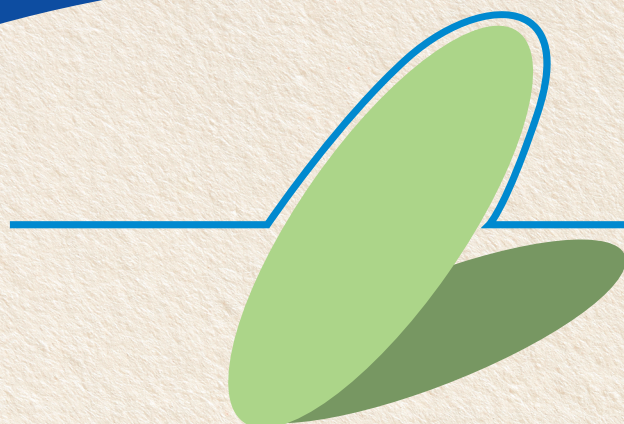


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The Japanese Association for the Study of Developmental Disabilities

[Case study]

Collaborative Support for Student with Challenging Behavior in Regular Classroom

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Abstract

We provided behavioral support for a child displaying challenging behavior in a regular elementary school classroom. In order to verify the effectiveness of support through collaboration between the child and the supporters, support policies and content were determined through discussions with the child concerned each time. As a result, the child's problematic behaviors decreased, and the decrease was maintained for up to six months after ending the support. In addition, the questionnaire results indicated that the support's effectiveness was evaluated highly despite the minor burden placed on teachers. These findings suggest that children's behavioral problems can be decreased, and their understanding of their difficulties and interventions can be increased by discussing support needs with children. This procedure may help develop an attitude of searching for a solution among children facing new challenges.

Keywords: challenging behavior, collaboration, regular classroom

1. Introduction

According to the Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2022), approximately 8.8% of students in regular classes are suspected of having developmental disabilities. In contrast, the estimated percentage of students judged as requiring special educational support by the school committee is 28.7%. Therefore, it is necessary to provide support tailored to the special educational needs of students, regardless of whether they have disabilities.

Hirasawa, Jinno, and Hiroshima (2006) surveyed regular elementary school classroom teachers and identified "violence," "excitement," "standing and walking," "selfish behavior," and "talking and yelling" as the most prevalent behavioral issues requiring immediate attention and improvement. When discussing changes in behavioral problems across grade levels, they emphasized that the nature of these problems evolved with higher grades. They highlighted the possibility of these issues escalating into secondary problems in upper grades, such as transitioning from "difficulty in behavior" and "struggling to keep up with group pace in lower grades" to "violence" in interpersonal relationships during middle school years and finally to manifestations such as "apathy" and "truancy" in the upper grades. Beppu (2013) pointed out that the quality of behavioral problems might change as the school year progresses, developing into secondary problems in older grades. Beppu (2013)

also reported that teachers experienced difficulties in early childhood and early elementary school due to hyperactive-impulsive behavior and interpersonal issues; however, as students reached the upper grades, they experienced teaching challenges due to problems arising from low self-esteem and secondary disorders. These findings suggest the importance of providing appropriate support before secondary issues occur.

Numerous functional assessments have been conducted to address such behavioral issues, accompanied by support interventions. For instance, Okubo, Takahashi, and Noro (2011) focused on enhancing participation in daily activities. Okitsu and Sekido (2007) addressed issues such as shouting, standing, scribbling, and touching classmates. Noguchi and Noro (2006) focused on aggressive behavior. The effectiveness of support using functional assessments was consistent in regular classrooms.

When providing support in a regular classroom, it is preferable for teachers who have frequent opportunities to interact with children to provide ongoing daily support rather than rely on an outside specialist. However, teachers must conduct classes and may struggle to support children with special needs in parallel with classes. Okamoto and Kamiyama (2018) analyzed instructional and support studies of functional assessment. They found that in studies with high support effectiveness, experts and people in the support environment “collaborate” in all stages of goal setting and instructional and support planning for target children, as well as in identifying the actual situation and setting goals.

Regarding such collaboration between specialists and people in the support environment, Okubo, Fukunaga, and Inoue (2007) provided individual support to children who showed behavior issues and, at the same time, established a support system in the school. Consequently, the behavioral problems of the target children decreased, and their appropriate class participation and task-oriented behaviors increased. They also reported that the role of providing individualized support shifted from the staff of the university consulting organization to the school staff. On the other hand, Okubo (2022) points out the existence of “information unique to the supported child” and suggests that this information may play a crucial role in developing behavior support plans. This indicates that collaboration not only among supporters but also with the child being supported is essential. However, the effectiveness of procedures where the supported child and the supporters work together, discussing and deciding the support content, has not been verified.

This study presents new findings on the support provided to a child exhibiting behaviors such as leaving their seat in class, low motivation, and hitting classmates daily. This study examines individualized support for a target child and the assistance offered by the homeroom teacher. In addition, we discuss the results and challenges associated with this support. In this study, we define collaboration as the process of determining and improving support goals and methods through repeated discussions with the subjects themselves. We also examine the effectiveness of providing support through collaboration.

2. Methods

2.1 Target Child

The study focused on a fourth-grade boy, hereafter referred to as “Child A” (nine years 11 months of age at the start of support), enrolled in a regular class at a public elementary school. Child A’s Wechsler Intelligence Scale for Children 4th Edition (WISC-IV; Wechsler, 2003; Wechsler & Japanese WISC- IV Publication Committee, 2010) results (nine years and 10 months old at

the time of testing) revealed FSIQ 79, VCI 78, PRI 87, WMI 91, and PSI 78 . The ASIST School Adjustment Skills Profile (Hashimoto, Kumagai, Otomo, Hayashi & Kanno, 2014) was administered in April 20XX. The results indicated that the children performed in grade-level manual dexterity and social skills. However, he lagged three grades behind in verbal expression and behavioral control, performing at the first-grade level in elementary school. Regarding special support needs, Child A required general support in learning, motivation, concentration, and hyperactivity/impulsivity. Child A has never sought medical consultation for developmental concerns, and there was no diagnosis of disability.

From the beginning of his schooling, Child A exhibited behaviors such as leaving his seat during class, standing around the classroom, and reacting strongly to trivial incidents by hitting his classmates.

Child A's class comprised 30 students, including him. Although many children in the class were proactive in providing assistance, they often struggled to understand Child A's intentions and were subjected to verbal abuse. The homeroom teacher faced challenges in providing appropriate guidance and support for Child A and occasionally resorted to emotional reprimanding. Despite discussions with the special needs education coordinator, a teacher in the same grade, and the school health nurse on how to address Child A's behavior, an effective remedy could not be identified.

2.2 Support Period and Situation

Assessments and classroom support were conducted from April 20XX to March 20XX+1, excluding summer vacation. The first author, a clinical developmental psychologist, visited the elementary school once a week as an assistant teacher ("AT," henceforth) to observe and intervene with Child A. On the remaining four days, the first author requested the homeroom teacher to continue supporting Child A in line with the first author's approach.

2.3 Support Procedures

2.3.1 Implementation Conditions for the Homeroom Teacher

The following implementation conditions were confirmed upon discussion with the homeroom teacher: (1) Engaging in conversation with Child A and addressing his questions during desk-to-desk instruction. (2) Allocating time at the end of the morning meeting, after each class, and after school to evaluate Child A's behavior. (3) Providing Kana alongside each Kanji that are difficult to read after a discussion with Child A when he commences a new unit in Japanese and other subjects. (4) Discuss support strategies for Child A during lunch breaks and other times. (5) It is impractical to constantly attend to Child A and respond to him during class. Additionally, the confirmation of implementation conditions was conducted between the baseline period and Phase I.

2.3.2 Functional Assessment of Behavioral Problems

The homeroom teacher and AT discussed and determined the target challenging behaviors. Considering the impact on other children, two items were selected: (1) Leaving one's seat during class and (2) hitting classmates and exhibiting aggressive language and behavior ("harming behavior," henceforth) .

Next, using the Motivation Assessment Scale (MAS) (Durand & Crimmins, 1992) , the homeroom teacher assessed Child A's behavioral issues. Children's escape behaviors scored 3.0, 1.8, 1.5, and 0 for escape, demand, sensation, and attention, respectively, indicating a tendency to avoid or evade tasks. Regarding harming behavior, the scores were 4.3 for demand, 2.0 for escape, 0.8 for sensation, and 0.5 for attention, indicating a desire for objects/activities.

Behavioral observations conducted during the same period revealed the following.

Child A experienced difficulties in reading and writing and could only comprehend second-grade Kanji. He frequently left his seat during class, especially when asked to copy a large amount of writing from the board or read aloud or silently from a textbook. Additionally, his motivation for learning was low, and he often expressed sentiments such as, “I don’t understand” or “I don’t want to do it anymore” during class. In the Japanese class, Child A often mumbled, “I don’t want to do it because I don’t understand Kanji characters,” indicating a strong aversion to writing and reading Kanji characters. However, in small-group math classes divided by proficiency level, Child A demonstrated an eagerness to tackle tasks, actively participating by raising his hand, asking questions to the teacher when faced with challenges, and engaging in the learning process.

Furthermore, Child A frequently left his seat when he misunderstood or missed the homeroom teacher’s instructions. When reminded to sit down, he responded, “I’m watching you now, so don’t get in my way.” It can be inferred that he understood what he needed to do at the time by observing his classmates.

Based on the above, it was inferred that Child A lacked basic academic abilities and skills and would leave his seat to escape situations where completing tasks proved challenging. Additionally, when unable to comprehend instructions from the homeroom teacher and uncertain about the tasks, Child A left his seat to observe his classmates and understand the instructions.

According to reports from the homeroom teachers, Child A often reacted impulsively and emotionally, blaming or hitting classmates for trivial incidents. Direct observations indicated instances of harming behavior when Child A struggled to articulate thoughts or failed to convey opinions effectively. When calm, he engaged in activities such as dodgeball and tagging with classmates in the schoolyard during recess, discussed the TV program he had watched the day before, and intervened in fights. Hence, it was inferred that Child A struggled to express himself appropriately to others due to immaturity in verbal expression and difficulty in controlling emotions. As a means of expression, he resorted to hitting classmates and using aggressive language and behavior.

Based on the above, Child A’s behavioral problems served two functions: escaping from challenging situations– demanding attention to obtain instruction from his homeroom teacher and classmates– and expressing his intentions.

2.3.3 Support Planning Based on Functional Assessment

Figure 1 summarizes the information obtained regarding behavioral issues according to O’Neill, Albin, Storey, Horner, Sprague, & Newton (1997) functional assessment framework. As shown in the bottom of Figure 1, strategies for antecedent conditions, such as situational factors, strategies for the immediately preceding situation to prevent challenging behaviors, strategies for behavior aimed at forming alternative behaviors that were functionally equivalent to challenging behaviors, strategies for outcome conditions that reduced challenging behaviors by responding to challenging behaviors and forming and strengthening desired behaviors and alternative behaviors were implemented. When providing support, the content was adjusted through ongoing discussions with Child A, while also considering the feasibility for the homeroom teacher to implement the support plan. Table 1 presents an example of a discussion with Child A.

(1) Strategies to deal with situational factors

To deal with the behavior of Child A leaving his seat, we worked with the homeroom teachers and ATs to mark Kanji that were difficult to read with rubies before starting a new unit of study in each subject class. Additionally, a fill-in-the-blank printout was prepared to copy the board’s content. The amount of copying was determined as needed after discussions with Child A.

Table 1 Examples of Discussion with Child A

Selection of Kanji for Adding Ruby Characters
“Are you not going to customize the textbook?” suggests the AT, poposing to add ruby character to the textbook. Child A responds, “I can read this kanji, so it’sfine,” and requests, “Please write (ruby) for this kanji.”
Choosing the Amount of Board Writing for Visual Copying
Proposing an amount that seems manageable to write on that day, such as “Today, I can write up to this point,” “Last time, I wrote two lines, so today I’ll write three lines,” “This character is challenging, so I’ll write it,” etc.
Observe the behavior of classmates when instructions are unclear
When asked about the method to confirm what classmates are doing without leaving the seat, the response was, “Ask B-kun (a close friend of Child A) to come over.” However, since B-kun’s seat is currently far away, Child A responded, “Can I look at C-chan (a classmate in the next seat) ?” accepting the suggestion from the AT after asking again, “Do I have to look at B-kun?”
Thinking of ways to release feelings of anger.
After taking deep breaths, the anger didn’t subside. Tearing paper is not possible without paper nearby. The method of jumping suggested by the teacher is good, but punching my own palm was also effective. Based on the results of these practices, the methods for releasing emotions were adjusted.

For the harming behavior, we explained the background of his misbehavior and how to respond to all the children in the class

(2) Strategies for immediate triggers

The homeroom teacher provided considerable desk-to-desk guidance so that students could be encouraged by teaching and praise, among others . In addition, the homeroom teacher and AT checked the progress of the assignments and asked if there were any questions so that the students could request assistance.

In response to the harming behavior, the homeroom teacher and AT taught appropriate ways of expression in situations where the child could not express his opinion as desired and became hesitant to express it. In addition, in situations where emotions were high, he was instructed to practice a method of venting that had been decided upon in advance, in consultation with Child A. The specific method will be explained in the next section.

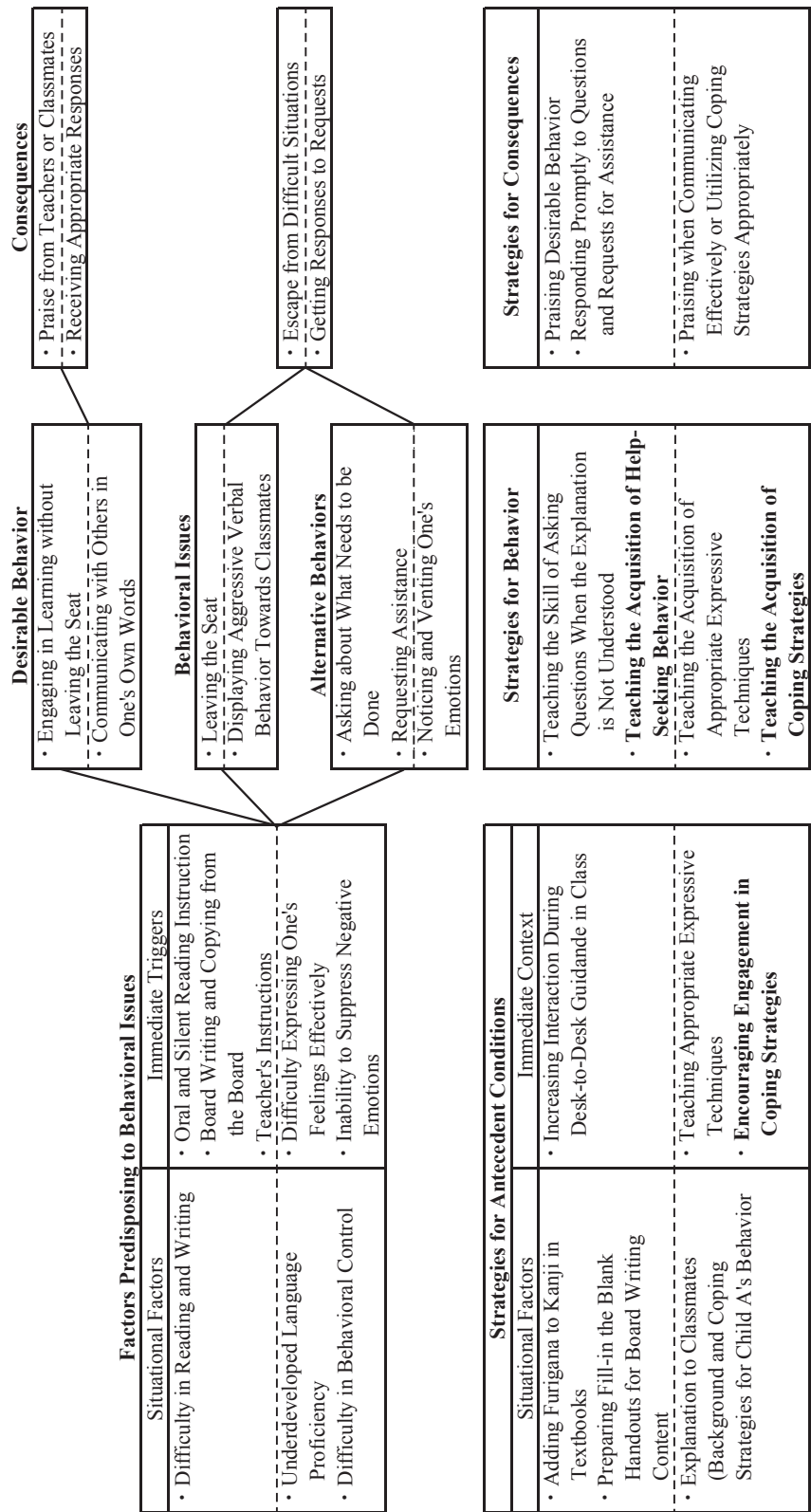
(3) Strategies for behavior

Regarding leaving the classroom, Child A was taught to raise his hand and ask questions if he did not understand the homeroom teacher’s explanations. When the teacher was not near, Child A was instructed to behave like his classmates and ask his peers in a quiet voice if he could not understand what was being taught.

For addressing harming behaviors, we allocated 10 minutes of lunch break to discuss ‘how to express Child A’s own opinion’ and ‘methods to alleviate feelings of frustration’. We discussed how to communicate in a manner that was easy for others to understand. We also discussed how to vent his frustrations by modeling and rehearsing methods such as deep breathing, cooling down, and jumping on the spot.

(4) Strategies for the outcome condition

The basic approach was not to respond directly to Child A but to give him brief reminders when he was interfering with learning or when he seemed to be getting into trouble with their classmates. When desirable behaviors were observed, such as staying in class, making appropriate



*New initiative implemented in Phase II are indicated in bold

Figure 1 Support Plan Based on Functional Assessment

requests to classmates, and taking action to release anger, the homeroom teacher, classmates, AT, and others praised Child A. In addition, alternative behaviors, such as responding to questions, comments, and instructional requests related to lesson content, were also immediately reinforced.

(5) Cooperation with other parties

The homeroom teacher and AT held meetings after school every time, albeit for a short period, and the homeroom teacher reported how the child was doing at home as needed. Information on each support method was shared with the parents as needed through a contact book.

2.3.4 Support Schedule

(1) Baseline phase (“BL Phase,” henceforth) (April 13 to April 20)

The homeroom teacher responded to Child A’s challenging behaviors in the usual manner, including cautions and reprimands. As the homeroom teacher wanted to improve behavioral issues as soon as possible, the baseline measurement was conducted only twice.

(2) Phase I (April 27– July 13)

The homeroom teacher and AT actively supported Child A leaving the classroom. Specifically, we proposed using rubies for difficult-to-read Kanji characters in textbooks and printouts to fill in holes on the board when entering a new unit. We asked Child A to decide whether to adopt the support plan. For harming behaviors, we provided instructions on “how to express opinions” and appropriate ways of expressing them.

(3) Phase II (September 7–December 21)

Support was given to Child A for his behavior of leaving his seat based on his request for assistance. After the discussion, we adjusted the amount of ruby for difficult-to-read Kanji characters in the textbooks, the use of printouts to fill in holes on the board, and the amount of reading and copying. When the homeroom teacher’s instructions were not well understood, Child A was instructed to watch his classmates. In addition to harmful behaviors, Child A was taught “how to resolve frustrated feelings” and was instructed to take pre-determined coping actions when his feelings of anger rose.

(4) Phase III (January 11–March 15)

The homeroom teacher and AT did not provide verbal instructions and only provided assistance when Child A requested assistance.

In addition, no clear criteria have been set to change the procedure. However, Child A expressed a desire to change the method of support when the school term changed; hence, the decision was made to change the method of support for each school term, taking into consideration the opinions of Child A, his homeroom teacher, and others, as well as the incidence of behavioral problems.

2.4 Evaluation of Results

2.4.1 Evaluation of Behavioral Problems

As the first author assumed the role of the AT in class, providing support for other children as needed was essential. Therefore, the evaluation was conducted as outlined below.

Away-from-classroom behavior was assessed weekly during the first through third periods of the school day in classes taught by the homeroom teacher, for a total of 135 minutes. If another teacher was responsible for the class during this timeframe, the measurement was conducted during the fourth or fifth school period. The homeroom teacher and AT recorded instances of Child A leaving his seat during class, and the calculated frequency was reviewed after school. The observed classes were held on the same day each week, mainly consisting of Japanese, mathematics, and social studies lessons.

Considering that harming behaviors occurred more frequently during recess than during class, in addition to the observed time of Away-from-class behavior, the 20-minute recess between the second and third periods ("recess," henceforth) was also included in addition to the class period, which was 155 minutes. Since the homeroom teachers often could not observe mid-break measurements, the AT observed Child A and recorded the number of instances observed.

Away-from-classroom behavior included standing and walking around the classroom without permission from the homeroom teacher or AT, lying on the floor, crawling under the desk, and other actions unrelated to the class content.

2.4.2 Social Validity

A questionnaire was administered to the homeroom teachers, grade teachers, special support education coordinators, and school health nurses after the support period to assess the validity of the support methods and their effects. The questionnaire posed the following questions on a five-point scale (agree, slightly agree, neither agree nor disagree, slightly disagree, and disagree) : "Do you think Child A's behavior at school has changed?", "Do you think Child A's behavior at school has changed?", "Do you think the classmates' involvement with Child A has changed?", "Do you think the classmates' involvement with Child A has changed?", "Do you think there has been a change in classmates' interaction with Child A?" The homeroom teachers were also asked to respond on a five-point scale (agree, somewhat agree, undecided, somewhat disagree, and disagree) and provide reasons for their answers. Additionally, the homeroom teachers were asked to answer similarly to questions like "Do you think the support methods are effective?" and "Did you feel that the support methods were burdensome for the teachers?"

2.5 Ethical Considerations

The school principal and parents were informed verbally and in writing about the support provided to Child A and the intention to publish the support results. Approval was obtained from all the patients. This study was conducted with the endorsement of the Research Ethics Committee of Tokyo Gakuji University (receipt number: 153) .

3. Results

3.1 Transformation of Behavioral Problems

3.1.1 Behavior Away from Seat

Figure 2 shows the number of times Child A left his seat in the third period: 4.5 times, on average, were observed during the BL period. In the first period, when the homeroom teacher and AT actively introduced the use of ruby characters and printouts to fill in the blanks on the board, the average number of times the child left his seat was 4.1. However, since Child A commented that "it is difficult to read when there are both Kanji and furigana," we changed to writing ruby with a red ballpoint pen to distinguish Kanji and ruby from observation occasion "5." In the second period, the average number of leaving behavior occurrences decreased by 1.2 times, and in the third period, leaving behavior was almost non-existent.

