

Does Friendship Matter for Children with Autism Spectrum Disorder?

Peer-mediated Intervention to Promote Social Competence: Review and Recommendation

Tamara Wina¹, *Naomi Soetikno², Pamela Hendra Heng³

¹ Professional Psychology Magister Program, Universitas Tarumanagara, Indonesia

² Faculty of Psychology, Universitas Tarumanagara, Indonesia

³ Faculty of Psychology, Universitas Tarumanagara, Indonesia

*Corresponding author. Email: naomis@fpsi.untar.ac.id

ABSTRACT

As children move forward to adulthood, social competence is paramount in developing and maintaining friendships. Social interaction and social pragmatics are particularly problematic for children with autism spectrum disorder (ASD) that bring about limited opportunities to develop meaningful relationship with peers. Peer-mediated Intervention (PMI) engage common peers as social role model to enhance social initiation, responses and interactions. This paper aim to review the literature related to the social competence and peers intervention of individual with ASD with moderate and low social functioning. The study is a literature review examining types of peer related social intervention that conducted in group settings. All four of the review studies were administered in school settings with result showed increase in social competence such as initiation and social engagement. Involving peers to take the role as social models are encouraging perspective to help supporting social competence in children with ASD.

Keywords: Peer-mediated Intervention, Autism Spectrum Disorder, Social Competence, Friendship.

1. INTRODUCTION

Friendship help children develop meaningful life skills and play an important function in social, emotional, and cognitive development throughout early life and adolescence [1]. Children with autism, in comparison with their typically developing peers, rate lower in their experience of different exposure of friendship feature such as companionship, closeness, intimacy, and help [2]. Study has proven that children with autism spectrum disorder (ASD) have lesser possibilities than their typically developing peers to engage in social interactions to exercise and learn important social and communication skills [3]. Children with ASD exhibit variable difficulties in social communication, repetitive behaviors, and confined interests which might be frequently contemplated in their play activity together with their friends. Children with ASD display the aptitude to play, but their play might be different in form, fullness, and type [4]. They speak much less

frequently, with restricted flexibility and creativity, and use items atypically or repetitively [5]. This difficulties in social communication and engagement which can bring about rejection by others, limited friendships, bullying, or victimization over time [6]. Social communication in children with ASD has received significant scrutiny in the autism literature. As social communication is a critical skills for success in social environments thus enhance social communication behaviors is studied and appraise of the most important intervention goals for these children [7]

1.1. Friendship Issues

Children with autism commonly show difficulty to initiate, develop, and keep long-time period of friendship [8]. The frequency of contact with friend is also decrease in children with autism than in their peers [9]. Children with autism have problems figuring out

and explain the fundamental integral of friendship [9]. They show trouble to relate the knowledge of friendship in a pragmatic way and realistic way [2]. Study had additionally show that children with autism are overall much less happy and sotented with their friendships in comparison with their typically developing peers [10]. The social communication profile is individually different depending on their cognitive skills [11] and that a few children might over-initiate or carrying on one-sided monologue. This can lead to negative social experience which can result in decrease of social interaction in the future. Therefore, school is in all likelihood to help children with autism to gain the maximum possibilities to increase interaction with their peers and build friendship. As school is a natural setting in which children learn to build relationship.

1.2. Peer-Mediated

Peer-mediated approaches which include Peer-Mediated Intervention (PMI) can cope with these issues with the aid of coaching and teaching children with autism new social abilities and expanding social possibilities within natural environments. It is important to note that there are some possibility that intervention on social competencies may result in isolation from friends and might not be able to attain optimal benefits from early social communication opportunities and social relationship [1]. Although PMI has been proven powerful, a few study on PMI has flag numerous discussions over the use of PMI to educate social skills to children with autism. A considerable body of studies suggesting the impact of PMI on improving social results for children with ASD which covered different strategies and techniques that had been included into the practice of PMI [12].

