EDUCATIONAL PSYCHOLOGY & COUNSELLING | RESEARCH ARTICLE

Effects of teacher efficacy and attitudes toward inclusive education for children with disabilities on the emotional distress of middle school teachers in Japan

Kai Nagase, Kenji Tsunoda and Kumi Fujita

Abstract: The purpose of this study is to examine the effects of teacher efficacy and teachers’ attitudes toward inclusive education for children with disabilities on the emotional distress of middle school teachers in Japan. A survey of 95 middle school teachers in Yamaguchi Prefecture, Japan measured the attitudes of regular and special education teachers toward inclusive education and teacher efficacy in inclusive education. Then, this study assessed the impact of these factors on teachers’ emotional distress. The results indicated that teachers’ emotional distress was significantly and negatively correlated with high teacher efficacy in inclusive instruction and collaboration. Furthermore, teachers’ emotional distress was significantly and negatively correlated with attitudes toward integrated classroom management. A regression analysis was performed, which further confirmed that middle school teachers’ level of efficacy in inclusive instruction and attitudes toward integrated classroom management were unique predictors of their emotional distress.

ABOUT THE AUTHOR
Kai Nagase, PhD, is a lecturer in developmental psychology at the Faculty of Social Welfare, Yamaguchi Prefectural University, Japan. He earned his PhD from Tohoku University in 2016. His main research interest is emotional distress of teachers in inclusive classroom settings. He is also interested in emotional characteristics such as humor appreciation and emotion regulation in individuals with autism spectrum disorders (ASD).

PUBLIC INTEREST STATEMENT
Teacher efficacy in inclusive education is defined as a teacher’s beliefs or perceptions about his or her ability to teach students with different kinds of needs and to bring about desired changes in student achievement. Teachers’ attitudes toward inclusive education are based on practical concerns about how inclusive education can be implemented. Previous studies suggested that teacher efficacy and attitudes toward inclusive education influence emotional distress of teachers in inclusive classroom. The purpose of this study was to examine the effects of teacher efficacy and teachers’ attitudes toward inclusive education for children with disabilities on the emotional distress of middle school teachers in Japan. The results indicated that teachers’ emotional distress was significantly and negatively correlated with high teacher efficacy in inclusive instruction and collaboration. Furthermore, teachers’ emotional distress was significantly and negatively correlated with attitudes toward integrated classroom management. These findings provide further insights into the challenges facing middle school teachers involved in special needs education.
distress. These findings provide further insights into the challenges facing middle school teachers involved in special needs education.

**Subjects:** Inclusion and Special Educational Needs; Middle School Education; School Psychology

**Keywords:** Middle school teachers; inclusive education; attitude; teachers' efficacy; emotional distress

1. Introduction

Inclusive education has been a key issue in special needs education worldwide for the past 20 years. Inclusive education is a system whereby students with and without disabilities can learn together. For this system to be possible, children with disabilities must be given the opportunity to receive primary and secondary education in areas where they reside, and they should be reasonably accommodated (Takahashi & Matsuzaki, 2014). In Japan, inclusive education is promoted through the Special Needs Education system, which was launched in 2007 with the aim of building a society in which all individuals, regardless of whether they have disabilities, are respected, and those with disabilities can participate fully in society (Nakamura & Oka, 2007; Song, 2016). The Special Needs Education system focuses on “needs” rather than “disabilities” so that all students who are experiencing difficulties, such as those with developmental disorders, can receive the appropriate educational support (Murata & Yamaguchi, 2010; Song, 2016). While the system has benefited students with and without disabilities, the mental health of the teachers involved has been a concern.

Mori and Tanaka (2011) examined the condition of emotional distress in teachers of students with special educational needs in Japan, and found that approximately 70% of them had some emotional distress. Mori and Tanaka (2012) reported no relationship between gender and emotional distress, or between years of teaching experience and emotional distress. This research suggests that teachers involved in the Special Needs Education system or the inclusive education system have higher emotional distress. Therefore, it is necessary to examine the factors that influence emotional distress of teachers in the inclusive education system in Japan.

Previous studies have pointed out that teacher efficacy and teachers’ attitudes toward inclusive education are factors that influence teachers’ emotional distress in the inclusive education system (Nagase et al., 2020). Teacher efficacy in inclusive education is defined as a teacher’s beliefs or perceptions about his or her ability to teach students with different kinds of needs and to bring about desired changes in student achievement (Minghui et al., 2018; Tschannen-Moran et al., 1998). Previous studies have indicated that teacher efficacy is one of the most pervasive factors that potentially distinguishes teachers who teach effectively from those who usually struggle to teach students (Minghui et al., 2018; Tschannen-Moran & Hoy, 2001). Skaalvik and Skaalvik (2014) showed that teacher efficacy is negatively associated with emotional exhaustion. These studies suggest that teachers with high teacher efficacy have less emotional distress.

There is a substantial body of research on teacher efficacy, although studies on teacher efficacy in inclusive education have started to receive attention only more recently. Sharma et al. (2012) developed the Teacher Efficacy for Inclusive Practices (TEIP) scale, which is an instrument designed to measure perceived teacher efficacy in teaching in inclusive classrooms. In the TEIP, three specific factors were identified: efficacy in using inclusive instructions (EII), efficacy in collaboration (EC), and efficacy in managing behavior (EMB). This factor structure in the TEIP has been confirmed in an additional study (Park et al., 2016).

Teachers’ attitudes toward inclusive education are often based on practical concerns about how inclusive education can be implemented, rather than being grounded in any particular ideology (Vaz et al., 2015). Antonak and Larrivee (1995) developed the Opinions Relative to Integration of Students with Disabilities (ORI) scale and identified four factors on the scale as follows: benefits of integration (BF),
integrated classroom management (ICM), perceived ability to teach students with disabilities (PATSD), and special versus integrated general education (SIGE). Attitudes toward inclusive education are known to be affected by age, gender, training to teach students with disability, other teachers’ attitudes, advanced degree of teachers (Dupoux et al., 2005; Vaz et al., 2015). Praisner (2003) examined the relationship between attitudes toward inclusive education and experiences with students with disabilities of 405 primary school principals. Praisner (2003) revealed that positive attitudes toward inclusive education of the principals were associated with positive experiences with students with disabilities. These studies suggest that positive attitudes toward inclusive education reduce teachers’ emotional distress.

