SHORT PAPER

Global Trends in Developmental Disorders Education and Japan's Current Status and New Initiatives

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ABSTRACT

In Japan, the number of students with developmental disorders has been increasing every year since 2007, so developmental disorders are now prevalent in Japanese classrooms. In this paper, the definitions of "developmental disorders" are summarized for each of seven countries. Results showed that among the seven, only Japan and South Korea have established definitions for developmental disorders. Educational inclusivity for children with disabilities is currently increasing around the world. The United Kingdom, one of the most advanced countries in terms of educational inclusion, provides education "to enable people to take into account not only disability but also all other factors." As a way to make this possible in Japan, new initiatives are being developed. One such initiative is the concept of "IN-Child" and "IN-Child Record" proposed by Han, Ota, and Kwon (2016). Research that enables educational evaluation and continuous support tailored to individual needs. This research will enable Japan to achieve inclusion without lagging behind the world. We hope that this will halt the "developmental disorders bubble" in Japan.

<Key-words>
developmental disorders, international comparison, IN-Child Record (Inclusive Needs Child),

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I. Introduction

Although the number of pupils at all stages of compulsory education is decreasing due to the declining birthrate, the number of pupils who are subject to special needs education is increasing. According to the National Special Needs Education Institute, the number of students enrolled in the autism spectrum disorder and emotional disorders special needs classes have increased by approximately 6,000 every year since 2007. In addition, the number of pupils with developmental disorders who are instructed through commuting courses has been increasing every year since 2007. As a result, development disorders are becoming commonplace in Japanese classrooms. In today's world, where inclusive education is essential, how are "developmental disorders" defined around the world? There are two primary diagnostic tools used to identify developmental disorders. The first is the International Classification of Diseases (ICD), proposed by the World Health Organization (WHO), which is primarily used in medical practice. The second is the Diagnostic and Statistical Manual of Mental Disorders (DSM), developed by the American Psychiatric Association, which is also used as a global diagnostic criterion. The DSM has been used in developmental disorders diagnostics in Japan, and both the ICD and DSM have recently revised content related to developmental disorders.

First, a summary of definitions of developmental disorders from major countries in Europe, Asia, and other parts of the world will be presented. Next, the historic evolution of the ICD and DSM used in medical practice as tools for diagnosing developmental disorders in Japan and around the world is summarized. Finally, we will clarify the challenges of education in developmental disorders in Japan in recent years, and examine the most recent studies that serve as a clue to the resolution of these issues.

II. Descriptions of Developmental Disorders by Country

1. National definitions of "developmental disorders" or similar content

Definitions and descriptions of "developmental disorders" by country are summarized in Table 1 below. The descriptions for "developmental disorders" or a similar concept is cited for each of seven countries: Japan, the United States, the United Kingdom, Italy, Australia, the Republic of Korea, and China.
### Table 1: Definitions of Developmental Disorders or Similar Concepts in Seven Major Countries

