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ORIGINAL ARTICLE

Impact of Inclusive Soccer Program on Psychosocial Development of Children with and without Intellectual Disabilities

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Abstract

Erroneous perception of "disability" in typically developing children leads to the exclusion of children with intellectual disabilities in sport. Therefore, the present study aimed to investigate the effectiveness of inclusive soccer (INS) program on ameliorating adverse behavior in children with and without intellectual disabilities (ID). Participants were 40 children, with half having intellectual disabilities ($n = 20$). Both the experimental and comparison groups consisted of 10 children with and without ID, respectively. The experimental group participated in an INS whereas the comparison group participated in a segregated soccer program. The Withdrawn Behavior Checklist (WBC) and Social Distance Scale (SDS) were measured repeatedly for children with and without ID, respectively. A mixed-design ANOVA was conducted for data analysis. There were significant main effects on time, group, and interaction for both SDS and WBC of the experimental group, except between-group difference on WBC. The comparison group did not show any significant change. The social distance of children toward peers with ID and withdrawn behavior of children with ID have been reduced. The INS could provide benefits for the psychosocial development of children on both populations toward inclusion.

Keywords Behavioral intention · Social distance · Withdrawn behavior · Theory of planned behavior

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Intellectual disability (ID) is defined as having significant deficits in intellectual functions in two or more areas of adaptive behavior that manifests before the age of eighteen (American Psychiatric Association 2013). The population with ID often experience stigmatization from the public since they are negatively-perceived minority (McManus et al. 2011; Ouellette-Kuntz et al. 2010). The research shows that there is a consensus that negative attitude held by the general population toward people with ID is one of the most powerful barriers preventing them from being included in the communities (Buljevac et al. 2012; Corrigan et al. 2001; Ouellette-Kuntz et al. 2010). Recently, behavioral intention has also been widely investigated due to its direct impact on actual behavior compared to attitude or perception (Bizer et al. 2012; Wilson and Scior 2015). The theory of planned behavior has provided a strong theoretical background of the contention that behavioral intention plays an important role as a mediator between attitude and behavior (Ajzen 1991; Ellis et al. 2009). According to the theory of planned behavior, the most proximal factor influencing behavior is the intention of the behavior; that is, behavioral intention may significantly predict one's actual behavior.

Social distance was initially proposed by Bogardus (1959) to describe emotional intimacy towards stigmatized groups (Parrillo and Donoghue 2005). That is, large social distance indicates low emotional intimacy toward a target group which may harm inclusion. Subsequently, many researchers employed the notion of social distance to display general public's behavioral intention exercised by the general public towards people with ID (Ouellette-Kuntz et al. 2010; Scior and Furnham 2016; Wilson and Scior 2015). To date, a wealth of literature adopted a notion of social distance as a measure of behavioral intention towards stigmatized groups (Corrigan et al. 2001; Silton et al. 2011). As a result, they revealed that the negative behavioral intention toward people with ID may result in behavioral discrimination. Therefore, less social distance, which reflects less adverse behavioral intention, is desirable for attaining true inclusion.

It is noted that children around the age of 8 to 12, relative to the older counterparts, are especially vulnerable to social prejudice. Previous studies have corroborated that the failure in developing amiable relationship with age-matched peers in early age would lead to psychopathology in later life (Lee et al. 2013). Especially, children with an intellectual disability perceive behavioral discrimination from similarly aged children without an intellectual disability, which can result in anti-social behavior such as withdrawn behavior (Dekker et al. 2002). In addition, Lee et al. (2013), and Ladd (2006) also found that children who had withdrawn behavioral patterns were normally resulted from adverse age-matched peer relationship (i.e., peer rejection or low acceptance), and such behavior manifested later social maladjustment. Therefore, proper remedies within the early developmental stages need to be implemented to prevent children with ID from being segregated in communities. Considering the previous findings regarding social distance and withdrawn behavior, the present study plans to investigate the possibility that social distance and withdrawn behavior may have a reciprocal causal relationship. Specifically, if the social distance toward children with ID were highly prevalent in society, this stigmatized group of children would consistently undergo marginalization and withdrawal experience due to behavioral discrimination from typically developing peers (Heiman 2000). Further, such discriminatory behavior that strengthens their withdrawn behavior may lead to the greater social distance from typically developing children than before.

