SHORT PAPER

Consideration of Construct of the Education Curriculum Management Models for Health Impairment Education in Japan: Focus on the Career Education for Children with Chronic Diseases

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ABSTRACT

This study aimed to identify educational challenges in career education for children with chronic diseases and to consider constructive constructs for building future education curriculum management models. The 12 literature were extracted and analyzed. The literature corresponds to the "career" area of the Scale C3 and examines the constructs needed for education curriculum management models for children with chronic diseases from the perspective of career education. Construct of education curriculum management models for chronically disease children suggested the following; “Describe the disease”, “Ask about the disease”, “Answer questions about the disease”, “Express one's opinion”, “Understand the disease”, “Understand the treatment and medications prescribed”, “Understand and respond to signs of disease deterioration”, “Understand the range of motion”, “Understand how to relieve stress”, “Practice science to avoid delays in studying”, “Accurately gather information about the disease”, “Explain and select medical insurance”, “Collect information for transition to adult health care”, “Choose work that takes into consideration the physical condition”, “Understand the precautions when choosing an occupation” and “Understand how to interact with others, marriage, and childbirth precautions”.

<Key-words>
health impairment, career education, education curriculum management, constructs

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I. Introduction

Although psychogenic diseases are increasing, many children with chronic diseases are also enrolled in the health impairment educational program. A primary challenge of chronic disease is carry-over. “Carry-over” refers to the continuation of a chronic disease that occurs during childhood into adulthood. Patients who experience carry-over not only have medical problems, such as worsening progressive disease, cumulative disability, and sequelae, but also socioeconomic problems caused by the increased duration of their disease (Takei, Shiramizu & Sato et al., 2007). In addition, there have been incidences of childhood cancer survivors facing difficulties in finding employment or continuing in employment. In particular, it has been noted that after high school, there is not a support system for schoolwork for students who are in the transition period of carry-over (Tsuchiya, Nagata & Hirose, 2013). Studies investigating the occupational status of chronically-ill patients have found that people with chronic diseases are more likely to be unemployed than the Japanese norm (Enomoto, Mizuno & Okajima, et al., 2019). Furthermore, it was found that the quality of life and living satisfaction of unemployed persons is low. In these circumstances, it is necessary to provide career education for patients with chronic diseases so that they can develop independence starting in childhood.

Studies on the ability of teachers in charge of health impairment education to help children become socially independent showed a correlation with basic and general-purpose abilities (Taniguchi, 2014). Basic and general-purpose abilities refer to the capacity to provide the basis for social and vocational independence, regardless of occupational field or occupation (The Central Education Council, 2011). Because trend in currently promoting career education in japan it will also need to present education curriculum management models for children with chronic diseases.

However, there are few studies of career education in children with chronic diseases in Japan, and there are no education curriculum management models from the perspective of career education. The Scale for Coordinate Contiguous Career (Scale C³), which is a tool for identifying the need for personal career development, has been developed for career training (Han, Numadate, Goya, et al., 2018). The scale is structured in two areas: personality and career. The area of “career” includes items that more specifically show the basic and general-purpose abilities determined by The Central Education Council (2011). The difficulty in social independence of children with chronic diseases is pointed out to be related to personality issues (Taniguchi, 2014). Therefore, Scale C³ structures may be helpful in examining the constructs of education curriculum management models for children with chronic diseases from the perspective of career education.

This study aimed to identify educational challenges in career education for children with chronic diseases and to consider constructive constructs for building future education curriculum management models.
II. Methods

1. Literature Section

The literature was extracted using the Japanese databases “CiNii (Citation Information by National Institute of Informatics)” and “J-STAGE (Japan Science and Technology Agency)”. The literature is extracted by the following method (Table 1). The literature corresponds to the "career" area of the Scale C³ and examines the constructs needed for education curriculum management models for children with chronic diseases from the perspective of career education.

| 1. Keyword | • Chronic disorders or Health impairment and carry-over  
| • Chronic disorders or Health impairment and Transitional Support  
| • Chronic diseases or Health impairment and career education |
| 2. Screening criteria | • Issues related to the transition period from elementary school to high school or issues related to subsequent carry-over  
| • Content related to career education and social independence  
| • Exclude symposium materials  
| • Exclude psychogenic disorders |

2. Structure of the Scale for Coordinate Contiguous Career (Scale C³)

The "career" area of the Scale C³ was developed based on the basic and general-purpose abilities described by The Central Education Council (2011). The four sub-domains of the "career" area are "human relationship formation skills", "self-understanding and self-management skills", "basic skills of responding to tasks" and "career planning skills".

III. Results

1. Literature analysis

The results of the extracted literature are showed in Table 2. Of these, 12 were analyzed except for overlapping literature.

| Number of papers that met the selection criteria |
|--------------------------------------------------|
| Chronic disease and Carry-over | 1 | 8 |
| Health impairment and Carry-over | 0 | 0 |
| "Chronic disease" and "Transitional support" | 0 | 1 |
| Health impairment and Transition support | 0 | 0 |
| "Chronic diseases" and "career training" | 1 | 0 |
| Health impairment and career training | 0 | 1 |
2. Results of consideration of construct

The constructs of education curriculum management models for children with chronic diseases, based on the career educational perspective, are showed in Table 3.

