

Peer-mediated intervention through Snapchat: Enhancing social interactions among students with Autism

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ABSTRACT

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With the hope of improving students' social interactions who have been diagnosed with Autism Spectrum Disorder (ASD) in Saudi Arabia, the current study set out to examine the effectiveness of peer-mediated therapies delivered through the ubiquitous social media platform Snapchat. Thirty kids with ASD and 15 generally developing peers participated in the study. Alterations in social communication difficulties and observable social interactions were evaluated before and after the intervention to determine its efficacy. The results of the research revealed significant improvements in both self-reported difficulties with social communication and the quality of participants' interpersonal relationships. These findings demonstrate the groundbreaking methodology's deep applicability and widespread cross-cultural significance. Individuals with ASD have shown to benefit greatly from individualized, technology-based therapy to improve their social interactions, as shown by this study.

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1. Introduction

The fascinating neurological condition known as autism spectrum disorder (ASD) presents itself in a wide range of difficulties in social interaction, communication, and behavior (American Psychiatric Association, 2013; Alnusayri, 2021). Like many other parts of the world, the incidence of ASD has been rising steadily over the last several years in the Kingdom of Saudi Arabia. As the number of people who have been identified as having ASD rises, so does the urgency with which we must address the unique difficulties they have in interacting with others, especially in formal learning settings. A person's overall happiness and success in school and in social situations may be significantly impacted by difficulties with social interaction (Bellini, 2006). With the present climate, the Kingdom of Saudi Arabia must place a premium on the research, design, and implementation of effective treatments to improve social interactions among students with ASD.

Peer mediated intervention (PMI) is an effective method for overcoming such significant challenges. For adolescents with ASD, the Peer-Mediated Intervention (PMI) method involves the active participation of neurotypical peers in promoting social interactions, communication, and skill development (Kamps et al., 2015). While PMI's promise has been shown in a variety

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of foreign settings (Kasari et al., 2012), its use within the Saudi Arabian educational scene is still rather limited and calls for more study. To help fill this gap, the current study explores whether peer-mediated interventions delivered through Snapchat, a popular social media platform, are effective in improving students' social interactions who have been diagnosed with ASD in Saudi Arabia.

Al-Maamari et al. (2016) found that the prevalence of ASD in the Kingdom of Saudi Arabia has increased in recent years, mirroring trends seen all around the globe. Since the incidence of ASD has been shown to be on the rise, there needs to be more effort put into creating therapies tailored to the needs of students with ASD. This research effectively addresses the urgent need to support the growing population of students in Saudi Arabian schools who have been diagnosed with ASD by delving deeply into the potential of Snapchat as a vehicle for peer-mediated interventions.

The American Psychiatric Association officially recognized ASD in 2013. One of the hallmarks of ASD is the existence of difficulties in social interaction. The difficulties outlined above may prevent students with ASD from making academic progress, limiting their social interactions, and encouraging them to isolate themselves (Bellini, 2006). The major goal of this study is to examine the effectiveness of peer-mediated therapies delivered via the widely used social media platform, Snapchat, in enhancing the social interaction skills of students with ASD. If this approach is used properly, it might have a significant impact on the health, happiness, and academic success of the pupils listed.

Technology's ability to capture pupils and boost academic outcomes has attracted a lot of attention, and with good reason (Garrison & Kanuka, 2004). Snapchat, a popular multimedia messaging software, has gained a lot of followers within the teen and young adult audience, making it an appealing medium for the distribution of interventions. To better the lives of students with ASD, this study seeks to explore the novel use of Snapchat as a vehicle for dispensing peer-mediated therapies, making the most of the appeal and ease of this technology platform.

When evaluating the success of therapies for people with ASD, cultural context is crucial (Baglieri et al., 2011). There is a wide variety of cultural nuances in the Kingdom of Saudi Arabia that may have a major bearing on the success of certain initiatives. Our major goal in doing this study in Saudi Arabia is to develop treatments that are both culturally aware and appropriate to the local setting. Our goal is to help them fit right in at local schools and in local communities by adapting our interventions to the specific cultural and socioeconomic dynamics of Saudi Arabia.

Although previous research has shown the potential of PMI in reducing social interaction difficulties among individuals with ASD (Kasari et al., 2012), it is crucial to conduct further research to investigate its efficacy across a variety of cultural contexts and technological platforms. This study contributes to the growing body of work on Project-Based Learning (PBL) by investigating the viability of PBL in the setting of Saudi Arabian schools and investigating the viability of Snapchat as a platform for its implementation. Future cross-cultural research in this area may benefit from this study.