3.1.2 Harming Behavior

Figure 2 shows the number of instances in which Child A engaged in harmful behaviors toward other children during the third period of class and the midday break. The average number of occurrences decreased to 1.3 in Phase I, when Child A was taught how to express his opinions during the midday break and how to express himself appropriately when he could not convey his

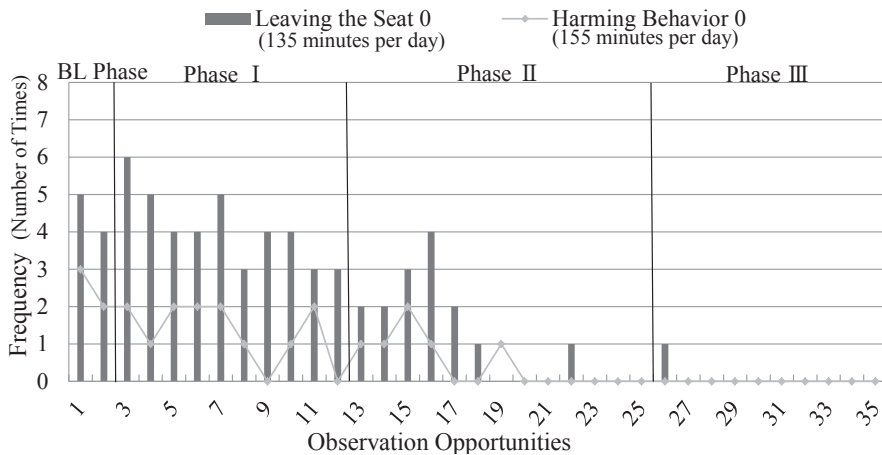


Figure 2 Changes in the Occurrence Frequency of Target Behaviors

feelings to others. In Phase II, when Child A was taught “how to resolve frustrated feelings” and how to practice it, the average number of occurrences decreased to 0.5. In particular, the occurrence of other harmful behaviors was observed in September, when the subjects experimented with coping behaviors to release their feelings of anger. However, after October, when they found a method that suited them, the number of occurrences decreased to zero, except for 19 occasions observed.

3.2 Episodes Related to the Transformation of Child A and the Class

In Phase I, the homeroom teacher reported that while the child’s motivation to participate in class increased through the use of ruby for difficult-to-read Kanji characters in the textbook and fill-in-the-blank handouts, he frequently left the class on days when the AT was not present. In addition, the homeroom teachers reported that, although aggressive behaviors toward classmates decreased, the frequency of such behaviors increased in the latter half of the week and when Child A was tired because he could not regulate his emotions.

In Phase II, he could request assistance from his classmates when the AT instructed him, and his understanding of class content improved, enabling him to engage in learning without leaving his seat. Concerning other harmful behaviors, after instructing Child A, he adopted coping actions that had been discussed and decided upon in advance and regulated his emotions.

In Phase III, Child A spontaneously requested assistance from his classmates and raised his hands to speak more often. In addition, the homeroom teacher reported that Child A could sit in class and participate even when the teacher was absent. Concerning harmful behaviors, it was observed that Child A was able to perform coping behaviors without instruction from the AT. In addition to the coping behaviors discussed and decided upon, some children seemed to think of other ways to cope independently. The homeroom teacher reported that as the class changed, Child A began to request assistance from his classmates, increasing the assistance orientation of the entire class, the number of children who provided assistance to classmates other than Child A, and the number of children who requested assistance from the children around them.

In October 20XX+1, Child A’s homeroom teacher interviewed the child, reported no behavior of leaving his seat or harming others and that the number of times he actively raised his hand and spoke up during class increased. The homeroom teacher also reported that Child A had begun to show leadership, for example, by requesting quietness when the class was noisy.

3.3 Social Relevance

The results of the questionnaires for the four teachers were as follows. The special needs education coordinator gave an “undecided” response to the question, “Do you think the classmates’ involvement with Child A has changed?” However, the other three items were positively evaluated by all respondents. When the homeroom teachers were asked about the effectiveness of the support and their sense of burden, they responded “Yes” to the effectiveness of the support and “Not so much” to their sense of burden.

4. Discussion

4.1 Transformation of challenging behaviors

4.1.1 Away from Seat

In Phase I, various measures were introduced, including writing rubies on difficult-to-read Kanji characters in textbooks and adjusting the amount of copying using fill-in-the-blank printouts on the board. Consequently, the average number of instances of Child A leaving his seat during the BL Phase was 4.5 times, and in Phase I, reduced by a factor of 4.1 times. In Phase II, when the homeroom teacher and AT refrained from giving verbal instructions but provided support at Child A’s request, instances of Child A leaving his seat became rare.

Leaving his seat was presumed to be a function of escape, and this behavior began decreasing when the child could participate actively in class by offering support to alleviate his reading difficulties and reduce the writing burden. One reason for the limited reduction in the number of times Child A left his seat during Phase I could be attributed to his difficulty understanding the homeroom teacher’s instructions, leading him to leave his seat to check on his classmates. Additionally, the child’s pre-existing aversion to learning and low motivation might have hindered him from overcoming this aversion, even when grasping the class content. He may have given up quickly on challenging tasks and maintained his escapism. However, through continued guidance tailored to Child A’s characteristics and learning comprehension, in Phase II, the perceived difficulty diminished, his motivation increased, and instances of leaving his seat decreased.

Furthermore, when faced with something that he did not understand, he was guided to observe his classmates and seek help from the homeroom teachers and peers. Establishing an environment that allowed problem-solving without the direct involvement of the AT likely contributed to maintaining seated behavior, even on days when the AT was absent.

4.1.2 Harming Behavior

In the BL Phase, the average number of occurrences of harmful behaviors was 2.5. In Phase I, it reduced to 1.3, in Phase II to 0.5, and was not observed in Phase III.

We hypothesized that as a background for the occurrence of harmful behaviors, the child experienced difficulty expressing feelings and controlling anger due to poor verbal expression skills and emotional regulation challenges. Therefore, in Phase I, we provided instructions on “how to express opinions” and specific ways to communicate effectively when facing challenges in expressing one’s thoughts. The homeroom teacher and AT taught the specific methods of expression that Child A shared with classmates, fostering appropriate responses. Consequently, in Phase I, the number of harmful behaviors was nearly halved compared with that in the BL Phase. In Phase II, we provided instructions on “how to relieve frustrating feelings” and taught predetermined coping actions when anger escalated. Consequently, the harming behavior almost ceased after Phase II. Notably, after discovering a venting method that aligned with Child A’s characteristics, in October, harming

behavior occurred only once. These results support the hypothesis that Child A's harming behavior may have a demand function and that the low level of verbal expression skills and difficulty in emotional control may underlie such behavior.

In support of leaving one's seat and harming behavior, Child A, the homeroom teacher and AT collaboratively discussed the necessity and content of support for Child A. To leave one's seat, they decided which Kanji characters to label with ruby and how much of the board was copied using memory. Additionally, to support harming behaviors, they explored ways to dissipate feelings of anger and examined the best method for Child A through practical trials. Kojima (2016) emphasized the importance of deepening self-understanding and awareness of oneself from others' viewpoints to promote multifaceted self-understanding. In this study, ongoing discussions on Child A's issues, feelings, and coping strategies facilitated self-understanding, leading to recognizing situations that required help and how to seek it appropriately. Moreover, through trial and error, practicing methods discussed with the homeroom teacher and AT, and achieving successful experiences, Child A spontaneously considered methods suitable for himself and solved problems independently. These factors enabled him to handle challenging situations independently, contributing to the absence of behavioral issues even six months after the support ended. Okamoto and Kamiyama (2018) highlighted the importance of "collaboration" between professionals and individuals in the support environment. This study suggests that "collaboration" with the subject children "in deciding support policies" may be effective. However, the effectiveness of this "collaboration" needs further examination in future studies, considering the individuality of each case.

4.2 Social Relevance

The four teachers positively evaluated Child A's conduct at school, interactions with teachers, and relationships with classmates. Furthermore, the homeroom teachers expressed positive feedback on the effectiveness of the support methods and their sense of burden. Based on these results, it can be concluded that individualized support for Child A was suitable for both the methods and their effectiveness.

4.3 Summary and Future Issues

In this study, we formulated a support plan for implementation by the homeroom teacher in a regular classroom, focusing on collaboration with the targeted child. Consequently, behavioral issues, such as leaving the seat and engaging in harmful behavior, decreased, and this positive trend persisted six months after the conclusion of the support program. Additionally, the results from the teacher questionnaire indicated overwhelmingly positive evaluations, except for the question, "Do you think the relationship of classmates with Child A has changed?" These results suggested that the support method employed in this study was effective.

Teacher interviews revealed a notable shift in classroom dynamics. Child A's requests for assistance prompted increased support from classmates directed at Child A and extended assistance to other classmates in need. Dr. Shimomura and Kobayashi (2015) highlighted that implementing class-wide social skills training enhanced relationships among children by providing more opportunities for modeling and fostering daily feedback on skill performance. This study serves as a pertinent example of positive interpersonal relationships among children. It is suggested that the modeling effect, wherein the surrounding children observed the sequence of Child A appropriately seeking help and receiving responses to problem-solving, contributed to enhancing the assistance-seeking skills of those children and fostering a proactive assistance-providing environment. However,

as this study did not investigate the classroom atmosphere or the frequency of assistance requests and provisions among surrounding children, further examination of the spillover effect on classmates is warranted in future research.

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[Paper]

A National Survey on Effective Teaching Methods and Issues of Moral Education in Special Needs Schools for Students with Intellectual Disabilities

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Abstract

This study examined measures for improving moral education at special needs schools for students with intellectual disabilities in the future and clarified effective teaching methods and issues in moral education at special needs schools for such students throughout Japan.

Of the 57.3% of teachers who had experience teaching moral education, 28.3% had experience teaching moral education only at special needs schools. Among the items related to effective teaching methods, “devising ways to present reading materials” and “handling content in relation to other subjects and areas” were considered to be highly versatile teaching methods in special needs schools for the Intellectual disabilities. Of the items related to issues in moral education, “effectiveness of teaching as a moral education course” had the highest mean value, with many teachers perceiving that it is more effective to teach through the entire educational activity than to teach as a moral education course.

Keywords: Moral education, Special Needs Schools for Students with Intellectual Disabilities, National Survey

1. Introduction

The “special subject of morality” (“moral education”) was fully implemented in elementary and junior high schools in 2018 and 2019, respectively. Similarly, moral education was fully implemented in special needs schools as follows: elementary, junior high, and high schools in 2018, 2019, and 2020 (only special needs schools for students with intellectual disabilities), respectively. In special needs schools for students with intellectual disabilities, each school’s policy covers whether to position moral education in the timetable, in accordance with Article 130, Paragraph 2 of the School Education Law Enforcement Regulations. According to a survey (Imaeda et al., 2021) conducted prior to the introduction of moral education as a school subject, the implementation rate of moral education time in special needs schools for students with intellectual disabilities was 12.5%, 11.5%, and 19.2% for elementary, junior high, and senior high schools, respectively. On the other hand, in a survey conducted after the introduction of the subject (Saito, 2023), the implementation rate of moral education was 18.3%, 20.9%, and 30.1% for elementary, junior high, and senior high schools, respectively, indicating that the implementation rate increased after the introduction of the subject. In other words, the impact of the curriculum change in special needs schools for students with intellectual disabilities took the form of an increase in the implementation rate of moral education.

In 2021, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) released

a “Survey on the State of Implementation of Moral Education” (MEXT, 2022) for elementary and junior high schools and boards of education nationwide. The survey included 16 items (4 items) asking about the changes that have resulted from the introduction of moral education as a school subject. Overall, 97.0% of the elementary and junior high schools responded “agree,” which included “strongly agree” and “somewhat agree” to the statement of “teachers’ awareness of moral education has increased,” while 92.5% responded “agree” to “teachers are now able to spend a sufficient number of class hours on moral education,” and 90.8% responded “agree” to “teachers are now more aware of the image of students that the school is trying to nurture.” Furthermore, 90.5%, which exceeded 90%, responded “agree” to “The tendency that moral education is neglected in comparison to other subjects has disappeared.” The results of the survey revealed that, although there were some issues related to lesson planning and evaluation, positive changes were generally evident in the moral education classes that used textbooks.

Furthermore, what kind of changes have been brought about in special needs schools for students with intellectual disabilities by the increase in the number of schools that have placed moral education on their time schedules after the subject has been made part of the curriculum? Saito (2021) conducted a survey on the current status and issues of moral education at Affiliated Schools for Special Needs Education nationwide. The results revealed that the positioning of and moral education in the curriculum, the difficulties in creating classes owing to the characteristics of moral education as a subject, and the disability characteristics of intellectual disabilities are issues unique to special needs schools for students with intellectual disabilities. In Japan, a nationwide survey has been conducted on teachers regarding difficulties in teaching art (Ikeda, 2019) and physical education (Suda and Kanno, 2015) in special needs schools, providing important suggestions for actual lesson planning and training in the school setting.

Therefore, this study examined measures for improving moral education at special needs schools for students with intellectual disabilities in the future and clarified effective teaching methods and issues in moral education at special needs schools for such students throughout Japan.

2. Method

This study reports a part of the research conducted as the “Survey on the Current Status and Issues of Moral Education in Special Needs Schools for Students with Intellectual Disabilities.” The survey consisted of Survey 1 (Saito, 2023) to grasp the state of implementation of moral education at each school, and Survey 2 (Saito, 2023) to grasp effective teaching methods and issues in moral education.

2.1 Survey procedures and implementation period

The survey covered 782 special needs schools nationwide that primarily serve students with intellectual disabilities. The 42 Affiliated Schools for Special Needs Education were excluded because they were covered in the preliminary survey (Saito, 2021) as in Survey 1. One copy of the survey request form, one copy of the Survey 1 questionnaire, two copies of the Survey 2 questionnaire, and one return envelope were mailed to each school. Two teachers, other than those who responded to the questionnaire in Survey 1, who were affiliated with either the elementary, middle, or high school departments were asked to respond to the survey, but the selection of respondents was left up to the individual schools. Respondents were asked to indicate their status as of October 1, 2020. The survey was conducted between October and December 2020.

2.2 Survey Contents

The questions covered the respondents' attributes (faculty affiliation, age, teaching experience, and school division), their experience in teaching moral education, effective methods of teaching moral education, and moral issues. Regarding the experience of teaching moral education, the respondents were asked whether they had this and, if so, the type of school.

The effective teaching methods for moral education are based on the nine items of the "Research on Methods of Teaching Moral Education" (MEXT, 2012) and the eight items of the "Teaching Methods and Learning Activities Most Commonly Used" in Nagata and Fujisawa (2012), and are composed of 15 items with additions and deletions, taking the curricula of education for intellectual disabilities and the disability characteristics of such disabilities into consideration. The question was, "If you were teaching moral education in your faculty, what teaching methods would you consider effective?". The responses were based on a 5-point scale (1: very valid to 5: not valid at all).

In addition to the five items listed in the "Survey on the State of Implementation of Moral Education" (MEXT, 2012), nine new items were created based on the issues in the implementation of moral education at special needs schools for students with intellectual disabilities identified in a preliminary survey (Saito, 2021), for a total of 14 items. The responses were rated on a 5-point scale (1: agree to 5: disagree).

2.3 Method of analysis

Simple totals were used for the demographics of the respondents and their experience in teaching moral education. The χ^2 test was conducted to examine whether there is a difference in teaching experience depending on whether the student belongs to a moral education promotion teacher or a school division related to moral education.

The scores of the five-case method were reversed and analyzed for effective teaching methods and moral issues in moral education. A one-sample t-test was conducted using the theoretical midpoint of 3 ("undecided") as the criterion value to examine whether there was a difference in the mean values of each item. A one-factor analysis of variance (ANOVA) without correspondence was also conducted to examine differences between faculties. Multiple comparisons were then made for items for which main effects were observed. IBM SPSS Statistics 28 was used for statistical analysis.

2.4 Ethical considerations

The purpose of the survey, the fact that survey responses were voluntary, and that information about individuals and individual schools would not be disclosed and would be processed statistically were explained in writing. By responding to the questionnaire, the respondents agreed to the purpose of the study and the protection of their personal and other information. This study was conducted with the approval of the Ethics Review Committee for Research on Human Subjects at Utsunomiya University (Registration No. H20-0040).

3. Results

3.1 Basic information about the respondent

Of the 782 schools to which the questionnaire was distributed, 297 responded (38.0%). Of the 1,564 questionnaires distributed, 581 were collected (37.1%). Of these, 19 with missing values were excluded, and 562 were used in the analysis. According to Table 1, 30.4%, 30.8%, and 38.8% of the respondents belonged to elementary, middle, and high schools, respectively, showing roughly the

Table 1 Basic information on the subject

attributes		the number of people	percentage
faculty	elementary	171	(30.4)
	middle	173	(30.8)
	high	218	(38.8)
age	20~29years	55	(9.8)
	30~39years	131	(23.3)
	40~49years	187	(33.3)
	50~59years	177	(31.5)
	60years~	12	(2.1)
teaching career in special needs school	less than 4years	63	(11.2)
	4~10years	148	(26.3)
	11~20years	180	(32.0)
	21~30years	122	(21.7)
	more than 31years	49	(8.7)
moral education promotion teacher/school division related to moral education	Yes	310	(55.2)
	No	252	(44.8)

same percentage. Respondents aged 40–49 years accounted for the largest percentage (33.3%), followed by those aged 50–59 years (31.5%). The highest percentage of special needs school teachers (32.0%) had been teaching for 11 to 20 years, followed by 26.3% who had been teaching for 4 to 10 years. These results were not significantly different from those of the “2019 Statistical Survey of School Teachers,” suggesting that the respondents were highly representative of the population.

3.2 Experience in teaching moral education

According to Table 2, 57.3% of all teachers had experience teaching moral education. In addition, 28.3% had experience teaching only in special needs schools. Teaching experience in elementary and middle schools was comparable, with 8.7% and 10.5% having only elementary and only middle school experience, respectively. In addition, 8.8% of the teachers had teaching experience in both special needs and elementary and junior high schools. A χ^2 test was conducted to examine whether there was a difference in teaching experience depending on whether the students belonged to a moral education promotion teacher or a school division related to moral education, and the results were unbiased ($\chi^2(1) = 3.171, n.s.$).

3.3 Effective teaching methods for moral education

According to Table 3, overall, Item 3 had the highest mean value of 4.28 as an effective method of teaching moral education, while Item 7 had the lowest of 2.83. The results of the one-sample t-test revealed a significant difference between the reference score of 3 for all items except Items 5 and 13. The magnitude of effect size was judged based on Mizumoto and Takeuchi (2008), and the effect sizes of Items 1, 2, 3, 4, 6, 9, 14, and 15 were large.

A between-participants (unpaired) one-factor ANOVA with department as the independent variable and each item as the dependent variable revealed that the main effect of department was

Table 2 Experience in teaching moral education

experience in teaching moral education			
Yes	322 (57.3)	SNS	159 (28.3)
		ES	49 (8.7)
		MS	59 (10.5)
		SNS, ES	29 (5.2)
		SNS, MS	18 (3.2)
		SNS, ES, MS	2 (0.4)
		ES, MS	5 (0.9)
		other	1 (0.2)
No	240 (42.7)		
total		562	

unit : persons, percentage in parentheses.

SNS : Special Needs Schools, ES : Elementary School, MS : Middle School.

significant in Item 1 ($F(2,562)=27.12, p<.001$), Item 3 ($F(2,562)=3.52, p<.05$), Item 4 ($F(2,562)=19.48, p<.001$), Item 5 ($F(2,562)=85.13, p<.001$), Item 6 ($F(2,562)=3.58, p<.05$), Item 7 ($F(2,562)=73.23, p<.001$), Item 8 ($F(2,562)=21.28, p<.001$), Item 9 ($F(2,562)=2.98, p<.05$), Item 10 ($F(2,562)=16.84, p<.001$), Item 11 ($F(2,562)=25.59, p<.001$), Item 12 ($F(2,562)=9.11, p<.001$), Item 13 ($F(2,562)=26.19, p<.001$), and Item 15 ($F(2,562)=4.54, p<.01$). Results of multiple comparisons using the Tukey method indicated that Item 1 had higher means in the order of elementary, middle, and high school. On the other hand, Items 4, 5, 7, 8, and 11 had higher means in the order of high, middle, and elementary school. Items 3, 6, 9, 12, and 15 had significantly higher means in upper school compared to elementary school. Items 10 and 13 had significantly higher means in upper school compared to elementary and middle school.

3.4 Issues of implementation in moral education

According to Table 4, as moral issues in special needs schools for students with intellectual disabilities, overall, the mean value for Item 10 was 4.08, which was the highest, followed by Item 9 and Item 12 with a mean value of 3.81. On the other hand, Item 3 had a mean of 2.58, the only item with a mean below 3. The results of the one-sample t-test documented a significant difference between the reference value of 3 points for all items except Item 5. Referring to Mizumoto and Takeuchi (2008), the effect sizes of Items 10 and 12 were large.

A between-participants (unpaired) one-factor ANOVA was conducted with department as the independent variable and each item as the dependent variable, and the main effect of department was significant in Item 7 ($F(2,562)=7.45, p<.001$), Item 8 ($F(2,562)=10.74, p<.001$), Item 9 ($F(2,562)=30.56, p<.001$), Item 10 ($F(2,562)=13.80, p<.001$), and Item 11 ($F(2,562)=13.48, p<.001$). The results of multiple comparisons using the Tukey method showed that the high school students had significantly lower means than the elementary and middle school students for Items 7-11.

4. Discussion

This study sought to identify effective teaching methods and issues in moral education in special needs schools for students with intellectual disabilities. We now discuss this from the perspective of specific measures to enhance future moral education class creation.

Table 3 Effective teaching methods for moral education

	Elementary (n=171)				Middle (n=173)				High (n=218)				Total (n=562)				analysis of variance multiple comparisons			one-sample t-test		
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	F	p	MC	t	p	r				
1	present textbooks as a play utilizing storyboards, puppets, or a paper theater																					
2	present textbooks in video with sound and music effects																					
3	use of images or real-life situations																					
4	questioning by teachers																					
5	discussion activities (in small groups or pairs)																					
6	Utilization of ICT																					
7	writing activities using study notes and study printouts																					
8	Programs and group games such as encounters and social skills																					
9	Handling of content related to school events																					
10	Role-playing and operationalization																					
11	Activities with lecturers and guests																					
12	Activities utilizing experiments and observations																					
13	Teachers' innovations in writing on the board																					
14	Handling of content related to other subjects/areas, etc.																					
15	experience activities, volunteer experiences, and other experiences																					

E : Elementary, M : Middle, H : High, MC : Multiple Comparisons.

Table 4 Issues of implementation in moral education

	Elementary (n=171)				Middle (n=173)				High (n=218)				Total (n=562)				analysis of variance multiple comparisons			one-sample t-test																
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	F	p	MC	t	p	r																
1	difficulty in obtaining appropriate teaching materials																				3.73	0.95	3.87	1.03	3.68	1.05	3.75	1.02	3.75	1.02	1.83	0.16	–	17.55	<.001	0.74
2	hard to know how to teach effectively																				3.54	0.99	3.57	1.04	3.41	1.03	3.50	1.02	3.36	0.26	–	11.53	<.001	0.49		
3	difficult to obtain cooperation from the community and parents																				2.44	0.94	2.63	0.96	2.64	0.91	2.58	0.94	2.46	0.09	–	–10.73	<.001	–0.45		
4	difficulty in evaluation (understanding the effectiveness of instruction)																				3.70	1.03	3.68	1.09	3.58	0.94	3.65	1.02	0.74	0.48	–	15.10	<.001	0.64		
5	insufficient instructional time																				2.90	1.00	3.14	1.10	3.11	1.09	3.06	1.07	2.75	0.07	–	1.30	0.01	0.06		
6	difficult to position in the curriculum due to many aspects related to Jiritsu Katsudo, career education, etc.																				3.43	0.98	3.37	1.06	3.23	0.99	3.33	1.01	2.1	0.12	–	7.85	<.001	0.33		
7	difficulty in setting up learning content according to disability status and characteristics																				3.69	1.05	3.69	1.09	3.34	1.03	3.56	1.07	7.45	<.001	E>H M>H	12.33	<.001	0.52		
8	difficult for students to understand feeling and emotions																				3.90	0.94	3.73	1.01	3.44	1.02	3.67	1.01	10.74	<.001	E>H M>H	15.70	<.001	0.66		
9	difficult for students to understand abstract words such as "honesty" and "compassion"																				4.17	0.88	3.94	0.95	3.42	1.06	3.81	1.02	30.56	<.001	E>H M>H	18.75	<.001	0.79		
10	It is more effective to teach throughout the entire educational activity than to teach it as a lesson																				4.35	0.88	4.14	1.04	3.83	1.02	4.08	1.01	13.80	<.001	E>H M>H	25.44	<.001	1.07		
11	difficulty in structuring learning groups according to disability status and characteristics																				3.71	1.01	3.52	1.07	3.17	1.05	3.44	1.07	13.48	<.001	E>H M>H	9.82	<.001	0.41		
12	few precedents for moral education in special needs schools for students with intellectual disabilities																				3.88	0.84	3.79	0.95	3.77	0.85	3.81	0.88	0.81	0.45	–	21.84	<.001	0.92		
13	few training opportunities on moral education in special needs schools																				3.71	0.97	3.76	0.92	3.70	0.88	3.72	0.92	0.23	0.80	–	18.67	<.001	0.79		
14	teachers do not fully understand the goals and significance of moral education																				3.33	1.02	3.42	0.97	3.36	0.90	3.37	0.96	0.39	0.68	–	9.22	<.001	0.39		

E : Elementary, M : Middle, H : High, MC : Multiple Comparisons.