Based on the previous research mentioned above, some studies have examined the association between teacher efficacy and teachers’ attitudes toward inclusive education and emotional distress. Boujut, Popa-Roch, Palomares, Dean and Cappe (2017) examined the association between teacher efficacy and burnout in teachers of students with autism spectrum disorder. Boujut et al. (2017) showed that the lower the feelings of teacher efficacy, the more the teacher perceived the teaching situation to be stressful, as a threat or a loss, and these perceptions generated more emotional exhaustion.

In recent years, such research has been conducted in Japan. Nagase et al. (2020) examined the relationship between teacher efficacy and teachers’ attitudes toward inclusive education and the emotional distress of primary school teachers in Japan. Nagase et al. (2020) found that EC and EMB are unique predictors of emotional distress in primary school teachers. Their results suggest that teacher efficacy in inclusive education reduces emotional distress. Nevertheless, Nagase et al. (2020) pointed out limitations of their study. One was that the participants were limited to primary school teachers. Nagase et al. (2020) suggested the need to examine the case of middle school teachers. In particular, it is possible that there are differences between primary and middle school teachers in Japan for the relationship between teacher efficacy and teachers’ attitudes toward inclusive education and emotional distress. This is because the school roles of primary and middle school teachers differ. Primary school teachers are in charge of only one class, and it is necessary for them to teach multiple subjects and to offer life support only to that class. On the other hand, middle schools teachers teach only the subjects they specialize in, and thus, teach students in multiple classes from grades 1 to 3. However, previous studies have not examined the association between teacher efficacy and teachers’ attitudes toward inclusive education and emotional distress of middle school teachers in Japan. This study aims to fill this research gap.

In addition, this study also aims to examine the association between demographic data such as gender and years of service as a teacher, teacher efficacy and teachers’ attitudes toward inclusive education, and emotional distress. Examining this association may be useful in considering support for enhancing teacher efficacy and teachers’ attitudes toward inclusive education. When teacher efficacy and teachers’ attitudes toward inclusive education affect emotional distress, it is important to know which factors influence them. In addition, while some studies have examined the relationship between demographic data and teacher efficacy and teachers’ general attitudes (Klassen & Chiu, 2010; Sandberg & Pramling-Samuelsson, 2005; Specht & Metsala, 2018), few have examined the relationship between demographic data and teacher efficacy and teachers’ attitudes toward inclusive education (Minghui et al., 2018). Thus, this study examines the association between the demographic data of middle school teachers and teacher efficacy and teachers’ attitudes toward inclusive education and emotional distress.

2. Method

2.1. Participants and procedure
This study was conducted in the Yamaguchi Prefecture in Honshu, Japan. We mailed the questionnaire to middle schools in Yamaguchi prefecture, and valid questionnaires were returned by 95 middle school teachers (58 men and 37 women) with a mean age of 42.32 (SD = 12.03). For middle school enrollment in Japan, students are required to attend school for three years, starting April 1, when they are 12 years old. Therefore, students aged 12 to 15 attend middle school in Japan. The mean value of their years of service as teachers was 17.89 (SD = 12.04), and 6.1% of the
participants (N = 6) held the special teacher licenses required for teaching in special education schools. All the participants were Japanese. The demographic characteristics of the participants are presented in Table 1.

2.2. Questionnaires

2.2.1. Brief demographic information
Participants’ demographic information was obtained by asking questions about their age, gender, years of service as a teacher, whether they possessed a teacher’s license for special education schools, the number of students in their class, the number of students with a disability in their class, and class grade in charge.

2.2.2. The teacher efficacy for inclusive practices scale
Teacher efficacy in inclusive education was measured using the TEIP scale. The TEIP measures school teachers’ teaching efficacy beliefs for inclusive practice, and the details of the scale development procedures, along with their validity and reliability, are described in Sharma et al. (2012). The scale consists of 18 items scored on a 6-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = disagree somewhat, 4 = agree somewhat, 5 = agree, and 6 = strongly agree). The TEIP yields a total score obtained by adding the value of the responses to each item. An example of an item on this scale is: “I am able to provide an alternate explanation or example when students are confused.” The total score of the TEIP scale can range from a minimum of 18 to a maximum of 108. Higher TEIP scores suggest that a respondent is more efficacious for teaching students with diverse learning needs in an inclusive classroom (Sharma et al., 2014). As mentioned in the introduction section, three specific factors were identified in the TEIP: EII, EC, and EMB. An example of an item in EII is: “I can use a variety of assessment strategies (e.g., portfolio assessment, modified tests, and performance-based assessment).” An example of an item in EC is: “I can assist families in helping their children do well in school.” An example of an item in EMB is: “I am confident in my ability to prevent disruptive behavior in the classroom before it occurs.” As is the case with the ORI, a significant number of previous highly regarded studies have examined attitudes toward inclusive education using the TEIP (e.g., Alnahdi et al., 2019; Park et al., 2016; Sharma et al., 2012, 2014). In the current study, the Cronbach’s alpha coefficient for the TEIP was .93. The Cronbach’s alphas for the TEIP subscales were .82, .91, and .82 for EII, EC, and EMB, respectively.