| Country name | Definition or similar content |
|--------------|------------------------------|
| Japan        | Autism spectrum disorder, other disorders of pervasive developmental disorders, Asperger syndrome, learning disability, attention-deficit hyperactivity disorder, and other similar brain functions, which are specified by Cabinet Order as manifestations of such disorders at an early age. Developmental disorders of supporters (Article 2, paragraph (1) of the Support Act). Disabilities prescribed by the Ordinance of the Ministry of Health, Labour and Welfare set forth in Article 1 of the Order for Enforcement of the Developmental Disorders Persons Support Act shall be psychological developmental disorders and behavioral and emotional disorders (excluding autism spectrum disorder, Asperger syndrome and other pervasive developmental disorders, learning disability, attention-deficit hyperactivity disorder, linguistic and coordination disorders). (International and Support Center for Persons with Development Disorders. http://www.rehab.go.jp/) |
| United States| The term "developmental disorders" was first coined in the United States, but since the advent of DSM-5 there has been no definition of "developmental disorders," and the term "neural developmental disorders" has emerged. Neural developmental disorders classifies six disorders, including intellectual disabilities, communication disorders, autism spectrum disorder, attention-deficit/hyperactivity disorder, specific learning disorder, and motor disorders. The DSM-5 changed names of disorders to intellectual disability, autism spectrum disorder, special learning disability, and motor disorder, which were previously known in the DSM-4 as mental retardation, pervasive developmental disorders, learning disorder, and motor skills disorder. In addition to name changes, subclassification (unit disorders and unit diseases) have been outlined and unified, and major changes have been added to the subclassification, addition, and diagnostic criteria. Thus, major revisions have been made on the whole (Miyakawa, 2014). |
| Country       | Definition Status        | Relevant Legal Frameworks/Definitions |
|---------------|--------------------------|---------------------------------------|
| **United Kingdom** | No definition | The U.K. has no definition for developmental disorders. The Autism Spectrum Disorder Law 2009 (Autism Act 2009) provides for the inclusion of "adults with autism spectrum disorder" in order to enable an adult with ASD to receive appropriate services. Although the scope of autism spectrum disorder here is primarily based on the ICD-10 ‘pervasive developmental disorders’ disease classifications, other criteria may be used for actual diagnoses. Children under 18 years of age can receive support and services on the basis of the Children’s Law (Children's Act, 1989). During school age, a "Special Educational provision" is available if there is learning difficulty or disability to the extent that "Special Educational Needs: SEN" is required. Definitions of pupils who require special educational support are set out in Education Law 1996 (Education Act 1996) and definitions of disability are set out in the Equality Act 2010. The Children and Families Act 2014 was enacted, and the Ministry of Education and the Ministry of Health have jointly issued the SEND code of practice: 0 to 25 years. The law raised the target age to 25 years old. (International and Support Center for Persons with Development Disorders. http://www.rehab.go.jp/) |
| **Italy**     | No definition          | Italy has no definitions for developmental disorders because of its inclusion policies. Learning disabilities are described in the Learning Disability Children's Education Law, which identifies four disabilities, including reading, literacy, correctness, and computational. Individual definitions for each disability are provided, but not a general definition for learning disability itself (Hagiwara, 2011). |
| **Australia** | No definition          | Australia does not have laws or systems that use the word "developmental disorders", and there is no agreement on the designation of learning disability. South Australian states use learning disabilities, which are defined as dyslexia, dyscalculia, dysgraphia, dysphasia, and nonverbal learning disorder. The Australian government's employment services also uses specific learning disabilities, which defines a broad range of disabilities, "where learning difficulties are evident in certain areas, such as attention, comprehension, sophistication, arithmetic, inference, reading, speaking, and writing, as compared to overall competence." |
South Korea
※ Defined

In South Korea, the Developmental Disorders Rights Guarantee and Support Act was enacted in 2014, and "developmental disorders" are defined as the following: "Mentally retarded persons: persons whose mental development is permanently retarded, whose intellectual development is inadequate or incomplete, and whose activities of daily living and adaptation to social life are extremely difficult", "Autism Spectrum Disorder: persons who are in need of support from others due to language, physical expression, self-adjustment, social adaptation function and disability associated with atypical Autism Spectrum Disorder and who need support from others in their daily life or social life", "persons who do not demonstrate normal development or who are greatly delayed and are subject to significant constraints on their daily life or social life as determined by the Presidential Decree".

China
※ No definition

Autism spectrum disorder, attention-deficient hyperactivity disorder, and learning disability are translated into Western literature (ICD, DSM, etc.), and there are no legal definitions at present.

The official terms for autism spectrum disorder are also referred to as "solitude," Autism Spectrum Disorder spectrum disorder as "solitary lineage," "autism spectrum disorder lineage," attention-deficient hyperactivity disorder as "hyperactivity," and learning disability as "learning disability." There is also the term `developmental disorders`, but it is not clear what kind of obstacle it is referring to.

In 2006, the Compulsory Education Law of the People's Republic of China was amended, and for the first time, children with autism spectrum disorder became subject to compulsory education with legal support.

Table 2 classifies Japan, the U.S., the U.K., Italy, Australia, South Korea, and China as to whether or not "developmental disorders" are defined.
As shown in Table 2, only Japan and South Korea clarify the definitions of developmental disorders. In the United States, which first used the term ‘developmental disorders’, a definition for ‘developmental disorders’ has not been established.

2. Challenges of Developmental Disorders in the United States

In 1994, the DSM-4 was published by the American Psychiatric Association, after which the term ‘developmental disorders’ began to be used for the first time. According to Tamaki, Chie, & Yoshiro (2016), the prevalence of autism spectrum disorder increased 20-fold in the United States, attention-deficit/hyperactivity disorder tripled, and bipolar disorder doubled (especially in children, where bipolar disorder increased 40-fold) in the 20 years since the publication of the DSM-IV. In addition, 90% of antidepressants, 80% of anti-anxiety drugs, and 90% of antipsychotics were prescribed by general practitioners, and concern has increased that people are suffering from psychiatric symptoms as a result of easy diagnoses and treatments. Avoiding such overdiagnosis/overtreatment was a concern in issuing the DSM-5. Against this background, the American Psychiatric Association began to use the term “neural developmental disorders” instead of "developmental disorders" after the release of the DSM-5.

Opposing the trends in the United States and many other countries, Japan is now embracing the term ‘developmental disorders.’ Information on developmental disorders is not only in the classroom and healthcare settings, but also on television programs and the Internet. The popularity and prevalence of the term ‘developmental disorders’ is expected to cause further confusion in Japan, despite the fact that its usage has been going against the global trend.

