Efficacy of Clinical Education in Promising Clinical Competency amongst Speech-Language Pathology Students of Riphah International University

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ABSTRACT:

Background: Clinical education is an important component of an undergraduate or a graduate health sciences program. It is perceived to be crucial in the development of skills and attitudes related to clinical practice. However, many speech-language pathology (SLP) programs are facing a challenge with regards to the provision of clinical education. There appears a lack of empirical studies outlining the efficiency of clinical education in developing competency in students.

Objective: This study was conducted to determine whether clinical education is necessary in promising clinical competency amongst SLP students of Riphah International University, Pakistan.

Methodology: A comparative cross sectional study between students with practical experience and those without practical experience was conducting to determine the necessity of clinical education. Questionnaires comprised of 10 questions testing the ability to differentiate between phonological disorders and delay was handed out to semesters 1, 2, 3, 4 and 4+ of Riphah's SLP students. Out of the collected questionnaires, 10 samples from both groups were randomly selected and analyzed via t-test statistics and Cohen's d for determination of the effect size.

Results: The obtained data showed a significant difference in the scores of experienced students (M=6.1, SD=1.37) and non-experienced students (M=4.8, SD=1.14); t (18) =2.31, p <0.05; d =1.03. The effect size, d =1.03, for this analysis was found to exceed d =0.80, Cohen's convention for a large effect.

Conclusion:

Clinical education is significantly effective in developing clinical competency amongst SLP students of Riphah. Students with knowledge of classroom-based theory and no exposure to clinical contexts show poor perception of the application of SLP concepts as oppose to their peers with exposure to clinical contexts. Consequently, institutions should ensure that the challenges facing the provision of clinical education are outlined and dealt with in order to present any form of clinical exposure to all future speech-language pathologists.

Keywords: Clinical Education, Phonological Disorder, Phonological delay. (JRCRS 2014; 2(1): 17-22

INTRODUCTION

Clinical education entails providing a student with opportunities to develop the required skills and attitudes pertaining to their professional field as outlined by the university's degree structure or an accrediting board 1. Clinical education focuses on care for people as a mode of teaching and learning 2. It involves students partaking in practical client activities within or outside the confines of the university 1. It requires students to join health clinics, community or educational settings to practice client care under the supervision of a practitioner 1.

According to literature on clinical education, it has been deemed essential in the training of future speech language pathologists. It provides the students with a client care platform in which they can practice and develop their professional skills 3. Since graduates of health sciences are expected to effectively work in multidisciplinary teams in dynamic workplace environments, clinical education aims to instill discipline-specific and multidisciplinary skills in students as they relate classroom knowledge to workplace contexts 3, 4. Furthermore, a study by Atrill and Gunn (2011) interviewed participants (SLP students of Flinder's University of South Australia) and found that their interaction with clients at practicum enhanced their understanding of rehabilitation.

On the other hand, there seems to be no set criteria of what is evidently comprised to be ideal clinical education or the prescribed number of clinical hours that will allow SLP students to attain elementary level clinical competence 6, 7. Every student varies in their prior work and life experiences, learning abilities and personal qualities that they bring to clinical education. Consequently, some SLP students show exceptional clinical skills and understanding of their field after 100 hours of clinical education, while there are students whom are lacking even after a completion of 500 clinical hours 5. On a broader scale, there are also differences found amongst nations with regards to the most suitable types of practices in clinical education accordingly. For instance, the frequency of the use of unconventional clinical experiences in which clinical education is not conducted as one-on-one supervisor to student weekly placements is found to vary between countries 4. Therefore, some models of clinical education can deem suitable for one sub-group of students while failing to work for another. Though there have been some attempts to collect subjective data and some existing anecdotal evidence pertaining to effective clinical education models for SLP students in Western countries, there appears to be no research of this nature for SLP students of Pakistan 4.

Riphah International University is one of the first university's in Pakistan to offer a Masters in speech-language

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pathology. The curriculum of the program lists practical experience in the form of clinical decision making, advance clinical practicum and the recent addition of a clinical log completion of 30 clients. However, there appears a gap between the ideal lay out and the actual conduction of the program with regards to clinical education as Riphah's SLP program is fairly new and it is still undergoing many changes. Many SLP students of Riphah have not had the opportunity to complete clinical hours or partake in a practicum due to the lack of resources, improper clinical setup on campus, lack of speech therapy awareness in turn causing a shortage of referring bodies and in some part hesitation amongst clients towards visiting students. Though Riphah's SLP program is facing a challenge with regards to the accommodation of clinical practice, it is not unique to this institution. Many universities offering speech language pathology studies around the world are experiencing difficulties in providing clinical education due to an increase in number of students, a shortage of clinical placements and the shifting skills required by newly graduates 6. This alteration in clinical education is overall found to be arising in the field of rehabilitation inclusive of occupational therapy and physiotherapy 5, 8.