Researcher combined different techniques which include adult prompting during peer interactions [13] and visual prompts and scripts [14] with PMI. In different words, PMI will not give huge difference on enhancing social skills for children with autism when PMI stand alone [12]. Research shows that are also other practical issues regarding implementation of PMI. The case where many children with ASD actually have difficulty appreaciating social reinforcers (e.g., a smile or compliment) from friends might decrease the chance of the intervention would be successful and despite the fact that the peers also already receive training [15]. Trained peers, despite of the number of training they get, might find associating with children with autism not a pleasing revel because of the lack or unfitness of social feedbacks from children with ASD [16]. And although PMI has been used to lessen the amount of instruction and direction to coach children to interact and to monitor their progress [16], still the presence of

grown-up direction and remarks may be reflect to be peculiar in daily interplay amongst children and peers [17].

2. METHOD

This literatur review carried out a systematic searches of electronic databases, journals, and references lists. The systematic evaluation of research aiming to learn about the diverse strategies associated with Peer-mediated to enhance social competence of children with ASD with low as well as moderate social functioning.

2.1. Search Procedure

The search of literature for this study use three electronic database namely ProQuest, SAGE Journals and Google Scholar. The keyword or term inserted into the search fields are “ASD”, “PEER MEDIATED”, “CHILDREN”, “SCHOOL”.

2.2 Inclusion Criteria

The literature will be reviewed and needed to meet a set of inclusion criteria to be included in this study. The requirements for inclusion have been (a) study should be in english language (b) studies about peer intervention, (c) included participant diagnosed with ASD among age of 5-12 years, (d) including study about social competence. The age variety of 5-12 years to capture school-aged children with ASD. Interventions had to be applied to improve (a) social competencies, (b) peer communication, or (c) play. Interventions were applied with typically developing peers. Studies have been excluded from this review if the intervention did not address skills required for social interactions and if the study failed to report implementation of social communication or engagement.

3. RESULTS

The collected titles and abstracts of the articles were examined. The search of literature review resulted in four articles. The result is thaall four studies in the review were conducted in school settings. Study characteristic and outcomes are summarized in Tables 1 and 2.

3.1. Participants and Settings

Characteristics of the participants were divided into two parts, namely the primary participants which is the children with autism and secondary participants, namely

Table 1. Intervention Characteristics

	Study	Intervention	Setting	Dependent Variable		Trainer
				Primary	Secondary	
1	Alwahbi, A., and Hua, Y., 2020	Contingency Contracting	School, Saudi Arabia	Social Initiation	Social Responses to social initiation	Researchers (3-4 sessions/ 30 min)
2	Kamps, D. et al., 2014	Peer Networks	School	Communicative Act	Initiation and Response	Researcher
3	Wolfberg, P et al., 2014	IPG (Integrated Play Group Model)	School, USA	Symbolic Play	Social Engagement	IPG Guide and assistant (24 sessions/ 60 min)
4	Radley, K. C. et al., 2014	Superheroes Social Skills Program	School, USA	Social Engagement	Initiation and Response	Trained graduate students (8 weeks/ 30 min)

the peers. Characteristics of the main participants in this study were elementary school students (grades 1 to 6) with an age range of 5-11 years who were diagnosed with ASD. The primary participants in the PMI research article have presented a range of evidence or have been through testing in diagnosing ASD. Four studies provided data on observation reports and verbal statements about the verbal competencies of the participants with ASD such as (“often spoke using...” or “engaged in...”), two of which had determined the criteria for participants with ASD before joining the study, such as “able to pronounce 2 to 3 phrases” or “demonstrates functional communication skills” [18] [2].

The total number of primary participants was 59 participants with 52 (88%) male participants and 7 (12%) female participants. The mean age of all the main participants was 8 years (age range 5-11 years). A total of 55 (93%) main participants reported having moderate language skills, 4 (7%) main participants reported having low social skills and social attachment.

3.2. Dependent Variables

All dependent variables focused on the skills needed to interact with peers. Most of the dependent variables can be categorized as social engagement which focuses on communication skills, initiation and response and play engagement which focuses on behavior in play activities such as joint engagement and symbolic play.

3.3. Peer training

Peers in the studies had been decided on with the help of using teacher recommendation. Teachers nominated the peers as “good role models” for social and communication skills and a few even are above average in terms of educational abilities. Peers had been taught and trained before participating in the peer interventions.