4.1 Experience in teaching moral education

According to Table 2, 57.3% of the teachers have experience teaching moral education in special needs schools for students with intellectual disabilities, indicating that more than half have teaching experience. Among these, 28.3% have experience teaching only in special needs schools. These teachers will require extensive support, such as training in specific lesson planning, based on the basic and theoretical content acquired in teaching courses related to morality and the foundation of practical leadership skills. On the other hand, 8.8% had experience teaching moral education in both special needs and elementary and junior high schools. Their experience in teaching moral education in elementary and junior high schools is considered to precede that in special needs schools, and they may be flexible in developing their knowledge of moral education in the former in a way that is appropriate to the disability characteristics of intellectual disabilities. Therefore, it is expected that they will greatly exert their abilities in promoting moral education throughout the school by appointing teachers to promote moral education.

We asked about the attributes of teachers as to whether they are in the role of a moral education promotion teacher or belong to a school division that is primarily responsible for moral education. The most common type of teacher was one who promoted moral education or who belonged to a related school division and had experience in teaching such education. However, the results of the χ^2 test showed no meaningful difference compared to the others. In other words, in special needs schools for students with intellectual disabilities, teachers with extensive experience in teaching moral education do not necessarily serve as moral education promotion teachers or belong to school divisions related to such education. In light of this current situation, to promote moral education in special needs schools for students with intellectual disabilities, it is necessary to first assign moral education promotion teachers a role that is not dependent on the quantity or quality of their experience and knowledge, such as preparing moral education teaching plans and enhancing training, which may contribute to the promotion of moral education. Katayama and Yaginuma (2022), who examined the job descriptions of teachers promoting moral education by career, identified “the role of creating an environment that facilitates the implementation of moral education time” and “the role of providing information on moral education” as roles required of early career promotion teachers. Nagata and Shima (2010) also highlight that “the maintenance, enhancement, and promotion of the use of moral education materials” is a major key to the promotion of moral education, and in special support schools for students with intellectual disabilities, the first priority should be given to creating an environment that facilitates access to moral education materials, with promotion teachers playing a central role.

4.2 Effective teaching methods for moral education

The results regarding effective teaching methods are reported in Table 3. The item with the highest average value overall was “Use of images of real-life situations” (Item 3). Moral education textbooks were also distributed in special needs schools for students with intellectual disabilities, and reading materials became the most readily available teaching materials. However, it is often difficult to utilize reading materials as they are in the classroom, and it may be effective to cut out scenes from daily life themselves and use them as teaching materials (Sekine, 2022). On the other hand, the items with the lowest average values were “discussion activities (in small groups or pairs)” (Item 5) and “writing activities using study notes and study printouts” (Item 7). Of the two, discussion activities that promote multilateral and multifaceted thinking, which are indispensable for moral development, need to be effectively incorporated into learning activities at special needs schools for

students with intellectual disabilities. Regarding writing activities, although they cannot be essential according to the actual conditions of the students, expressing opinions and reflecting on oneself through alternative activities to writing are essential for the development of moral character.

An ANOVA was conducted to determine differences among the faculties, but no main effects were observed for “present textbooks in video with sound and music effects” (Item 2) and “Handling of content related to other subjects/areas, etc.” (Item 14). Since these two items had an overall average value close to 4, the content is considered effective in all faculties. Specifically, the presentation of reading materials and the handling of content in relation to other subjects and areas, and so on, are highly versatile instructional innovations at special needs schools for students with intellectual disabilities, regardless of the department.

4.3 Issues of implementation in moral education

The results for moral issues are reported in Table 4; the most noteworthy item is “It is more effective to teach throughout the entire educational activity than to teach it as a lesson” (Item 10). Item 10 is a challenge because special needs schools for students with intellectual disabilities are guaranteed flexibility regarding the establishment of moral education and is deeply related to the state of moral education in such schools. Even in the Hanzawa’s (2023) survey research on moral education at such special needs schools throughout Japan, which is similar to this study, the most frequently cited issue for moral education classes was “the ability to conduct moral education through life unit studies, other subject instruction, etc.” The results revealed that more teachers viewed teaching throughout the entire educational activity as more effective than teaching as a moral education course, and this number was higher in elementary and middle schools than in senior high schools. These results may be due to the challenges in moral education resulting from the disability characteristics of intellectual disability, as described in “difficult for students to understand feelings and emotions” (Item 8) and “difficult for students to understand abstract words such as “honesty” and “compassion”” (Item 9).

4.4 Limitations of this study

There are two issues to be addressed in this study.

The first is the timing of the survey. The survey was conducted immediately after Japan was forced to close for a long period of time due to the coronavirus outbreak, and it is possible that the situation was different from normal, not only in moral education but in other subjects as well.

The second point concerns effective teaching methods. In this study, we asked about teachers' ideas of effective teaching methods. Therefore, there is room for further investigation as to whether or not the teaching methods considered effective in this study are effective for students in actual classes.

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[Paper]

Report on a Survey of Educational Support Needs of Students with Borderline Intelligence

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Abstract

In recent years, the number of students with borderline intelligence (BIF students) has been increasing in Japanese schools. BIF have an IQ test score that is one to two standard deviations below average, in the range of 70 to 85, which are on the borderline between Mild Intellectual Disabilities (MID) and average intelligence. Since borderline intelligence is not a disability, there is no educational support system in place.

In order to investigate their actual condition, we conducted a survey of regular classes, special classes and special needs schools (for intellectual disabilities).

The results showed that the number of BIF students is increasing, especially in regular and special classes. In addition, it seems that teachers in regular classes tend to find it difficult to teach BIF students.

It was found that the support needs of BIF students in regular and special classes are mainly in terms of learning. The degree of learning delays tended to increase as students moved up through the grades. In the special needs schools, interpersonal support needs were more prevalent. It was suggested that children in the supportive schools may have chosen a smaller, more intensive support environment due to their adjustment to group life, communication, and social skills challenges.

In the future, we would like to consider support measures by more accurately understanding the IQs of the children in the study or by investigating the relationship between developmental disabilities.

Keywords: Borderline Intelligence, Intellectual Disabilities, Educational Support

1. Introduction

Recent reports indicate an increase in the prevalence of students with Borderline Intellectual Functioning (BIF) in Japanese schools (Honda et al., 2018). BIF is characterized by IQ test scores ranging from one to two standard deviations below the average, specifically between 70 and 85. This

range borders the threshold between Mild Intellectual Disabilities (MID) and average intelligence (Aizawa, 2023). The Full Scale Intelligence Quotient (FSIQ) in BIF can be affected by various factors, such as language ability and working memory. In some cases, the variation in abilities is minimal, yet the overall FSIQ remains within the borderline range. The challenges in adapting to social and practical domains for BIF students are often comparable to those faced by individuals with MID. Notably, school-aged children with BIF are at a heightened risk for academic and social maladjustment, primarily due to learning and daily living difficulties (Shaw, 2008). Despite these challenges, there remains a lack of statistical research identifying the specific conditions and standardized trends among BIF students.

In Japan, educational provisions for students with disabilities include “Special Classes (SC)” within regular schools for those with milder disabilities and “Special Needs Schools (SNS)” for more severe cases. According to MEXT, SCs and SNS offer a modified curriculum tailored to the child’s specific disability, allowing for adjustments in subject matter and teaching methods. For instance, in cases of intellectual disabilities, curricular goals and content may be adapted to lower grade levels or combined into interdisciplinary subjects. A key feature of both SCs and SNSs is the focus on independent activities designed to help students overcome learning and living challenges associated with their disabilities. These educational settings typically offer more individualized attention and support, with more teachers and support staff than regular classes (RC).

However, the suitability of SCs and SNSs for students with borderline intellectual functioning remains unclear. The disparity between the needs of students with mild or moderate intellectual disabilities and those with borderline functioning can lead to feelings of inadequacy and misfit in these educational settings. This study was designed to explore the specific needs of BIF students and the challenges their parents and teachers face. By investigating the current situation, this study seeks to inform strategies for effectively supporting the education of BIF students.

2. Research Methods

2.1 Survey Methodology

This study employed a questionnaire survey targeting schoolteachers. We sent 1,932 questionnaires (collection rate of 27.2%).

2.2 Survey Period

The survey was conducted from July to August 2022.

2.3 Survey Targets

- Elementary Schools (in Kanto Region) : Homeroom teachers in Regular Classes and Special Classes.
- Special Needs Schools for Intellectual Disabilities (nationwide) : Homeroom teachers and department heads.

2.4 Questionnaire Contents

2.4.1 Enrollment of BIF Students in Schools

- (1) Trends in the increase or decrease of BIF students.
- (2) The proportion of BIF students in the respondent’s class or school.

2.4.2 Information About One Selected BIF Student

Note: Respondents were asked to select one BIF student from their class for the following questions.

- (1) Student Profile: a. Grade. b. Disorders (excluding Intellectual Disabilities). c. Medication use.
- (2) Support needs for school life (multiple responses allowed).
- (3) Delays in learning Japanese and math.
- (4) Family issues.
- (5) Perception of difficulty by parents.
- (6) Perception of difficulty by teachers.

2.5 Analysis Method

The χ^2 (Chi-square) test examined differences based on the BIF students' school affiliation. We used a software called HAD (Shimizu, 2016) for the analysis.

2.6 Ethical Considerations

In the survey request form, participants were informed in writing about handling personal information and disclosing research results. Responses were collected only after obtaining their informed consent. The Tokyo Gakugei University Ethics Committee approved this study.

3. Results

3.1 Enrollment of BIF Students in Schools

3.1.1 Increase or decrease in students

Responses to increasing or decreasing trends in BIF students varied across the three settings: RC (N=535), SC (N=131), and SNS (N=274). In the RC setting, 151 participants (28.2%) reported a significant increase in BIF students, whereas 278 (52.0%) observed a moderate increase. None reported a significant decrease. However, 2 (0.4%) noted a slight decrease. A notable 95 (17.8%) found the numbers unchanged, and 9 participants (1.7%) were unsure. In contrast, 26 individuals (19.8%) indicated a substantial increase in the SC setting, and 72 (55.0%) saw a moderate increase. A higher proportion, 16 respondents (12.2%), observed a significant decrease, and 2 (1.5%) slightly decreased. Unlike RC, no one in SC reported unchanged numbers, but 15 (11.7%) were uncertain. A higher proportion, 16 respondents (12.2%), observed a significant decrease, and 2 (1.5%) slightly decreased. Unlike RC, no one in SC reported unchanged numbers, but 15 (11.7%) were uncertain.

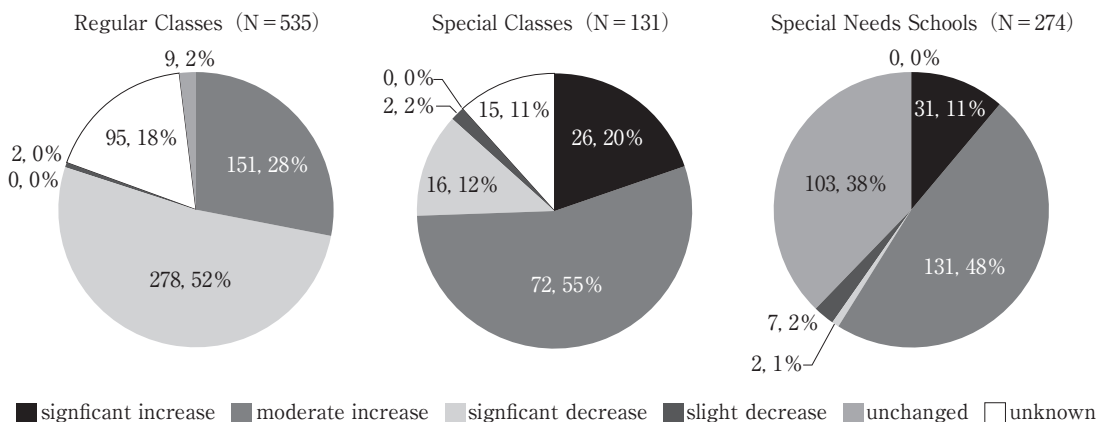


Figure 1 Increase or decrease in students

The SNS setting presented another variation, with 31 respondents (11.3%) noting a considerable increase and 131 (47.8%) a moderate increase. Only 2 (0.7%) reported a significant decrease, while 7 (2.6%) saw a slight decrease. A larger group, 103 (37.6%), observed no change, and none were unsure about the trend.

3.1.2 Percentage of BIF Students in the respondent's class or school

The study focused on the percentage of BIF students enrolled in classes or schools and categorized the respondents into three groups: RC (N=291), SC (N=125), and SNS (N=109). The number of children in the classes under the respondents' responsibility varied across these settings. In the RC setting, there were 7,996 children, averaging 27.5 children per class. The SC setting had 555 children, averaging 5.1 children per class. In the SNS setting, the total was 452 children, averaging 3.6 children per class. Among these populations, the number of BIF students differed significantly. There were 893 BIF students in the RC setting, whereas the SC setting had 40 and the SNS setting had 96. When these figures were translated into percentages relative to the total number of classes in each setting, it was found that BIF students constituted 11.2% of the RC setting, 21.2% of the SC setting, and 7.2% of the SNS setting.

3.2. Information About One Selected BIF Student

3.2.1 Demographic Information

(1) Grade Distribution

The survey received 424 responses, with a distribution across grades: 11.6% from 1st grade, 15.3% from 2nd grade, 18.4% from 3rd grade, 17.5% from 4th grade, 17.9% from 5th grade, and 19.3% from 6th grade.

(2) Disorders (Medical Diagnosis)

Information was gathered on students' disabilities, excluding Intellectual Developmental Disabilities (IDD). The details, including the prevalence of each disability type, are presented in Table 1. Specific students had multiple disabilities.

(3) Medication Usage

Responses regarding medication usage were collected from different settings: 345 from RC, 47 from SC, and 77 from SNS. In RC, 12.8% of the respondents indicated medication usage, 79.1% did not, and 8.1% were unsure. In SC, 21.3% reported medication usage, 74.5% did not, and 4.3% were unsure. Similarly, 29.9% indicated medication usage in SNS, 62.3% did not, and 7.8% were unsure.

3.2.2 Support Needs for School Life

The survey sought multiple responses regarding the support needs for school life, with the detailed results presented in Table 2. It was observed that students in RC and SC predominantly required academic support, whereas those in supportive schools (SNS) had more interpersonal needs.

Table 1 Number of responses by disability type

	ASD	ADHD	LD	DS	Others	Nothing/ Unknown	Total
RC	36	44	21	0	0	70	171
SC	5	10	4	1	6	29	55
SNS	35	13	0	1	4	3	56

※ ASD: Autism Spectrum Disorder/ADHD: Attention-Deficit Hyperactivity Disorder/LD: Learning Disability/DS: Down syndrome

Table 2 Support needs for school life

Needs	Learning	Daily Life	Interpersonal Relationships	Behavior/ Emotions	Exercise	Self-esteem	Problem Behavior	School Refusal	Isolation	Total
RC	267 (31.1 %)	135 (15.7 %)	157 (18.3 %)	138 (16.1%)	26 (3.0%)	63 (7.3 %)	19 (2.2%)	29 (3.4%)	24 (2.8%)	858
SC	46 (28.2 %)	32 (19.6 %)	30 (18.4 %)	28 (17.2 %)	11 (6.7 %)	6 (3.7 %)	5 (3.1 %)	4 (2.5 %)	1 (0.6 %)	163
SNS	51 (18.0 %)	46 (16.3 %)	65 (23.0 %)	60 (21.2 %)	14 (4.9 %)	22 (7.8 %)	11 (3.9 %)	10 (3.5 %)	4 (1.4 %)	283

3.2.3 Delays in Learning Japanese and Math

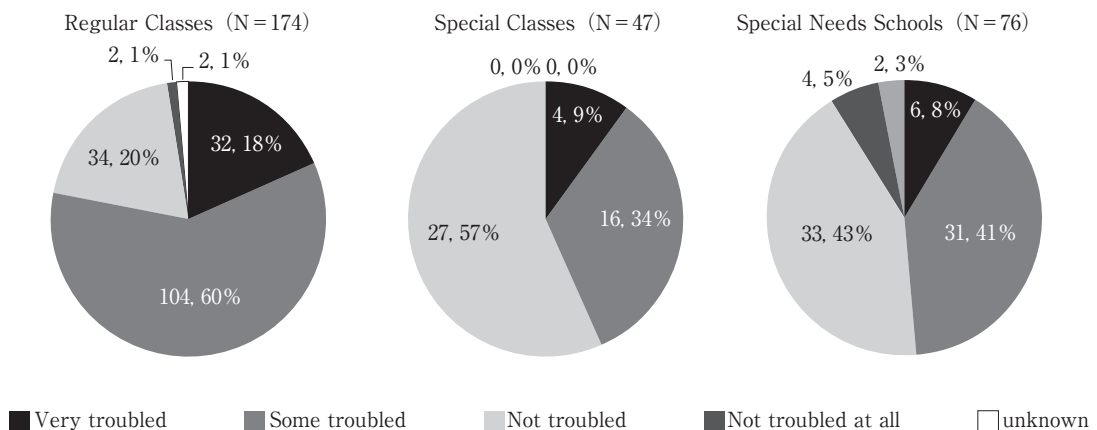
The study gathered responses on Japanese and mathematics learning delays. The results indicated that 348 from RC, 48 from SC, and 74 from SNS had such delays. The most common responses were “the grade concerned” in RC (34.5%), both “the grade concerned” and “2 grades behind” in SC (29.2% each), and “3 grades behind” in SNS (43.2%). Additional insights in the “others” category from RC included varying learning delays and difficulty making specific assessments, indicating possible learning disabilities. SC and SNS respondents mentioned using various educational tools like general books, textbooks for IDD, and tablet devices.

3.2.4 Family Environment Issues

When asked about problems in the students’ family environment, the responses were 348 from RC, 47 from SC, and 77 from SNS. In RC, 44.0% reported problems, 38.2% did not, and 17.8% were unsure. In SC, 46.8% reported problems, 48.9% did not, and 4.3% were unsure. In SNS, 36.4% indicated problems, 50.6% did not, and 13.0% were unsure. Examples of problems included “mental problems/disabilities of parents,” “abuse/neglect,” “complicated family relationships,” and “poor parenting skills.”

3.2.5 Parental Challenges

The survey assessed the level of difficulty parents experienced in raising their children. From RC, 17.8% reported being “Very troubled,” 48.1% “Somewhat troubled,” 27.8% “Not much troubled,” 2.3% “Not troubled at all,” and 4.0% were unsure. In SC, 12.5% were “Very troubled,” 35.4% were “Somewhat troubled,” and 52.0% were “Not much troubled,” with no responses for “Not troubled at all” and “Unknown.” In SNS, 15.6% were “Very troubled,” 37.7% were “Somewhat troubled,” 35.0% were “Not much troubled,” 2.6% were “Not troubled at all,” and 9.1% were unsure.

**Figure 2** Teacher's Perception of Educational Challenges

3.2.6 Teacher's Perception of Educational Challenges

The number of responses on educational challenges faced by teachers was 174 from RC, 47 from SC, and 76 from SNS. In RC, 18.4% felt "Very troubled," 59.8% "Somewhat troubled," 19.5% "Not much troubled," 1.1% "Not troubled at all", and 1.1% were unsure. In SC, 8.5% were "Very troubled," 34.0% were "Somewhat troubled," and 57.4% were "Not much troubled," with no responses for "Not troubled at all" and "Unknown." In SNS, 7.9% were "Very troubled," 40.8% "Somewhat troubled," 43.4% "Not much troubled," 5.3% "Not troubled at all", and 2.6% were unsure.

4. Discussion

This study reveals a notable increase in Borderline Intellectual Functioning (BIF) students, particularly in regular elementary schools, constituting approximately 10–20% of a class. An important finding is that many BIF students in Regular Classes (RC) are not diagnosed with developmental or other disabilities and are not receiving medication. It was suggested that they often have difficulties in school, but that their emotional and behavioral problems are not as pronounced. The lack of overt problems may contribute to their enrollment in RC, where their difficulties can be easily overlooked, underscoring the need for heightened awareness and attention in these settings.

The enrollment of BIF in Special Needs Schools (SNS) should also be noted. Originally, SNS were supposed to enroll students with intellectual disabilities (=IQs below 70). However, we found that the enrollment of BIF students is increasing. This background is related to the diagnostic criteria for intellectual disability. The determination of intellectual disability is not only IQ, but also difficulties with adaptive behavior. Thus, even if a student has an IQ of 70 or higher, a diagnosis of intellectual disability may be made if the student is found to need special support and attention in adaptive functions.

4.1 Support Needs and Learning Delays

The study highlights that support needs in "Learning" are more prevalent in RC and Special Classes (SC). At the same time, "Interpersonal relationships" are a primary support needs in Special Needs Schools (SNS). This suggests that students in SNS, potentially with higher intellectual levels, may opt for environments offering extensive support due to communication and social adaptation challenges. Regarding learning delays, no significant differences were observed across educational settings, indicating that high support needs beyond academic assistance might influence enrollment in SC. A concerning trend is the widening gap in academic performance between BIF students and their peers as they progress to higher grades. According to Honda et al. (2018), there are a certain number of children in whom problems become apparent in late school age, and in particular, it was shown that there was an increasing trend in the incidence of problems related to borderline intelligence noted after the fourth year of school. Similar results were obtained in this study. We must do longitudinal studies for a deeper understanding of their evolving educational needs.

4.2 Challenges in Regular Classes

In RC, BIF students face the challenge of adhering to grade-level curriculum, often leading to secondary issues like school maladjustment. This is attributed to the difficulty in assessing their learning delays and the variance in subject comprehension. Further research is needed to explore how RC teachers perceive and address these learning challenges and the impact of transitioning to SC.

4.3 Teachers' Difficulties

Teachers in RC reported more significant difficulties, likely stemming from challenges in providing individualized support and a lack of expertise in managing borderline intellectual and developmental disabilities. This highlights a crucial area for teacher training and resource allocation.