Table 1. Demographic characteristics of participants

|                     | Male   | Female | Total |
|---------------------|--------|--------|-------|
| Number              | 58     | 37     | 95    |
| Mean age (SD)       | 41.17 (12.00) | 44.17 (12.03) | 42.32 (12.03) |
| Mean years of service as teachers (SD) | 16.83 (12.16) | 19.66 (11.81) | 17.89 (12.04) |
| Number of participants with a teacher’s license for special education schools (proportion) | 26 (25.5%) | 6 (10.7%) | 32 (20.3%) |
| Median number of students in their class | 29 | 28 | 29 |
| Median number of students with a disability in their class | 1 | 1 | 1 |
| Class grade         |        |        |       |
| 1st                 | 25     | 17     | 42    |
| 2nd                 | 24     | 13     | 37    |
| 3rd                 | 9      | 7      | 16    |
2.2.3. The opinions relative to integration of students with disabilities scale

Attitude toward inclusive education was measured using the ORI scale. The ORI scale is appropriate for this study because it measures the attitudes of regular and special education teachers toward inclusion. It has four subscales. The ORI contains 25 positively and negatively worded statement options rated on a six-point continuum, eliminating the non-informative middle value on the original response continuum. An example of an item on this scale is: “The integration of special needs students can be beneficial for regular students.” The available responses to the statements are: −3 = I strongly disagree; −2 = I mostly disagree; −1, I somewhat disagree; +1, I somewhat agree; +2, I mostly agree; and +3, I strongly agree. In this study, the responses to the 25 items were scored in the direction of positive attitudes and then summed. A constant of 90 was then added to this total to eliminate negative scores, meaning that the potential scores could range from 0 to 180. As mentioned in the introduction, four specific factors were identified in the ORI scale: BF, ICM, PATSD, and SIGE. An example of an item in BF is: “The integration of students with disabilities can be beneficial for students without disabilities.” An example of an item in ICM is: “Students with disabilities are likely to create confusion in general classrooms.” An example of an item in PATSD is: “General classroom teachers have the necessary ability to work with students with disabilities.” An example of an item in SIGE is: “Students with disabilities can be best served in general classrooms.” A significant number of highly regarded previous studies have examined attitudes toward inclusive education using the ORI (e.g., Antonak & Larrivee, 1995; Ismail et al., 2016; Vaz et al., 2015). In the current study, the Cronbach’s alpha coefficient for the ORI was .79. The Cronbach’s alphas for the ORI subscale were .60, .72, .54, and .44 for BF, ICM, PATSD, and SIGE, respectively.

2.2.4. The general health questionnaire

The emotional distress of participants was measured using the 12-item General Health Questionnaire (GHQ-12). The GHQ-12 is a widely used instrument that has been translated into more than 30 languages throughout the world, and its validity and reliability have been established using Japanese adults (Doi & Minowa, 2003). It is a self-administered screening questionnaire that is used to detect the incidence of minor psychiatric disorders in the general population. In particular, it is intended to evaluate respondents’ general emotional distress during the 4 weeks preceding the questionnaire administration, and the scale items ask about levels of happiness, depression, anxiety, and sleep disturbance (Doi & Minowa, 2003). Each item is rated on a four-point scale (less than usual, no more than usual, rather more than usual, or much more than usual) and depending on the scoring method selected, the maximum total score can be either 12 or 36. The most common scoring methods are bimodal (−0-0-1-1) and Likert (−0-1-2-3). Since the latter produces a more acceptable distribution of scores for parametric analysis (Salama-Younes et al., 2009), each item can be rated on a 4-point Likert scale from 0 to 3 in response to whether the respondents had experienced each symptom during the 4 weeks prior to completing the questionnaire. Therefore, Likert scoring was the method adopted in this study. The Cronbach’s alpha coefficient for the GHQ-12 was found to be .99.

2.3. Translation of questionnaire components

The ORI and TEIP sections of the questionnaire were originally written in English. For our study, they were translated into Japanese, and the content and quality of the translation was checked by the authors, whose native language is Japanese. The authors are also fluent in English. They are also familiar with the specific details of the Special Needs Education system and the state of inclusive education in Japan. Finally, the translated version of the instrument was proofread by teachers with experience of teaching in Japanese schools, and corrections were agreed upon by all the authors to ensure maximum similarity with the original questionnaires.

2.4. Data analysis

To examine the association between demographic data, teacher efficacy and teachers’ attitudes toward inclusive education, and emotional distress, students’ t-test with gender as the independent variable and one-way ANOVA with the class grade of participants as the independent variable were
carried out. Additionally, Pearson’s correlations were calculated between years of service as a teacher, the number of students in their class, and psychological variables such as TEIP, ORI, and GHQ-12.

To reveal the association between teacher efficacy and teachers’ attitudes toward inclusive education and emotional distress, the first step was to calculate Pearson’s correlations between the scores on the four ORI subscales, the scores on the three subscales of the TEIP, and the GHQ-12 score to examine the relationships between teacher efficacy and teachers’ attitudes toward inclusive education and the emotional distress status of middle teachers in Japan. Then, a multiple linear regression analysis using the forward-backward stepwise selection method was performed containing the subscales of the ORI and the TEIP. The results examining which aspects of attitudes and teacher efficacy in inclusive education influence emotional distress in middle teachers in Japan showed a significant correlation with the GHQ-12 score as explanatory variables and with the GHQ-12 score as the outcome variable. Statistical Package for the Social Sciences (SPSS) Statistics 23.0 (IBM Corp., Armonk, NY) was used for all analyses.

2.5. Ethics statement
The study protocol was designed in accordance with the tenets of the Declaration of Helsinki. All participants were informed that their privacy and responses would be strictly protected. Furthermore, they were informed that their participation was not mandatory, that they could withdraw at any time, and that the data obtained would not be used outside of this study. The questionnaire’s cover sheet stated that participants need not return the questionnaire if they did not agree to participate in the study. Therefore, returning the questionnaire was taken to constitute consent to participate in the study.

3. Results

3.1. Descriptive statistics and the relationship between psychological variables such as TEIP, ORI, and GHQ-12 and demographic information
Table 2 presents the descriptive statistics for the ORI, TEIP, and GHQ-12 scores.