Recent studies support the idea that contact experience through an inclusive sports platform may substantially help mitigate prejudice among the general population. An inclusive sports program may also reduce behavioral discrimination toward individuals with ID (Keith et al. 2015; McManus et al. 2011; Morgan and Parker 2017). McManus et al. (2011) and Keith et al. (2015) provided the evidence regarding the contact hypothesis that the quality of contact experience significantly altered attitude toward people with ID. In addition, they found that the understanding of the general population towards people with ID and quantity of contact did not affect the attitude of young adults towards people with ID. In addition to the contact hypothesis, many research studies have reported that participating in an inclusive sport program enables children with their development by allowing them to experience social acceptance and positive interaction (Morgan and Parker 2017). Thus, inclusive sports program is one of the best avenues to facilitate inclusion among all children (Özer et al. 2012). The researchers used soccer as an intervention activity due to its worldwide popularity among children (Hulteen et al. 2017). Therefore, this study sought to facilitate high-quality contact experience for the children with and without ID through inclusive soccer intervention program.

Özer et al. (2012) adopted the Special Olympics Unified Sports soccer program as an intervention to examine the impact of psychosocial attributes of children with ID and their typically developing peers. Through 8 weeks of the participation in soccer program, children with ID had decreased problem behavior, developed friendship. Also, the attitude of partners without ID towards their peers with ID had improved. This is one of the few intervention studies to examine the attitude of typically developing children toward their peers with ID. The present study intended to expand on Özer et al. (2012) in several ways. One contribution is that this would be the first study to examine a mutual interactive effect between social distance and withdrawn behavior of children with and without ID, respectively. This study investigated the behavioral intention of children toward peers with ID by employing the notion of social distance, as well as relating the withdrawn behavior of children with ID to the social distance of typically developing peers. Second, this study embedded the peer buddy technique to facilitate equal status so as to be able to promote positive contact experience (Hughes et al. 2002), and disability awareness education was conducted to remedy the baseline prejudice from typically developing peers toward disability. Therefore, the purpose of the present study was to investigate the effectiveness of an inclusive soccer program on the psychosocial development of children to achieve an inclusion. Through the inclusive soccer program, we hypothesized that, a) the social distance of typically developing children toward peers with ID will be ameliorated and b) withdrawn behavior of children with ID also decreased through the facilitation of positive contact experience within the inclusive soccer program.

Methods

Participants

Participants included 20 students without ID (Mean = 10.9 years, SD = 0.6 years) and 20 students with ID (Mean = 10.6 years, SD = 0.7 years) living in South

Korea. The researchers recruited the participants without ID through an elementary school in Seoul, and participants with ID through a rehabilitation center for children with developmental disabilities in Seoul. Therefore, the participants with and without ID were recruited from different affiliations, so each group (i.e., either children with or without ID) did not know the participants from another group before the intervention. Since Wilson and Scior (2015) reported that the social distance towards other groups can be affected by gender and educational attainment level, only male children from 10 to 12 years old in the elementary school were exclusively recruited to control gender and academic status. None of the participants previously participated in an inclusive education program. Thus, inclusion criteria for the participation were: 1) male; 2) aged between 10 and 12 years; 3) attending elementary school; 4) no prior experiences on inclusive education; and 5) no physical disabilities and limitation on verbal communication. Additionally, there was one more inclusion criteria for children with ID that their social age need to be above 6 years. The researchers measured social age for the participants with ID as the present study focused on psychosocial variables. Also, the children with ID having social age above 6 years were thought to be able to communicate with others and comprehend instructions thereby participating in the present study. All the participants signed assent forms and agreed on partaking in the study. In addition, their parents were provided the consent form and agreed to participate in the study. All protocols were approved by the Human Subjects Institutional Review Board of the University. Details about the research participants were illustrated in Table 1.