This study aims to address the lack of clinical education at Riphah International University, Pakistan. Though it would be beneficial to suggest a suitable model (conventional or unconventional) of clinical education for SLP students of Pakistan and how to prepare for challenges to the provision of clinical education, it is imperative to decide whether clinical education even promises competency in SLP students of Pakistan as nations vary in their effective educational models. Therefore, the purpose of this study is to identify whether clinical education is essential in promising competency in future speech language pathologists at Riphah or is classroom-based theory sufficient by itself. For the purposes of this study, promise of competency entails having understanding of specific SLP concepts, namely being able to differentiate between phonological disorders and phonological delay.

A phonological disorder is a communication disorder involving disordered speech production comprising of sound deletions and substitutions affecting speech intelligibility 9. It is identified in an individual who shows an atypical phonological error (unfound in the normative sample of any age group for the assessment) a minimum of five times in a 50-word task comprised of different lexical units 10. DSM-TV, characterizes phonological disorder as a "failure to use developmentally expected speech sounds that are appropriate for age and dialect" 11.While a phonological delay is defined by delayed development of segmental organization of the sound system and its poor underlying perceptual knowledge 12. Dodd describes phonological delay as the presence of phonological error patterns that occur in a minimum of five different lexical units in a 50-word picture naming task and are typically found in children at least 10% younger in age according to the normative data for the assessment [10].

MATERIALS AND METHODS:

The data presented in this article is drawn through a comparative cross sectional design in which SLP students in semester 1, 2, 3, 4 and 4+ of Riphah were recruited to complete a questionnaire on voluntary basis. For the purposes of this study, Riphah SLP graduates and those who have completed class work, currently conducting research are referred to as SLP students of semester 4+. The inclusion criteria of the study are comprised of experienced and non-experienced Riphah SLP students who had knowledge of phonological disorders and delay through class-room based theory. The exclusion criteria was of Riphah SLP students who had not yet learned about phonological disorders and delay in a classroom setting and all other non-Riphah SLP students.

A Questionnaire consisting of 10 questions (conceptual and case studies testing an individual's knowledge of phonological delay and disorder) were handed out to all those who fell in the inclusion criteria. A total of 40 questionnaires were handed out and only 27 were filled and returned. Out of the 27, 2 were excluded from the analysis as they were incomplete. Out of the 25 completed questionnaires, 13 were filled by students who had practical experience while 12 were filled out by those who did not. From the questionnaires of 13 experienced and 12 non-experienced individuals, 10 were randomly selected for each category in order to match the sample sizes of both categories and randomize the confounding effects of semester-related or individual differences.

The questionnaires were then scored out of 10 and the complied data was analyzed through SPSS version 20 via the t-test statistics in order to determine the difference between the score mean values of the two groups on a significance level of

5 %. Following the determination of significance, the effect size using Cohen's d was computed.

RESULTS:

An independent-samples t-test was conducted to compare promise of clinical competency between experienced and non-experienced SLP students of Riphah. Questionnaires representing competency, testing knowledge of factors differentiating phonological disorder from delay were scored out of 10 for both groups. The results indicate that individuals with experience (M=6.1, SD=1.37) scored higher on the questionnaire than individuals without experience (M=4.8, SD=1.14).The analyzed data showed a significant difference in the scores of the two groups; t (18) =2.31, p <0.05; d =1.03. The effect size, d =1.03, for this analysis was found to exceed d =0.80, Cohen's convention for a large effect. The analyzed difference in the scores of the two groups can be observed in figure 1.

