

Speech-Language Pathologists' Knowledge and Attitude of Genetics in Korea

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Abstract. To examine their knowledge and attitude of genetics, a survey was conducted with 112 speech-language pathologists(SLPs) in Korea. As a result, it was found that 47% of SLPs intervened genetics-related children, and the most on their caseloads was Down syndrome, followed by Williams syndrome and Prader-Willi syndrome. The mean percentage of correct answer to genetics knowledge was 55.84% and the mean confidence score of genetics was 17, suggesting their diffidence of genetics. However, attitudes toward genetics revealed that most SLPs agreed to the relevance of speech-language pathology to genetics.

Keywords: Speech-Language Pathologists, Genetics, Knowledge, Attitude

1 Introduction

The development of speech-language pathology has brought about studies linked with related fields and the expansion of the scope of concern. One of them is genetics because it can explain certain aspects of speech-language pathology. For example, twin study demonstrated that genetics influenced spoken and written language acquisition[1]. The detailed results has been reported that chromosome 1, 3, 6, 7, and 15 were associated with speech disorder[2], and the FOXP2 gene has been related with autism spectrum disorders[3], dyslexia[4], specific language impairment[5] and developmental verbal apraxia[6]. Specifically, the broadest area conducted in studies of communication disorders and genetics is stuttering. Stuttering has the long history of genetics study including twin, adopted child, and specific genes[7].

The other reason that Speech-language pathology is concerned for genetics studies is that it can explains the development of the speech, language, and literacy and can provides certain information about the intervention and diagnosis of speech language impairment[8]. In this reason, American Speech-Language Hearing Association(ASHA) has emphasized that it is important to understand the the

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principles of genetics, genetic testing, and genetic counseling[9]. NCHPEG developed training programs and web-sites related to genetics for undergraduates, graduates studying speech-language pathology and SLPs[8]. Also the academic circle has actively conducted researches on genetic knowledge, confidence, and awareness.

The history of speech-language pathology is short in Korea. However, with increased demands for speech therapy, speech-language pathology became the field of national qualification in 2011. Speech-language pathology has been rapidly developed such that 1,200 SLPs are produced in a year and the concern for speech-language pathology has been extended to various fields in Korea. This study is intended to examine SLP's knowledge and attitudes of genetics in response to the development of speech-language pathology in Korea and contribute to further understanding of genetics-related language disorders.

2. Methods

2.1 Participants

With mail survey methodology, a survey was conducted with SLPs who worked for welfare centers, hospitals, clinics, speech-language therapy centers, kindergartens for children with disabilities, and special schools in the whole country and 112 SLPs were included in this study.

2.2 Survey materials

Four-part survey questionnaire was developed and contained 50 items which were adapted from Michael Tramontana et al(2013)[8]. A content validity was conducted by one geneticist and SLP with a doctoral degree in communication disorders. Cronbach's a reliability coefficient was 0.910 for 29 knowledge items, .929 for 6 confidence items, and .862 for 5 attitudes items.

2.3 Procedures and data analysis

To conduct study, addresses, e-mail addresses, and telephone numbers were collected from web-sites of welfare centers, speech therapy centers, hospitals, and clinics in Korea and then 200 questionnaires were distributed to them. Of them, 115 questionnaires were returned(57.5%). Finally, 112 questionnaires were used for the final analysis after incomplete ones were excluded. Descriptive statistics was used for data analysis and SPSS 18.0 statistics program was used.

3. Results

3.1 Participants' characteristics

The results of SLPs' demo-sociological characteristics were as follows. Females were 95.6% and males were 4.4%. SLPs reported working in speech therapy centers(33.6%), educational institutions(29.9%), hospitals (14.0%), and welfare centers(12.1%). SLPs also reported their geographic work locations with 91% working in urban areas and 9% working in rural areas. 47.2% of SLPs reported they had children with genetic syndromes or diagnosed genetic disorders on their caseloads and the most frequent referral disorder was Down syndrome(54.3%), followed by Williams syndrome(17.1%), Prader-Willi syndrome(11.4%), Turner's syndrome(5.7%), and Cri du chat syndrome(2.9%). Klinefelter's syndrome, fragile X syndrome, and Hunter syndrome were also included.

3.2 Descriptive analyses

For the results of analyzing genetics knowledge, the mean correct answer number was 16.19(SD 5.12) with the range of 6-28. The mean percentage of correct answer to genetics knowledge was 55.84%(SD 17.66) and the range of percentage was 26.69%-96.55%. For the results of analyzing confidence, the mean was 18(SD 5.96) with the range of 7-30. Generally the mean was close to 3 points, indicating that SLPs had little confidence of genetics. Specifically, they showed the lowest confidence level in discussion on general knowledge of genetic syndrome. For attitudes, the mean was 9.56(SD 3.51) with the range of 5-16. Specifically, most of them agreed that genetics information was useful for their intervention by helping them understand a disorder and identify problems early.

4 Conclusion and Discussion

47.2% of SLPs were engaged in intervention and the most frequent disorder was Down syndrome, followed by Williams syndrome, and Prader-Willi syndrome on their caseloads. Although Down syndrome was the most frequent case, a very variety of syndromes were referred.

SLPs' mean percentage of correct answer to genetics knowledge was 55.84%. As items used in this study were about general public information of genetics[10], it was found that SLPs has been not given information enough to establish intervention goals and provide service for the genetics-related children.

The mean confidence score of genetics was 18. It suggests SLPs' poor confidence level of genetics and accords with the result that higher knowledge of genetics was associated with higher confidence level of genetics[8]. While SPLs showed unsure confidence level in genetics, they agreed the relevance of speech-language pathology

to genetics. Given that individual attitudes along with knowledge and confidence play an important role in effectively giving information to people with needs of speech therapy including children and parents[11], it is necessary to conduct a variety of researches related to genetics.

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