Procedure

All participants were evenly divided into two groups, an experimental and a comparison group, with both groups consisting of 10 students without ID and 10 students with ID. The study proceeded in an order of a pre-test, intervention, and post-test. The pre- and post-test assessment procedures and methods were identical for both experimental and comparison group. Typically developing children in both groups were requested to answer the social distance scale for pre- and post-test, whereas, children with ID in both groups were scored through the withdrawn behavior checklist by observers. Observers were trained to score the scales and did not participate in any type of interaction with the participants as well as data analysis.

Table 1 Descriptive statistics of participants

	Experimental group		Comparison group		t value	*p* value
	TDC ($n = 10$)	CID ($n = 10$)	TDC ($n = 10$)	CID ($n = 10$)		
Age (years)	10.6 ± 0.5	10.8 ± 0.6	11.1 ± 0.7	10.4 ± 0.7	2.098	.118
Social age (years)	N/A	8.28 ± 0.7	N/A	8.57 ± 0.9	−.791	.439

TDC Typically developing children / *CID* Children experiencing intellectual disabilities

After completing the pre-test with the social distance scale, typically developing children in the experimental group received one-time disability awareness education to ameliorate baseline prejudice toward peers with ID. Multiple studies have shown the positive impact of disability awareness education on mitigating a baseline prejudice (Ison et al. 2010; Moore and Nettelbeck 2013). However, there was no disability awareness education for the typically developing children in comparison group since the disability awareness education is a part of the intervention. Thereafter, the soccer intervention was implemented for both groups. The experimental group participated in the inclusive soccer program and the comparison group participated in the segregated soccer program. The only difference regarding the two groups was whether their soccer program was inclusive or segregated. Therefore, the participants in the comparison group were separated into two groups based on the existence of an ID and participated in segregated soccer program. The frequency, duration, time, and class procedure for the soccer class were identical in two groups. The program lasted 90 min per session, Children participated in the study for 4 weeks, 5 consecutive days per week, with a total of 20 days. The activity of the participants was videotaped and stored to monitor the withdrawn behavior of children with ID. During the study, researchers measured the withdrawn behavior checklist every 4 days, which was a total of 6 times (i.e., 1st, 5th, 9th, 13th, 17th, and post-test day). The social distance scale was assessed to typically developing children after participation in the soccer program concluded.

Intervention

The intervention for the present study to the experimental group was composed of disability awareness education and an inclusive soccer program, and the intervention for the comparison group was the segregated soccer program.

Disability Awareness Education The education took place in a classroom and consisted of three components which are a short lecture to understand people with ID, watching videos related to the people with ID, and quiz activities. Previous research reported that specific strategies were needed to improve the relationships between people with and without ID (Forest 1987; Nam and Shin 2012). Furthermore, with regard to short-term changes in attitude, disability awareness education incorporating video materials as well as reading materials and disability-experience activities has been proven to be effective (Moore and Nettelbeck 2013).

Soccer Program The program was implemented for 4 weeks. It started 1 week after the pre-test and disability awareness education for typically developing children in the experimental group. The soccer program procedure for both groups were identical, and consisted of 10 min of warm up activity with non-competitive physical activity, 30 min of practice with a peer buddy, a 10 min recess period, 30 min of soccer game activity, and 10 min of cool down. Also, our intervention employed one-on-one peer buddy matching technique. The program in the experimental group employed a one-on-one peer buddy matching technique so that each child with ID was able to pair up with their typically developing peers. Similarly, two separated soccer programs for children with and without ID were also employed the peer buddy technique to match the program structure with the experimental group. As a pair, participants were given a

demonstration from instructors and asked to practice to achieve the demonstrated goal with a partner. The peer buddy was switched at each intervention day which allowed an opportunities which made it possible for each children to interact with many peers. Each peer group was encouraged to possess an equal status by the instructors, since the perception of similarity has been proven as one of the important conditions to facilitate positive contact experiences between groups (Hughes et al. 2002; Stanish and Temple 2012). Additionally, during the intervention with the experimental group, usage of the word "disability" was strictly prohibited to facilitate a cooperative environment and reduce the possibility for any child to develop prejudice. All children attached a removable nametag on the backside of their team jersey which encouraged them to memorize and call out the name of their partners. At the beginning of daily inclusive soccer practices, children were asked to find their partner's nametag, and attach their peer's nametag on the back of them.