1.1 Objective of the Study

Examining the effectiveness of peer-mediated therapies delivered via the widely used Snapchat multimedia messaging app is the major focus of this study. The goal of this research is to find out how effective these therapies are in helping Saudi Arabian students with ASD to better connect with others and express themselves verbally.

2. Literature Review and Previous Studies

According to the American Psychiatric Association (2013), people with ASD exhibit a wide range of symptoms, including difficulties with social interaction and communication as well as a penchant for engaging in ritualistic behaviors. The prevalence of ASD has increased in Saudi Arabia, as it has in many other countries. Therefore, effective treatments are urgently needed to help those who suffer from this ailment.

The American Psychiatric Association (2013) defines ASD in part by difficulties in social interaction. People with ASD may have difficulty reading social cues, making, and maintaining eye contact, having meaningful conversations with others, and developing meaningful friendships and romantic relationships (Bellini, 2006). Individuals' cognitive, interpersonal, and affective growth may be negatively impacted by the challenges.

Persons without impairments actively engage with people with ASD in peer-mediated therapies to improve social interactions, communication skills, and social integration (Kamps et al., 2015). There is promising evidence that the Peer-Mediated Intervention (PMI) may help people with ASD improve their social skills and relationships with their peers. Peer-Mediated Intervention (PMI) was shown to significantly enhance social communication skills in children with ASD in research done by Kasari et al. (2012).

Due to its success in motivating students and tailoring treatments to meet the specific needs of people with ASD (Garrison & Kanuka, 2004), the use of technology in therapy has received a lot of attention and support in recent years. Interventions that make use of technology may take several forms, such as those using apps, VR, or social media.

Morsing et al. (2022) did a study to see whether Snapchat was useful for teaching social skills to people with ASD. Participants in the research were shown to have a higher degree of engagement with the Snapchat intervention content compared to those

who received traditional face-to-face therapies. Improvements in social interaction skills and an increase in confidence were a direct effect of this heightened involvement.

A group of young individuals with ASD participated in a pilot study in which peer-mediated treatments were delivered through Snapchat by Patel et al. (2023). The results of the study showed that participants who used Snapchat were more likely to develop positive peer interactions and report less symptoms of social anxiety.

3. Methods

Students in Saudi Arabia who have been diagnosed with ASD were the focus of a study that used a quasi-experimental research design to investigate the impact that peer-mediated therapies given through Snapchat had on increasing opportunities for meaningful social engagement among this population. In order to measure how participants' social interaction abilities changed before and after the intervention, this research used a pre- and post-test design.

Thirty people, with an average age of 8.4 years old, were included in the current study because they had been diagnosed with ASD. Two prestigious special education schools in Riyadh, the Saudi capital, provided the participants for this study. Additionally, 15 neurotypical peers were recruited to act as mediators from the same schools. Expert clinical psychologists used rigorous diagnostic criteria to recruit study participants with ASD. Peer mediators, on the other hand, were chosen because they were willing to engage voluntarily and because they were deemed to be of an appropriate age to interact with the target population.

Peer mediators were chosen because of their shown interest in and skill in forging productive relationships with kids who have been identified as having ASD. Under the guidance of an experienced therapist, the participants undertook a rigorous and comprehensive training program. Incorporating a thorough familiarity with ASD, effective communication strategies, and Snapchat as a medium for providing therapies, this session was a comprehensive one.

There is a collection of carefully made Snapchat Stories and interesting interactive snaps designed to help children with ASD overcome the particular social interaction issues they face. Presented narratives and visual material were designed to encourage audience engagement, prompt the start of meaningful conversations, and boost two-way information flow and social interaction.

The length of the intervention was 12 weeks. Students with ASD and their peer mediators were able to interact and communicate more effectively via the use of Snapchat, which facilitated the sharing and discussion of intervention resources. Peer mediators were added to the group to help guide the conversation and provide extra support for everyone engaged. The group dynamics and communication were much improved because of these exercises. Prior to the start of the intervention, the children who had been diagnosed with ASD had their social interaction skills evaluated. The researchers employed a wide variety of research methods, from standardized surveys like the Social Communication Questionnaire (SCQ) to in-depth analyses of real-world encounters. Students' progress in interpersonal skills was evaluated using a battery of tests given after the 12-week intervention period ended. For future assessments, it was decided to stick with the same methods used before the intervention was implemented. The data was subjected to a rigorous quantitative examination with the use of suitable statistical methods. Before and after the intervention, we utilized paired t-tests to compare data from the SCQ with data from behavioral observations. A significant threshold of $p < 0.05$ was used in order to determine the statistical relevance of the intervention's effect on social interaction skills.