4.4 Study Limitations and Future Directions

A limitation of this study is the indeterminate relationship between the target children's IQs and developmental disabilities. Future research should strive to understand better their IQ profiles and medical diagnoses to better identify factors contributing to their distress. Additionally, by focusing on less apparent needs in learning and daily living, further insights might be gained to expand the scope of support for BIF students.

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[Paper]

Teacher Perspectives on Emotionally Disturbed Students Across Educational Settings

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Abstract

The term 'emotional disturbance' denotes a condition that disrupts daily life due to psychological factors. In Japan, students identified as emotionally disturbed receive specialized support education tailored to their needs. Despite this, the conceptualization of emotional disturbance remains underdeveloped, presenting challenges for teachers in providing adequate support. In this survey, we targeted teachers in regular classrooms, resource rooms, special-needs classes, and special-needs schools to clarify (1) the educational status of emotionally disturbed children in general, and (2) the educational status of each classroom school. Findings indicate that behaviors causing conflicts with others, such as tantrums and anger, are markers of emotional disturbance across all educational settings. Affected children often struggle with interpersonal relationships and general life skills. Moreover, a chi-square test showed significant differences in support challenges and perceptions of emotional disturbance across different types of schools. These results highlight the need for teacher flexibility in supporting emotionally disturbed students, considering both the students' individual circumstances and the specific characteristics of emotional disturbances within their educational context."

Keywords: emotional disturbance in education, teacher surveys, special support education, interpersonal challenges in students, special-needs classes

1. Introduction

Emotional disturbance is defined by the Ministry of Education, Culture, Sports, Science, and Technology (MEXT, 2021) as "a condition in which a psychological factor interferes with daily life." This condition manifests through symptoms such as selective mutism and school non-attendance. Students identified as emotionally disturbed experience significant disruptions compared to their

physically and mentally healthy peers, struggling to control their emotions. Their emotional instability frequently impacts academic performance and interpersonal relationships, leading to challenges in school life. In Japan, these students are eligible for special support education, receiving assistance in regular classes, resource rooms, and autism/emotional disturbance special-needs classes to mitigate learning and living difficulties (MEXT, 2021). MEXT (2024) reports that 19,376 students are receiving instruction in resource rooms, with an additional 132,061 enrolled in special-needs classes for autism and emotional disturbance, indicating a rising trend in the number of students needing such support. This increase underscores the demand for more detailed educational support for emotionally disturbed students.

Within the Japanese educational system, a student is classified as emotionally disturbed based on exhibited problematic behaviors resulting from psychological stress to the extent that school adjustment becomes unmanageable (MEXT, 2021). Problematic behaviors are categorized into two types: “internalized problem behavior,” which includes maladaptive behaviors due to internal conflicts and stress, such as selective mutism, school non-attendance, and somatic complaints (MEXT, 2021), and “externalized problem behaviors,” characterized by actions that lead to conflicts with others, including defiance, verbal abuse, and classroom departures (MEXT, 2021). Emotional disturbances may also encompass difficulties related to social skills, cognition, and daily living activities, further complicating the support needed (MEXT, 2021).

However, the concept of emotional disturbance has been vaguely defined without clear medical diagnostic criteria, as pointed out by the National Institute for Special Education (NISE, 2012). As a result, what conditions are considered emotional disorders differs depending on the teacher and the school he/she belongs to (Muranaka, 2017), and the lack of systematization of support has been cited as a problem for many years. In fact, a survey by Kobayashi and Shimo (2022) indicated that the factor that caused difficulties in supporting children with scene disturbance was “a lack of basic information about scene disturbance.” In a survey conducted by Kocho and Tsuruta (2022), it was shown that teachers are looking for ways to be close to children with behavioral and emotional problems and for specialized knowledge. Continued failure to address symptoms of emotional disturbance can lead to teacher burnout (Hastings and Bham, 2003) and stress in support (Onodera and Kawamura, 2012). Therefore, we believe it is necessary to clarify the concept of emotional disturbance in order to construct appropriate support methods for children and reduce the burden on teachers. In addition, since the actual conditions of children with emotional disorders are expected to differ depending on the classes and schools in which they are enrolled, it will be necessary to consider environmental factors as well. Therefore, we will conduct a survey from two perspectives: (1) the educational status of emotionally disturbed children in general, and (2) the educational status of each classroom and school. This study has significance as a basic research for organizing the concept of emotional disabilities.

2. Method

2.1 Survey Participants

The target population was elementary school homeroom teachers of children with emotional disabilities in regular classes, resource rooms, special-needs classes for the intellectual disabilities, and special-needs schools for the intellectual disabilities, physical disability and health impairment in Tokyo, Kanagawa, Saitama, and Chiba Prefectures. The schools were selected on the basis of their location in the suburbs of Tokyo and their availability of resource rooms and special-needs classes.

Invitations were sent to 1,000 teachers from each regular class, resource room, and special-needs class and 890 teachers from special-needs schools. They were provided with a survey request form and a questionnaire, which could be completed on paper or online via Google Forms. The response rates were as follows: 30.6% (306 teachers) from regular classrooms, 13.5% (135 teachers) from resource rooms, 14.9% (149 teachers) from special-needs classes, and 34.4% (306 teachers) from special-needs schools.

2.2 Survey Period

The survey was conducted from July to August 2023.

2.3 Survey Details

The specifics of this questionnaire survey are depicted in Table 1. The survey was conducted anonymously. The questionnaire was developed based on the section on emotional disabilities in the Guide for Children with Disabilities of the Ministry of Education (2021) and the survey items of NISE (2012). This was an arbitrarily designed questionnaire. Therefore, the validity of the questionnaire was confirmed by one teacher of an autism emotional disability class, one university professor enrolled in the psychology department, and one graduate student.

2.3.1 Demographic Data

Participants were queried about their tenure at the school, the number of students they managed, and their observations on the trend of increasing emotionally disturbed students (one item, six-case method). Teachers in special-needs settings also provided the duration of their special-needs education experience.

Table 1 Survey details

Category of Question	Item Question	Item Content
Demographic Data	Teacher's tenure at the school	Teachers were queried about their tenure at the school
	The number of students teachers managed	Teachers were queried the number of students they managed
	The duration of their special-needs education experience	Teachers in special-needs settings also provided the duration of their special-needs education experience
	Teachers' Perceptions of Emotionally Disturbed Students' Increase	(1) Very much increasing (2) Somewhat increasing (3) Unchanged (4) Somewhat decreasing (5) Very decreasing (6) Don't know
Questions about Emotionally Disturbed Students	Emotionally Disturbed Students School Life	(1) Selective mutism, (2) School non-attendance, (3) Excessive anxiety (separation anxiety, fear of insects, etc.), (4) Depressive symptoms and lethargy (5) self-injury (6) Frequent tantrums and anger (7) Violent and aggressive behavior (8) defiance with abusive language (9) Depending too much on others (10) Physical complaint (frequent occurrence of abdominal pain, headache, sluggishness, etc.) (11) Anorexia (12) Compulsive behavior (such as washing hands repeatedly) (13) trichotillomania and genital manipulation (14) Claims of persecution complex (15) Game addiction (16) Repeated failure to urinate (17) Other
	Support Needs of Emotionally Disturbed Students in School	(1) Learning (2) Daily life (3) Interpersonal relationships (4) Exercise (5) Low self-esteem (6) Trouble with other children (7) Delinquency/Problem Behavior (8) School non-attendance (9) Isolated and introverted (10) Other
	Self-Understanding of Symptoms by Emotionally Disturbed Students	(1) Understand themselves very much (2) Understand themselves somewhat (3) Don't have self-understanding (4) Unknown
	Difficulty in Providing Educational Support for Emotionally Disturbed Students	(1) Very troubled (2) Somewhat troubled (3) Not very troubled (4) Not at all troubled (5) Unknown

2.3.2 Questions about Emotionally Disturbed Students

Teachers selected one emotionally disturbed student per class to report on, covering aspects of the student's school life (17 items), support needs (10 items), self-awareness of symptoms (one item, four-choice method), and the challenges in providing educational support (one item, five-point scale).

2.4 Ethical Considerations

The survey protocol, including ethical considerations, was thoroughly explained to participants, who then provided informed consent. ***** Ethics Committee approved this study.

3. Results

3.1 Demographic Data

After accounting for missing values, responses for the analysis were received from 246 regular class teachers, 118 resource room teachers, 131 special-needs class teachers, and 197 special-needs school teachers. A total of 631 teachers reported their length of service, averaging 14.2 years ($SD = 9.3$). For special-needs education, 131 special-needs class teachers and 197 special-needs school teachers reported an average duration of 4.2 years ($SD = 6.0$) and 12.8 years ($SD = 9.4$), respectively. The average class size reported was 30.1 students ($SD = 15.7$) for regular classes ($N = 245$), 53.7 ($SD = 27.0$) for resource rooms (including an average of 5.4 students, $SD = 4.8$ in study group units), 10.4 students ($SD = 8.4$) for special-needs classes ($N = 78$), and 5.1 students ($SD = 1.8$) for special-needs schools ($N = 197$).

3.2 Demographic Data (Teachers' Perceptions of Emotionally Disturbed Students' Increase)

Teachers were surveyed on whether they perceived an increase in emotionally disturbed students, with results detailed in Table 2. A chi-square test assessed the relationship between school type and responses. Due to minimal responses for "somewhat decreasing," "very decreasing," or "don't know," these were grouped under "unchanged." Analysis with "very much increasing," "somewhat increasing," and "unchanged" categories revealed a significant difference by school type ($\chi^2(6, N = 687) = 89.1, p < .001$). Residual analysis showed a significant excess of teachers in regular classes reporting increases ($p < .001$) and those in special-needs schools reporting unchanged numbers ($p < .001$).

Table 2 Teachers' perceptions of emotionally disturbed students' increase

		Very much increasing	Somewhat increasing	Unchanged
Regular classes ($N = 245$)	Answers	110	121	14
	Percentage	44.9	49.4	5.7
Resource rooms ($N = 115$)	Answers	43	53	19
	Percentage	37.4	46.1	16.5
Special Needs classes ($N = 131$)	Answers	50	70	11
	Percentage	38.2	53.4	8.4
Special Needs Schools ($N = 196$)	Answers	26	108	62
	Percentage	13.3	55.1	31.6
Total number of responses ($N = 687$)		229	352	106

Table 3 Emotionally disturbed students' school life

		Regular classes (<i>N</i> =246)		Resource rooms (<i>N</i> =118)		Special-need classes (<i>N</i> =131)		Special-need schools (<i>N</i> =197)		Total number of responses
		Answers	Percentage	Answers	Percentage	Answers	Percentage	Answers	Percentage	
Internalized problem behavior	(3) Excessive anxiety	67	10.1	39	11.0	41	9.2	39	8.6	186
	(2) School non-attendance	77	11.6	38	10.7	35	7.8	19	4.2	169
	(1) Selective mutism	33	5.0	33	9.3	8	1.8	9	2.0	83
	(10) Physical complaint	28	4.2	11	3.1	14	3.1	9	2.0	62
	(4) Depressive symptoms and lethargy	21	3.2	18	5.1	9	2.0	2	0.4	50
externalized problematic behaviors	(6) Frequent tantrums and anger	131	19.8	59	16.6	91	20.3	138	30.5	419
	(7) Violence and aggressive behavior	79	11.9	38	10.7	58	12.9	65	14.3	240
	(8) defiance with abusive language	73	11.0	43	12.1	63	14.1	28	6.2	207
other problem behaviors	(9) Depending too much on others	73	11.0	25	7.0	43	9.6	53	11.7	194
	(5) self-injury	8	1.2	15	4.2	17	3.8	45	9.9	85
	(14) Claims of persecution complex	21	3.2	10	2.8	17	3.8	2	0.4	50
	(17) Other	23	3.5	8	2.2	9	2.0	5	1.1	45
	(15) Game addiction	9	1.4	9	2.5	17	3.8	3	0.7	38
	(13) trichotillomania and genital manipulation	5	0.8	5	1.4	6	1.3	12	2.6	28
	(11) Anorexia	6	0.9	2	0.6	8	1.8	10	2.2	26
	(16) Repeated failure to urinate	6	0.9	1	0.3	4	0.9	11	2.4	22
	(12) Compulsive behavior	3	0.5	2	0.6	8	1.8	3	0.7	16

3.3 Emotionally Disturbed Students' School Life

Teachers provided multiple responses about emotionally disturbed students' school conditions, with average responses of 2.7 ($SD=1.7$) for regular classrooms, 3.0 ($SD=1.9$) for resource rooms, 3.4 ($SD=1.8$) for special-needs classes, and 2.3 ($SD=1.4$) for special-needs schools. Responses were categorized into "internalized problem behaviors," "externalized problem behaviors," and "other problem behaviors" as per MEXT guidelines (MEXT, 2021). Table 3 shows the results results. Notably, "externalized problem behaviors" that cause conflicts with others were prevalent in schools and by school type.

3.4 Support Needs of Emotionally Disturbed Students in School

Teachers identified support needs for emotionally disturbed students, with an average of 2.8 items selected per teacher ($SD=1.7$), varying by setting. Table 4 shows the results of simple tabulation. The results for schools as a whole and by school type indicate high needs in "interpersonal aspects" and "daily life" support across all school types.

Table 4 Support needs of emotionally disturbed students in school

	Regular classes (<i>N</i> =246)		Resource rooms (<i>N</i> =118)		Special-need classes (<i>N</i> =131)		Special-need schools (<i>N</i> =197)		Total number of responses
	Answers	Percentage	Answers	Percentage	Answers	Percentage	Answers	Percentage	
(3) Interpersonal relationships	183	21.5	103	23.1	113	21.9	166	25.2	565
(2) Daily life	165	19.4	74	16.6	94	18.3	153	23.2	486
(1) Learning	134	15.8	58	13.0	79	15.3	101	15.3	372
(6) Trouble with other children	125	14.7	45	10.1	75	14.6	69	10.5	314
(5) Low self-esteem	77	9.1	67	15.0	60	11.7	53	8.0	257
(8) School non-attendance	59	6.9	31	7.0	28	5.4	22	3.3	140
(4) Exercise	30	3.5	20	4.5	32	6.2	54	8.2	136
(7) Delinquency/Problem Behavior	36	4.2	16	3.6	22	4.3	24	3.6	98
(9) Isolated and introverted	32	3.8	28	6.3	6	1.2	9	1.4	75
(10) Other	9	1.1	4	0.9	6	1.2	8	1.2	27

Table 5 Self-understanding of symptoms by emotionally disturbed students

		Understand themselves very much	Understand themselves somewhat	Don't have self-understanding	Unknown
		Answers	Percentage	Answers	Percentage
Regular rooms (<i>N</i> =224)	Answers	2	86	122	34
	Percentage	0.8	35.0	49.6	13.8
Resource rooms (<i>N</i> =117)	Answers	3	60	43	10
	Percentage	2.5	50.8	36.4	8.5
Special-need classes (<i>N</i> =131)	Answers	4	62	58	7
	Percentage	3.1	47.3	44.3	5.3
Special-need school (<i>N</i> =186)	Answers	2	33	127	22
	Percentage	1.0	16.8	64.5	11.2
Total number of responses (<i>N</i> =678)		11	241	350	73

3.5 Self-Understanding of Symptoms by Emotionally Disturbed Students

Responses regarding students' self-awareness of their symptoms from the teachers' perspective were collected (Table 5). A chi-square test indicated a significant association between school type and level of self-understanding ($\chi^2(9, N=678) = 56.4, p < .001$), with resource rooms and special-needs class teachers reporting that emotionally disturbed students "understand themselves somewhat" (resource room: $p < .001$, special-needs class: $p < .05$). However, significantly more teachers in special-needs schools answered that emotionally disturbed students "did not have self-understanding" ($p < .001$) of their symptoms.

3.6 Difficulty in Providing Educational Support for Emotionally Disturbed Students

The degree of difficulty in supporting emotionally disturbed students was assessed (Table 6). Due to limited responses for "not troubled" and "unknown" categories, they were categorized as "not very troubled." A chi-square test indicated analysis revealed significant differences in reported challenges by school type ($\chi^2(6, N=682) = 35.8, p < .001$). Residual analysis revealed that regular class teachers reported being "very troubled" support for emotionally disturbed students ($p < .001$). In contrast, those in special-needs schools reported that they were "not very troubled" ($p < .001$).

Table 6 Difficulty in providing educational support for emotionally disturbed students

		Very troubled	Somewhat troubled	Not very troubled
Regular classes ($N=245$)	Answers	67	135	43
	Percentage	27.3	55.1	17.6
Resource rooms ($N=116$)	Answers	27	61	28
	Percentage	23.3	52.6	24.1
Special-need classes ($N=131$)	Answers	28	76	27
	Percentage	21.4	58.0	20.6
Special-need classes ($N=190$)	Answers	16	106	68
	Percentage	8.4	55.8	35.8
Total number of responses ($N=682$)		138	378	166

4. Discussion

This study explored teachers' perceptions and experiences with emotionally disturbed students in Japan, seeking to unravel the complexities of their educational needs and behavioral characteristics.

4.1 The educational status of emotionally disturbed children in general

Initially, teachers often perceived students with emotional disturbances as exhibiting externalized problem behaviors, such as frequent tantrums and anger, while at school. These behaviors, which disrupt the educational environment and pose risks to others, tend to be more observable than internalized problem behaviors, such as selective mutism or school non-attendance. The Ministry of Education, Culture, Sports, Science and Technology (MEXT, 2021) currently defines emotionally disturbed students as those who cannot control their physical and mental condition appropriately for a given situation. Thus, teachers might identify children exhibiting externalized behaviors as emotionally disturbed because such behaviors provide objective evidence of the student's inability to regulate their emotions.

In Japanese educational administration, internalized problem behaviors like selective mutism and school non-attendance are recognized as key indicators of emotional disturbance (NISE, 2012). However, externalized behaviors such as tantrums and anger are more frequently associated with school emotional disturbances. This discrepancy suggests a need to reassess the prevailing definition of emotional disturbance, considering the findings from this study.

Regarding support needs, teachers expressed that assistance with interpersonal relationships and daily life is crucial for students with emotional disturbances. Externalized behaviors can negatively impact the perceptions of peers and teachers, leading to challenges in forming and maintaining healthy relationships. Some students with emotional disturbances may also have a history of non-abuse or display traits of developmental disorders (NISE, 2012), complicating their ability to establish trust and connections with others. Consequently, there is a significant risk that these students might struggle academically and socially, underscoring the importance of targeted support measures.

4.2 The educational status of each classroom and school

In exploring the self-awareness among emotionally disturbed students concerning their symptoms, it was observed that those in resource rooms and special-needs classes exhibited

a notably higher degree of self-understanding. This heightened awareness is likely due to the individualized instruction these students receive, closely aligned with their specific needs. Additionally, initiatives within Japanese educational frameworks encourage interactions between students in mainstream settings and those in special-needs environments to foster a deeper understanding of disabilities (MEXT, 2019). Such personalized teaching approaches, coupled with opportunities for interaction with their mainstream peers, enhance students' recognition of the distinct learning environments and teaching methodologies they experience. Ito and Tsuge (2023) noted that some resource room students perceive these spaces as designated for those facing specific challenges, suggesting a conscious identification with having special educational needs distinct from mainstream students.

Conversely, students with intellectual disabilities in special-needs schools were often perceived by educators as lacking symptom awareness. These students face considerable challenges in social communication and societal integration due to intellectual delays, which impede their ability to recognize emotional disturbances from a broader perspective. This study focused on students with intellectual disabilities, as defined by MEXT (2021), highlighting the teachers' observation that these students struggle with self-awareness concerning their emotional states.

Concerning the perception of an increase in emotionally disturbed students and the challenges of providing educational support, educators in mainstream classrooms report a significant rise in the prevalence of these students and express substantial difficulties in offering support. In contrast, teachers in special-needs settings do not report a similar trend or face comparable challenges in support provision. This discrepancy may reflect the growing enrollment of students requiring special support in mainstream classrooms, now accounting for 8.8% and increasing annually, as reported by MEXT (2022). Despite the increase, the educational support available remains inadequate. Mainstream classrooms, comprising a mix of students with and without special needs, demand teachers to provide individualized special education within a group teaching context. Given the limited exposure of mainstream educators to special education training compared to their special-needs school counterparts, they often resort to trial and error in their support efforts (Kasai, 2020). Additionally, the concept of emotional disturbance lacks a coherent framework in Japan, further complicating the support process for educators in mainstream settings who are already stretched thin by their responsibilities.

This variance in the perception and management of emotional disturbance underscores the necessity for a flexible approach to supporting emotionally disturbed students tailored to the specific context of each teacher and the characteristics of the student body.

4.3 Limitation

The data collection rate was low this time, and there are issues with the reliability of the data. Therefore, it would be difficult to describe emotional disorders based on the results of this data alone. Furthermore, the study highlights the need for a broader and more in-depth investigation into emotional disturbance, calling for additional research that encompasses a larger sample of educators and delves into the qualitative dimensions of student experiences to fully grasp the complex nature of emotional disturbances.

Note Definitions of educational settings are as follows:

Regular classes: Education based on the regular curriculum, accommodating students with special needs (MEXT, 2015) .

Resource room: A supplementary setting where students with special needs receive tailored educational support while enrolled in regular classes (MEXT, 2015).

Special-needs classes: Established within schools to assist students with disabilities in overcoming learning and living challenges (MEXT, 2015).

Special-needs schools: Institutions providing comprehensive education for students with disabilities to foster independence and overcome learning and living difficulties (MEXT, 2015).

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[Paper]

Survey on Parental Perceptions of Difficulty in Raising Infants and Toddlers

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Abstract

Background: The concept of “difficulty in raising children” is child-rearing difficulty defined within a framework encompassing four factors: the child, parent, parent-child relationship, and environment. Developmental disabilities in children can sometimes play a causal role in these difficulties (CFA, n.d.).

Aims: This study aims to examine the relationship between child-rearing difficulty and developmental concerns or disabilities and to identify elements directly causing child-rearing difficulty, based on the framework, among items parents perceive as stresses or problems.

Methods: A questionnaire was administered to parents of children aged 0-6, inquiring about their child-rearing difficulty and perceived contributing factors using five-point Likert scales. Multiple regression analysis identified significant items as direct subjective factors of child-rearing difficulty.

Results: Over half of the parents of children with developmental disorders, stunting, or concerns reported difficulties in raising them. Approximately 30% of parents of children without such conditions also reported difficulties. A significant relationship was found between the diagnosis of developmental disabilities and child-rearing difficulty. Among 38 parental stresses or problems, eleven issues were directly related to the difficulty. Additionally, there was a significant interaction between parental difficulty and the child's restlessness and impulsivity in predicting developmental disabilities or concerns.

Conclusion: This study advances the investigation into the relationship between child-rearing difficulty for children aged 0-6 and developmental concerns or disabilities. It also identifies direct factors of child-rearing difficulty perceived by parents. The findings may aid in recognizing signs of problems in parents and children, both with and without disabilities, and clinically approaching these situations in a courteous manner.

Keywords: child-rearing difficulty, developmental disabilities, stunted growth, restlessness, impulsivity

1. Introduction

Japan is confronted with multiple challenges in maternal and child health, such as a declining birth rate, delayed marriages, a decreasing marriage rate, isolation of nuclear families, child poverty, and disparities in maternal and child health (Kim et al., 2018). In response, the national campaign “Healthy Parents and Children 21” was initiated in 2001, embarking on its second phase in 2015, aimed at addressing these issues through three basic tasks and two priority issues (Osawa et al., 2019). A critical priority is support for parents experiencing difficulty raising their children (Osawa et al., 2019). According to Japan’s Children and Families Agency (CFA, n.d.), this difficulty is challenges encountered in child-rearing due to various factors affecting children or parents, including aspects related to the parent-child relationship or the environment, such as the support system available. Data from the FY2017 national infant health checkup revealed that 13.0% of parents of 3 to 4-month-old infants, 23.9% of parents of 18-month-old children, and 33.8% of parents of 3-year-old children reported frequently or at least sometimes experiencing difficulties in raising their children (National Institute of Public Health, 2019).