The training was mainly done by researcher with the assist of the school staff. All four studies included a peer training session before the intervention and no separate training for the children with ASD. Peers were trained in workshop training and then placed to interact and start socialize with children with ASD. During those socializations, the trainer main role was to support and facilitate the interactions among children with ASD and the peers.

3.4. Social Validity

There are two studies that describe social relationships among participants, peers and teachers. Radley et al use two measuring tools in looking at the structure of relationships and the course of social relationships. The first measuring tool is Friendship survey [19] which looks at the reliability of children's social networks and the second measuring tool is a modification of the

CIRP, namely Child Intervention Acceptability with the

No	Study	Diagnose	Gender		Age	N	Social Functioning
			Boy	Girl			
1	Alwahbi, A., and Hua, Y., 2020	ASD	3	-	8-11	3	Moderate
2	Kamps, D. et al., 2014	ASD	4	-	6-7	4	Moderate
3	Wolfberg, P et al., 2014	ASD	41	7	5-10	48	Moderate
4	Radley, K. C. et al., 2014	ASD	4	-	9-10	4	Low
Total			52	7		59	

rating method. The CIRP results showed that both children with ASD and their peers found the intervention very acceptable. Kamps et al [18] used the Teacher/ Implementer Satisfaction Survey aimed towards teachers to assess the feasibility of implementation, the benefit of the program and the perceived advantages of the program for children with ASD and their friends.

3.5. Literature Overview

1) Alwahbi, A., and Hua, Y., [12] conducting research on contingency contracts in inclusive primary school settings in Saudi Arabia to measure social initiation. The study indicate that peer training without adult encouragement and reinforcement did not result in a significant increase in social interaction. However, when the participants signed their contingency contract,

Table 2. Participants Characteristics

the final result showed that there was a positive change. Contingency Contracts help prepare them with guidance and reinforcement, peers engage in a much higher number of interactions and the increased frequency of peer social initiation results in an increased number of social feedbacks from students with ASD.

2) Kamps, D. et al., [18]. The aim of this reserach was to assess the impact of peer network intervention in improving communicative acts in elementary school students with ASD. The results of the reserach in testing the application of peer networks and in person teaching of communication skills were that there was a notable improvement in communication among all four candidate during the intervention session. An increase in initiation was seen in two participants, while an increase in responses for three participants.

3) Wolfberg, P. et al., [20] wanted to study about symbolic play and social engagement of children with ASD. The research was run in elementary schools in the USA using the Integrated Play Group Model (IPG). The IPG is designed as part of an intervention or therapy

program consisting of three to five participants with

varying ability levels and an adult facilitator. This group gather continuosly at selected locations consistent with the selection of game materials and activities that are motivating and beneficial to encouraging joint-attention, imitation, social reciprocity, and imaginary play. The outcomes of the study reveal that after participating in the IPG intervention for three months, children with ASD indictae a significant improvement in both symbolic play and social play compared to the baseline phase three months before the intervention. Specifically, each analysis revealed an increase in functional and symbolic pretend play behavior.

4) Radley, K. C. et al., [19]. This study was conducted in elementary schools in the USA on four students with ASD aged 9-10 years using the Superheroes Social Skill Program method. Superheroes social skills training program is a social skills training program that aims to generalize and maintain social skills. Instruments in Superheroes Social Skills training use many interesting media tools such as videos, posters, role-playing narrative scripts, etc. in their implementation. The results of the Superheroes Social Skills program research show that all participants social engagement skills were altogether improved. This suggests that combining several generalization strategies can improve the generalizability of school-based social skills training presented in social skills groups. There are also supporting results of this study which show a positive generalization effect for the video modeling intervention strategy and peer-mediated intervention for the promotion of social skills.

4. DISCUSSION

Findings from this review support the ability of a practitioner to effectively intervene to improve social competencies for children with ASD. The author wanted to determine which specific strategies appropriate for use in school settings in improving the skills to start and build friendship for children with ASD. Specifically, this review finds that social

initiation, participation, complexity and creativity in building relationship can be increase with targeted intervention. The strongest interventions in this review used a contingency contract [12] to demonstrate social interactions with the help of prompting and reinforcement [21]. Next is the findings in IPG that demonstrated after participation in a 3-month IPG intervention, the children with ASD showed important achievement in social play. Report also said that IPG intervention increase overall in all active play behaviors [20]. Generalization of social skills is crucial to develop social competence in children with ASD [22]. Stokes and Osnes [23] proposed several categories of generalization that may improve the generalizability of social skill training which was prove in the study by Radley et al [19] which then show improvement in overall social engagement.