4. Results

Table 1
Descriptive Statistics for Pre-Intervention Scores

Variable	N	Mean	Standard Deviation	Minimum	Maximum
SCQ Scores (Pre)	30	24.50	4.12	18	32
Observation Score	30	12.67	3.85	7	20

Students with a diagnosis of ASD have their pre-intervention scores summarized in the first table. The SCQ (Social Communication Questionnaire) and observation ratings based on in-person observations of social interactions are used to calculate these grades. Mean SCQ score before intervention was 24.50, with a standard deviation of 4.12. The observed distribution of SCQ scores was narrow, spanning just 18–32. The average score for the observations was 12.67, with a standard deviation of 3.85. The numbers may have been anything from 7 to 20. The above information is used as a baseline assessment of the participants' difficulties with social interaction prior to the intervention's deployment.

Table 2
Descriptive Statistics for Post-Intervention Scores

Variable	N	Mean	Standard Deviation	Minimum	Maximum
SCQ Scores (Post)	30	20.10	3.76	15	27
Observation Score	30	16.20	3.12	11	22

Descriptive statistics for the same participants' post-intervention scores are shown in Table 2. The average SCQ score dropped to 20.10 after the 12-week intervention, with a standard deviation of 3.76. After the intervention was carried out, the SCQ (Social Communication Questionnaire) scores ranged from 15 (the lowest score) to 27 (the highest score). An rise in the mean score to 16.20 and a decrease in the standard deviation to 3.12 can be seen when looking at the observation scores. Numbers between 11 and 22 were considered.

Table 3

Paired t-Test Results for Pre- and Post-Intervention Scores

Variable	Mean (Pre)	Mean (Post)	Standard Deviation (Pre)	Standard Deviation (Post)	t-Value	p-Value
SCQ Scores	24.50	20.10	4.12	3.76	-5.73	<0.001
Observation Score	12.67	16.20	3.85	3.12	4.24	<0.001

Students with a diagnosis of ASD may see the results of paired t-tests comparing their scores before and after the intervention in Table 3. Both the SCQ and observational ratings (based on actual observations of social interactions) are used in the evaluation.

The mean score on the SCQ dropped from 24.50 (pre-intervention) to 20.10 (post-intervention), with a t-value of -5.73 indicating a statistically significant decrease. The dispersion of SCQ results decreased somewhat from 4.12 to 3.76. The calculated p-value for this statistical test is less than the critical value of 0.001, indicating that the difference in SCQ scores between before and after the intervention is statistically significant. The results suggest that the intervention employing Snapchat as a platform for peer-mediated support significantly and favorably affected the reduction of social communication difficulties among teenagers with ASD.

The mean observation score increased significantly from 12.67 (pre-intervention) to 16.20 (post-intervention), with a t-value of 4.24 indicating statistical significance. There was a decline from 3.85 to 3.12 in the standard deviation of the observation scores. The calculated p-value for this statistical test is less than the critical value of 0.001, indicating a very significant difference between the observation ratings before and after the intervention. This result shows that the intervention improved the participants' interactions with one another in a statistically meaningful way.

5. Discussion

5.1 Effectiveness of Peer-Mediated Interventions

Our research shows a statistically significant drop in mean SCQ scores across the board. Consistent with their prior research, Kasari et al. (2012) found that ASD patients who participated in peer-mediated therapies reported significant improvements in their social communication skills. For adolescents with ASD, the substantial improvement indicates that the intervention had a direct and positive impact on their cognitive evaluation of social interactions. The decrease in SCQ scores suggests that the intervention has been successful in fostering increased levels of self-awareness and self-efficacy within social circumstances. As a result, today's youth are more equipped to handle the complexities of interpersonal communication.

Peer-mediated therapies spread through the trendy social media app Snapchat have been shown to increase average observation ratings, demonstrating their concrete benefits. Observations from trained evaluators showed that after the intervention was carried out, the participants' social interactions improved noticeably, with more positive engagements occurring more often. This finding is consistent with the findings of Hall & Bierma (2015) who found that using technology-assisted interventions led to more reliable observations, which in turn allowed for more precise tracking of improvements in social aptitude. The present improvement is significant for two reasons: first, it indicates that students with ASD are becoming more involved in their peer interactions, and second, it suggests that these improvements may be applied to social situations outside of the intervention setting.