Warm up and cool-down was a non-competitive recreational program since a program facilitating competitive activities would possibly result in widening the prejudice and behavioral discrimination due to a cognitive and motor functional gap. By conducting a non-competitive recreation program, children with and without ID experienced an increased possibility for positive interactions (Siperstein et al. 2009).

Thereafter, soccer program consisted of 30 min soccer practice and 30 min game activity. For the practice, instructors provided a verbal instruction and demonstration regarding a daily target activity such as pass, dribble, and shoot. After the explanation on the daily task and demonstration, the instructors assigned a specific activity goal such as successful 20 consecutive pass with pair, go through slalom dribble within set amount of time, and make 20 accurate shooting. Each pair practiced with their partner to achieve the activity goal, and the instructors monitored peer groups during the practice session to provide feedbacks and encourage them to facilitate equal status during the practice. As for the game activity, peer buddies were assigned to a same team and played a variety of soccer game activities during 30 min.

Walking and static stretching were used as a cool down activity after the 30-min soccer game. Peer buddy was asked to do the walking and static stretching together following instructor's demonstration.

Measurement

Social Age The concept of social age was adopted in the present study for the screening purpose of children with ID who participated in this study, since the variables used in this study were psychosocial concepts such as social distance and withdrawn behavior. The social age of participants with ID was assessed and evaluated by the Korean version of the social maturity scale (Lee et al. 2014), which originated from the Vineland Social Maturity Scale (Doll 1936). The test was performed with a social maturity test specialist.

Social Distance Scale (SDS) The social distance of children toward peers with ID was assessed using the social distance scale (Cronbach's $\alpha = .831$). The scale was developed in Korean by National Institute of Special Education in South Korea, since the

participants in the present study were children using Korean as their first language. The scale used in this research was based on 'Disability-Acceptance Scale: Behavioral Intention' (김성애, 정대영,, and 박희찬 1997). The present study modified this scale to meet the participants' cognitive level under the guidance of three experts in the adaptive physical activity field. The scale has 30 question items, composed with three different categories regarding school life, inter-personal life, and recreational life. The SDS used a five-point Likert scale: very good (1 point), good (2 points), normal (3 points), bad (4 points), and very bad (5 points). A higher score indicates a higher level of social distance, with the possible range for total scores being from 30 to 150 points. The component and reliability of the scale was reported in Table 2.

Withdrawn Behavior Checklist (WBC) The Withdrawn Behavior Checklist used in this study (Cronbach's $\alpha = .968$) was developed based on the "Action Category List" by Lee (2000) on the basis of the study by Oden and Asher (1977). Several items that were not appropriate to the participants among the original checklist have been deleted or modified at the discretion of the researchers and confirmed by three experts in adaptive physical activity fields. The withdrawn behavior checklist was made for assessing the behavior of children with ID, and was divided into three categories: friendships-related, communication-related, and self-esteem-related withdrawn behavior. The checklist consisted of a total of 14 question items, and used a five-point Likert scale: strongly disagree (1 point), disagree (2 points), normal (3 points), agree (4 points), and strongly agree (5 points). A higher score represents higher levels of withdrawn behavior, while total possible scores ranging from 14 points to 70 points. Table 3 reported the components and reliability of the checklist. The participants' activity during the 10-min recess time was assessed by five trained observers. After every four intervention days, the observers watched the video files and assessed the withdrawn behavior checklist for participants with ID. Upon completion, the average among the observers' scores were computed and used for data analysis.

Data Analysis

IBM SPSS Statistics 24 was utilized to analyze the data for the present study. An independent t-test was conducted to confirm whether there was any significant difference between the experimental and comparison group before the intervention. As for the typically developing children, their baseline social distance scale score was compared between two groups. For the baseline comparison for the children with ID, the difference of social age and baseline withdrawn behavior checklist score between the experiment and comparison group was computed using an independent t-test.

