Peer Support of Students with Autism Spectrum Disorders in Higher Education Institutions by Typical Students

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Abstract

In recent times, the number of students with autism spectrum disorders (ASD) in higher education institutions in Japan has increased. As a result, some researchers have investigated the role of peer support provided by typical students in supporting students with ASD. The purpose of this study was to examine the relationship between the intentionality of peer support and the characteristics of the peer supporter, focusing on autistic traits and social support. Participants were 51 university students who responded to a questionnaire on intentionality of peer support, autistic traits, and social support. Results showed that among students with high level of autistic traits, those having more social support could more easily help students with ASD than those with less social support. Furthermore, among students with little social support, those with a low level of autistic traits could more easily help students with ASD than those with a high level of autistic traits.

Keywords: peer support, autism spectrum disorder, higher education

Introduction

Autism Spectrum Disorders (ASD) are a group of neurodevelopmental disorders characterized by qualitative impairments in social and communication skills as well as restricted interests and stereotyped behavior (American Psychiatric Association, 2013). Choice of post-secondary education among individuals with ASD has recently received much attention from researchers, particularly their continuation to higher education institutions (Hart, Grigal, & Weir, 2010). High school students with ASD and good academic performance, tend to pursue higher education in institutions (Chiang, Cheung, Hickson, Xiang, & Tsai, 2012). As a result, the number of students with ASD in higher education institutions in Japan has also increased. The Japan Students Services Organization (2017) revealed that the number of students with ASD increased from 127 students in 2006 to 4,150 students in 2016. Attention has been paid to the ways of supporting students with ASD in higher education institutions (Sato & Tokunaga, 2006; Mori, Yamami, & Tanaka, 2015).

In Japan, there are many practices supporting students with ASD in higher education institutions (Kawasumi, Yoshitake, Nishida, Hosokawa, Ueno, Kumai, Tanaka, Anbo, Ikeda, & Sato, 2010). However, some studies have reported difficulties with these kinds of support. Kawasumi et al. (2010) revealed three difficulties, namely, difficulties in assessment of appropriate support, difficulties in specific ways of support, and difficulties in coping with students who are around students with ASD. It is necessary to resolve these difficulties in order to optimally support students with ASD.

The core of these difficulties could be that only staff members in higher education institutions in Japan have to support students with ASD who have various problems. Cai and Richdale (2015) showed that students with ASD in higher education institutions have many difficulties caused by core ASD symptoms such as social-communication difficulties, structure, routine and sensory sensitivities, and co-morbid conditions such as psychopathology, executive dysfunction, and clumsy motor skills. It has also been shown that they do not feel adequate educational and social support is offered in higher education (Cai & Richdale, 2015). Tanji and Noro (2014) also showed that in Japan, students with ASD in higher education institutions have various special needs in their studies, life skills, personal relationships, finding employment, and mental health. In addition, Tanji and Noro (2014) also found that certain staff members in higher education institutions, such as counselors, administrative staff, and teaching staff support these students' special needs. In the present situation of increased enrollment of individuals with ASD, it is quite likely that it is burdensome for these staff members in higher education institutions to support the needs of these students, and they are not adequately able to provide the educational and social support that these students need. Some researchers have paid attention to peer support provided by typical students to assist in relieving this burden and adequately support students with ASD (Tanji & Noro, 2014; Gardiner & Iarocci, 2014).

Peer Support
Peer support is defined as the provision of emotional, appraisal, and informational assistance from a social network member who possesses experiential knowledge of a specific behavior or stressor, and similar characteristics as the target population. The purpose is to address a health related issue of a potentially or actually stressed person (Dennis, 2003). Based on this definition, peer supporters who support students with ASD have experiential knowledge about required behavior in higher education institutions or stressors in their own lives, and

can support students with ASD by using this knowledge. There are three reasons why peer support of students with ASD has received academic attention. First, peer support could help students with ASD to improve their academic learning and social skills (VanBergeijk, Klin, & Volkmar, 2008; McCurdy & Cole, 2014; Watkins, O' Reilly, Kuhn, Gevarter, Lancioni, Sigafoos, & Lang, 2015). VanBergeijk et al. (2008) pointed out that students with ASD did not have enough opportunities to learn about academic learning and social skills, and needed empirical support about these skills.