The concept of “difficulty in raising children” is encapsulated within a framework comprising four factors: child, parent, parent-child relationships, and life environment (CFA, n.d.; Koyanagi et al., 2022). Child factors include developmental challenges, health issues, and temperament. Parental factors entail illnesses or disabilities, personality, attitudes, and the parents’ upbringing environments. Relationship factors focus on the bonding and attachment between parent and child, including personality compatibility. Life environment factors encompass the broader context, such as community and social support challenges, lack of familial support, economic hardships, and the dynamics within single-parent families.

The terminology surrounding child-rearing challenges has evolved, with terms like “child-rearing difficulty,” “child-rearing anxiety,” and “child-rearing stress” being used interchangeably (Tagawa et al., 2021). Kawai et al. (1996) identified a core feeling of difficulty in child-rearing through factor analysis. They extracted one factor consisting of four items, highlighting the nuanced nature of maternal child-rearing anxiety. This concept has influenced subsequent understandings of child-rearing anxiety, though definitions have varied and, at times, remained ambiguous (Ueno, 2010). Parenting stress, in particular, is often equated with parenting anxiety in Japan (Miyazaki et al., 2015). The role of social support in mitigating child-rearing anxiety and stress has been increasingly recognized, with sensitive engagement in childcare support facilitating early detection of disabilities and preventing child abuse (Kashiwa and Sato, 2017; Tagawa et al., 2021; Tamaru and Koeda, 2010). The national agency CFA (n.d.) specifies that “difficulty in raising children” encompasses a broad spectrum of challenges.

Developmental disabilities have been identified as a potential causal factor in child-rearing difficulties (CFA, n.d.). Research both within Japan and internationally has explored the relationship between developmental disabilities or concerns and child-rearing anxiety, stress, or difficulty. Previous studies have examined the four-factor framework of child-rearing difficulty as defined in the “Healthy Parents and Children 21 (Phase 2)” campaign, identifying specific factors associated with child-rearing challenges (Fuchigami, 2020; Maeda, 2021). Koyanagi et al. (2022) scored each factor from their supporters’ perspective. Sugiyama et al. (2023) showed percentages of parents who find those factors stressful or difficult in raising children of 0–6 years. From the previous research of Sugiyama et al. (2023) about simple proportions, this study extracts only the data for which all the answers against the specific factors to examine are available and reanalyzes pending issues,

which are differences in the difficulty of raising children depending on the presence or absence of disabilities and whether or not each factor with high or low proportion at first glance is actually affecting child-rearing difficulty at the core. Besides, Tagawa et al. (2021) analyzed child health data from local government records, identifying eleven objective factors directly related to child-rearing difficulties. Tamaru and Koeda (2010) noted that findings related to developmental disorders during health checkups do not always lead to timely developmental counselling due to the subjective nature of parental concerns and mental states. Therefore, this study aims to examine factors perceived by parents as contributing to child-rearing stress or problems and yet directly impacting the difficulty experienced in raising children and considers the relationship between subjective direct factors and developmental disabilities or concerns.

2. Method

2.1 Participants and Procedure

The study targeted parents of children aged 0 to 6 years. Data was collected via a Google Forms survey in August and September 2022. Recruitment occurred through two primary methods: (1) distribution of flyers with the survey URL at 48 public and public-private preschools and national kindergartens in Tokyo's Tama area, and (2) sharing the URL with parents connected to the authors via a social networking service (SNS). The survey received 753 responses (Sugiyama et al., 2023), with 409 (54.3%) via the first method and 344 (45.7%) via the second. After excluding duplicates, responses for children older than 7, and responses with missing data for analyzed variables, 616 participants were included in the analysis.

Participant demographics included children aged 0 ($n=56$), 1 ($n=175$), 2 ($n=115$), 3 ($n=79$), 4 ($n=79$), 5 ($n=82$), and 6 ($n=30$). Of these, 449 were firstborns, 115 were second-borns, 21 were third-born or later, and 31 were unspecified. The sample comprised 323 males and 285 females, with eight unreported. Sibling presence was noted as follows: no siblings ($n=353$), one sibling ($n=218$), and two or more siblings ($n=41$), with four unreported. Enrollment status included public or public-private preschools ($n=300$), national university kindergartens ($n=41$), and others/unknown ($n=275$). Thirteen reported developmental conditions were autism spectrum disorder ($n=7$), Down syndrome ($n=2$), ADHD ($n=1$), cerebral palsy ($n=1$), and other developmental disabilities ($n=2$). Stunting ($n=24$) was identified through child health checkups, with Japan reporting a 95% attendance rate for such checkups at critical developmental stages (OECD, 2019; Shioda et al., 2016). Among those with developmental concerns ($n=14$), three children received medical or public care.

Parent demographics indicated ages in the 20s ($n=61$), 30s ($n=415$), 40s ($n=139$), and 50s ($n=1$), with fathers comprising 29 and mothers 585 of the respondents. Family structures included 602 respondents with a spouse or partner, 13 without, and one unreported. The division of parenting roles varied, with primary responsibility reported by 248 respondents, somewhat more by 225, equal division by 109, somewhat less by 11, partner's primary role by 4, and 19 unreported.

2.2 Ethical Considerations

The study's objectives were communicated at the onset of the survey. Participation was voluntary, with assurances of no penalty for non-participation and protection of personal information through data anonymization. The institutional research ethics committee affiliated with the first author approved this study.

2.3 Survey Instrument

The questionnaire measured perceived child-rearing difficulty on a five-point Likert scale ranging from (1) not at all to (5) very much. To assess the four-factor framework of child-rearing difficulty, the survey included 18 items on child factors, 16 on parent and parent-child relationship factors (combined due to anticipated difficulty distinguishing between personal and relational factors), and 12 on environmental factors. Respondents rated their level of stress or problems related to these factors using a similar five-point scale. These questions were based on prior research (Fuchigami, 2020; Maeda, 2021) on child-rearing difficulty for asking supporters of 3-year-olds with developmental disabilities or concerns and modified for parents of 0-6-year-olds with and without disabilities, referencing Akiyama et al. (2017).

2.4 Analysis

2.4.1 General Analytical Approaches

The significance level for all statistical tests was set at $p < .05$. Statistical analyses were conducted using R software, version 4.3.2. The variance inflation factors (VIFs) for the regression models were all below 3, indicating no multicollinearity concerns.

2.4.2 Cross-Tabulation Analysis

Initial analyses included calculating probabilities, as depicted in Figure 1 and Table 1, and their 95% confidence intervals computed by assuming a normal distribution. A case where the probability is close to 0% employed the Wilson (1927) score interval to provide a more accurate estimate.

2.4.3 Multiple Regression Analysis

Multiple regression analysis was applied, with variables measured on five-point Likert scales as predictors and outcomes. Variables with responses from fewer than 200 participants were excluded to ensure robust analysis. Key assumptions were using the Shapiro-Wilk (normality of residuals), Breusch-Pagan (homoscedasticity), Durbin-Watson (independence of residuals), and RESET (linearity of the regression model) tests. Outliers were removed if the normality assumption was violated, and the model was accepted if it subsequently met the $p > .05$ significance threshold. Models failing any other assumption tests were not considered further.

2.4.4 Binomial Logistic Regression Analysis

Binomial logistic regression was conducted on three different models, assessing the predictive significance of independent variables on dichotomous outcomes using the Wald test. The models were assessed for goodness of fit with the Hosmer-Lemeshow test and accepted if they met the $p > .05$ significance threshold. On top of that, this analysis expects ten events per variable to avoid bias (Peduzzi et al., 1996). Therefore, the key model of this study adjusted the number of explanatory variables to satisfy this condition. For models including interaction terms, quantitative predictors were mean-centered to avoid multicollinearity.

3. Results

3.1 Relationship Between Developmental Concerns or Disabilities and Child-Rearing Difficulty

Analysis of parental experiences, as depicted in Figure 1, reveals that 29.6% of parents with typically developing children report difficulties raising them, with a 95% confidence interval (*CI*) ranging from .258 to .333 ($n = 565$). In stark contrast, a significantly higher proportion of parents, 64.7% (95% $CI = .516 - .778$, $n = 51$), whose children have developmental disorders, stunting, or their concerns (DDSC), experience child-rearing difficulties. Notably, the intensity of these difficulties

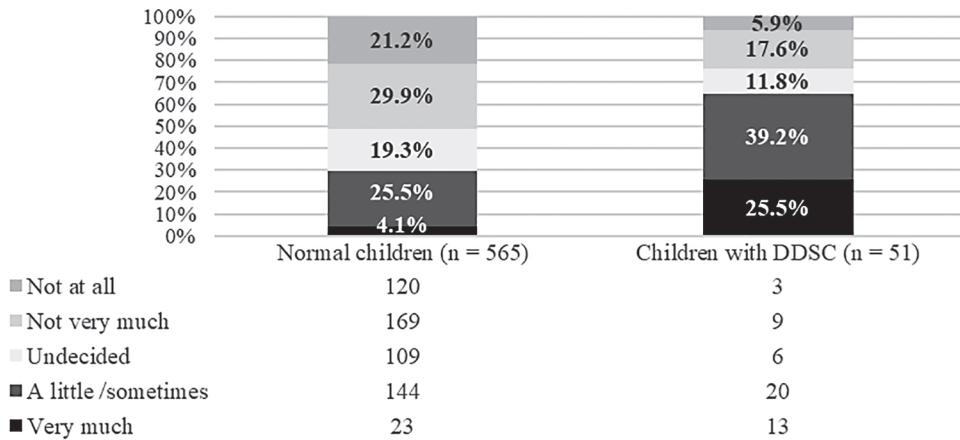


Figure 1 Relationship between child's development and degree feeling child-rearing difficulty

Table 1 Relation between certainty of developmental disabilities and child-rearing difficulty

	Children with DDSC			Normal children
	Disorders	Stunting	Concerns	
Parents having child-rearing difficulty (<i>n</i> = 200)	12 (6.0%)	12 (6.0%)	9 (4.5%)	167 (83.5%)
Parents without the confessed difficulty (<i>n</i> = 416)	1 (0.2%)	12 (2.9%)	5 (1.2%)	398 (95.7%)

significantly varied, with only 4.1% of parents of typically developing children reporting severe challenges, compared to 25.5% of parents of children with DDSC (95% *CI* for normal children = .024 – .057; 95% *CI* for DDSC = .135 – .375). Figure 1 illustrates the relationship between a child's developmental challenges and the degree of difficulty parents experience in child-rearing.

With the same sample, Table 1 elaborates on stages of disability assessment depending on the presence or absence of child-rearing difficulty. 6.0% (95% *CI* = .027 – .093, *n* = 200) of children whose parents confessed to child-rearing difficulties had developmental disorders, which is significantly higher than 0.2% (Wilson 95% *CI* = .000 – .013, *n* = 416) in the children without the confession. Besides, children without developmental concerns or disabilities were 83.5% (95% *CI* = .784 – .886, *n* = 200) in the former, which is significantly lower than 95.7% (95% *CI* = .937 – .976, *n* = 416) in the latter. The result reinforces the impact of developmental challenges on parenting experiences.

3.2 Direct Subjective Factors Contributing to Child-Rearing Difficulty

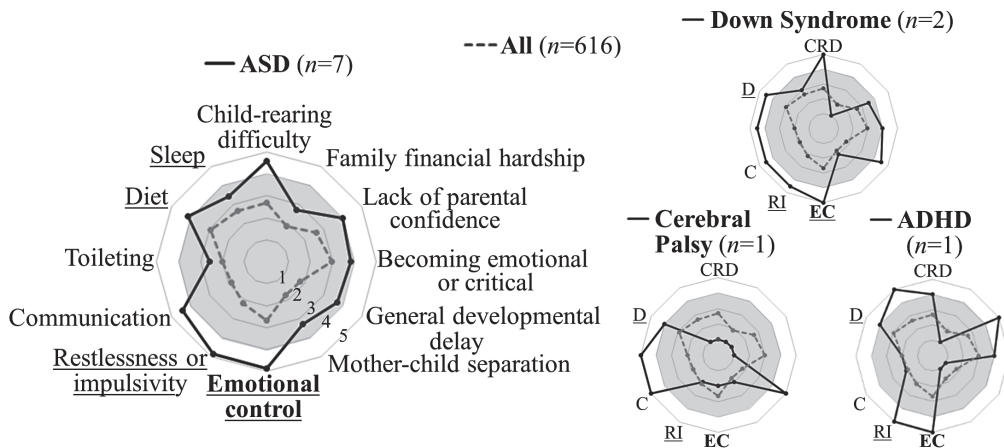
This study employed multiple regression analysis to examine the factors contributing to the difficulty of raising children, utilizing parents' reported stressors and problems as explanatory variables detailed in Table 2. The analysis was anchored on a five-point Likert scale for all variables for a detailed understanding of how different aspects of parenting and environmental conditions relate to perceived child-rearing challenges.

The four models are based on the framework of four factors feeling child-rearing difficulty as stated in Healthy Parents and Children 21 (Phase 2) : child, parent, child-parent relationship, and environment (CFA, n.d.). The Parent/Relation models combine two of the factors. The Total model includes all of the four. The rate is the percentage of parents with child-rearing difficulty a little, sometimes, or very much among all respondents. The child and total models removed outlier data in normality until the Shapiro-Wilk test resulted in over 5%. The gray highlights indicate significant

Table 2 Subjective factors directly/indirectly related to child-rearing difficulty

Four models & item's proportion	Child		Parent/Relation		Environment		Total		Rate
Sample size (<i>n</i>)	611		616		616		614		616
Statistical symbol	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	%
(Intercept/Constant)	.295**	.110	.983**	.165	1.476**	.152	.181	.158	—
Sleep	.110**	.027					.105**	.028	35.1%
Diet	.140**	.027					.124**	.028	44.6%
Toileting	.054 [†]	.031					.063*	.032	17.4%
Health	.005	.034					-.023	.035	12.8%
Hygiene or personal independence	.026	.033					.012	.034	26.9%
Motor development	-.005	.042					.001	.044	7.3%
Language development	-.045	.037					-.045	.038	14.3%
Communication	.081*	.040					.065	.041	15.9%
Obsessiveness or interest bias	.061	.039					.055	.040	14.9%
Intensity of anxiety	-.037	.035					-.052	.036	16.6%
Restlessness and impulsivity	.155**	.031					.127**	.032	22.4%
Emotional control	.275**	.032					.230**	.035	35.4%
Mother-child separation	.091*	.038					.093*	.039	10.1%
General developmental delay	.095*	.039					.097*	.040	12.8%
High anxiety or worry			.081 [†]	.044			.040	.037	39.3%
Becoming emotional or critical			.239**	.038			.093**	.033	44.2%
Desire to do anything for the kid			.013	.046			-.027	.038	16.9%
Strong expectations of the child			.060	.042			.016	.035	24.0%
Inability to love			-.024	.058			-.048	.047	6.2%
Lack of parental confidence			.200**	.041			.071*	.035	33.0%
Sacrifice of careers and privates			.087*	.037			.046	.032	24.0%
Strong sense of parental role			-.005	.039			-.008	.032	29.9%
Keeping her worries to herself			.074 [†]	.040			.032	.036	19.5%
Susceptible to information			-.055	.038			-.055 [†]	.032	24.8%
Disposition to addiction			-.058	.051			-.039	.043	5.8%
Domestic violence			-.003	.069			-.031	.060	3.1%
Own abuse experience			-.026	.048			.004	.042	8.8%
Young or unwanted pregnancy			.018	.121			.045	.102	1.0%
Inability to enroll in preschool					.41	.036	.001	.028	19.8%
Maladjustment to the preschool					.126*	.059	.026	.044	4.7%
No relatives or friends to consult					.096*	.039	.010	.032	23.1%
Family financial hardship					-.051	.044	-.072*	.033	13.5%
Parent's discord with a grandparent					.029	.043	-.011	.033	14.6%
Move					.027	.054	-.059	.041	7.6%
Many children					.108*	.051	-.009	.040	7.8%
Caring for grandparents					.013	.070	.056	.052	3.4%
Busyness of both parents					.161**	.038	.035	.030	37.5%
Marital discord					.071 [†]	.038	.015	.030	23.7%
Adjusted <i>R</i> ²	.534**		.282**		.120**		.534**		—
Statistics Notes	—		Non-normality		Non-normality		—		—

Note. The gray highlights are valid and significant β s or top 10 rates in the explanatory variables. ** $p < .01$, * $p < .05$, [†] $p < .10$



Note. CRD stands for "Child-rearing difficulty." The other abbreviations mean Diet (D), Communication (C), Emotional control (EC), and Restlessness or impulsivity (RI). The underlined items have the effect sizes of $b > .100$, and the underlined bold is $b > .200$ (See Table 2). The scale indicates from the inside, "1. Not at all," "2. Not very much," "3. Undecided," "4. A little or sometimes," and "5. Very much." The translucent gray areas are four or fewer on this 5-point scale, and this outer frame and beyond show items with evident difficulty: four to five points.

Figure 2 Five-point rating of eleven direct factors and difficulty in raising children

explanatory variables in the adopted regression models or the top 10 items in the simple proportion.

In the child model (adj. $R^2 = .534$, $p = .000$, $n = 611$), eight items significantly explained the difficulty: sleep ($b = .110$, $p = .000$), diet ($b = .140$, $p = .000$), communication ($b = .081$, $p = .043$), restlessness and impulsivity ($b = .155$, $p = .000$), emotional control ($b = .275$, $p = .000$), mother-child separation ($b = .091$, $p = .016$), general developmental delay ($b = .095$, $p = .014$), and intercept ($b = .295$, $p = .008$). Models of the parent or relationship (adj. $R^2 = .282$) and environment (adj. $R^2 = .120$) excluded outliers but did not satisfy the normality requirement.

In the total model (adj. $R^2 = .534$, $p = .000$, $n = 614$), the seven child factors, the two parent or relationship factors, and the one environmental factor significantly explained the difficulty. Its child factors were sleep ($b = .105$, $p = .000$), diet ($b = .124$, $p = .000$), toileting ($b = .063$, $p = .047$), restlessness and impulsivity ($b = .127$, $p = .000$), emotional control ($b = .230$, $p = .000$), mother-child separation ($b = .093$, $p = .017$), general developmental delay ($b = .097$, $p = .017$). The parent or relationship factors were becoming emotional or critical ($b = .093$, $p = .005$) and lack of parental confidence ($b = .071$, $p = .042$). The environmental factor was family financial hardship ($b = -.072$, $p = .029$). Unlike the child model, the intercept was insignificant ($b = .181$, $p = .251$). It supports that comprehensive factors causing child-rearing difficulty include not only the child but also the parent, the relationship, and the environment (CFA, n.d.).

The significant 11 variables of child or total factor models were regarded as direct child-rearing difficulty factors. The gray highlights of the rate column show the top 10 factors parents find at least a little or more stressful or problematic in childcare. Five items overlapped with the eleven direct subjective factors. Although parent or parent-child relationship (P/R) factors comprised half the top worries, the child's (C) factors were more directly related to child-rearing difficulty. On the simple proportions, parents evaluated the diet (44.6%: 95% $CI = .407 - .486$, $b = .124$: 95% $CI = .070 - .178$) and becoming emotional or critical (44.2%: 95% $CI = .402 - .481$, $b = .093$: 95% $CI = .028 - .159$) as the most common factors of stress or difficulty. However, emotional control, which had a lower percentage

than those two items, explained child-rearing difficulty more strikingly (35.4%: 95% $CI = .316 - .392$, $b = .230$: 95% $CI = .162 - .298$). The mother-child separation (10.1%: 95% $CI = .077 - .124$, $b = .093$: 95% $CI = .017 - .169$) and general developmental delay (12.8%: 95% $CI = .102 - .155$, $b = .097$: 95% $CI = .018 - .176$) significantly explained child-rearing difficulty but not many parents mentioned their problems. The greater family financial hardship related significantly to lower difficulty in raising children (13.5%: 95% $CI = .108 - .162$, $b = -.072$: 95% $CI = [-.138, -.007]$).

Figure 2 shows the five-case method scores for the eleven respondents whose diagnosed names of disabilities are reported. ADHD and Cerebral palsy are raw data. The others are each mean. Parents of children with ASD, ADHD, and Down syndrome felt child-rearing difficulty, but a parent of a child with cerebral palsy did not. Regarding direct factors, parents felt stress or difficulty in five items for the ASD children ($n=7$), six for the ADHD child ($n=1$), seven for the Down syndrome children ($n=2$), and four for the cerebral palsy child ($n=1$) against 2.84 items in an overall average ($SD = 2.39$, $n=616$). Diet (D) was difficult or stressful for all four disabilities. Emotional control (EC), restlessness or impulsivity (RI), and communication (C) were so for three of the disabilities.

3.3 Relationship Between Direct Subjective Factors and Developmental Disorders, Stunting, or Concerns

The analysis exploring the relationship between direct subjective factors and developmental disorders, stunting, or concerns via binomial logistic regression provided an insight. This examination was structured around three distinct parental perspectives: those experiencing child-rearing difficulties, those without acknowledged problems, and a comprehensive view encompassing all participating parents.

For parents identifying child-rearing challenges (Nagelkerke $R^2 = .41$, $n=200$; DDSC $n=33$), significant predictors of DDSC included communication ($OR = 2.33$, $p = .006$), restlessness and impulsivity ($OR = 1.88$, $p = .037$), and general developmental delay ($OR = 1.84$, $p = .027$). Conversely, among parents not reporting significant child-rearing difficulties (Nagelkerke $R^2 = .20$, $n=416$; DDSC $n=18$), the predictive strength was primarily observed in communication abilities of the child ($OR = 2.16$, $p = .002$), with restlessness and impulsivity not presenting a significant correlation ($OR = .98$). This indicates that while communication issues are a consistent concern across groups, the relationship between DDSC and restlessness/impulsivity varies based on the presence of child-rearing difficulty.

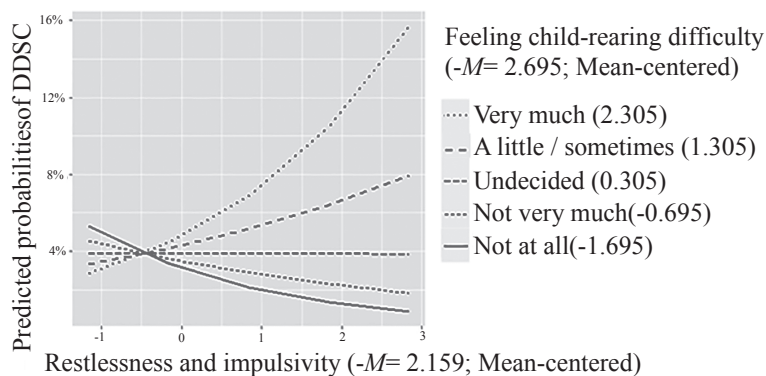


Figure 3 Simple slopes of the interaction

The aggregated analysis of all parents (Nagelkerke $R^2 = .31$, $n = 616$; DDSC $n = 51$) confirmed the significant interaction. This analysis employed the following five factors to prevent bias due to insufficient events per explanatory variable (Peduzzi et al., 1996). The factors were child-rearing difficulty (adj. $OR = 1.12$, 95% $CI = 0.77-1.62$, $p = .569$), its interaction with restlessness and impulsivity (adj. $OR = 1.26$, 95% $CI = 1.01-1.57$, $p = .038$), and the previous significant variables: communication (adj. $OR = 1.82$, 95% $CI = 1.39-2.40$, $p < .001$), restlessness and impulsivity (adj. $OR = 0.93$, 95% $CI = 0.65-1.33$, $p = .686$), general developmental delay (adj. $OR = 1.48$, 95% $CI = 1.14-1.92$, $p = .003$). Figure 3 visualizes the interactions between restlessness/impulsivity and child-rearing difficulty in predicting DDSC.