3. About "Special Educational Needs" (Special Education Needs, SEN) in the U.K.

Inclusion in education for children with disabilities is currently active around the world. In particular, according to Ida Akiha (2014), in the United Kingdom, where inclusion has been systematized, the British government introduced "special educational needs" (Special Education Needs, SEN) as a concept that mediates inclusion from the term "disability," including the term "developmental disorders." In addition, according to Sanagi (2014), the introduction of specific educational needs concepts "is intended to enable all factors as well as barriers to be taken into account." This was introduced not to abolish and "replace" the category of disability, but to guide the necessary responses, including the concept of disability, taking into account various factors affecting conditions in which children need special educational responses (i.e. conditions in special
educational needs). Rather than abolishing categories or replacing terms, it can be viewed as a change in the viewpoints and methods used to guide the response needed by students.

III. About ICD and DSM

In Japan, developmental disorders are defined by the Developmental Disorders Support Act 2007, as shown in Table 1, based on the ICD-10 prepared by the World Health Organization. In Japan, ICD-10 is mainly used in diagnostic and diagnostic management systems in hospitals and in government systems and statistics. Diagnostic use is primarily in the psychiatric setting. According to Tani and Oikawa (2013), the ICD was first recommended in 1900 and revised roughly every 10 years, with major revisions in 2003 and 2010. The 10th edition (ICD-10) is currently used. On 18 June 2018, the World Health Organization released the ICD-11. This is the result of a full revision of the ICD-10. According to Ministry of Health, Labor, and Welfare (2019), the Japanese translation of ICD-11 will be "prepared by the ICD Expert Committee in cooperation with the Japanese Society of Medical Sciences, the Japanese Society of Dental Medicine, etc., and consulted with the ICD Subcommittee after confirming the ICD-11 to be submitted to the WHO General Assembly in May 2019." The full-scale introduction is expected to be after May 2019.

On the other hand, the DSM (Diagnostic and Statistical Manual for Mental Disorders) prepared by the American Psychiatric Association may be used as a diagnostic criterion that is used globally in Japanese medical practice as well as the ICD. During World War II, the DSM was a diagnostic manual used by psychiatrists in the testing of soldiers and in the treatment of returning soldiers. The first DSM to enter Japan was the fifth edition of the DSM, which was translated into Japanese by the Japanese Society of Psychiatry and Neurology. It was published as the "Diagnostic and Statistical Manual of Mental Disorders: American Psychiatric Association (2013)" one year after publication in the United States (Nishimatsu, 2014).

However, the issue of overdiagnosis/overtreatment of developmental disorders was recognized in the U.S. by the DSM-4, and addressed with the issuance of the DSM-5. However, the definition of developmental disorders in Japan was determined in 2007 by the Ministry of Health, Labour and Welfare, standard on the ICD. The standards for administrative services are also based on the ICD. As the release of the full revision of the ICD-11 is approaching, professionals in Japan hope that, like the rest of the world, the trend will change to focus on individual symptoms and needs, rather than a concept that is collectively referred to as 'developmental disorders.'
IV. Japan’s Current Situation and New Initiatives

1. Current Status of Developmental disorders Education in Japan

Although the number of pupils at all stages of compulsory education is decreasing due to the declining birthrate, the number of pupils who are subject to special needs education is increasing. According to the National Special Needs Education Institute, the number of students enrolled in the autism spectrum disorder and emotional disorders special needs classes has increased by approximately 6,000 every year since 2007. In 2014, pupils enrolled in the autism spectrum disorder and emotional disorders special needs classes as a percentage of the total number of pupils enrolled in special needs classes was approximately 44%. The number of pupils with developmental disorders (autism spectrum disorder, learning disability, attention-deficit/hyperactivity disorder) being instructed through regular courses has been increasing every year since 2007. Furthermore, in 2014, the percentage of pupils with developmental disorders receiving instruction through commuting courses as a portion of the total number of pupils in the class was estimated to be approximately 45%. It can be noted that developmental disorders are now prevalent in Japanese classrooms.

While developmental disorders can be diagnosed in the medical field, there are few specialists outside of the medical setting who can diagnose developmental disorders. Students who wish to undergo developmental disorders evaluations at the school site have to wait for several months.

In addition, there are issues concerning the expertise of teachers in the field of special needs education, including developmental disorders. The Education Personnel License Law and the Enforcement Regulations were revised in fiscal year 2019. In 2019, new teaching courses will be launched for those who have completed the course. “Understanding of infants, children and pupils in need of special assistance” was added as a new requirement in the "Subjects on Basic Understanding of Education." Until now, it had been treated as a mandatory choice as a "curriculum related to teaching," but it became a mandatory requirement for the first time in 2019. In other words, among those who have obtained a teacher's license in Japan by 2019, there is a current situation in which children who need special support are instructed by teachers without specialized knowledge of infants, children, and pupils who need special support.