As mentioned above, peer supporters have knowledge about these skills, which they can impart to students with ASD. In fact, Watkins et al. (2015) pointed out that students with ASD could improve various skills required in higher education by imitating the skills other students have. Therefore, peer support is informative for students with ASD to improve their academic learning and social skills. Second, peer support could help ease the burden of staff members in higher education institutions who support students with ASD. As already stated, a single member of staff cannot support all the special needs adequately because he or she does not have enough time and adequate knowledge about the daily life of students with ASD (Tanji & Noro, 2014). These situations are believed to lead to the burden of staff members in higher education institutions. Therefore, it is necessary to ease their burden through peer support. Finally, peer support could help students with ASD achieve academic success. This is because improving their academic learning and social skills and easing the burden of staff members helps to reduce effort in their academic lives. Peer support could prevent students with ASD from truancy and psychological problems such as mood and anxiety disorders. Since students with ASD are at high risk of developing psychological disorders, it is especially important for them to live their academic lives in as healthy a manner as possible (Strang, Kenworthy, Daniolos, Case, Wills, Martin, & Wallace, 2012). Therefore, peer support is necessary for students with ASD to achieve academic success.

However, it is possible that it would be difficult for peer supporters to support the special needs that students with ASD have. Peer supporters might feel psychological reluctance, such as felling difficulties in understanding students with ASD or difficulties in conveying their intentions to students with ASD when they support them (Neville & White, 2011). Neville and White (2011) revealed that psychological reluctance to assist students with ASD varies according to the characteristics of the peer supporters, such as experience of contact with people with ASD, personality, gender, and grade. This study suggests that psychological reluctance to support students with ASD can vary from student to student. Therefore, researchers need to reveal what personality traits make some less likely to experience psychological reluctance while assisting students with ASD. Peer supporters who also have autistic traits might be less likely to experience psychological reluctance while assisting students with ASD. Komeda, Kosaka, Saito, Mano, Jung, Fujii, Yanaka, Munesue, Ishitobi, Sato, and Okazawa (2014) examined empathy and autistic traits among 15 individuals with ASD and typically developing individuals by using sentences that described the behavior of a target character as having autistic or non-autistic traits.

Results showed that people with ASD are more likely to empathize with people with ASD than typically developing individuals. This study suggested that students who have high autistic traits could be motivated to support students with ASD because they are better able to empathize with students with ASD. However, being motivated to provide support would not be enough when peer supporters helps students with ASD. This is because peer supporters need experiences of talking to other students and need to show various support skills. These

experiences depend almost entirely on the social support that he or she has. Therefore, it is likely that students who receive a large amount of social support can support students with ASD more easily because they have experience in talking to other students and demonstrating various skills.

Thus, in terms of peers supporting students with ASD, it is believed that students who have high autistic traits and a large amount of social support can support students with ASD positively. However, previous studies have not examined the relationships between the intentionality of peer support and the characteristics of the peer supporter, such as autistic traits and social support. Thus, the purpose of this study is to examine these relationships. In other words, this study hypothesizes that peers with high autistic traits who have social support are more likely to provide support to peers with ASD. Examining these relationships will contribute to understanding the support system of students with ASD.

Methods
Participants and Procedure
The participants were 51 (36 females and 15 males) volunteer undergraduate students attending a university in Japan. The mean age was 20.35 years ($SD = 0.74$), ranging from 19 to 23 years. All participants were Japanese. The questionnaire was completed during the last 30 minutes of a class in July 2016.

Questionnaires
Peer Support
To measure the extent of ease of peer support by students, the Feeling Troubles of Autism Spectrum Disorder Scale was revised (FAS; Yamamoto & Takahashi, 2009), and used in this study. The FAS is a 25-item scale consists of two subscales. Feeling troubles of social interaction refers to experiencing difficulties elicited by social interaction in actual life (e.g., "He/She is lonely because he/she has no friends."). Feeling troubles of autistic traits refers to experiencing difficulties elicited by students' autistic traits (e.g., "He/She has problem in understanding others' mental state."). In this study, participants were asked to rate the ease with which they could support students with ASD on each item. All items were rated on a Likert scale from 1 (not at all) to 4 (very much).