4. Discussion

4.1 Relationship between Developmental Concerns or Disabilities and Child-Rearing Difficulty

This study revealed that over half of the parents of children aged 0–6 years with developmental disorders, stunting, or concerns experience significant difficulty in raising their children. Severe difficulties were seen more with them than with parents of normal children. On the flip side, having a child with developmental issues does not universally lead to severe child-rearing challenges. Additionally, approximately 30% of parents of children without identified developmental concerns also reported difficulties, underscoring the universality of child-rearing challenges across different parental experiences.

A significant association was identified between the presence of developmental disabilities and child-rearing difficulty. However, this association does not clarify whether children of parents reporting higher levels of difficulty are more likely to have a disability or if such difficulties merely increase the likelihood of detecting an existing disability. Childcare support professionals, while focused on identifying and assisting children with disabilities, should also be attuned to the struggles of all parents, irrespective of their children's developmental status. This broader focus on parental difficulties, as explored in this study by examining subjective factors impacting child-rearing directly, is crucial for comprehensive support systems.

4.2 Direct Subjective Factors Contributing to Child-Rearing Difficulties

This study reanalyzed simple proportions of Sugiyama et al. (2023), performing multiple regression analysis with child-rearing difficulty as the objective variable. The simple proportions of child factors indicated greater stress on things closely related to daily life, such as eating, sleeping, and personal care. However, the greatest impact on child-rearing difficulty was on the neurodevelopmental disorder-like character of poor emotional control and restlessness or impulsivity. The latter result supports previous studies from the supporters' point of view (Fuchigami, 2020; Koyanagi et al., 2022; Maeda, 2021). Removing the parents' subjective bias might cause the difference. On the other hand, the problem of mother-child separation was not often pointed out by parents as well as supporters but directly related to difficulty in raising the children (Fuchigami, 2020; Koyanagi et al., 2022; Maeda, 2021; Sugiyama et al., 2023).

Previous research by Tagawa et al. (2021) highlighted objective factors influencing child-rearing difficulties, utilizing data collected by local governments. In contrast, our investigation centers on the subjective experiences of parents, revealing 11 primary stressors and challenges directly linked to child-rearing difficulties. Despite parents identifying similar number of challenges within parental or parent-child relational factors, the child factors predominantly contributed

Table 3 Translation of question items for the eleven direct factors

Factors	Question items	(<i>b</i>)
Child	Sleep (e.g., difficulty falling asleep, waking up during the night)	+
	Diet (e.g., significant picky eating, unbalanced appetite)	+
	Toileting (e.g., difficulty removing diapers, toileting independence is hard to achieve)	+
	Communication (e.g., no interest in adults/friends, talking one-sidedly and not stopping)	+
	Restlessness or impulsiveness (e.g., going away alone when you take your eyes off, not being able to wait quietly)	+
	Emotional control (e.g., no sooner don't things go their way than angering, crying violently)	+
	Mother-child separation (e.g., crying a lot when a parent tries to leave the child)	+
	General developmental delay	+
Parent/	I tend to be emotional about and critical of my children.	+
Relationship	I have no confidence in parenting appropriately and no idea what to do with my child.	+
Environment	Family financial hardship	–

Note. Column (*b*) refers to the sign of the partial regression coefficient.

to the perceived child-rearing difficulty. The findings underscore the importance of childcare support workers being vigilant for signs of parenting challenges, facilitating the timely detection of developmental issues (CFA, n.d.; Tamaru and Koeda, 2010). In doing so, support systems can be more effectively tailored to meet the nuanced needs of families, enhancing child welfare and parental well-being.

An intriguing finding in this model was the association between perceived financial hardship and child-rearing difficulty. Higher subjective financial hardship was linked to lower reported difficulty in raising children, a counterintuitive result that reflects the complex relationship described by Fang et al. (2022). They noted an inconsistent relationship between lower income and parenting stress, suggesting the influence of environmental factors and coping resources. The integrity of the data and the model's validity in this study were thoroughly assessed through checks for multicollinearity, normality, homoscedasticity, independence, and linearity, all of which supported the robustness of the findings. Therefore, the significant negative impact of family financial hardship on child-rearing difficulty might indicate the presence of an extraneous variable not captured in the analysis or reflect nuances in the data collection phase. For example, at least nearly half of the children in this study were in public or prefectural licensed preschools where their daycare fees varied depending on household income. Such preferential social services may reduce child-rearing difficulty, assuming that other explanatory variables remain constant.

4.3 Relationship between Direct Subjective Factors and Developmental Concerns or Disabilities

Among parents experiencing difficulties in child-rearing, the analysis highlighted higher restlessness or impulsivity in children increases the likelihood of identifying developmental disorders, stunting, or concerns. This tendency was not observed among parents who did not report child-rearing difficulty, suggesting that the context of child-rearing challenges significantly influences the perception and identification of potential developmental issues. This finding underscores the importance of considering the nuances of parental experience in assessing child behavior, indicating that difficulties in child-rearing may either amplify the identification of developmental concerns or

reflect the inherent challenges in distinguishing between typical child temperament and symptoms of a disability.

In the case of cerebral palsy, unlike ASD, ADHD, or Down Syndrome, he was the only developmentally disabled child without child-rearing difficulty. The causation could be because he did not have many of the direct factors, including the neurodevelopmental disorder-like character of emotional control difficulty and restlessness or impulsivity with the highest impacts on child-rearing difficulty. According to DSM-5 of the American Psychiatric Association (APA, 2013), ADHD is not only characterized by restlessness and impulsivity but also by “emotional dysregulation.” Children with ASD widely have “hyperactivity” like ADHD, and their hyper-reactivity to sensory input or difficulty against environmental changes can cause excessive emotional responses (APA, 2013). Down syndrome is a genetic disorder, not a neurodevelopmental disorder, but brings, in most cases, various levels of intellectual disability categorized as the latter disorder. The intellectual disability can co-occur with emotional or behavioral disorders or “mood dysregulation” (APA, 2013). DSM-5 indicates that there are cases causing aggressive behavior in ADHD, ASD, and intellectual disorders. Children with Down Syndrome were often stereotyped as being highly sociable, but recent studies have reported that they show more emotional or behavioral problems than their typically developing peers (Helma et al., 2011; Næss et al., 2017). Cerebral palsy is a physical disability with impaired motor function as a symptom and brings intellectual disability at a high rate, but lower than in Down syndrome: both Down syndrome and cerebral palsy children can co-occur with ASD or ADHD at some rates (Ekstein et al., 2011; Oxelgren et al., 2017; Pålman et al., 2021). Our eleven cases are thought to represent the above characteristics of each disorder to some extent because the diagnostic names are clear. And then, the parent of the child with cerebral palsy did not report co-occurrences of intellectual developmental disorder, ASD, or ADHD and such neurodevelopmental disorder-like characteristics. Because communication difficulty explains our DDSC cases well, it might be regarded as a neurodevelopmental-like character. However, its impact on child-rearing difficulty is the smallest among the eleven direct factors. In addition, social communication problems of ASD and physical or perceptual communication problems, which are the symptoms of children with cerebral palsy, can have different effects on child-rearing difficulty.

4.4 From the Individual Model to the Social Model

This study’s identification of 11 direct subjective factors contributing to child-rearing difficulty revealed a predominance of non-environmental factors, with only one factor explicitly related to environmental conditions. However, embracing the perspective of the social model — contrary to the individual model, which locates the issue within the individual due to functional limitations — allows for reevaluating these factors as environmental. The social model, emerging from the disability rights movement in the 1970s, challenges societal structures that fail to accommodate individuals with disabilities, positing that the real issue lies in society’s inability to meet diverse needs (Shakespeare, 2013; Oliver, 1996).

Adopting this model suggests that problems traditionally viewed as individual or relational, such as challenges with children’s sleep or parental confidence, may reflect broader societal failures, such as inadequate family support or insufficient parenting counseling. This shift in perspective emphasizes the societal obligation to provide robust support to families facing child-rearing difficulties, advocating for a more inclusive approach that addresses both direct challenges and the underlying societal conditions contributing to these difficulties.

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[Paper]

Self-Esteem and Other-awareness Perceptions in Adolescents and Adults with Mild Intellectual Disability in Japan.

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Abstract

In this study, we examined how individuals with intellectual disabilities perceive others, using specific measures. We developed scales to assess self-esteem and other-awareness in individuals with intellectual disabilities and examined their usefulness. We also assessed differences in scores on the self-esteem and other-awareness scales among individuals with intellectual disabilities in three age groups: adolescents (aged 15–24), adults (aged 25–39), and middle-aged (aged 40–59). The results showed no differences in self-esteem or other-awareness across developmental stages. Although the questionnaires had some limitations, an interview survey in which each question was read aloud was considered helpful. Using effective tools, it was possible to rate self-esteem and other-awareness on a scale of 4. Unlike a previous study with typically developing participants, individuals with intellectual disabilities did not show differences in self-esteem across age groups. This suggests that individuals with intellectual disabilities may experience fewer fluctuations in self-esteem during adolescence and may lack experience to cope with them. As it is challenging for children to gain a deeper understanding of themselves once they enter society, it is desirable for them to learn more about self-esteem and other-awareness within the context of career education in special support education. Further research is required to explore the relationship between self-concept and significant others in individuals with intellectual disabilities.

Keywords: Intellectual Disabilities, Self-Esteem, Other-Awareness, Adolescents, Adults

1. Introduction

Children describe themselves in relation to different things as they grow and develop cognitively and socially, from infancy to childhood (Damon & Hart, 1988; Montemayor & Eisen, 1977). Tomasello (1993) pointed out that when children engage in joint attention behavior, it indicates that they recognize and include themselves as individuals with similar intentions. In other words, once children gain awareness of other people, they view themselves as separate entities but similar to others (Kajita and Mizokami, 2012).

Mead (1934) referred to the subjective aspect of internal communication as “me,” and the part of the self that becomes apparent only after taking action as “I.” The function of “me” involves forming a sense of self and pertains to the organization of the community. In other words, others’ reactions to our actions shape our understanding of them. The accumulation of these experiences plays a crucial role in the development of an individual’s self-concept (Kanagawa, 2001). Both the individual’s perspective and the perspectives of others are important in self-concept formation (Bracken, 1996).

Psychologists have defined self-esteem in various ways. According to Rosenberg (1965), it refers to a positive or negative attitude toward oneself, whereas Zeigler-Hill (2013) defined it as the extent to which individuals view themselves favorably or perceive their capabilities. Leary and Downs (1995) introduced the sociometer theory, which suggests that self-esteem is affected by the acceptance of interpersonal relationships. This theory emphasizes the link between the self and others. In Japan, people tend to have low self-esteem in childhood and adolescence (Oshio et al. 2014). Japanese youths also exhibit lower self-satisfaction than their counterparts in countries such as Korea and the United States (Cabinet Office, 2019). This finding is supported by a study by Schmitt and Allik (2005), who used Rosenberg's Self-Esteem Scale to compare self-esteem scores across 53 countries; Japan ranked the lowest. Several researchers, including Chiu (1990), Lemétayer and Kraemer (2005), and Carroll et al. (1984), have investigated the impact of self-esteem on adolescents with intellectual disabilities and low learning abilities; however, their findings were inconclusive. Notably, research on self-esteem among individuals with mild intellectual disabilities in Japan is lacking, particularly in relation to emotional development.

Tsuji (1993) reported that individuals who paid attention to and showed concern for their own well-being were more likely to do the same for others. Tsuji (1993) observed that attention to the inner self encompassed subjective viewpoints and cognitive attitudes shared by the self and others, while attention to the outer self involved objective cognitive attitudes that were common to the self and others. Thus, individuals who have a strong "concern for the inner life of others" are more likely to intuitively recognize others' emotions through situational cues, whereas those with a strong "concern for the outer life" are more likely to recognize emotions through facial expressions. Additionally, individuals with a strong "imaginative concern" are more prone to using situational cues to fantasize and identify with fantasies. Toyota et al. (2008) using Tsuji's (1993) scale to measure other-awareness explored the relationship between external, internal, and imaginative awareness of others and emotional intelligence among university students. They found that internal awareness of others was strongly associated with emotional awareness and understanding. This implies that awareness of others may also shape an individual's self-concept. Several studies (Kojima & Notomi, 2013; Kooper et al., 2020) have highlighted how others significantly influence an individual's self-esteem. However, these studies focused solely on the direct influence of others' evaluations on self-esteem without considering the internalized perceptions of others' evaluations. In this study, we used specific measures to examine how individuals with intellectual disabilities perceive others.

Adolescence is a time of instability during which individuals form self-concepts, including their identity (Hall, 1904). However, as adulthood progresses, self-esteem tends to stabilize. People may experience fluctuations in self-esteem during adolescence because of certain events, but they mature and stabilize as they face these challenges (Harada, 2008). However, individuals with intellectual disabilities may face unique life events compared with neurotypical individuals, which could affect their self-esteem. Few studies have examined the self-esteem of individuals with intellectual disabilities during adolescence or adulthood. Furthermore, quality of life (QOL) and well-being are thought to be crucial for social interactions, and well-being and self-esteem are strongly correlated (Rosenberg et al., 1995). Research has shown that individuals with intellectual disabilities benefit from a perception regarding their QOL that is consistent with others in their environment (Jacinto et al., 2023). In Japan, Ito and Kodama (2005) revealed that self-esteem affected college students' subjective well-being. Kojima (2018) found that raising self-esteem in adolescent with autism spectrum conditions improved their well-being. Thus, self-esteem may be related to well-being and QOL in adolescents and adults with intellectual disabilities.

However, no study has examined self-esteem during both life-stages in Japan. Therefore, this study developed and administered self-esteem and other-awareness scales for individuals with intellectual disabilities aged between 15 and 60.

2. Method

2.1 Participants

Seventy-nine individuals (32 men and 47 women) with mild intellectual disabilities were included in this study across three groups, adolescents ($n=31$; 15–24 years), early adults ($n=25$; 25–39 years), and middle-aged group ($n=23$; 40–60 years). The mean age of the participants was 31.2 years ($SD=12.8$ years; range: 15–60). Participants' IQ scores were provided by the school or facility in advance. Table 1 shows each group's average age and IQ scores.

2.2 Procedure

Individuals with mild intellectual disabilities were shown text and were read the study so that they could understand them. They were informed of the purpose and content of the study and were explained that they could stop responding to the interviews at any time. This study was approved by the Research Ethics Committee of the Institution to which the first author previous belongs. The interviews were administered in a quiet and secluded room. The interviews were unstructured. Furthermore, participants were assured that their confidentiality would be protected and their data would only be used for anonymous statistical analysis.

2.3 Measures

2.3.1 Self-esteem scale

Kojima and Notomi (2013) introduced a nine-item self-esteem scale, originally developed by Rosenberg (1965) and later translated into Japanese by Yamamoto, Matsui, and Yamanari (1982).

Table 1 1 Average age and IQ for each age group

	Age		IQ	
	Average	SD	Average	SD
Adolescent	17.3	1.5	58.9	7.9
Adult	31.6	5.0	47.9	10.9
Middle-aged	47.6	4.5	47.5	8.8

Table 2 Self-esteem questionnaire

- | | |
|----|---|
| 1. | I love myself. |
| 2. | I have many good qualities. |
| 3. | I am an important person. |
| 4. | I can do as many things as other people |
| 5. | I have many things to be proud of. |
| 6. | I can't do anything right. * |
| 7. | I think I am fine the way I am. |
| 8. | I think I am a bad person. * |
| 9. | I think I am a useful person. |

Table 3 Other-awareness scale for individuals with mild intellectual disability

1.	I try to pay attention to the actions and faces of others.
2.	I am always trying to read people's thoughts.
3.	I am always on the lookout for what people say and how they move.
4.	I find it easy to sense small changes in people's moods.
5.	I am careful to understand people's feelings.
6.	It is easy to look at a person's appearance.
7.	I am concerned about other people's clothes, makeup, and so on.
8.	I am interested in people's physical appearance and so on.
9.	I think a lot about people.
10.	I remember a lot of things about people.
11.	I often think about people this way and that.

Some negative expressions were modified into positive ones to make the questions easier for 4th to 6th graders (Kojima & Notomi, 2013). The items were read out for ease of understanding.

The scale consisted of a four-point rating scale accompanied by a "circle-and-x's" picture. For instance, a large circle represented "agree very much," while a small circle indicated "agree a little." Similarly, a small x indicated "disagree a little," and a large X denoted "disagree very much." Table 2 presents the self-esteem questionnaire, with items 6 and 8 as reversed items.

2.3.2 Other-awareness scale

Based on Tsuji (1993), this scale was modified for individuals with mild intellectual disabilities from a scale originally developed for university students. It comprises of 11 items, with a four-point response scale: "completely agree," "agree," "disagree," and "completely disagree." The items were read out for ease of understanding. The measure of other-awareness developed for people with mild intellectual disabilities is presented in Table 3.

3. Results

For the self-esteem scale, sixty-seven participants (mean chronological age [CA] = 30.0 years, SD = 12.5) were included in the analysis, excluding 12 participants who provided ambiguous answers. Cronbach's α coefficient was calculated to examine the internal consistency of items comprising the self-esteem scale; the overall questionnaire showed high internal consistency ($\alpha = .79$). To test for differences in the mean self-esteem scores of the three groups of people with mild intellectual disabilities (adolescent: $n = 25$; adult: $n = 25$; middle-aged: $n = 17$), a one-way analysis of variance (ANOVA) without correspondence was conducted with developmental stage as the independent variable and self-esteem scores as the dependent variable (Table 4). The results showed no statistically significant main effects.

Table 4 One-way ANOVA for self-esteem

	Sum of Squares	df	Mean Square	F
Self-esteem	0.81	2	0.41	1.45
Residuals	17.87	64	0.28	
Total	18.68	66		

For the other-awareness scale, sixty-one participants (mean CA = 29.5 years, SD = 12.8) were included in the analysis, excluding 18 who provided ambiguous answers (mean CA = 29.5 years, SD = 12.8). Cronbach's α coefficient was calculated to examine the internal consistency of the items comprising each other-awareness subscale; the overall scale had high internal consistency ($= .77$). The mean scores of the items corresponding to the three subscales of the other-awareness scale ($M = 2.99$, $SD = 0.59$) were: internal otherness subscale ($M = 2.84$, $SD = 0.81$), external otherness subscale ($M = 2.84$, $SD = 0.81$), and imaginary otherness subscale ($M = 2.97$, $SD = 0.80$). The alpha coefficients of the subscales were: $\alpha = .60$ for "internal otherness," $\alpha = .74$ for "external otherness," and $\alpha = .70$ for "imaginary otherness." The correlations among the other-awareness subscales are shown in Table 5; the three subscales showed significant positive correlations. To test for mean differences in the other-awareness scores among the three groups with mild intellectual disabilities, we conducted a one-way ANOVA with no correspondence, and with developmental stage as the independent variable and other-awareness scores as the dependent variable (Table 6). The results showed no statistically significant main effects.

4. Discussion

In this study, we developed scales to assess self-esteem and other-awareness in individuals with intellectual disabilities and examined their usefulness. We also assessed differences in scores on the self-esteem and other-awareness scales among individuals with intellectual disabilities in three age groups: adolescents (aged 15–24), adults (aged 25–39), and middle-aged (aged 40–59). The results showed no differences in self-esteem or other-awareness across developmental stages. Although the questionnaires had some limitations, an interview survey in which each question was read aloud was considered helpful. Using effective tools, it was possible to rate self-esteem and other-awareness on a four-point scale. Oshio et al. (1996) used a pictorial presentation to facilitate understanding while examining self-competence evaluation and social acceptance in children with intellectual disabilities and demonstrated the reliability of the scale.

Table 5 Correlations between other-awareness subscales

	Internal Otherness	External Otherness	Imaginary Otherness
Internal Otherness	—	0.36*	0.45*
External Otherness		—	0.31*
Imaginary Otherness			—

* $p < .01$

Table 6 One-way ANOVA for other-awareness

	Sum of Squares	df	Mean Square	F
Awareness of others	1.24	2	0.62	2.19
Residuals	16.38	58	0.28	
Total	17.62	60		

Unlike a previous study with neurotypical participants (Oshio et al., 2014), individuals with intellectual disabilities did not show differences in self-esteem across age groups. This suggests that individuals with intellectual disabilities may experience fewer fluctuations in self-esteem during adolescence and may lack the experience to cope with them. The Ministry of Education, Culture, Sports, Science and Technology–Japan (2017) has been developing a seamless support system to ensure that people with disabilities have access to various educational and cultural opportunities throughout their lives after completing school. However, they may not have the opportunity to reflect deeply on and reidentify themselves. As it is challenging for children to gain a deeper understanding of themselves once they enter society, it is desirable for them to learn more about self- and other-awareness within the context of career education in special support education.

The fact that there was no difference in other-awareness scores across age groups suggests that the other-awareness scale can be widely used for adolescents and adults. Students' other-awareness may increase as they interact with people in society; however, those with intellectual disabilities have fewer opportunities to interact with diverse individuals during school and often limit close relationships to their parents and teachers (Lee et al., 2019). Educating students about diverse others is likely to lead to a search for future role models.

5. Conclusion

The self-esteem and other-awareness scales developed in this study were found to be beneficial for individuals with mild intellectual disabilities, regardless of age. This study also assessed the scales' usefulness and reliability. In future studies, it is important to consider these findings and prepare additional questions in advance. Further research is required to explore the relationship between self-concept and significant others in individuals with intellectual disabilities.

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[Paper]

Engaging Fathers To Increase Their Involvement In Psychomotor Therapy And Early Intervention-Based Parent Support Program For Young Children With Developmental Disability

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Abstract

This practical research study aims to improve the effect of psychomotor therapy and early intervention-based parent support program and increase the parents' involvement during weekly sessions, especially on how to increase fathers' participation in the development and support of their child with developmental disabilities.

During the 48 months of a psychomotor therapy and early intervention-based parent support program, parents or guardians were asked to participate actively in the sessions. This developmental approach utilizes a modified psychomotor therapy that needs the participants' physical strength, stamina, agility, speed, and peer work.

Parents were asked to record their home activities (engaging parent, activity type, and engagement frequency) with their child daily in a weekly chart at home. Additional data were obtained from qualitative analysis of semi-structured interviews, modified onsite slow-motion video recordings (Video Interaction Guidance), and field notes of participant observations.

Results showed that fathers were well acquainted with the general concept of child development. However, how they engage their child with developmental disabilities leaves space for early intervention programs and continuous parent education.

Further research is needed to address the father's involvement in child-rearing in the Japanese cultural setting and the future direction of early intervention practice. This practical study provides actionable insights for family and parent support programs on working with parents, especially fathers, involving them with their child's developmental progress.