For analyzing pre- and post-scores of the social distance scale and 6 repetitions of the withdrawn behavior checklist, 2 (group) × 2 (time) mixed-design Analysis of Variance (ANOVA) and 2 (group) × 6 (time) mixed-design ANOVA were conducted. The significant alpha level was set at .05 (two-tailed).

Lastly, an Intra-class Correlation Coefficient (ICC) using an absolute agreement definition among the five raters of the withdrawn behavior checklist was computed to ensure that their observations were objective.

Table 2 Components and reliabilities of the social distance scale

Component	Item	Cronbach's α
School Life	1. Go to school with a friend with ID.	.819
	2. Clean up classroom with the friend with ID.	
	3. Do homework with the friend with ID.	
	4. Use stationary equipment together with the friend with ID.	
	5. Go to the restroom with the friend with ID.	
	6. Burrow an interesting book to the friend with ID.	
	7. Eat lunch with the friend with ID.	
	8. Use mine together if the friend with ID did not bring class materials.	
	9. Shop with the friend with ID to buy my class materials.	
	10. Cooperate with the friend with ID and produce artworks together.	
Personal Life	11. Tell my secret to the friend with ID.	.825
	12. Go to a nursing room together when the friend with ID is sick.	
	13. Visit my relative's house with the friend with ID.	
	14. Invite the friend with ID to my birthday party.	
	15. Share my food with the friend with ID.	
	16. Exchange mail or e-mail with the friend with ID.	
	17. Exchange gifts with the friend with ID.	
	18. Encourage the friend with ID when the friend is having a hard time.	
	19. Hang out with the friend with ID in my home.	
	20. Buy identical shoes and clothes with the friend with ID.	
Hobby Life	21. Have a soccer match with the friend with ID.	.737
	22. Being on a same side with the friend with ID when playing a sports.	
	23. Hang out with the friend with ID after school.	
	24. Ride a bicycle with the friend with ID.	
	25. Talking about hilarious stories with the friend with ID.	
	26. Play computer games with the friend with ID.	
	27. Go out to eat hamburger with the friend with ID.	
	28. Go to museum or exhibition with the friend with ID.	
	29. Sing a song with the friend with ID.	
	30. Draw pictures with the friend with ID.	
Total		.831

Results

Baseline Measures

No significant difference was found between the experimental group and the comparison group prior to the intervention confirmed by independent t-tests. The typically developing children in both the experimental and comparison group did not show statistical difference in social distance ($p = .069$). Also, children with ID did not show any statistical difference in the baseline withdrawn behavior measure ($p = .705$) or social age ($p = .439$).

Table 3 Components and reliabilities of the withdrawn behavior checklist

Component	Item	Cronbach's α
Friendship-related	1. Be alone in free time.	.819
	2. Not participating, but watching peers playing.	
	3. Shy or no reaction when peers talk to the child.	
	4. Have difficulty hanging out with others.	
Communication-related	5. No showing opinion or intention to peers.	.825
	6. Not talking well in front of peers.	
	7. Do not see eyes when a friend talks to the child.	
	8. Show panic or scare when others point out something about the child.	
	9. Follow what others opinion even if the child dislike it.	
Self-esteem-related	10. Avoid competition.	.737
	11. Act as if the child is a loser in competition.	
	12. No reaction when the child's stuff is stolen.	
	13. Overly care others mood.	
	14. Hesitate for a long time after given an assignment.	
Total		.831

Social Distance

According to a mixed-design ANOVA, social distance scale scores for typically developing children between pre- and post-measure were significantly reduced in the experimental group. There was no difference in comparison group. The result of within-subject effect showed a significant difference between times with a large effect size: $F(1, 18) = 30.738$, $p < .001$, $\eta_p^2 = .631$, as well as a significant interaction between time and group with a large effect size: $F(1, 18) = 22.634$, $p < .001$, $\eta_p^2 = .557$. For between-subject effect, social distance scores between the experimental and comparison groups were not statistically significant: $F(1, 18) = .647$, $p = .432$, $\eta_p^2 = .035$. Figure 1 compared the average scores of the social distance scale between the experimental and comparison group.