Autistic Traits
To measure autistic traits of participants, the Autism Spectrum Quotient-Japanese version short form (AQ-J-10) was used (Kurita, Koyama, & Osada, 2005). The AQ-J-10 is based on the Autism Spectrum Quotient (Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001). The AQ-J-10 is a 10-item self-report questionnaire for screening adolescents and adults of normal intelligence with ASD, and is designed to measure autistic traits distributed among typically developed adults. The participants rated each of these items on a 4-point scale. The total scores ranged from 0 to 10. The validity of AQ-J-10 have been shown to be good (Kurita et al., 2005). AQ-J-10 can be downloaded for free.

Social Support
To measure participants' social support, the Japanese version of the abbreviated Lubben Social Networks Scale (LSNS-6) was used (Kurimoto, Awata, Ohkubo, Tsubota-Utsugi, Asayama, Takahashi, Suenaga, Satoh, & Imai, 2011). This scale is based on the LSNS-6 (Lubben, Blozik, Gillmann, Iliffe, von Renreln Kruse, Beck, & Stuck, 2006). The LSNS-6 is constructed from a set of three questions that evaluate family ties and a comparable set of

three questions that evaluate friendship ties (Lubben et al., 2006). The total scores range from 0 to 30. The Japanese version of the abbreviated LSNS-6 was validated in Japanese samples (Kurimoto et al., 2011), and used to assess an individual's social network with whom one has social contact and social support (Watabe, Kato, Teo, Horikawa, Tateno, Hayakawa, Shimokawa, & Kanba, 2015). Both the LSNS-6 and the Japanese version of the abbreviated LSNS-6 can be downloaded for free.

Ethics Statement

At the beginning of the study, the researchers explained to all the participants that their personal information would be strictly protected, and that their decision to participate or not would not affect their academic evaluation. They were also told that participation was voluntary and that they could quit at any time. This research was approved by the ethics committee of Yamaguchi prefectural university (Approval Number: 28–29).

Statistical Analysis

Participants were divided into a low LSNS-6 group and a high LSNS-6 group. Participants were also divided into a low AQ-J-10 group and a high AQ-J-10 group. Peer support variables were analyzed in a 2 (low LSNS-6 group vs. high LSNS-6 group) × 2 (low AQ-J-10 group vs. high AQ-J-10 group) ANOVA with Bonferroni correction to examine the effect of autistic traits and social support on the intentionality of peer support to students with ASD. Data analysis was performed using SPSS Statistics 23.0.

Results

Table 1 shows the mean score of peer support in the low LSNS-6 group and the high LSNS-6 group. The results of the ANOVA showed that the main effect of LSNS-6 group was not significant (F (1, 47) = 2.66, p > .05, η^2 = 0.05).

Group	n	LSNS-6 score range	Mean score peer support	SD
Low LSNS-6	25	3-19	62.96	11.22
High LSNS-6	26	20-30	68.62	9.49

Note: SD = Standard Deviation

Table 1. Fundamental statistics of peer support variables in each group of the LSNS-6

Table 2 shows the mean score of peer support in the low AQ-J-10 group and the high AQ-J-10 group. The ANOVA showed that the main effect of AQ-J-10 group was not significant (F (1, 47) = 0.34, p > .05, η^2 < 0.01).

Group	n	range of AQ-J-10 score	Mean score peer support	SD
Low AQ-J-10	23	0-1	67	9.29
High AQ-J-10	28	2-8	64.89	11.74