Students’ t-test showed significant differences between TEIP scores (t (90) = 2.861, p < .01, d = .618) and EII scores (t (91) = 2.503, p < .05, d = .536) and EC (t (92) = 3.844, p < .01, d = .816) between male and female participants. However, no significant difference was seen between EMB (t (93) = 0.046, n.s., d = .010), total ORI (t (90) = −0.144, n.s., d = .031), BF (t (93) = 0.426, n.s., d = .090), ICM (t (92) = −0.640, n.s., d = .136), PATSD (t (92) = 0.856, n.s., d = .188), SIGE (t (92) = −0.844, n.s., d = .178), and GHQ-12 scores (t (92) = −1.227, n.s., d = .260). Table 3 presents the result of students’ t-test.

One-way ANOVA showed that there were no significant differences between the total TEP (F (2, 89) = 0.380, n.s., η² = .01), EII (F (2, 90) = 0.385, n.s., η² = .01), EC (F (2, 91) = 0.333, n.s., η² = .01), EMB (F (2, 92) = 0.554, n.s., η² = .01), the total ORI (F (2, 89) = 0.219, n.s., η² = .01), BF (F (2, 92) = 2.582, n.s., η² = .05), ICM (F (2, 91) = 0.056, n.s., η² = .00), PATSD (F (2, 91) = 0.733, n.s., η² = .02), SIGE (F (2, 91) = 1.154, n.s., η² = .03), and GHQ-12 scores (F (2, 91) = 0.021, n.s., η² = .00) among class grades in charge of teachers.

The Pearson’s correlations between years of service as a teacher, the number of students in their class, and psychological variables such as TEIP, ORI, and GHQ-12 are presented in Table 4. Correlation analysis showed that there was significant correlation between the number of students in their class and the EC scores (r = .21, p < .05). However, no significant correlations were seen between the number of students in their class and other psychological variables such as the total TEIP (r = .20, n.s.), EII (r = −.17, n.s.) EMB (r = .12, n.s.), the total ORI (r = .06, n.s.), BF (r = −.05, n.s.), ICM (r = .06, n.s.), PATSD (r = .15, n.s.), SIGE (r = −.06, n.s.), and GHQ-12 scores (r = −.13, n.s.).

Further, no significant correlations were seen between years of service as a teacher and psychological variables such as the total TEIP (r = −.04, n.s.), EII (r = −.17, n.s.), EC (r = −.02, n.s.),
Table 2. Descriptive statistics of scores of ORI, TEIP, and GHQ-12

|                          | Mean scores | SD  | Min | Max |
|--------------------------|-------------|-----|-----|-----|
| TEIP                     | 64.21       | 10.64 | 30  | 90  |
| Efficacy in using inclusive instructions (EII) | 20.18 | 3.86 | 9   | 32  |
| Efficacy in collaboration (EC) | 22.17 | 5.07 | 7   | 33  |
| Efficacy in managing behavior (EMB) | 21.92 | 3.42 | 13  | 31  |
| ORI                      | 80.5        | 14.05 | 45  | 121 |
| Benefits of integration (BF) | 32.74 | 4.56 | 22  | 43  |
| Integrated classroom management (ICM) | 32.49 | 9.38 | 12  | 57  |
| Perceived ability to teach students with disabilities (PATSD) | 5.67 | 12 | 0   | 12  |
| Special versus integrated general education (SIGE) | 9.52 | 3.17 | 1   | 17  |
| GHQ-12                   | 24.93       | 4.8  | 15  | 38  |

ORI = Opinions Relative to Integration of Students with Disabilities scale, TEIP = Teacher Efficacy for Inclusive Practices scale, GHQ-12 = The General Health Questionnaire-12
SD = standard deviation, Min = minimum values, Max = maximum values
n = 95.

EMB (r = .13, n.s.), ORI (r = −.05, n.s.), BF (r = −.01, n.s.), ICM (r = −.01, n.s.), PATSD (r = −.13, n.s.), SIGE (r = −.06, n.s.), and GHQ-12 scores (r = .14, n.s.).

The relationship between teachers’ license for special education schools and these psychological variables and the relationship between the number of students with a disability in their class and these psychological variables have not been examined due to the small sample.

3.2. Correlational analysis of TEIP, ORI, and GHQ-12 scores

The Pearson’s correlations between the ORI subscales, the TEIP subscales, and the GHQ-12 are provided in Table 5. First, the correlation between the TEIP subscales is described. The scores of the EII subscale of the TEIP were moderately positively correlated with the EC scores (r = .69, p < .01) and EMB scores (r = .48, p < .01). Thus, the participants who reported higher teacher EII also reported higher teacher EC and EMB than the other participants. The EC scores were moderately positively correlated with the EMB scores (r = .55, p < .01), indicating that the participants who reported higher teacher EC also reported higher teacher EMB than the other participants.

Second, the correlation between the ORI subscales is described. The scores of the BF subscale of the ORI were lowly positively correlated with the ICM subscale scores (r = .36, p < .01). Thus, the participants who reported positive attitudes toward BF also reported positive attitudes toward ICM. The ICM subscale scores were lowly positively correlated with the PATSD subscale scores (r = .30, p < .01), and moderately correlated with the SIGE subscale scores (r = .43, p < .01). This indicates that the participants who reported positive attitudes toward ICM also reported positive attitudes toward PATSD and SIGE. The PATSD subscale scores were lowly positively correlated with the SIGE subscale scores (r = .23, p < .05), indicating that the participants who reported positive attitudes toward PATSD also reported positive attitudes toward SIGE. However, there was no significant correlation between BF and PATSD (r = −.03, n.s.) and between BF and SIGE (r = .19, n.s.).