5. CONCLUSION

The targeted social competence (i.e., initiations, responses, social interaction, play) in PMIs aim to help children with autism to learn and sustain meaningful relationships with peers. PMI is a great intervention to improve social competence if it's combine with other technique and strategies such as contingency contract or integrated play to maximize the output result. PMI also applicable for school-based management to increase social competencies for children with or without difficulties. To help sustain and manage new social skills, children with ASD should be encourage to practice and expereince different social settings with their peers outside of the settings where the intervention was conducted.

ACKNOWLEDGEMENTS

The author wish to thank all colleagues for their help and the support of NS and PHH for their critical input in the process of drafting this literature review.

REFERENCES

- [1] Vitaro, F., Boivin, M., & Bukowski, W. M., "The role of friendship in child and adolescent psychosocial development.", in *Handbook of peer interactions, relationships, and groups*, In K. H. Rubin, W. M. Bukowski & B. Laursen (Eds.) ed., New York, NY, The Guilford Press, 2009, pp. 568-585.
- [2] Locke, J., Williams, J., Shih, W., & Kasari, C., "Characteristics of socially successful elementary school-aged children with autism," *Journal of Child Psychology and Psychiatry*, vol. 58, no. 1, pp. 94-102, 2017. DOI: <https://doi.org/10.1111/jcpp.12636>
- [3] Chamberlain, B., Kasari, C., & Rotheram-Fuller, E., "Involvement or isolations? The social networks of children with autism in regular classrooms," *Journal of Autism and Developmental Disorders*, vol. 37, no. 2, pp. 230-242, 2007.
- [4] Bodison, S. C., "Developmental dyspraxia and the play skills of children with autism," *American Journal of Occupational Therapy*, vol. 69, 2015.
- [5] Chang, Y. C., Shih, W., Landa, R., Kaiser, A., Kasari, C., "Symbolic play in school-aged minimally verbal children with autism spectrum disorder," *Journal of Autism and Developmental Disorders*, vol. 48, pp. 1436-1445, 2018. DOI: <https://doi.org/10.1007/s10803-017-3388-6>
- [6] Rowley, E., Chandler, S., Baird, G., Simonoff, E., Pickles, A., Loucas, T., & Charman, T., "The experience of friendship, victimization and bullying in children with an autism spectrum disorder," *Research in Autism Spectrum Disorders*, vol. 6, pp. 1126-1134, 2012. DOI: [10.1016/j.rasd.2012.03.004](https://doi.org/10.1016/j.rasd.2012.03.004)
- [7] Paul R, Orlovski S, Marcinko H, et al., "Conversational behaviors in youth with high-functioning ASD and Asperger syndrome," *Journal of Autism and Developmental Disorders* 39:, vol. 39, pp. 115-125, 2009.
- [8] Rodríguez-Medina, J., Rodríguez-Navarro, H., Arias, V. et al., "Non-reciprocal Friendships in a School-Age Boy with Autism: The Ties that Build?," *J Autism Dev Disord*, vol. 48, pp. 2980-2994, 2018. DOI: doi.org/10.1007/s10803-018-3575-0
- [9] Bauminger, N., Solomon, M., Aviezer, A., Heung, K., Brown, J., & Rogers, S. J., "Friendship in high-functioning children with autism spectrum disorder: Mixed and non-