"Human relationship formation skills" includes "appreciating diversity," "communication skills," and "social skills". The human relationship formation skills of children with chronic diseases included the following: "They can explain the disease around them" (Nio & Ishikawa, 2013; Ishikawa, Nio & Takada, 2013), "Questions can be answered by healthcare professionals" (Maru, 2012; Nagoya & Abe, 2015; Yamamura, 2017), and "Ability to express one's opinion" (Nagoya & Abe, 2015).

"Self-understanding and self-management skills" has three sub-domains: "understanding one's role," "motivation," and "stress tolerance". The self-understanding and self-management skills of children with chronic diseases included the following: "Understand your illness" (Nio, 2008; Nio & Ishikawa, 2013; Tsuchiya, Nagata & Hirose, 2013; Ishikawa, Nio & Takada, 2013), "Understand the range of exercise" (Nio & Ishikawa, 2013; Ishikawa, Nio & Takada, 2013), "Understand the details of the treatment and the drugs prescribed" (Maru, 2012; Nagata & Hirose, 2013; Ishikawa, Nio & Takada, 2013; Yamamura, 2017), "Can recognize and cope with signs of disease deterioration" (Maru, 2012), and "Education for stress relief" (Ikari, 2015).

"Basic skills of responding to tasks" consists of three sub-domains: information acquisition, information expression, and information processing. The basic skills of responding to tasks of children with chronic diseases included the following: "Learn about delays in study" (Ishikawa, Nio & Takada, 2013; Ikari, 2015), "Accurately gather information on diseases" (Ikari, 2015; Sasaki & Kojima; 2017), "Ability to explain about medical insurance" (Nagoya & Abe, 2015), and "Ability to gather information on preparation for transition to internal medicine" (Nagoya & Abe, 2015).

"Career planning skills" consists of two domains: "decision-making" and "career design." The career planning skills of children with chronic diseases included the following: "Ability to choose a job that takes into account their physical condition" (Nio & Ishikawa, 2013), "Confirm the precautions when choosing an occupation" (Yamamura, 2017), "Manage money" (Yamamura, 2017), and "Checks points of caution regarding how to interact with others, marriage, and childbirth" (Nagoya & Abe, 2015).
### Construct of education curriculum management models for chronically disease children based on career educational perspective

| Proposed construct | Career area of the Scale C³ (Basic and general-purpose abilities) |
|--------------------|---------------------------------------------------------------|
| • Describe the disease | Human relationship formation skills |
| • Ask about the disease | |
| • Answer questions about the disease | |
| • Express one's opinion | |
| • Understand the disease | Self-understanding and self-management skills |
| • Understand the treatment and medications prescribed | |
| • Understand and respond to signs of disease deterioration | |
| • Understand the range of motion | |
| • Understand how to relieve stress | |
| • Practice science to avoid delays in studying | Basic skills of responding to tasks |
| • Accurately gather information about the disease | |
| • Explain and select medical insurance | |
| • Collect information for transition to adult health care | |
| • Choose work that takes into consideration the physical condition | Career planning skills |
| • Understand the precautions when choosing an occupation | |
| • Understand how to interact with others, marriage, and childbirth precautions | |

### IV. Discussion

Children with chronic diseases are often restricted from participating in schools and society because of their illness. The impact of the illness on the child may also affect career development. In particular, it has been shown that restricting life activities due to the illness itself or its treatment causes stress, anxiety, and insecurity due to delays in studying (Ikari, 2015). In order to support the career development of children with chronic diseases, it is necessary to understand diseases and treatment methods and to consider their impact on children’s daily lives. In addition, children may need to develop skills to explain and understand the illnesses around them. People working with children with chronic diseases often communicate with family members, school teachers, friends, and healthcare professionals. It is therefore a key skill for people with chronic diseases to be able to ask doctors about their illnesses and to express their opinions (Nagoya & Abe, 2015). It is also considered necessary to have the power to infer what could happen with one's illness or occupational life when choosing a job.
The limitations of this study include the narrow focus of literature on career teaching for people with chronic diseases in Japan, which resulted in a small number of articles available for literature analysis. In the future, in order to create education curriculum management models for career education for children with chronic diseases, analysis of literature from non-paper sources will be included, and a more detailed modeling of the constructs will be considered. There are also many issues related to learning for children with chronic disease, but this study was not able to analyze those issues specifically. From the viewpoint of basic and general-purpose abilities, we believe that analyzing the content of each subject will create a curriculum for children with chronic diseases.

Children with chronic diseases face a number of career development challenges due to their needs as a result of their illness. The majority of unemployed patients are assessed to be self-employed (Enomoto, Mizuno & Okajima, et al., 2019). From the perspective of career education, therefore, it is necessary to create from basic and general-purpose abilities perspective models the formulation of curricula tailored to the needs of children with chronic diseases in the future.

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