Third, the correlation between the TEIP subscales and the ORI subscales is described. The scores of the EII subscale of the TEIP were lowly positively correlated with the scores of the BF subscales...
Table 3. Mean scores of the scores on the four ORI subscales, the three TEIP subscales, and the GHQ-12 in male and female participants

|                          | Male          | Female         | t       | p       | d       |
|--------------------------|---------------|----------------|---------|---------|---------|
|                          | Mean Score    | SD             | Mean Score | SD |         |         |
| total TEIP               | 66.448        | 9.133          | 60.588  | 10.055  | 2.861   | .005**  | .618   |
| Efficacy in using        | 20.862        | 3.306          | 19.029  | 3.610   | 2.503   | .014*   | .536   |
| inclusive instructions   |               |                |         |         |         |         |        |
| (EII)                    |               |                |         |         |         |         |        |
| Efficacy in collaboration| 23.690        | 4.189          | 20.000  | 5.020   | 3.844   | .000**  | .816   |
| (EC)                     |               |                |         |         |         |         |        |
| Efficacy in managing     | 21.897        | 3.254          | 21.865  | 3.343   | 0.046   | .964    | .010   |
| behavior (EMB)           |               |                |         |         |         |         |        |
| total ORI                | 80.333        | 14.183         | 80.771  | 14.019  | -80.144 | .885    | .031   |
| Benefits of integration  | 32.897        | 4.811          | 32.487  | 4.174   | 0.426   | .671    | .090   |
| (BF)                     |               |                |         |         |         |         |        |
| Integrated classroom     | 32.000        | 9.394          | 33.278  | 9.437   | -0.640  | .524    | .136   |
| management (ICM)         |               |                |         |         |         |         |        |
| Perceived ability to    | 5.828         | 2.303          | 5.417   | 2.130   | 0.885   | .389    | .188   |
| teach students with      |               |                |         |         |         |         |        |
| disabilities (PATSD)     |               |                |         |         |         |         |        |
| Special versus           | 9.298         | 2.946          | 9.865   | 3.513   | -0.844  | .401    | .178   |
| integrated general        |               |                |         |         |         |         |        |
| education (SIGE)         |               |                |         |         |         |         |        |
| GHQ-12                   | 24.448        | 5.041          | 25.694  | 4.341   | -1.227  | .223    | .260   |

ORI = Opinions Relative to Integration of Students with Disabilities scale, TEIP = Teacher Efficacy for Inclusive Practice scale, GHQ-12 = The General Health Questionnaire-12, t = t-value, p = p-Value, d = Cohen’s d

n = 95

* p < .05

** p < .01

of the ORI (r = .21, p < .05). Thus, the participants who rated higher teacher efficacy in using inclusive instruction than the other participants also reported positive attitudes toward ICM. The scores of the EMB subscale of the TEIP were lowly positively correlated with the BF scores (r = .31, p < .01). Thus, the participants who reported higher teacher EMB also reported positive attitudes toward PATSD. However, there were no significant correlations between: EII and ICM (r = .02, n.s.), PATSD (r = .16, n.s.), or SIGE (r = .11, n.s.); EC and BF (r = .20, n.s.), ICM (r = .15, n.s.), PATSD (r = .17, n.s.), or SIGE (r = .01, n.s.); and EMB and ICM (r = .14, n.s.), PATSD (r = .12, n.s.), or SIGE (r = .12, n.s.).

Finally, the correlation between the GHQ-12 and the ORI and TEIP subscales is described. The GHQ-12 scores were lowly negatively correlated with the scores of EII (r = -.27, p < .01), EC (r = -.24, p < .01), and ICM (r = -.22, p < .05). Thus, the participants who reported higher emotional distress also reported higher teacher efficacy in using inclusive instruction and collaboration than the other participants, as well as more positive attitudes toward ICM. There were no significant correlations between GHQ-12 and the EMB scores (r = -.15, n.s.), BF scores (r = -.17, n.s.), PATSD scores (r = -.08, n.s.), or SIGE scores (r = .00, n.s.).
Table 4. Correlations between years of service as a teacher, the number of students in their class, and psychological variables

|                                           | years of service as a teacher | the number of students in their class |
|-------------------------------------------|-------------------------------|---------------------------------------|
| total TEIP                                | −.04                          | .20                                   |
| Efficacy in using inclusive instructions (EII) | −.17                          | −.17                                  |
| Efficacy in collaboration (EC)             | −.02                          | .21*                                  |
| Efficacy in managing behavior (EMB)        | .13                           | .12                                   |
| total ORI                                 | −.05                          | .06                                   |
| Benefits of integration (BF)               | −.01                          | −.05                                  |
| Integrated classroom management (ICM)      | −.01                          | .06                                   |
| Perceived ability to teach students with disabilities (PATSD) | −.13                          | .15                                   |
| Special versus integrated general education (SIE) | −.06                          | −.06                                  |
| GHQ-12                                    | .14                           | −.13                                  |

ORI = Opinions Relative to Integration of Students with Disabilities scale, TEIP = Teacher Efficacy for Inclusive Practice scale, GHQ-12 = The General Health Questionnaire-12

n = 95
* p < .05

3.3. Stepwise multiple linear regression analysis

Stepwise multiple linear regression analysis was performed using EII, EC, and ICM as explanatory variables to examine which aspects of teachers' attitudes and teacher efficacy in inclusive education influence emotional distress in middle school teachers in Japan. The variance inflation factors (VIFs) of the variables were examined to determine whether multicollinearity was an issue. Table 6 shows the results of the regression analysis. For the analysis, this study adopted a model in which the EII subscale and the ICM subscale influenced emotional distress as measured by the GHQ-12. The coefficient of determination of the model was significant (R² = .12, F (2, 88) = 5.86, p < .01). The predictors of the model accounted for 12% of the variation in emotional distress. Both the EII subscale (β = −.27, p < .01) of the TEIP and the ICM subscale (β = −.21, p < .05) of the ORI were independent and significant predictors of the GHQ-12. In addition, the VIFs of EII and ICM, adopted as independent predictors of the model, were both 1.00, thereby satisfying the criterion for the absence of multicollinearity (less than 2.00).

