily by doing and consulting with peers was cited in disability sports literature (Cushion et al., 2003; Duarte & Culver, 2014; MacDonald et al., 2016; Mallett et al., 2009; McMaster et al., 2012). These results suggest that a broader coaching educational approach incorporated structured coaching courses, sharing sessions with mentors, administrative and social support. Coaches should be encouraged to learn on their own as well as from peers. According to Culver & Werthner, (2018),

coaches must develop critical qualities for effective coaching, such as empathy, patience, effective communication, adaptability, an understanding of the nature of the disability, and, most importantly, the ability to work with the athletes. Future research could investigate coaching effectiveness as well as coaching pathways in specific SO sports, such as badminton.

CONCLUSION

This research provides insight into coaching needs for badminton players with intellectual disabilities. Data from this study suggest that coaches were more concerned about their interpersonal and communication skills when working with athletes with intellectual disability. Coaching education should take a broader approach that integrates formal coaching courses, non-formal education such as mentor and mentee programmes, and encourage informal learning from peers, athletes' families, and volunteers. Informal learning would benefit from a socially supportive environment. Although SO badminton coaches' involvement in the sport is intrinsically motivated, coaches must also foster critical qualities for effective coaching in working with SO athletes.

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