Withdrawn Behavior

Withdrawn behavior of children with ID in the experimental group resulted in a significant decline while the checklist scores for children with ID in the comparison group did not have significant difference among the six repeated measurements. Since the equal variance assumption for within subjects was violated by Mauchly's Test of Sphericity ($p < .001$), Greenhouse-Geisser's value was adopted for interpretation. As a result, within-subject effect among the six test times showed significant main effect: $F(2.548, 45.868) = 7.813$, $p = .001$, $\eta_p^2 = .285$. There was a significant interaction effect as well: $F(2.548, 45.868) = 5.447$, $p = .004$, $\eta_p^2 = .232$. On the other hand, between-

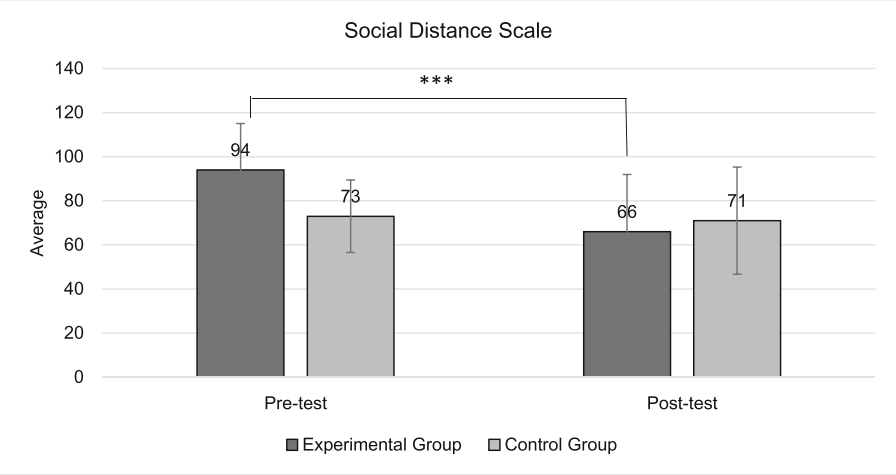

Fig. 1 Average scores of social distance scale. *Note.* *$p < .05$; **$p < .01$; ***$p < .001$

group difference of the score of the checklist did not show a significant difference between the experimental and comparison groups: F (1, 18) = .672, $p = .473$, $\eta_p^2 = .036$. Figure 2 showed a variation of the withdrawn behavior checklist mean scores.

The ICC using an absolute agreement definition was computed to calculate reliability among the observers involved in measuring the withdrawn behavior checklist. Video recordings for children with ID in both groups were sent to five observers to score the checklist. The 13th class day, which is the fourth withdrawn behavior checklist measurement day, was randomly selected for ICC analysis, which indicated that it was highly reliable: ICC = .892, Cronbach's $\alpha = .929$.

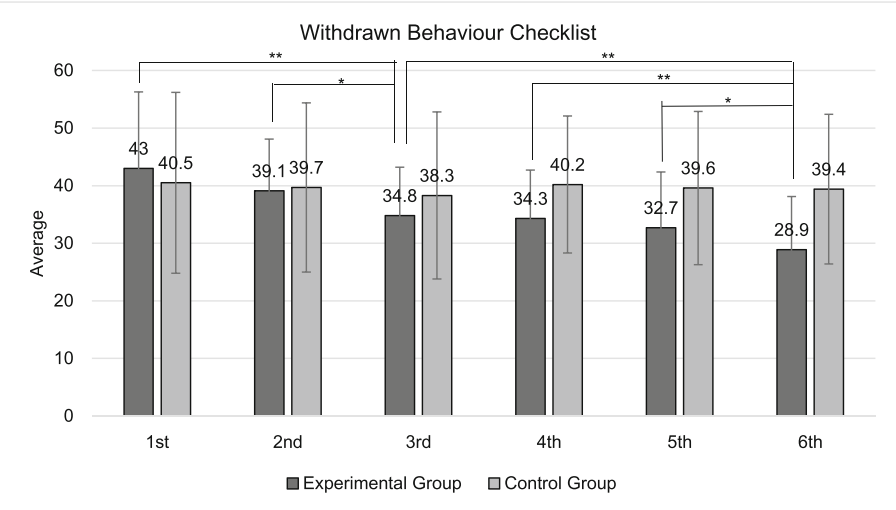

Fig. 2 Average Scores of Withdrawn Behavior Checklist. *Note.* *$p < .05$; **$p < .01$; ***$p < .001$