4. Discussion

This study examined the effect of teachers' attitudes and teacher efficacy in inclusive education on the emotional distress of middle school teachers in Japan's integrated education system for children with disabilities.

We first discuss the association between demographic data, teacher efficacy and teachers' attitudes toward inclusive education, and emotional distress before discussing the effect of teacher attitudes and teacher efficacy in inclusive education on teachers' emotional distress. The results showed that the total TEIP score and the scores of EII and EC in male participants were significantly higher than those in female participants. Previous studies also showed that male teachers had higher teacher efficacy than female teachers (Klassen & Chiu, 2010; Specht & Metsala, 2018). This result corroborates those of previous studies. Hence, it is important to consider support for enhancing teacher efficacy for inclusive education in female middle school teachers in Japan. On the contrary, Minghui et al. (2018) showed female teachers of special education school had higher teacher efficacy toward inclusive education than male teachers of special education school in China. Therefore, it is also necessary to examine whether the difference between the results of this study and Minghui et al.'s (2018) study is due to the school type or the nation.

Further, there was a significant correlation between the number of students in their class and the scores of EC. This result suggested that the greater the number of students in the class the
teachers were in charge of, the greater efficacy in collaboration they had. If the number of students enrolled in the class is large, it is possible that many students have various problems including special educational needs. It is necessary for teachers to collaborate with other teachers, parents, and other specialized institutions such as medical institutions in order to deal with these

### Table 5. Correlations between scores for four ORI subscales, three TEIP subscales, and GHQ-12 score

|   | 1          | 2          | 3          | 4          | 5          | 6          | 7          | 8          |
|---|------------|------------|------------|------------|------------|------------|------------|------------|
| 1. Efficacy in using inclusive instructions (EII) | .69**      | .48**      | .21*       | .02        | .16        | .11        | .27**      |
| 2. Efficacy in collaboration (EC) |            | .55**      | .20        | .15        | .17        | .13        | .24**      |
| 3. Efficacy in managing behavior (EMB) |            |            | .21*       | .14        | .12        | .12        | .15        |
| 4. Benefits of integration (BF) |            |            |            | .36**      | -.03       | .19        | .17        |
| 5. Integrated classroom management (ICM) |            |            |            |            | .30**      | .43**      | .22**      |
| 6. Perceived ability to teach students with disabilities (PATSD) |            |            |            |            |            | .23*       | .08        |
| 7. Special versus integrated general education (SIGE) |            |            |            |            |            |            | .00        |
| 8. GHQ-12 |            |            |            |            |            |            |            |

ORI = Opinions Relative to Integration of Students with Disabilities scale, TEIP = Teacher Efficacy for Inclusive Practices scale, GHQ-12 = The General Health Questionnaire-12

n = 95

* p < .05

** p < .01

### Table 6. Stepwise multiple regression analysis: scores on the four ORI subscales and three TEIP subscales as predictors of GHQ-12

|           | GHQ-12 | \( \beta \) | t     | p   | VIF |
|-----------|--------|-------------|-------|-----|-----|
| EII       |        | -.27        | -2.69 | .009** | 1.00 |
| ICM       |        | -.21        | -2.12 | .037*  | 1.00 |
| EC†       |        | -.09        | -0.64 | .526  | 1.85 |

GHQ-12: \( R^2 = .12, F (2, 88) = 5.86, p < .01; \( \beta \) = standardized beta coefficients; VIF = variance inflation factor.

† EC are variables not adopted in the model, and each value in the table is the value when inputted.

* p < .01

** p < .05
problems. It is considered that the accumulation of experience related to such collaboration enhances efficacy in collaboration.

As mentioned above, some demographic data were associated with teacher efficacy toward inclusive education, but not teachers’ attitudes toward inclusive education or emotional distress. Therefore, it is necessary to examine the factors that influence teachers’ attitudes toward inclusive education and emotional distress in future research.

Next, we discuss the relationship between teacher attitudes and teacher efficacy in inclusive education, and then the effect of teacher attitudes and teacher efficacy in inclusive education on teachers’ emotional distress. The results showed that the scores of the EII subscale of the TEIP were low positively correlated with the scores of the BF subscales of the ORI. This result suggests that high efficacy in the use of inclusive instructions is associated with positive attitudes toward BF. The results also showed that the scores of the EMB subscale of the TEIP were low positively correlated with the scores of the BF subscales of the ORI. This result suggests that high efficacy in management behaviors is associated with positive attitudes toward BF. These results of the relationships differ from those of the relationships between teacher attitudes and teacher efficacy in inclusive education of primary school teachers in Japan. Nagase et al. (2020) indicated that the EII and EMB subscale scores were not correlated with the BF subscale scores for primary school teachers in Japan. This difference may be because of the different roles between primary and middle school teachers.

As mentioned in introduction section, in primary schools, teachers are in charge of only one class, and it is necessary for them to teach multiple subjects and to offer life support only to that class. Meanwhile, in middle schools, teachers teach only the subjects they specialize in, and thus, teach students in multiple classes from grades 1 to 3. Based on this difference, middle school teachers are considered able to develop the instruction skills and management skills required for teaching their own specialized subjects more easily than primary school teachers are, and these skills are developed in an inclusive classroom according to the student’s disability characteristics. Inclusive instruction and management skills developed through this process are known to improve the academic performance of students with and without disabilities. Cole et al. (2004) investigated the effects of inclusive school settings for students, and indicated that learners without disabilities educated in inclusive settings made significantly greater academic progress in mathematics and reading. Thus, it is considered that middle school teachers with high efficacy in the use of inclusive instruction and management behaviors have positive attitudes toward BF because they improve the academic performance of students with and without disabilities. In contrast, it is considered that middle school teachers with low efficacy in the use of inclusive instruction and management behaviors have negative attitudes toward BF because they fail to improve the academic performance of students with and without disabilities.