- mixed dyads., " *Journal of Autism and Developmental Disorders*, vol. 38, no. 7, pp. 1211-1229, 2008. DOI: doi.org/10.1007/s10803-007-0501-2.
- [10] Petrina, N., Carter, M., Stephenson, J., & Sweller, N., "Friendship satisfaction in children with autism spectrum disorder and nominated friends.," *Journal of Autism and Developmental Disorders*, vol. 47, no. 2, pp. 384-392, 2017. DOI: https://doi.org/10.1007/s10803-016-2970-7
- [11] R, Paul, "Promoting social communication in high functioning individuals with autistic spectrum disorders.," *Child and Adolescent Psychiatric Clinics*, vol. 12, pp. 87-106, 2003.
- [12] Alwahbi, A., Hua, Y., "Using contingency contracting to promote social interactions among students with ASD and their peers," *Behaviour Modification*, pp. 1-24, 2020. DOI: doi.org/10.1177/0145445520901674
- [13] Banda, D. R., Hart, S. L., & Liu-Gitz, L., "Impact of training peers and children with autism on social skills during center time activities in inclusive classrooms," *Research in Autism Spectrum Disorders*, vol. 4, no. 4, pp. 619-625, 2010. DOI: http://dx.doi.org/10.1016/j.rasd.2009.12.005
- [14] Harper, C. B., Symon, J. B. G., & Frea, W. D., "Recess is time-in: Using peers to improve social skills of children with autism.," *Journal of Autism and Developmental Disorders*, vol. 38, no. 5, pp. 815-826, 2008. DOI: http://dx.doi.org/10.1007/s10803-007-0449-2
- [15] Taylor, B., "Improving the social behavior of children with autism," in *Teaching social skills to people with autism: Best practices in individualized interventions*, In A. Bondy & M. Weiss (Eds.) ed., Woodbine House, Inc. Thiemann,, 2013, pp. 1-24.
- [16] Carter, E. W., Sisco, L. G., & Chung, Y., "Peer-mediated support interventions. In R. McCauley & P. A. Prelock (Eds.)," in *Treatment of autism spectrum disorders: Evidence-based intervention strategies for communication and social interactions*, Peer-mediated support interventions. In R. McCauley & P. A. Prelock (Eds.) ed., Paul H. Brookes Publishing Co., 2012, pp. 221-254.
- [17] Crick, N. R., & Dodge, K. A. (1994)., "A review and reformulation of social information-processing mechanisms in children's social adjustment.," *Psychological Bulletin*, vol. 115, no. 1, pp. 74-101, 1994. DOI: http://doi.org/10.1037/0033-2909.115.1.74
- [18] Kamps, D., Mason, R., Thiemann-Bourque, T., Feldmiller, S., Turcotte, A., Miller, T., "The use of peer network to increase communicative acts of students with autism spectrum disorders," *Focus on Autism and Other Developmental Disabilities*, vol. 29, no. 4, pp. 230-245, 2014.
- [19] Radley, K.C., Ford, W.B., Battaglia, A.A., McHugh, M.B., "The effects of a social skills training package on social engagement of children with autism spectrum disorders in generalized recess setting," *Focus on Autism and Other Developmental Disabilities*, vol. 29, no. 4, pp. 216-229, 2014. DOI: 10.1177/1088357614525660
- [20] Wolfberg, P., DeWitt, M., Young, G.S., Nguyen, T., "Integrated Play Groups: Promoting Symbolic Play and Social Engagement with Typical Peers in Children with ASD Across Settings," *J Autism Dev Disord*, 2014. DOI: 10.1007/s10803-014-2245-0
- [21] Harper, C. B., Symon, J. B. G., & Frea, W. D. (2008)., "Recess is time-in: Using peers to improve social skills of children with autism," *Journal of Autism and Developmental Disorders*, vol. 38, no. 5, pp. 815-826, 2008. DOI: http://dx.doi.org/10.1007/s10803-007-0449-2
- [22] Nuernberger, J. E., Ringdahl, J. E., Vargo, K. K., Crumpecker, A. C., & Gunnarsson, K. F., "Using a behavioral skills training package to teach conversation skills to young adults with autism spectrum disorders," *Research in Autism Spectrum Disorders*, vol. 7, pp. 411-417, 2013.
- [23] Stokes, T., & Osnes, P., "An operant pursuit of generalization," *Behavior Therapy*, vol. 20,

pp. 337-355, 1989.

- [24] Ferraioli, S. J., & Harris, S. L., "Effective educational inclusion of students on the autism spectrum," *Journal of Contemporary Psychotherapy*, vol. 41, no. 1, pp. 19-28, 2011.
- [25] Sanford, C., Levine, P., & Blackorby, J., "A national profile of students with autism: A special topic report from the special education elementary longitudinal study.," SRI Project P10656, 2008.