Discussion

The present study aimed to investigate whether an inclusive soccer program is effective in reducing the social distance of typically developing children toward peers with ID, as well as the withdrawn behavior of children with ID. The experimental group combined children with and without ID, and they jointly participated in the inclusive soccer program, whereas the comparison group segregated both groups. The notion of social distance was adopted as the concept has been widely utilized to measure behavioral intention (Ouellette-Kuntz et al. 2010; Scior and Furnham 2016; Wilson and Scior 2015), and such behavioral intention is important for achieving a true inclusion since it is the most proximal predictor of actual behavior (Ajzen 1991; Bizer et al. 2012). Also, withdrawn behavior, one of the major maladaptive behaviors of children with ID which prevents them from participating in an exercise program, mainly resulted from negative results of adverse peer relationships such as peer rejection or low acceptance (Dekker et al. 2002; Ladd 2006). Thus, reduced perceived behavioral discrimination from typically developing children confirmed by lowered social distance may mitigate the withdrawn behavior of children with ID. Therefore, we hypothesized that the social distance score of typically developing children who participated in the inclusive soccer program will be reduced to a greater extent than children with ID who participated in a segregated soccer program. At the same time, we also hypothesized that the withdrawn behavior of children with ID who participated in an inclusive soccer program will be reduced to a greater extent than children with ID who participated in a segregated soccer program. Consistent with our hypothesis, the effectiveness of an inclusive soccer program has provided the evidence that physical activity program which integrates children with and without ID can reduce the withdrawn behavior and social distance of both typically developing children as well as children with ID.

Administering a high quality inclusive soccer program with positive contact experience may be a significant contributor for achieving successful outcome. Amiable contact experience has been known to contribute to reduce prejudice and behavioral discrimination. For example, McManus et al. (2011) measured young adults' knowledge about disability, quantity, and quality of contact experience as well as their attitude toward people with ID. As a result, knowledge and quantity of contact did not affect the attitude of young adults toward people with ID; however, quality of contact significantly altered the attitude toward people with ID. Later, Wilson and Scior (2015) further reported that the more positive contact experience gained by people with intellectual and developmental disabilities had a more positive effect on reducing both explicit and implicit prejudice. Therefore, the findings from the studies suggested that merely increasing frequency and quantity of contact experience does not guarantee positive interaction between two heterogeneous groups.

Three attributes of an inclusive soccer program might enable a high-quality positive contact experience. First, the nature of physical activity may facilitate social relationships between children with and without ID to form a kin relationship with each other through a physical interaction. Previous literature has indicated that the sporting activity can improve social acceptance and positive interaction among peer groups (Morgan and Parker 2017; Smith 2003).

Secondly, one-time disability awareness education was conducted for typically developing children in the experimental group. Previous literature reported that

stereotypical knowledge may contribute to form a bias towards the intellectually disabled among this population (Ison et al. 2010; Moore and Nettelbeck 2013). For example, Moore and Nettelbeck (2013) recruited children at an average age of 13 and provided an acute disability awareness training. The training consisted of informative evidence regarding people with disabilities, lecture by guest speakers with disabilities, and interactive discussions. The result found that the training was significantly beneficial to improve the self-reported attitude of children toward people with disabilities. The improvement persisted after a one-month retention. Ison and colleagues (Ison et al. 2010) found short term benefits to providing disability awareness education on improvement of knowledge, attitude, and social acceptance among children of the age between 9 and 11. Therefore, the education took place prior to the initiation of the inclusive soccer program aimed to remedy baseline prejudice and behavioral discrimination. The one-time disability awareness education in our intervention may contribute to facilitating a positive contact experience between two groups by reducing baseline prejudice and behavioral discrimination.