2. New Japanese Initiatives (IN-Child)

Similar to in the U.K. and other global trends, Japan has been developing advanced initiatives. The concept of “IN-Child” proposed by Han, Ota, and Kwon (2016) is one such development. IN-Child is an abbreviation for Inclusive Needs Child, which means children requiring comprehensive education. It is also defined as "children who require comprehensive education by a team, including specialists, due to such factors as delayed development, intellectual delay, or non-physical, emotional needs, and home
environment.” A child in need of comprehensive education may include children diagnosed with developmental disorders, those not diagnosed but showing a similar trend, or a child temporarily receiving comprehensive education due to an environmental factor.

Han, Ota, and Kwon (2016) developed the IN-Child Record, noting that long-term support needs to be considered in light of child development and that it needs to be recorded using a tool for educational assessment and ongoing support. The IN-Child Record is designed to promote inclusive education in the field of education and to promote the sound growth and development of IN-Child in need of some kind of assistance, and enables assessment and ongoing support for educational diagnostics that comprehensively capture IN-Child conditions. In addition to the educational evaluation of children, school teachers will also play a role in providing a new perspective on the needs of schoolchildren. IN-Child Record also includes a multidisciplinary perspective, such as healthcare, health, and childcare, and also incorporates concepts that are common to all domains, such as ICF and QOL. Using a multidisciplinary tool will enable educators to look at the needs of children from a variety of perspectives. At the same time, it is expected that it can be used by multidisciplinary professionals to better understand children’s needs and be used as a common tool within a team of experts.

IN-Child Record consists of two domains: “Cause” and “Result”. The cause domain includes the “Physical” and “Mental” subdomains. The “Physical” subdomain consists of “Body condition” and “Posture, movement, and motion” while the “Mental” domain consists of “Inattention” “Hyperactivity/impulsivity”, “Adherence”, and “Self-esteem”. The “Result” domain, on the other hand, includes the “Daily living” and “Learning” subdomains. The “Daily living” subdomain consists of “Social functioning” and “Communication”, while the “Learning” subdomain consists of “Listening”, “Speaking”, “Reading”, “Writing”, “Calculating”, and “Reasoning” (Han, Ota & Kwon, 2016) (Fig. 1). Reliability and constructional validity of scales have been tested (Han, Yano, Kohara, et al., 2017). Data on 624 elementary school pupils and 504 junior high school pupils in Okinawa Prefecture were collected at the time. A book on “IN-Child” has also been published. The “IN-Child Record” is used to provide individual support based on the conditions and characteristics of children at school sites, and many successful cases are summarized. The “IN-Child” initiative has already been used at schools in Okinawa Prefecture, and it is thought that the book introduces many successful cases and is spreading nationwide. It is expected that this will be a new initiative in Japan’s education system in the future.
V. Discussion

In recent years, the identification of "developmental disorders" has become more prevalent in Japan. By examining the definitions and current status of 'developmental disorders' in seven countries, and the nothing recent changes in the ICD and DSM, which are considered to be the leading diagnostic tools, we conclude there are probably similarities between the challenges facing "developmental disorders" in the United States and the current challenges facing Japan. In the United States, the prevalence of autism spectrum disorder increased 20-fold, 3-fold for attention deficit/hyperactivity disorder, and 2-fold for bipolar disorder (particularly 40-fold for bipolar disorder in children) in approximately 20 years following the issuance of DSM-IV. The issue of the DSM-5 has become a challenge to avoid over diagnosis and overtreatment (Tamaki, Chie & Yoshiro, 2016). In Japan, the number of children enrolled in the Special Support Class for Autism Spectrum Disorder and Emotional Disorders has increased by approximately 6,000 every year since FY2007. In FY2014, the percentage of children enrolled in the Training Class with Developmental Disabilities who use Training has increased by approximately 45% of the total number of children enrolled in the Training Class that uses Training Training in the United States. In Japan, there is no denying the possibility of "overdiagnosis/overtreatment." In response to this issue, the United States issued the DSM-5 from a revision of the DSM-4. However, nothing has been done in Japan to date. Against this backdrop, research is being conducted to enable Japan to develop the groundbreaking theory of "IN-Child" and to conduct educational evaluations and provide continuous support tailored to individual needs through "IN-Child Record." The breakthrough in this study is that teachers assess the way children and students are seen in the classroom and that they can provide concrete instruction plans based on
IN-Child Record (Han, Ota, & Kwon, 2016). This study will enable education “to take into account not only disability but all other factors” such as in the United Kingdom. Without lagging behind the rest of the world, we hope that using IN-Child will enable Japan to achieve educational inclusion.

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