Note: SD = Standard Deviation

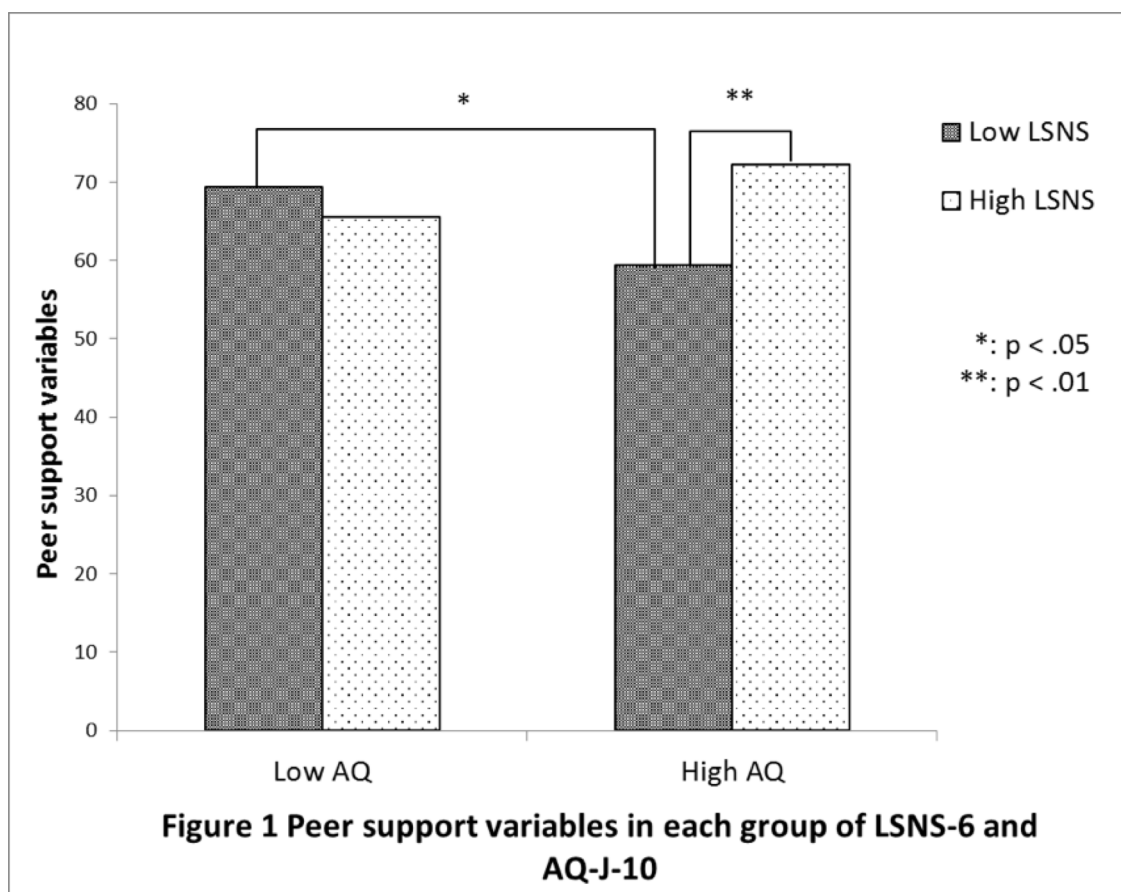Table 2. Fundamental statistics of peer support variables in each group of AQ-J-10

Table 3 shows the mean score of peer support in the four groups divided by LSNS-6 score and AQ-J-10 score. The ANOVA showed that the interaction of LSNS-6 group and AQ-J-10 group was significant (F (1, 47) = 9.07, p < .01, η^2 = 0.16). Thus, a single main effect test was carried out as sub-effect test. The results of the single main effect test showed that the single main effect of AQ-J-10 group was significant (F (1, 47) = 12.13, p < .01, η^2 = 0.21). The mean score of peer support of the high LSNS-6 group was higher than that of the low LSNS-6 in the high AQ-J-10 group (Figure 1). However, the mean score of peer support was not significantly different between that of the high LSNS-6 group and of the low LSNS-6 in the low AQ-J-10 group (F (1, 47) = 0.86, p > .01, η^2 = 0.02).

Group		n	Mean score of peer support	SD
Low LSNS-6	Low AQ-J-10	9	69.33*	9.25
	High AQ-J-10	16	59.38	10.84
High LSNS-6	Low AQ-J-10	14	65.5	9.35
	High AQ-J-10	12	72.25**	8.64

Note: SD = Standard Deviation; **: p < .01; *: p < .05

Table 3. Mean score of peer support in each group of LSNS-6 and AQ-J-10

The results of the single main effect test also showed that the single main effect of LSNS-6 group was significant (F (1, 47) = 6.10, p < .05, η^2 = 0.12). In particular, the mean score of peer support of the low AQ-J-10 group was higher than that of the high AQ-J-10 in low LSNS-6 group (Figure 1). However, the mean score of peer support was not significantly different between the low AQ-J-10 group and the high AQ-J-10 group in the high LSNS-6 group (F (1, 47) = 3.14, p > .05, η^2 = 0.06).