Based on these relationships, we discuss the effect of teacher efficacy and teachers’ attitudes toward inclusive education on the emotional distress of middle school teachers. The results of this study showed that the GHQ-12 scores were low positively correlated with the scores of EII and EC of the TEIP and ICM of the ORI. Moreover, the regression analysis confirmed that the EII scores of the TEIP and the ICM scores of the ORI were unique predictors of GHQ-12 scores for middle school teachers in Japan. These results showed that high EII and cooperation, along with positive attitudes toward ICM, are associated with less emotional distress. These results about the effects were partly in common with those examining the effects of teacher efficacy and teachers’ attitudes toward inclusive education on emotional distress of primary school teachers in Japan. Nagase et al. (2020) showed that the GHQ-12 scores were low negatively correlated with the scores of EII of the TEIP, and ICM and PATSD of the ORI, and moderately negatively correlated with the scores of EC and EMB of the TEIP. Correlation analysis of this study showed similar results in Nagase et al.’s (2020) study except for the association between GHQ-12 and EMB and PATSD. The results of this correlation analysis suggest that there is a relationship between teacher efficacy and teachers’ attitudes toward inclusive education, and emotional distress in middle school teachers as well as in elementary school teachers.
On the contrary, the result of regression analysis in this study differed from those in Nagase et al.’s (2020) study. Nagase et al. (2020) showed that EC and EMB were unique predictors of emotional distress of primary school teachers in Japan. Regression analysis in this study showed that EII and ICM were unique predictors of emotional distress of middle school teachers in Japan. This suggests that the factors that influence emotional distress differ between middle school teachers and elementary school teachers. The reason for these differences is again the different roles of primary and middle school teachers.

As mentioned earlier in the discussion section, middle school teachers in Japan teach only the subjects in which they specialize. Therefore, the emotional distress of middle school teachers is thought to be strongly related to teaching their subjects of specialization, because teaching their subjects of specialization are directly related to their work evaluation. Thus, emotional distress is considered to be lower in teachers who have high efficacy in inclusive instruction, which improves the academic performance of their students. In contrast, emotional distress is considered to be higher in teachers who have low efficacy in inclusive instruction. Furthermore, the role of middle school teachers is considered to be a strong factor in the association between positive attitudes toward ICM and emotional distress. Middle school teachers are unable to focus on teaching the subject in which they specialize and to improve the academic performance of students with and without disabilities when they are unable to manage an inclusive classroom well. Hence, if middle school teachers are trained to manage an inclusive classroom well and have positive attitudes toward ICM, they are able to focus on teaching the subject in which they specialize. As a result, their emotional distress is likely to decrease.

The findings of this study provide useful insights to address the challenge of emotional distress of middle school teachers. However, this study has a number of limitations. First, it did not examine inclusive instruction or ICM in detail. This study revealed that teachers with high efficacy in inclusive instruction and positive attitudes toward ICM have less emotional distress. However, we did not fully examine what kind of inclusive instruction and ICM reduce emotional distress. Thus, future research should examine what kind of inclusive instruction and ICM management are effective in reducing emotional distress. Second, the participants in this study were limited to middle school teachers in Yamaguchi Prefecture. Future research should examine the effects of teacher efficacy in inclusive education and teachers’ attitudes toward inclusive education on emotional distress in other region of Japan. Third, the sample size of this study was small. Future research should examine the effects of teacher efficacy in inclusive education and teachers’ attitudes toward inclusive education on emotional distress among a larger sample of middle school teachers. Fourth, because this was a cross-sectional study, it could not fully clarify the causal relationship between teachers’ attitudes and teacher efficacy in inclusive education and emotional distress. Future studies should examine the topic using a longitudinal study.

Acknowledgements
The authors express their sincere appreciation to the participants, who generously contributed their time and had the courage to participate in this research.

Author details
Kai Nagase1
E-mail: knagase@yamaguchi-pu.ac.jp
Kenji Tsunoda1
Kumi Fujita2
1 Faculty of Social Welfare, Yamaguchi Prefectural University, Yamaguchi, Japan.

Disclosure statement
The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Funding
This work was supported in part by a Grant-in-Aid for Young Scientists (grant number Grant-in-Aid for Early-Career Scientists 20K14165 to KN).

Citation information
Cite this article as: Effects of teacher efficacy and attitudes toward inclusive education for children with disabilities on the emotional distress of middle school teachers in Japan, Kai Nagase, Kenji Tsunoda & Kumi Fujita, Cogent Education (2021), 8: 2007572.

References
Alnahdi, G. H., Hui, S. K. F., & Hui, S. K. F. (2019). The Arabic version of the teacher efficacy for inclusive practices (TEIP-AR) scale: A construct validity study. Cogent Education, 6(1), 1618516. https://doi.org/10.1080/2331186X.2019.1618516
Antonak, R. F., & Lorrivee, B. (1995). Psychometric analysis and revision of the opinions relative to mainstreaming scale. Exceptional Children, 62(2), 139–149. https://doi.org/10.1177/001440299506200204

Boujut E., Popo-Roch, M., Palomares, E. A., Dean, A., & Coppe, E. (2017). Self-efficacy and burnout in teachers of students with autism spectrum disorder. Research in Autism Spectrum Disorders, 36, 8–20. https://doi.org/10.1016/j.rasd.2017.01.002

Cole, C. M., Waldron, N., & Mejia, M. (2004). Academic progress of students across inclusive and traditional settings. Intellectual and Developmental Disabilities, 42(2), 136–144. https://doi.org/10.1352/0047-6765(2004)42<136:APOSAI>2.0.CO;2

Dii, V., & Minowa, M. (2003). Factor structure of the 12-item general health questionnaire in the Japanese general adult population. Psychiatry and Clinical Neurosciences, 57(4), 379–381. https://doi.org/10.1046/j.1440-1819.2003.01135.x