Third, the peer buddy system within the program possibly facilitated perceptions of similarity, or equal status, within each pair of children with and without ID. The perception of similarity has been proven as one of the important conditions to facilitating positive interactions between heterogeneous groups (Hughes et al. 2002; Piercy et al. 2002; Stanish and Temple 2012). There are intriguing findings in a study by Hughes et al. (2002) that participants without a disability were less likely to interact with their peers with ID when their relationship had a hierarchy such as peer tutoring, that one is likely to possess higher status than another (Siperstein et al. 2009). Consistent with the contention that equal status is important for amiable social interaction, Piercy et al. (2002) stressed cooperative learning environments where all participants share an equal status through a peer buddy pair. The present study was also programed to facilitate equal status within peer buddy partners by encouraging the children with and without ID to achieve an assigned goal together, and such activity possibly facilitated cooperation which may result in a perception of similarity with each other. Therefore, the peer buddy system appears to be beneficial for producing positive contact experience between two groups as well. All in harmony, an inclusive soccer program with embedded one-time disability awareness education and peer buddy system confirmed its effectiveness on the psychosocial development of children to achieve true inclusion in sporting environment.

Limitations and Future Studies

Theoretically, we can conclude that our inclusive soccer program successfully facilitated positive contact experience between two groups and, thus, had significantly reduced behavioral intention (i.e., social distance) of typically developing children toward the peers with ID, which led to reduce withdrawn behavior of children with ID. However, the present study did not provide a strong statistical confirmation of our theoretical hypothesis due to a small sample size. Therefore, future studies should replicate the present study with larger sample size to verify the causal relationship between social distance and withdrawn behavior.

The inclusive soccer program contained the one-time disability awareness education a week before the implementation of the soccer program in the experimental group. That is, the present study design did not allow the researchers to rigorously verify whether the notable findings regarding the children's psychosocial development were due to inclusive soccer, one-time disability awareness education, or both. Therefore, on top of the findings in the present study, subsequent study is needed to rigorously verify the benefits from inclusive soccer and disability awareness education, separately. Additionally, this study mainly focused on explicit attitudes of the participants. Recently, Wilson and Scior (2015) divided attitude into explicit, which is consciously controlled, and implicit, which is automatically activated without intention such as eye contact and body language. According to them, explicit attitude has a stronger relationship with social distance, and easily varied by contact experience, relative to implicit attitude. On the other hand, implicit attitude was not altered by contact experience. Therefore, our significant amelioration of social distance and withdrawn behavior may be due to a change in explicit attitude. However, a meta-analysis study revealed that not only explicit attitude but implicit attitude also has moderate predictive validity of one's behavior that cannot be controlled by conscious process (Greenwald et al. 2009). Therefore, future researchers may need to conduct studies aimed to examine the impact of implicit attitude on inclusion as well.

Conclusion

The present study found positive effect of an inclusive soccer program on reducing the social distance of typically developing children toward peers with ID, and withdrawn behavior among children with ID. According to our findings, it would be beneficial for practitioners (e.g., school physical education teachers) to encourage positive contact experience within sporting environments to improve inclusivity. To our knowledge, it is one of the pioneering studies examined mutual psychosocial impact for achieving inclusion in the integrated sporting environment, including studies regarding Special Olympics Unified Sports (Hassan et al. 2012; Özer et al. 2012). Through the study, inclusive sports, focusing on producing positive contact experience, is found to be beneficial for the psychosocial development for both children with and without ID. Therefore, it will be worthwhile for researchers to conduct subsequent studies to examine the impact of sporting environments on psychosocial development and inclusion.

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Compliance with Ethical Standards

Ethical Approval All procedures performed in this study were in accordance with ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent The study was approved by Institutional Review Board in our university. All parents/legal guardians signed an informed consent form, and children assented.

Conflict of Interest No conflict of interest has been declared.

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