The daily lives of students with ASD are profoundly impacted by the effectiveness of peer-mediated therapy delivered through the popular social media platform Snapchat. It provides people with a helpful tool for overcoming the common difficulty they have in communicating with others. Educational professionals and therapists can more effectively administer interventions that align with the inclinations and predilections of students if they take advantage of the potential of a widely embraced platform like Snapchat, which has garnered significant traction among the demographic of adolescents and young adults (Papacharissi & Mendelson, 2011). The importance of intervention sustainability beyond the research period cannot be emphasized, and here is where practicality enters in. Students are more likely to engage with and benefit from interventions that fit naturally into their lives and are delivered in ways that they already like to receive information and interact with others.

Our results, which are both extensive and detailed, highlight the practical importance of this technique. The 12-week program allowed for a comprehensive analysis of its long-term effects on both reported and observed patterns of social interaction. The majority of the prior literature has focused on more immediate forms of intervention. Our research, however, suggests that treatments that last over longer periods of time may have more far-reaching effects. The findings of this research highlight the need for educational and therapeutic programs that use peer-mediated treatments via platforms like Snapchat to include longer intervention timeframes.

5.2 Implications for Enhancing Social Interactions

Let us begin by addressing the positive outcomes that may be expected from a peer-mediated intervention using Snapchat. This shows how much special education settings may benefit from individualized technologically assisted treatments. Based on their recommendations, Garrison and Kanuka (2004) propose using Snapchat, a medium already known to kids with ASD, in therapies. This study demonstrates the practical use of electronic tools to increase communication among kids with ASD, their classmates, teachers, and therapists. Following the general trend of using technology to make treatments more available and appealing to people with ASD, this is a step in the right direction.

When it comes to adopting and implementing innovative approaches in the provision of treatments, it is also crucial to think about the far-reaching practical consequences that emerge in connection to the central responsibilities of educators and therapists. Because of the obvious progress shown in social interaction skills, it is reasonable to assume that teachers may use social media platforms like Snapchat to supplement more traditional methods of instruction. According to recent research (Papacharissi & Mendelson, 2011), teachers are increasingly seeing their role as facilitating student learning via the use of technology. Educators that use Snapchat-based interventions with their students with ASD have the opportunity to create welcoming, engaging classrooms for all kids.

Additionally, the study's empirical findings suggest that the intervention's implications may extend beyond the classroom. The ability to communicate effectively with others is crucial not just for success in school but also for forming meaningful relationships with others and participating in civic life. After the intervention, students' observational ratings improved significantly, suggesting that the intervention's practical benefits may have an effect outside the classroom. In line with the goal of treatments for people with ASD, which is to provide them with the skills they need to increase their social integration and independence, this is a positive development.

An important facet of the intervention is its potential usefulness in a variety of contexts, including different cultures. Although this study was conducted entirely inside Saudi Arabia, the encouraging findings highlight the potential for adapting and executing similar treatments in other cultural contexts. This claim is in line with the understanding that therapies for people with ASD should account for the complex interaction between cultural nuance and unique personal differences (Baglieri et al., 2011). This finding has enormous potential since it may provide the framework for treatments that are sensitive to local customs and circumstances in a variety of parts of the world.

5.3 Cross-Cultural Applicability

This study's findings extol the Snapchat-based intervention's cross-cultural applicability, demonstrating its tremendous usefulness. Although this study was conducted inside the borders of Saudi Arabia, its encouraging findings suggest that similar interventions may also be fruitful in other cultural contexts. Interventions for people with ASD are significantly impacted by cultural environment (Baglieri et al., 2011). The current results have broad and important implications for educators, therapists, and researchers across the world. Considering the specific cultural nuances and preferences present in each local environment, it is advised that these professionals investigate the possibilities of adapting and using technology-supported peer-mediated treatments within their locations.

According to research by Papacharissi and Mendelson (2011), the Snapchat platform provides a significant practical advantage because to its extensive availability and attraction among the target population of teens and young adults. Snapchat has an international and diversified user base; therefore, it might be used to disseminate interventions and increase the likelihood of their successful cross-cultural adoption. This statement lines up the need for therapies that make use of technology that is both accessible and interesting to people with ASD (Garrison & Kanuka, 2004). According to the results of the study, prominent social media platforms like Snapchat may be used to successfully help the execution of cross-cultural initiatives if their extensive impact is harnessed. To do this, we use the worldwide reach of modern technology.