Keywords: Developmental disability, Psychomotor therapy, Early intervention-based parent support program, father participation and involvement, Video Interaction Guidance

1. Introduction

“Loving my son, building my son, touching my son, playing with my son, being with my son... these are not tasks that only super dads can perform. These are tasks that every dad should perform. Always. Without fail.” (Pearce, 2011)

Families are dynamic systems that change roles and structures throughout their life course, influenced by broader political, cultural, social, and economic contexts. Over the past 15 years, there has been increased interest in involving fathers in early childhood care and development, particularly in supporting the relationship between fathers and their young children with developmental delays or disabilities, where mothers typically handle most tasks during the early years (Wolpert, 2002; Bagner, 2013). Early childhood, from prenatal development to eight years of age, is a crucial phase

of growth and development, as experiences during this period can influence outcomes across an individual's life (WHO, 2007). Children with developmental delays require access to early interventions to help them reach their full potential (UNESCO, 2009).

While the developmental effects of mothers' involvement with their young children during the early years are well established, recent research indicates that a responsive, adequate, and sensitive father-child relationship also contributes to more optimal early development (Magill-Evans & Harrison, 2001; Shannon et al., 2002). However, there are limited studies on the effectiveness of interventions involving fathers, particularly in community-based early intervention programs for children with developmental delays or disabilities.

Although many principles promoting mothers' involvement can be applied to fathers, they must be tailored differently, especially in the early years. Frieman and Berkeley (2002) suggest that early intervention practitioners are often predominantly female, making it challenging for fathers to relate to and see male role models on staff.

Increasing father involvement is a feasible goal in early childhood settings. A practical approach called "hooking" by Levine (1993) engages fathers in activities that match their interests (e.g., physical activities requiring strength, speed, agility, and stamina). Proper timing of these events or workshops significantly boosts fathers' participation in early intervention-based parent support programs (Turbiville et al., 2000; Frieman & Berkeley, 2002). Cooperation between parents is crucial; therefore, programs should aim to engage both parents simultaneously, as their interactions can significantly influence each other (Johnston & Mash, 1989).

Early intervention programs for parents, especially fathers of children with various disabilities, including chromosomal abnormalities and developmental disorders, are essential for addressing developmental delays and enhancing overall child growth. These programs are typically multifaceted, including physical, speech, and occupational therapy elements, which are vital given these children's common developmental challenges.

2. Psychomotor-based early intervention and parent support program of the CDSC

Psychomotor therapy is a method that is based on a holistic view of a person (somatic psychology) originating from the wholeness of body, mind, brain, and behavior (Figure 1). Assessments (observation and other continuous evaluations) are essential to achieve developmental and therapeutical goals (Hartley, 2004; Probst, 2017). Psychomotor therapy in early intervention focuses on basic motor skills like sitting, crawling, and walking, which are often delayed since these children may have problems with muscle tone and motor coordination. Thus, psychomotor therapy helps them develop necessary muscle strength and motor skills early, vital for overall mobility and independence. Supporting speech and language development is also essential to start early to cultivate communication skills, even before verbal communication begins. This includes fostering pre-language skills such as imitating sounds and understanding basic commands, foundational for later speech and language development.

In general, there have been three types of interventions or supports for families that have been subject to research evaluation: (1) training for parents designed to improve their parenting skills, (2) psychological interventions for parents designed to reduce distress, and (3) supports designed to help the family as a whole or focused on family members other than parents (IASSIDD Families SIRG, 2013). The present study partially involved all three types, mainly with the first. In April 2013, a Childcare & Development Support Centre (Kosodate Shien Sentā: CDSC) was established at

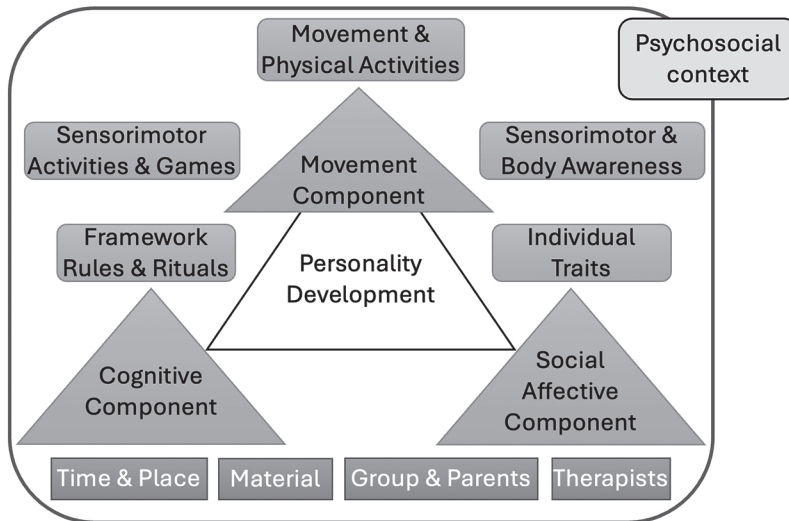


Figure 1 Psychomotor therapy: motor, cognitive, and social-affective components
(Modified model to fit the program, original by Probst, 2017)

the university (where the author works). First, it functioned as a developmental support resource room for families in the local community who needed advice and support for child rearing or developmental issues, like delayed development. Since April 2014, it has functioned as a multilevel early years childcare support center, with advisory, developmental evaluation, family support, research on parent education, parent empowerment, and volunteer group functions.

This practical research study aims to overview an early intervention-based family support program and its effect on parent involvement, especially on how to increase fathers' participation in the development support of their child with a developmental disability. The program aimed to promote increased involvement of fathers in their child's development progress during targeted psychomotor therapy in an early intervention setting. Psychomotor development, in a broader sense, is made up of five subsystems:

1. Neuromotor system: neuromuscular activities, muscle tone, muscle composition.
2. Sensorimotor system: sensory perception and integration.
3. Psychomotor system: experiencing movement processes.
4. Sociomotor system: the use of one's body and movement in interaction and communication.
5. Performance motor system (movement skills) : measurable and evaluable movement performances, sports activities, etc.

On one level, the present study introduces the CDSC's early intervention program for children with developmental delays or disability, where parents are actively engaged. Mothers and fathers are invited to participate in the complex developmental program. A well-designed psychomotor therapy aims to positively affect neurophysiological (brain) dysmaturity through movement, sensory integration, communication, and social behavior (Ayres, 1979; Bundy et al., 2002). This complex therapeutic approach aims to stimulate the postnatal maturational mechanisms of the central nervous system by activating different brain structures using modular sensorimotor stimulation (utilizing all known senses) and other activity areas to support child development during the early years (Kandel et al., 1995). These sensory systems include proprioception (muscle-joint awareness, body position), vestibular (balance, orientation in space, sensing movement), tactile (touch: pressure, hot, cold,

and pain), auditory (hearing), visual (sight), gustatory (taste), and olfactory (smell). The central nervous system tries to receive and integrate all sensory inputs without becoming too overwhelmed (hypersensitive), distracted (inattentive), unresponsive (hyposensitive), or disengaged (not processing or storing: “go through”).

On the second level, the intervention program aims to help and educate parents on how to deal with their child with developmental delay and chromosomal disorders by giving them activity examples/models and showing how those could be done together with the child as routine daily activities at home.

In summary, the program contains two main elements. The first one is the planned psychomotor therapy session for children with the four “big” activity areas of developmental difficulties during the early years (Figure 2) :

1. Motor development area (gross-, fine motor, and vocal movements).
2. Sensory development and psycho-cognitive area.
3. Communication development area.
4. Social development area.

The second element is to provide parents – in this study, which primarily focuses on fathers – multiple opportunities to interact with their children and observe them in a controlled therapeutic setting where parents work together with professionals. Participant observations, field notes, periodical short semi-structured interviews, and video record analysis help them provide positive feedback about the children’s abilities and parental behavior changes.

The Pyramid of Learning begins in the central nervous system, as shown in Figure 3 (Williams & Shellenberger, 1996). Each level must properly integrate with the previous level or levels to progress to the next level. The goal is to reach the cognitive level of functioning. Progress to the cognitive level of functioning is necessary for children to attend learning and daily living (Bundy et al., 2002). This will happen with the two lower levels of the Pyramid of Learning to work optimally and connect well.

Looking at the Pyramid of Learning, it becomes evident that if the sensory and motor systems cause the malfunctioning of the higher levels (if those are not developed and working correctly),

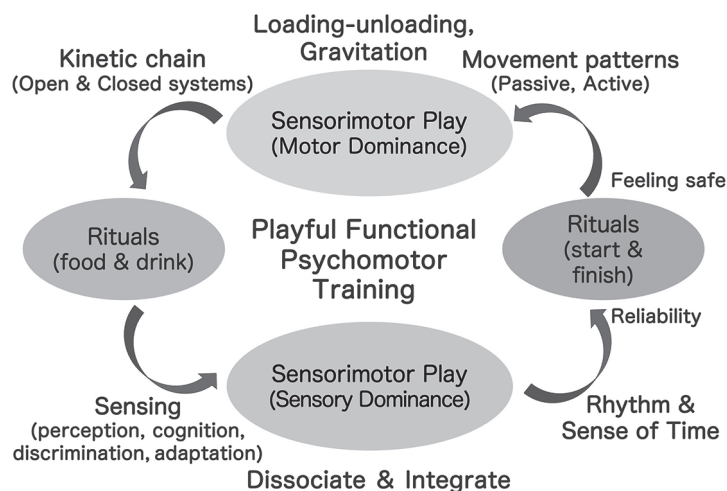


Figure 2 The four “big” psychomotor activity areas of the CDSC’s psychomotor therapy and early intervention-based parent support program

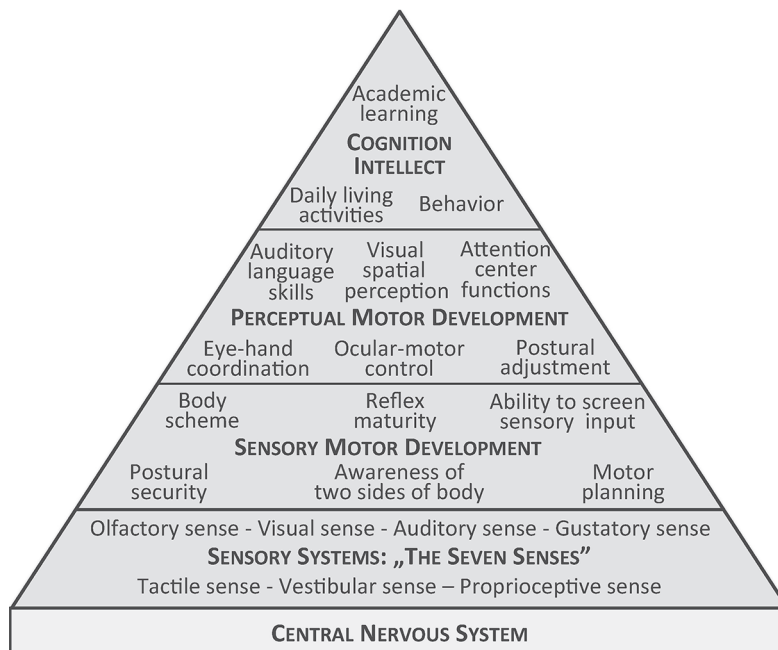


Figure 3 Foundations for behavior and learning: The Pyramid of Learning (Modified from Williams & Shellenberger, 1996)

then a therapeutic approach, which focuses on restructuring the neurophysiological system of these levels, seems to be a valid and a logical start for an early intervention practice.

3. Methods

This study employed qualitative approaches, including semi-structured interviews, to explore the experiences of fathers and mothers of children with developmental and chromosomal disorders actively engaged in an early intervention and parent support program. The parental interviews were transcribed, coded, and analyzed using an inductive thematic approach. Initially, parents were asked about their general demographic and lifestyle information, such as parents' age at their participating child's birth, educational background, socioeconomic background, and number of children. They also provided necessary anamnestic data on pregnancy, childbirth, developmental, and health issues of their child. Information on parenting style, personal matters (hobbies, strengths, weaknesses, anxiety, etc.), and previous experience within the medical and social welfare system and services were also collected. Weekly participation in the program was voluntary for local families within one hour of travel time.

3.1 Participants

Participants included fathers and mothers of young children with developmental disabilities (28 families). The children's ages ranged from 6 months to 5 years 10 months (average age: 2 years 8 months). Of the 28 children, 16 were boys (57.2%) and 12 were girls (42.8%), mostly with chromosome-related conditions (Down Syndrome 75%, Prader-Willi Syndrome 3.5%, XYY Syndrome 3.5%), while others had different developmental disabilities (early onset Autism Spectrum Disorder 10.7%, Attention Deficit and Hyperactivity Disorder 7.2%). Out of 28 families, 16 fathers (57.1%)

were actively involved in the program. The other 12 fathers (42.9%) who did not personally attend the weekly sessions received necessary information from the mothers, prepared activity materials (printed illustration aids, written explanations, and recorded videos by mothers), and short questionnaires as a replacement for semi-structured interviews. This study is part of a long-running program of 13 years and has been continuously shaped over the years. This study focuses on fathers whenever possible to separate the results of observation data, field notes, and charts. When no distinction was possible, the study used “parents” or “mothers” if the mother’s actions or comments were dominant or informative. Table 1 shows the primary descriptive data on fathers who actively participated in the program and those who did not attend personally.

3.2 Data collection

The participant sample consisted of 28 families, of which 16 fathers could personally participate in the program. The other 12 fathers received information on the program from their partners or spouses, including activity information sheets, short video clips, and other written materials. The baseline semi-structured interviews were conducted individually before the program started and included an anamnesis questionnaire with basic information on the family, the child’s developmental progress, and health and medical history. The author conducted all interviews in Japanese except two, one in English and the other in Hungarian, as the parents were more familiar with those languages and requested that they not be performed in Japanese. However, during the program, they could have daily conversations in Japanese with other parents. The participants were informed of the semi-structured interview procedure and recordings, which lasted approximately 40–90 minutes on average the first time. Interviews were transcribed verbatim using the inductive thematic approach.

Table 1 Descriptive statistics of fathers participating in the program

Demographic and Lifestyle Data	Fathers
Age at birth, mean (SD), yrs.	35.7 (6.3)
Educational background (%)	
<i>Compulsory*</i>	—
<i>Upper secondary** (High school graduate)</i>	1 (3.6)
<i>Vocational school or junior college graduate</i>	10 (35.7)
<i>University bachelor's degree or higher</i>	17 (60.7)
Employment Status (%)	
<i>Full-time</i>	23 (82.1)
<i>Part-time</i>	5 (17.9)
Job classification (%)	
<i>Education (Early Childhood, Primary, Secondary, Higher)</i>	2 (7.1)
<i>Manufacturing, transportation</i>	3 (10.7)
<i>Sales, services</i>	13 (46.4)
<i>Technical, clerical, managerial</i>	10 (35.7)
Monthly Income in JPY (%)	
<i>80, 000–110, 000</i>	1 (3.6)
<i>120, 000–290, 000</i>	2 (7.1)
<i>300, 000–490, 000</i>	17 (60.7)
<i>500, 000 or more</i>	8 (28.6)
Number of children (mean)	1.5

* Compulsory: Junior high school (until the age of 15)

** Upper secondary and higher (vocational or high school, junior college or higher)

The inductive thematic approach is a qualitative research method (Braun & Clarke, 2006) that analyzes verbatim data and identifies themes or patterns. In addition to spoken words, the interviewer used side notes during the interview to record nonverbal cues (e.g., body language, silence, facial movement) and emotional aspects (e.g., sighs, coughs, crying). Therefore, in this study, the semi-structured interviews were analyzed using this thematic approach, and interpretive description was applied to explore potential patterns and similarities. These were thematically coded by keywords and organized into categories such as vocalization, nonverbal communication, verbal communication, age-appropriate practical tasks and skills, personal self-care, leisure and play activities, coping skills, parental anxiety and fears, experience with services, work and life balance, activities of daily living, time spent with the child, play activities, medical emergencies, developmental issues (medical, physical, and mental), progress in development, and shared participation in childrearing and household chores.

All subsequent interviews at the end of each semester were shorter due to the unique structure of each session (see 3-TSDA structure of the program). Some questions from the first interview were modified, and new questions were added (adjusted according to the family's needs). These short semi-structured interviews lasted between 10 and 30 minutes during the program and were used for follow-up questioning while also answering questions from the parents. Similar questions from parents were discussed in the program's parent support group.

3.3 Structure of the program (Three-Tiered Schedule Developmental Approach)

The CDSC's psychomotor therapy-based early intervention and parent support program uses a Three-Tiered Schedule Developmental Approach (3-TSDA). Each session is divided into a three-part schedule. The first part is the planned multimodal psychomotor therapy, where all children and their parents are supported by two certified psychologists (therapists), one early childhood care and education (ECCE) specialist, and four seminar student volunteers. During the second part of the 3-TSDA, children participate in playful group activities with one therapist, supported by the ECCE specialist and student volunteers, while the other therapist engages with the parent group nearby (information sharing, coaching, and counseling). After the second part of the 3-TSDA, parents leave the CDSC with their children. The therapists, the ECCE specialist, and student volunteers have a post-session meeting for information sharing on what happened in the first two parts of the 3-TSDA, identify necessary changes, emphasize essential points of participant observation and field notes, followed by planning the activities for the next session as the third part of the 3-TSDA.

3.4 Participant observation, field notes, and the analysis of WHAC sheets

Observation is a social research method that gives the researcher direct access to information on social phenomena. The researcher becomes a firsthand eyewitness of social actions. Researchers observe overt phenomena manifesting as behavior, actions, and/or interactions. Researchers use different strategies to observe. The main decisions for observational research concern the participatory level, structural issues, and the research setting. Widely accepted sub-classifications of observation are participant, direct (non-participant), and indirect (Whitley & Crawford, 2005). This study utilized participant observation due to its socially acceptable nature during fieldwork. The observer can take three roles during participant observation: complete-participant, participant-as-observer, and observer-as-participant. In the case of complete participation, the researcher becomes part of the group; therefore, it is a covert, non-reactive observation that could involve deception of group members. The other two roles could be summarized as participating, depending on the

researcher's involvement. The participant-as-observer option is 'doing' rather than 'being' there (e.g., nurse) ; the observer-as-participant role is 'being' rather than 'doing' (e.g., therapy supervisor). This study chose the second and third roles during the study and switched between them as the situation changed. Two certified psychologists did the observation and were the leaders of the program. One is a kindergarten teacher and clinical psychologist; the other is a clinical developmental psychologist, speech-language therapist, and trained early intervention specialist with 30 years of field experience.

The observation used field notes – so-called “jottings” – by the therapist to record important moments that were regarded as important or meaningful to be remembered and later used in discussion for clarification.

Another utilized instrument was the CDSC's Weekly Home Activity Chart (WHAC), a weekly one-page easy-mark table (see Figure 4). The WHAC sheets were designed to track and analyze parents' daily activities with their children. It refers to an easily fillable chart where the parents can record their daily activities with their children on weekly sheets. The WHAC was developed as a simple frequency-matrix method to record and later analyze the parent-child activities outside the early intervention setting. WHAC sheet categories are based on activities practiced and encouraged during sessions. However, other categories are part of the daily life of families. Here are some WHAC sheet categories that focus on the types of activities parents typically engage in with their children at home:

- Basic Care Activities (Feeding, Bathing, Dressing, Diapering/Toileting)
- Routine Activities (Morning routines, Bedtime routines, Daily schedules)
- Educational Activities (Reading books, Educational games)
- Play Activities (Indoor play: toys, games; Outdoor play: parks, playgrounds; Creative play: drawing, coloring and painting)
- Social Interaction Activities (Family gatherings, Playdates with other children, Attending social events)
- Physical Activities (Structured physical therapy exercises; Exercise: running, jumping; Sports like activities: ball games, water & pool activities)
- Emotional and Social Development Activities (Talking and listening; Emotional support: comforting, hugging, Problem-solving together)
- Household Chores and Daily Living Skills (Cleaning and tidying; Preparing meals and the table together)
- Therapy and Medical Care Activities (Medical appointments, Attending therapy sessions, Administering medication)
- Special Activities (Celebrations: birthdays, holidays; Outings: zoo, Disney Land and Sea)

The filled weekly sheets were handed in by the participating parent weekly at the CDSC. These WHAC sheets were later studied and analyzed, and a frequency matrix of daily life activities of fathers and mothers engaging with the child (separately) or when both were involved at the same time together was drawn up. The frequency of their engagement and the activity type were counted, resulting in a ranking system. Each time a parent engaged with the child, they marked it on the sheet according to the day of the week (column) and activity category (row), clearly marking who did it (father, blue marker; mother, red marker; both parents together, double circle mark) in the appropriate cell. These marks represented a usage-frequency unit, and the simple analysis procedure involved counting and categorizing these units. The scores were ranked by the usage frequency of each activity category to find out which activities were used most and least by the parents, then a usage frequency order described which activity and time (day) needed attention

Weekly Home Activity Chart (WHAC)								
Activity Type	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Rank*
Gross Motor Activities								
Fine Motor Activities								
Sensory Activities								
Balance and Spatial Activities								
Language and Communication Activities								
Self-help and Self-regulation Activities								
Free Play Activities								
Others								

○ Blue circle = activity with father; ○ Red circle = activity with mother; ⊙ Double circle = activity involving both parents

Rank* number (1-8): shows the activity frequency ranking of each activity type. It helps to identify goals and modify engagement plans.

Figure 4 Weekly Home Activity Chart (WHAC) of the CDSC's program to record activity type, engagement frequency, engaged parent, and the rank by occurrence

and possible change to provide a better balance of activities. The therapists used these weekly results as essential reference points to advise parents on "home activities" during group sessions.

The therapists applied the following three questions to establish reference points:

1. Which activity type was used most frequently by the parent?
2. Which activity type was used least frequently by the parent?
3. Which activity type could be utilized more frequently to be more effective?

3.5 Video Interaction Guidance (VIG)

The Video Enhanced Reflection on Communication (VEROC) technique was developed and first used in the 1990s in the Netherlands. Later, it was modified and renamed Video Interaction Guidance (VIG) at the University of Dundee (UK) (Fukkink & Tavecchio, 2010; Kennedy et al., 2011). There are approximately 500 practitioners of VIG in the UK, including educational psychologists, speech and language therapists, teachers, social workers, family therapists, and academics. VIG is designed as a family-centered intervention based on observation of real-life communication between parent and child. Moments from the video are then selected and played back to the parent. It demonstrates what the "guider" (therapist) has identified as successful communicative events and aims to co-construct an understanding of the moment's success. In this way, it is anticipated that participants will perceive existing positive contingencies and be able to build upon them in future communication (Pilnick & James, 2013). The study of Fukkink and Tavecchio (2010) shows that video feedback training for early childhood educators is a promising method to increase their socio-emotional support and verbal stimulation in childcare practice.

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VIG is a therapeutic approach to enhance communication and relationships through video feedback. It involves recording interactions between individuals (e.g., parents and children) and then reviewing the footage to highlight successful interactions and areas for improvement. This method is grounded in attachment, social learning, and mediated learning theories.

The therapists examine the parent-child interaction during each psychomotor therapy session (1st Tier). When they see a notable connection, they noninvasively take a slow-motion video with a 120-per-second frame speed on-site. Then, the recording is used as a shared reflection, a short clip of a so-called “moment of vitality” to support the parent by building on current strengths and “positive moments.” It is a complex technique that requires a training course and years of practice. The Initial Training Course is typically a four-and-a-half-day course that can be taken as a standalone or as the first step towards becoming an accredited VIG practitioner. It provides the foundational understanding of VIG principles and practical skills for initial application. After completing the Initial Training Course, trainees begin supervised practice, which involves at least 15 supervision sessions. Continuous supervision and self-directed learning are crucial parts of the microanalysis of interactions.