Dupoux, E., Wolman, C., & Estrada, E. (2005). Teachers’ attitudes toward integration of students with disabilities in Haiti and the United States. International Journal of Disability, Development and Education, 52(1), 43–58. https://doi.org/10.1080/01383950500071894

Ismail, Z., Basheer, I., & Khan, J. (2016). Teachers’ attitudes toward inclusion of special needs children into primary level mainstream schools in Karachi. The European Journal of Social & Behavioural Sciences, 17(3), 2177–2196. https://doi.org/10.51465/ejsbs.195

Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers’ self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. Journal of Educational Psychology, 102(3), 741–756. https://doi.org/10.1037/a0019237

Minigui, L., Lei, H., Xiaomeng, C., & Potmítlík, M. (2018). Teacher efficacy, work engagement, and social support among Chinese special education school teachers. Frontiers in Psychology, 9, 648. https://doi.org/10.3389/fpsyg.2018.00648

Mori, K., & Tanaka, A. (2011). The present condition of mental health in teachers that engaged in special needs education: from the analysis of GHQ 28 for teachers. Asian Journal of Human Service, 1, 112–119. [In Japanese]. Retrieved from https://www.ashs-human.net/international-journal/ajhs/vol-1-5-2011-2013/

Mori, K., & Tanaka, A. (2012). Mental health and stressor in teachers that engaged in special needs education: from the analysis of mental health check for teachers. Bulletin of Faculty of Education University of the Ryukyus, 80, 183–189. [In Japanese]. Retrieved from http://ir.lib.u-ryukyu.ac.jp/bitstream/20.500.12000/2513771/No80p183.pdf

Murata, Y., & Yamaguchi, M. (2010). Special needs education system. Y. Murata & M. Yamaguchi (Eds.), Education in contemporary Japan: System and content (pp. 110–127). Toshindo. [In Japanese].

Nagase, K., Tsunoda, K., & Fujita, K. (2020). The effect of teachers’ attitudes and teacher efficacy for inclusive education on emotional distress in primary school teachers in Japan. Frontiers in Education, 5, 570988. https://doi.org/10.3389/feduc.2020.570988

Nakamura, M., & Oka, N. (2007). International trends of inclusive education and special needs education. Education, 10, 75–81. [In Japanese]. Retrieved from https://core.ac.uk/download/pdf/59645682.pdf

Park, M. H., Dimitrov, D. M., Das, A., & Gichuru, M. (2016). The Teacher Efficacy for Inclusive Practices (TEIP) scale: Dimensionality and factor structure. Journal of Research in Special Educational Needs, 16(1), 2–12. https://doi.org/10.1111/1471-3802.12047

Pranin, C. L. (2003). Attitudes of elementary school principals toward the inclusion of students with disabilities. Exceptional Children, 69(2), 135–145. https://doi.org/10.1177/001440290306900201

Salama-Younes, M., Montazeri, A., Ismail, A., & Roncin, C. (2009). Factor structure and internal consistency of the 12-item General Health Questionnaire (GHQ-12) and the Subjective Vitality Scale (VS), and the relationship between them: A study from France. Health and Quality of Life Outcomes, 7(1), 22. https://doi.org/10.1186/1477-7526-7-22

Sandberg, A., & Pålming-Samuelsson, I. (2005). An interview study of gender difference in preschool teachers’ attitudes toward children’s play. Early Childhood Education Journal, 32(5), 297–305. https://doi.org/10.1007/s10643-005-4400-x

Sharma, U., Loreman, T., & Forlin, C. (2012). Measuring teacher efficacy to implement inclusive practice. Journal of Research in Special Educational Needs, 12(1), 78–91. https://doi.org/10.1177/1471380211410200120100

Sharma, U., Shaukat, S., & Furlonger, B. (2014). Attitudes and self-efficacy of pre-service teachers towards inclusion in Pakistan. Journal of Research in Special Educational Needs, 15(2), 97–105. https://doi.org/10.1111/1471-3802.12071

Skaalvik, E. M., & Skaalvik, S. (2016). Teacher self-efficacy and perceived autonomy: Relations with teacher engagement, job satisfaction, and emotional exhaustion. Psychological Reports, 114(1), 68–77. https://doi.org/10.2466/14.02.PR0.114k14w0

Song, J. (2016). Inclusive education in Japan and Korea: Japanese and Korean teachers’ self-efficacy and attitudes towards inclusive education. Journal of Research in Special Educational Needs, 16, 643–648. https://doi.org/10.1111/1471-3802.12324

Specht, J. A., & Metsola, J. L. (2018). Predictors of teacher efficacy for inclusive practice in pre-service teachers. Exceptionality Education International, 28(1), 67–82. https://doi.org/10.5206/eel.v28i3.7772

Takahashi, M., & Matsuoka, H. (2014). The changes and problems in inclusive education. Bulletin of the Faculty of Human Development and Culture Fukushima University, 19, 13–26. [In Japanese]. Retrieved from https://www.lib.fukushima-u.ac.jp/repo/repository/fukuro/000004531/16-116.pdf

Tschanne-Moran, M., & Hoy, A. W. (2002). Teacher efficacy: Capturing an elusive construct. Teaching and Teacher Education, 17(7), 783–805. https://doi.org/10.1016/S0742-051X(01)00036-1

Tschanne-Moran, M., Hoy, A. W., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. Review of Educational Research, 68(2), 202–248. https://doi.org/10.3102/00346543068002202

Voz, S., Wilson, N., Falkmer, M., Sim, A., Scott, M., Cordier, R., Falkmer, T., & van Wouwe, J. (2015). Factors associated with primary school teachers’ attitudes towards the inclusion of students with disabilities. PLoS One, 10(8), e0137002. https://doi.org/10.1371/journal.pone.0137002