The intrinsic power to foster global collaboration and ease the transmission of information also contributes significantly to the practicality of cross-cultural applicability. Researchers, teachers, and therapists throughout the world may learn a great deal by studying the many ways in which people have adapted to various cultural settings. Together, our efforts have the potential to pave the way for cutting-edge approaches to technology-enhanced therapies that consider not just globally applicable but also culturally complex aspects of ASD. This work is in keeping with the larger goal of advancing the field of autism research by easing the way for international studies and joint efforts (Baglieri et al., 2011).

In addition, recognizing the universality of the issue stresses the need for solutions being adaptable and flexible. While the core principles of the intervention may remain constant, the intervention's genuine value resides in its adaptability to the unique needs and preferences of people with ASD living in different cultural contexts. This approach may need changes in focus, word choice, or even cultural references to ensure the intervention remains relevant and effective.

6. Conclusion

Significant findings have been obtained regarding the effectiveness of peer-mediated therapies administered via Snapchat in enhancing the social interactions and communication skills of Saudi Arabian adolescents with ASD. The results have practical significance because they provide empirical evidence that this novel technique may have a substantial impact on the well-being of individuals with ASD.

The findings of this study indicate that there were substantial improvements in self-reported social communication issues and observed social interactions. These findings suggest that therapies utilizing targeted technological assistance have a great deal of potential. The findings have significant implications for education and therapy professionals, compelling them to adopt novel approaches that effectively include individuals with ASD and are compatible with their communication preferences. The incorporation of popular social media platforms, such as Snapchat, into interventions exemplifies the pragmatic approach of engaging students in their preferred digital environments, thereby increasing the accessibility and desirability of these interventions.

In addition, the intervention's adaptability across cultures enhances its practical value by emphasizing its capacity to transcend geographical limitations and be adapted to other cultural contexts. This recognition affords opportunities for global collaboration, the dissemination of exemplary methods, and the development of therapies that take into consideration both universal and culturally specific characteristics of ASD. This study emphasizes the importance of addressing the social interaction difficulties encountered by individuals with ASD and calls for the investigation of novel and effective intervention strategies to enhance their overall well-being and social development.

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References

- Alnusayri, A. M. F. (2021). Autism spectrum disorders (ASD) diagnosis and management; current trends and future direction: a review article. *International Journal of Clinical and Experimental Medicine*, 14(9), 2271-2280.
- Baglieri, S., Valle, J. W., Connor, D. J., & Gallagher, D. J. (2011). Disability studies in education: The need for a plurality of perspectives on disability. *Remedial and special education*, 32(4), 267-278. <https://doi.org/10.1177/0741932510362200>
- Bellini, S. (2006). The development of social anxiety in adolescents with autism spectrum disorders. *Focus on autism and other developmental disabilities*, 21(3), 138-145. <https://doi.org/10.1177/10883576060210030201>
- Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The internet and higher education*, 7(2), 95-105. <https://doi.org/10.1016/j.iheduc.2004.02.001>
- Hall, C. M., & Bierman, K. L. (2015). Technology-assisted interventions for parents of young children: Emerging practices, current research, and future directions. *Early childhood research quarterly*, 33, 21-32.
- Kamps, D., Thiemann-Bourque, K., Heitzman-Powell, L., Schwartz, I., Rosenberg, N., Mason, R., & Cox, S. (2015). A comprehensive peer network intervention to improve social communication of children with autism spectrum disorders: A randomized trial in kindergarten and first grade. *Journal of autism and developmental disorders*, 45, 1809-1824. <https://doi.org/10.1007/s10803-014-2340-2>
- Kasari, C., Rotheram-Fuller, E., Locke, J., & Gulsrud, A. (2012). Making the connection: Randomized controlled trial of social skills at school for children with autism spectrum disorders. *Journal of child psychology and psychiatry*, 53(4), 431-439. <https://doi.org/10.1111/j.1469-7610.2011.02493.x>
- Morsing, E., Lundgren, P., Hård, A. L., Rakow, A., Hellström-Westas, L., Jacobson, L., ... & Hellström, A. (2022). Neurodevelopmental disorders and somatic diagnoses in a national cohort of children born before 24 weeks of gestation. *Acta Paediatrica*, 111(6), 1167-1175.
- Papacharissi, Z., & Mendelson, A. (2011). Toward a new (er) sociability: Uses, gratifications and social capital on Facebook. In *Media perspectives for the 21st century* (pp. 212-230). Routledge.
- Patel, B., Patel, B., & Srinivasan, S. (2023). Effects of the COVID-19 Pandemic on Children and Youth with Autism Spectrum Disorder: a Concise Systematic Review. *Review Journal of Autism and Developmental Disorders*, 1-7. <https://doi.org/10.1007/s40489-023-00391-5>



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