Figure 1 Peer support variables in each group of LSNS-6 and AQ-J-10

Discussion

The purpose of this study was to examine the relationship between the intentionality of peer support and the characteristics of peer supporters focusing on autistic traits and social support. The results of this study revealed the following three points. First, students with high autistic traits who have more social support could help students with ASD more easily than those with high autistic traits who have less social support. This result is considered to reflect the idea that students with high autistic traits would be motivated by empathizing with students with ASD, and they would be confident in supporting them by gaining experience of talking to other students and demonstrating various skills. In other words, the intentionality of peer support in students with high autistic traits would be influenced by their social support.

It is suggested that people with high autistic traits develop confidence in social interactions by interacting with other people frequently (Tse, Strulovitch, Tagalakis, Meng, & Fombonne, 2007). Tse et al. (2007) examined the effectiveness of a social skill training group for adolescents with ASD, and showed a significant difference of confidence levels in social interactions between pre-training and post-training. This result implied that accumulating experiences of social interactions contributed to developing confidence in social interactions. Therefore, students with high autistic traits and more social support may be more confident in social interactions by accumulating experiences of social interactions and could support students with ASD more easily.

Second, it was found that students with low autistic traits and little social support could help students with ASD more easily than those with high autistic traits and little social support. This result reflects that students with high autistic traits and little social support are less confident in social interactions than students with low autistic traits and little social support. As mentioned above, people with ASD become confident in social interactions by gaining experience in interacting with others (Tse et al., 2007). Therefore, students with high autistic traits and little social support could not gain experience in interacting with others and have less confidence in social interactions. On the other hand, students with low autistic traits have a certain degree of social skills even if they do not have a lot of experience in interacting with others. Thus, students with low autistic traits and little social support could help students with ASD more easily than those with high autistic traits.

Third, it was found that either autistic traits or social support alone could not influence the intentionality of peer support students with ASD. This might mean that autistic traits could elicit empathy for students with ASD, but not give confidence in social interactions, and social support could give confidence in social interactions, but not elicit empathy for students with ASD.

These results suggest a need for peer support groups for students with ASD in universities. Currently, there are few health services for adults with ASD (Murphy, Wilson, Robertson, Ecker, Daly, Hammond, Galanopoulos, Dud, Murphy, & McAlonan, 2016). However, the results showed that students with high autistic traits with much social support could help each other more easily and, based on this, peer support groups for students with ASD in universities are appropriate. Few studies have examined the effectiveness of peer support groups for adolescents or adults with ASD, while there is a lot of support for the effectiveness of peer support groups for young people with ASD (McCurdy & Cole, 2014; Rodriguez-Medina, Martín-Antón, Carbonero, & Ovejero, 2016).

However, some previous studies have shown the effectiveness of peer support groups for adolescents or adults with ASD (Scmidt & Stichter, 2012). Scmidt and Stichter (2012) examined the effectiveness of peer-mediated interventions to promote the social competence for adolescents with ASD by using this intervention with three adolescents with ASD. The intervention included the following components: skill instructions, adult modeling, skill rehearsal, feedback, and a system for reinforcement. Results showed that the peer-mediated interventions enhanced generalized gains in social interaction. This study suggested that peer support for students with autism could lead to generalizing various skills in social interaction.

Therefore, higher education institutions, such as universities and colleges need to support the establishment of peer support groups for students with ASD and implement peer support program including components such as skill instructions, adult modeling, skill rehearsal, feedback, and a system for reinforcement.

Limitations
The limitations of this study include the following two points. First, the study included a small number of participants. Therefore, it is likely that the results of this study were not stable. For that reason, a study with a larger number of participants should be considered to validate the findings in this study. Second, the assessment of intentionality in peer support for students with ASD in this study does not represent peers' ability to support students with ASD. In other words, there might be some cases where students who have high intentionality

in peer support for students with ASD, would not have the ability to provide peer support for students with ASD. Therefore, the relationship between the intentionality of peer support for students with ASD and the ability of peers to support students with ASD should be assessed.

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