Key points of the VIG method relating to parent-child interaction include:

- The parent can understand the child and choose an appropriate response to the child's specific needs.
- “Sharing magical moments” to bring positive change (meeting the child at an emotional and cognitive level).
- Promotes empathy and builds positive relationships by reviewing micro-moments

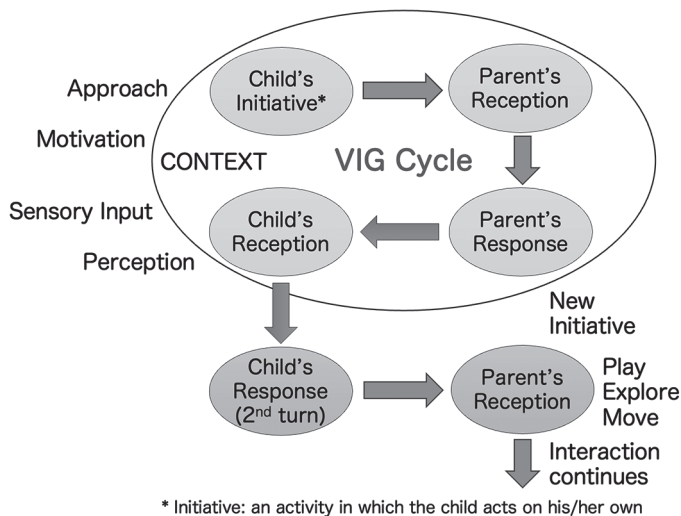


Figure 5 The VIG Cycle shows the relation changes between parent and child

(metacommunication signals).

- It provides “moments of vitality” and “communicative dance” (Murray & Trevarthen, 1985).

Figure 5 shows the VIG cycle and how the relationship changes between a parent and child during an interaction cycle.

4. Results

The CDSC’s program utilized public holidays on Mondays (approximately 4–6 times per school calendar year) to enhance father participation, resulting in 24 sessions with active involvement from 16 fathers (57.1%). Over the four-year research period, 30 sessions were planned annually (15 per semester). On average, 27 family attendances were recorded annually (approximately 13 times per semester), with absences primarily due to medical treatments, hospital visits, or planned family activities. This resulted in 108 sessions over four years, with a father participation ratio of 22.2% (24 times). Only one father managed to participate continuously in weekly sessions as he was the child’s primary caregiver while the mother worked full-time (Table 1: stay-at-home father).

The mean age of the 28 fathers at their child’s birth was 35.7 years ($SD = 6.3$), compared to the reported mean age of 32.8 for fathers at their first child’s birth in Japan (Statistics Japan, 2016). Table 1 indicates that all 28 fathers had a high school education or higher, and 96.4% had vocational school/junior college or higher degrees. This educational background may have influenced participating fathers to seek additional information on health and developmental subjects and ask follow-up questions during the second tier of the session (parents and therapist only).

Most participating families were two-parent households (90%), with all fathers employed (full- or part-time; even the stay-at-home dad had a small part-time job). Nearly half of the mothers (42.9%) also worked full- or part-time outside the home but managed their time to participate.

The average monthly salary in Japan varies significantly based on location, occupation, and experience. For reference, the participating fathers’ monthly income (see Table 1) fits the average profile, with the Ministry of Health, Labour and Welfare’s Monthly Labour Survey 2022 reporting an average wage of approximately 326,000 yen (The Japan Institute for Labour Policy and Training, 2022).

Family size ranged from one to three children (mean number of children per family: 1.5). All participants lived in the Tokyo and Kanagawa prefectural areas. Twenty-two families (78.6%) participated in local support groups for parents of children with disabilities, primarily the Association for Parents with Down Syndrome. These parents were more knowledgeable about developmental and health issues and actively sought early intervention programs.

Participants were informed about the program’s purpose and study-related issues, including consent, confidentiality, and the right to withdraw, making participation voluntary. Parents could choose to continue attending the following year or withdraw for various reasons (e.g., moving away, the child entering kindergarten, progressive health conditions). Thus, there were a few changes in participating families each year. Veteran parent members welcomed new participants and invited them to join activities outside the program.

Semi-structured short interviews revealed that fathers were well acquainted with the general concept of child development. However, engaging with children with developmental disabilities requires early intervention and parent support programs. Twenty-two parents (78.6%) reported feeling “very involved” in their child’s development since joining the program (including both mothers and fathers). Of 28 fathers, 21 (the 16 actively participating and 5 others) expressed a desire to “get more involved” in their child’s early development but needed professional help due

to health and developmental issues with their children. Five fathers with other children reported feeling “afraid” or “uncertain” about engaging with children with atypical development as they were “different” from typically developed siblings. They viewed the sessions as training and wanted to learn more. Two families acquired basic information on the MAKATON language program, including signs and symbols for everyday communication, and were redirected to a short course involving hands-on practice and interactive activities. Table 2 summarizes some of the semi-structured interview questions.

The WHAC collected information on engagement frequency and activity type but did not include hourly data on weekly time spent directly with the child. Using the WHAC, all fathers (28) acknowledged increased involvement (12% to 42%) compared with baseline interview data in supporting the individual child at home.

Baseline data for fathers' self-reported engagement frequency at home was taken on a simple 100 mm line with no markings. Fathers marked a point where they felt their active engagement frequency with their child was at that time. The therapist checked the marking on the line and assigned a score based on the millimeter position from the left end of the line. Follow-up interviews used the same assessment technique. The 16 actively participating fathers showed increased (all over 30%) involvement with their child at home, feeling more “empowered” after weekly group sessions. Thus, the study indicated that the quality and content of fathers' participation mattered more for children's developmental outcomes than increased time at home.

The 22 fathers who participated in the VIG video analysis (16 at sessions and six who received recordings as file attachments) of parent-child interactions and rigorously recorded their activity type and frequency on the WHAC sheets at home showed more engagement in other home-related tasks (e.g., shopping, cleaning, cooking) compared to those who did not participate in weekly sessions or were uninterested in VIG video analysis recordings. Therefore, promoting increased fathers' involvement in early intervention services is essential.

Interview results with the 16 participating fathers (and other participating mothers) indicated that fathers with more participation had better skills in addressing childcare problems at home. The

Table 2 Semi-structured interview questions

Type of Questions	Examples of Questions
General Questions	What do you hope to gain from this program? Do you have a <i>personal goal</i> to attend these sessions? Can you describe how <i>easy or difficult it was to you to attend</i> these sessions?
Questions related to changes in the child's behavior	Have you <i>noticed any changes</i> in your child's behavior? How <i>do you see the progress</i> of your child? How do you <i>feel</i> about your child's developmental progress or behavior changes?
Questions related to changes in the parent's behavior	Can you describe any <i>personal changes in you</i> since you attend these sessions? Is there anything that you <i>wanted to change</i> that hasn't since the program started? What did you find personally most <i>helpful in</i> these <i>sessions</i> (or benefit from) ?
Questions related to parent-child relationship	Looking at your day-to-day interactions with your child, <i>how this program helped</i> you? Can you give me an example on <i>what do you enjoy doing together with your child</i> at home? Can you describe some of the <i>changes that you noticed between you and your child</i> since attending the program?

VIG analysis helped fathers perceive and understand their children's behavior and unique needs. In general, VIG analysis assisted fathers in perceiving their children more positively, feeling more self-confident in their parenting roles, and dealing with everyday issues.

Video Interaction Guidance (VIG) is primarily a qualitative method focused on improving communication and interaction through video feedback. The study used qualitative ratings during initial baseline data collection during the first three sessions. Table 3 uses subjective ratings of interaction quality from the observer's viewpoint. These ratings were used initially to help parents understand the purpose of video recordings. However, the therapist did not use these ratings afterward for two reasons. Firstly, the most significant changes occurred from baseline to the third session. Afterward, the improvements flattened, and the quality of interaction became more important than the frequency of interaction behaviors. Secondly, counting and scoring were too direct and authoritative, disrupting the natural flow of fieldwork. The VIG continued with narrative analysis of vital moments (e.g., eye contact, physical touch, turn-taking, positive feedback frequencies). The therapist immediately showed the slow-motion clip to the parent and waited for the parent to identify those points. If not identified, the therapist pointed them out. The therapist and parent-rated the VIG recording together by verbally agreeing on the quality of the interaction.

Field notes ("jottings") of participant observations showed that children became more positive in mood and behavior and more open to the father. Children made more eye contact with their father when the father actively engaged rather than just observing during the early intervention program. Fathers became increasingly active after each session in which they participated, requiring less instruction and using their imagination to combine different play activities confidently, especially in structured physical activities requiring strength, agility, stamina, and speed.

Field notes of observations during sessions and WHAC data indicated that the 16 fathers who actively participated in the psychomotor therapy and early intervention-based parent support program showed the most significant positive change in direct interaction with their children. The other 12 fathers received interview questions through the mother and later forwarded the completed forms to the CDSC, discussing them with their participating partners.

Table 3 Example table of qualitative rating of interactions of three fathers in a session captured by VIG recording

Session	Participant	Observer rating (1-5)	Key Observations
Session 1	F1	1	No eye contact, hesitant
Session 2		3	Improved eye contact, but still hesitant
Session 3		4	More confident better turn-taking and continuously could keep eye contact
Session 1	F4	1	Hesitant, no turn-taking, few physical touch moments
Session 2		2	Improved eye contact, still does not facilitate physical contact
Session 3		4	Continuously keeps eye contact, gained interaction
Session 1	F12	3	Confident, too verbal
Session 2		4	Good eye contact, not hesitant.
Session 3		5	Excellent interaction skills, good positive feedback

Summarizing the results of parental semi-structured interviews at the end of each semester on parental workshare and participation:

- Sensitive and responsive parent-child interactions are related to more optimal child development.
- Interventions with mothers have been successful in increasing maternal sensitivity and responsiveness.
- Activities involving the father's active participation, with or without observation of their child, enhance father-child interactions.
- Intervention is more likely to be effective if the father is exposed to the program multiple times (regular participation) .
- There was high agreement between mothers and fathers concerning the extent of "participation in child-rearing" of fathers, with the highest emphasis on playing, nurturing, deciding on services, and discipline.
- Mothers explained that while fathers are personally concerned with coping with their child's developmental delay or disorder, mothers are concerned with the complex task of how to work together for the child.

5. Discussion: Key Findings and Future Directions

For a child to be mature enough to attend school at six and fit well into the community, they must function adequately in their environment from their early years. According to Bloom's Taxonomy (1956), learning has three classical domain categories: psychomotor, affective, and cognitive. The psychomotor domain involves the development of the body and its skills, including seven levels: perceiving, patterning, accommodating, refining, varying, improvising, and composing. Psychomotor learning mainly contains sensorimotor-related perception-based actions requiring speed, accuracy, dexterity, and physical skills (Bloom, 1956). The affective domain addresses acquiring attitudes and values (e.g., receiving, responding, valuing, organization, and characterization) (Krathwohl et al., 1956). The affective domain is mainly based on feelings from emotional learning, such as attitudes, appreciation, interests, values, and adjustment. The cognitive domain involves learning and applying knowledge (rational learning) with six levels: knowledge, comprehension, application, analysis, synthesis (creative thinking), and evaluation (critical thinking) (Bloom, 1956).

Over 48 months of targeted psychomotor therapy and early intervention programs, parents were asked to participate actively in group activities during weekly sessions. The developmental approach was based on tailored multimodal psychomotor therapy requiring physical strength, stamina, agility, speed, and peer work between parents. Parents were asked to use WHAC sheets to record which parent engaged with the child, the type of activity, the frequency of their daily engagement, and the occurrence rank of each activity group (see Figure 4). These WHAC sheets were used during semi-structured short interviews to identify goals and modify engagement plans for the following weeks in agreement with the parents. Additional data were obtained through qualitative analysis of field notes of participant observations, analysis of slow-motion short VIG recordings, and semi-structured interviews (baseline and anamnesis initially and follow-ups at the end of each semester).

The list below gives a summary of the aims and exercise groups of the psychomotor therapy that parents – after necessary explanation, hours spent in therapy sessions, and receiving sufficient coaching – were able to carry out at home as well with their children during the early years while participated in the CDSC's program.

5.1 Aims and Exercises of Psychomotor Therapy

- Improve the child's visual and acoustic attention (e.g., familiar sounds, words, toys, pictures).
- Enhance the child's ability to imitate (e.g., animals, basic movements, emotional faces).
- Develop physical endurance (exercises for about 30 minutes).
- Understand task situations (e.g., repetitive movements, new movements, essential tool use in daily life).
- Maintain task situations (e.g., passive vestibular exercises).
- Improve the child's ability to calm down (e.g., start points and closing exercises).
- Improve the quality and quantity of the child's social interactions (e.g., pair exercises).
- Motivate the child (e.g., using favorite toys or instruments).
- Increase interest in objects (e.g., exciting tools/toys, musical instruments, lights, tactile stimulation).
- Exercises for adaptive motor responses (e.g., rotational exercises).
- Participation in group activities other than gross motor exercises (e.g., active vestibular exercises).
- Develop balance ability and synchronize movements.
- Ensure parental satisfaction.

The following section shows the advantages of successfully applying psychomotor therapy and early intervention in small-group settings by the CDSC.

5.2 Advantages of Small-Group Settings for Psychomotor Therapy and Early Intervention

- Small group activities help children with developmental disabilities experience sensorimotor and concrete operational stages of development, facilitating reaching the formal operational level (abstract thinking) after at least three years.
- Correct children's posture and develop physical abilities (balance, strength, speed, endurance) even after a year if starting the CDSC's program around one year old.
- Develop a feeling of security in a small group setting and make social connections with others who are not family members.
- Parents, especially fathers, can practice at home and become "partners" with their children by participating in therapy sessions and becoming more competent in dealing with other family matters.
- There is a gradual transition from active helper to participant observer, taking turns (father-mother, therapist-parent) during VIG recordings using mobile phones or tablets with slow-motion video capabilities.

Other recommended examples of the advantages of well-planned small group activities and playful exercises for 2-4-year-old children with developmental delays or disabilities.

- Develop the ability to imitate in serial and coordinated form (2, 4, or 8-cycle exercises).
- Physical endurance (45-60 minutes, active vestibular exercises, basic developmental movement patterns).
- Memorize and remember complex task situations (2-4-8-cycle serial exercises).
- Develop a sense of rhythm by moving the whole body and performing fine motor movements in a controlled manner.
- Use rhyme as typical children's songs (e.g., "Genkotsu Yama") for synchronizing movements and words (2-4-8 cycles of coordinated tasks).

- Use stairs and walk on slopes (upwards and downwards).
- Perform playful exercises with ropes.
- Improve the quality of social interactions (e.g., exercises that develop multi-channeled attention, exercises in pairs).
- Perform exercises while sitting, standing, walking, or skipping.
- Develop inner controls and keep rules (e.g., exercises involving bilateral motor coordination and cognitive tasks).
- Recognize and solve fundamental problems.
- Develop adaptive motor responses.

5.3 Advantages of Fathers' Active Participation in Early Intervention Programs (besides reaching developmental aims and goals)

- 57.1% of fathers participated in the program 24 times, with a 22.2% participant ratio compared to mothers, with no dropouts in this group.
- Fathers actively participated and assisted their children, developing stronger bonds.
- Fathers felt it was beneficial to attend the program where their children were happy to be in the group and play with different equipment and toys.
- Emotional empowerment for fathers is achieved through hugging their children, feeling part of the child's developmental progress, and becoming competent parents.
- Previous studies indicate that advanced maternal age carries higher risks of complications compared to younger maternal ages (Ogawa et al., 2017; Frick, 2021). In this study, the mothers' mean age was 31 years ($SD=5.4$), close to the mean age of Japanese mothers at first childbirth (30.7 years) (Statistics Japan, 2016). Only 9 out of 28 mothers (32%) were 35 years or older at their child's birth, and 7 (25%) planned to have more children despite present difficulties.

Participant parents reported developmental issues with their child (medical, physical, and mental), some treated or expected to cause further difficulties. Participants expressed concerns and interests in issues the early intervention program could positively affect. Follow-up semi-structured interview questions addressed changes caused by participating in weekly group sessions, stress, and anxiety.

5.4 Follow-Up Interview Questions Related to Group Sessions

- What impressions do you have about your child? Did anything change today?
- What were your impressions of the activities during early intervention sessions at the start, and what about now?
- What were your impressions after receiving advice during or after an early intervention session?
- Have you noticed any changes in your child during or after an early intervention session?

5.5 Questions Related to Stress and Anxiety

- Do you feel any anxiety about childcare? If so, when, how, why, and how severe is it?
- Have there been any changes in your anxiety about childcare? What changes have you made, or what changes have occurred?
- Did your anxiety about childcare decrease or increase? To what extent and for what reason?

Participant children had the following developmental issues (medical, physical, and mental) that parents reported during the program sessions, which made them more conscious. Still, it is also a possible cause for their perceived parental anxiety. The early intervention program could address some of those underlined below.

5.6 Developmental Issues Reported by Parents on Participant Children

- Congenital heart defects
- Delayed intellectual development (e.g., cognitive issues like lower-than-average IQ)
- Muscle tone issues (e.g., too much or too little muscle tone, rigid/spastic muscles)
- Poor muscle coordination (slow and/or weak movements)
- Joint issues
- Immunological issues and recurrent infections
- Vision issues and eye diseases
- Balance issues
- Hearing problems (e.g., need early hearing aids)
- Difficulty speaking
- Epilepsy and seizures
- Breathing issues (e.g., asthma)
- Sleep issues (e.g., sleep apnea)
- Delayed motor development
- Difficulty swallowing, drooling, and chewing (oral health issues)
- Digestive issues and gastrointestinal complications
- Weight control and nutrition problems
- Emotional issues and behavioral problems

Fathers and mothers who worked full-time reported higher psychological stress, while those who stayed home with their children reported higher levels of anxiety and physical tiredness. Although the study did not employ special assessments on these issues, the information resulted from semi-structured interview sessions with parents. Fathers who worked part-time reported positive benefits from employment work overload, allowing them to spend more time with their children while the mother worked full-time. Parents who both worked full-time or one of them full-time and the other part-time reported receiving childcare assistance from relatives or professional help through social welfare support. Most participating families (78%) belonged to an association for parents with Down syndrome or another local self-support group aimed at helping parents with their child's developmental difficulties. Therefore, both fathers and mothers were more connected to social networks and aware of different services in their local communities.

During follow-up semi-structured interview sessions, 14 of 16 fathers revealed fluctuating working hours, noting a decrease in the first year after birth (due to many health issues) followed by a gradual increase and subsequent plateau after two years. This dynamic shift in work hours over time provides a nuanced understanding of the evolving work-life balance dynamics for fathers. Given the demanding nature of parenting children with developmental and chromosomal disorders, childcare support centers (Kosodate Shien Sentā) and other social welfare support services need to collaborate with families to assess demands, identify special needs (medical, psychological, and social well-being), and develop intervention programs designed to enhance family functioning and early supported development of a child. In the meantime, it is vital that these services provide parental support and encourage parents – like in the case of this study and early intervention programs –

especially fathers, to cope with the cumulative demands of daily life.

The present study shows that the mother was the primary caregiver in many families during weekdays. Therefore, involving fathers helped increase family functioning and led to better communication and domestic workload sharing between mothers and fathers. Follow-up semi-structured interviews with all 16 actively participating fathers showed increased interest and anxiety about their child's development and future uncertainty. The weekly sharing experiences within group sessions with other fathers and mothers facing similar caregiving challenges became a solid supporting factor of the group dynamics in this program. For the 16 actively participating fathers, the most significant increase was in accessibility to their child and the tremendous growth in support for learning new things during group sessions. Therefore, it is vital to encourage and empower fathers to develop their caregiving skills and use their abilities, special interests, and social networks.

This study finds it essential that the early intervention program with parent support group activities provided fathers with adequate information and assistance with behavioral management, play activities, and positive parenting in caring for their children. Future studies can adopt more qualitative approaches to allow fathers and mothers to discuss their experiences. The present program had an open-door policy, allowing parents to bring (with agreement from other participants) siblings, grandparents, and other actively engaging professionals (e.g., nursery teachers) as guests into the early intervention program.

Specific data on the educational background and job classification of participating parents and their self-reported issues—during semi-structured interview sessions – showed that these factors could influence a family's access to resources and support systems, which are critical in managing the child's condition. Income levels can also impact healthcare, educational services accessible to the child, and the families' general quality of life. On the other hand, fathers reported during interview sessions that parental involvement is necessary for the development of their children with disabilities; thus, fathers should be taught and encouraged to engage with them.

This practical research study used a modified version of the VIG video analysis. Slow-motion video with 120 frames per second was shot on-site during the first part of the 3-TSDA and used as a shared reflection on short clips of parent-child interaction to support the parent by building on current strengths and “positive moments” in the second part of the 3-TSDA. Each clip typically showed positive feedback in a “here and now” situation (after those moments just happened, “straight reflections”). The VIG recordings are short, approximately 1-2-minute videos with slow-motion recording and playback options where the parent (e.g., father) “engaged” with his child in an activity. Observed behaviors of the parent and the reciprocal behavior of parent and child were then searched, and “positive moments” were shared from the video.

The leading researcher established eight VIG measurement points for video evaluation of parents' behavior during the study:

- Turning toward the child (directions of face and body)
- Making eye contact (eye movements)
- Following the child
- Verbal reception
- Non-verbal reception (e.g., facial expressions)
- Letting the child take a turn
- Acknowledging the child
- Parent recognizes self

Follow-up semi-structured interview sessions with 16 fathers revealed that involvement in the

early intervention program and receiving VIG measurement points was particularly empowering, providing them with the skills to support their child's development effectively. Engaging fathers in this program fostered a stronger parent-child bond and offered fathers a deeper understanding of their children's needs and capabilities. During these follow-up interview sessions, the study revealed that fathers and mothers of children with developmental disabilities, including Down syndrome, may experience similar levels of stress, but the nature of their stress differed. Fathers reported stress related to emotional attachment to the child, while mothers' stress was more often associated with the demands of caregiving. This distinction underscores the importance of understanding and supporting fathers' unique experiences and contributions in early intervention settings. All 16 fathers also reported that after each session in which they actively participated, they felt more competent and more satisfied in their parenting role at home because they experienced less stress related to attachment and were able to play with and care for their child more effectively. Thus, the study suggests that parenting efficacy – which includes parents' confidence and satisfaction in their parenting roles – is crucial for both fathers and mothers.

The study shows that collecting data and quantifying fathers' involvement in an early intervention program is difficult and limited. However, the results highlight fathers' role and the need for more targeted support and acknowledgment of their contributions to these programs. This can help ensure that interventions are more family-inclusive, recognizing and bolstering both parents' critical roles in the development and well-being of children with developmental delays or disabilities.

The present study focused more on parental characteristics than providing detailed occupational and economic data for fathers. Therefore, further specialized studies are needed to provide more detailed and specific information about the father's role and demographic attributes in families with a child with developmental and chromosomal disorders like Down Syndrome. In the future, it might be essential to determine whether the early intervention-based parent support program is more effective if both parents participate or if the intervention is directed only to fathers. Fagan and Iglesias (1999) found that fathers with the most exposure to an intervention over eight months had the most significant behavioral changes.

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Compliance with ethics guidelines

All procedures followed were by the ethical standards of the responsible committee on human experimentation and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from all participant parents for being included in the study.

Conflict of Interest

The author has no actual or potential conflict of interest to disclose.

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