Figure 1: Questionnaire scores (out of 10) for experienced versus non-experienced SLP students of Riphah
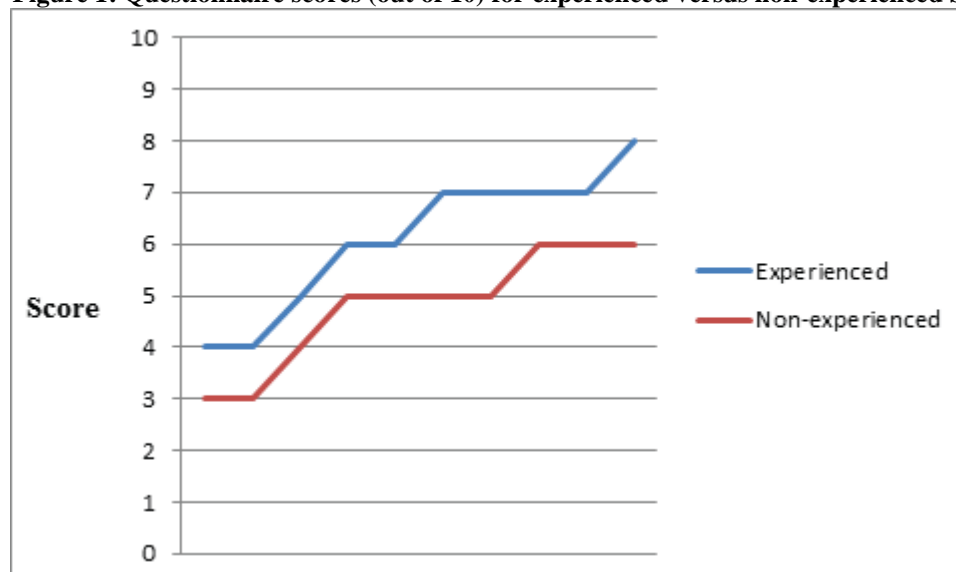
DISCUSSION:

The results indicate a significant difference between the scores of students with practical experience and those without it. By scoring higher, students with practical experience have demonstrated greater understanding of the differentiating factors between phonological disorder and delay. Hence implying that participation in practical experience is effective in developing student competency as oppose to no practical experience. The findings of this study were consistent with the mentioned study of Atrill and Gunn's (2011) on the efficacy of clinical education in developing student competency. It suggested that the SLP Students' understanding of rehabilitation was centered on interactions with clients and related experiences in practicum rehabilitation settings.[5]

Understanding of rehabilitation concepts and practice was defined to be essential in successful integration and development of clinical skills for SLP students 5. The students reported that classroom-based theory gave them a poor grasp on core skills associated with rehabilitation while the development of the "core skills" occurred in practicum through the context of the client 5. Students further felt that the classical nature of case studies presented to them in class differed from the complex cases observed in real life through practicum. Overall, the data represented the notion of "clients becoming teachers", implying the importance of clients to students' understanding of rehabilitation as oppose to integration of theory and teachings by the clinical educator or the multidisciplinary team 5. This study appears to be one of the very few studies testing the efficacy of clinical education amongst students of SLP 5.

There is plenty of other literature that traditionally recognizes clinical education to be effective in developing clinical competency and is in line with the presented results of this study. However, the traditional recognition of clinical education is marked to be of low level evidence. [13]

One of such findings by Lindquist et al (2004) recognized that graduates prize learning from practical experience gained through clinical contexts. Moreover, it is generally accepted that professional skills are enhanced within a workplace that allows integration of theory and practice 7, 15. Clinical context plays an important role in the development of students' knowledge base and the exposure to the subjectivity of the real world introduces variability and complexity in the students SLP concepts allowing them to challenge learned theory 16. Such challenges guide the students to reorganize their knowledge so it can be best applied practically to problem solving and clinical decision making 16. In addition, professional skill development via clinical contexts helps SLP students to acquire an understanding of rehabilitation since the required requisites may not have been subject of matter during their academic work 5.

It is also reported that unconventional models of clinical education for SLP students, such as project placements, allow for greater development of professional skills 4. Another unconventional model of clinical education in SLP is known as inter-professional placements 4. Inter-professional placements involve students joining with students of other disciplines to form interactive learning experiences 4. Since this model allows learning about other disciplines and working with a multi-disciplinary team, it has found to link theory to practice on a greater scale and as well has allowed for development of teamwork skills 8. The

conventional models in comparison to unconventional models of SLP clinical education, such as weekly placements and blocks have received a grater rating with regards to its perceived effectiveness in building student competency 4. A recurring theme here is that both conventional and unconventional models of clinical education have been identified to be effective in promising clinical competency amongst students as oppose to classroom-based theory by itself.

However, as mentioned already the actual benefit of clinical education whether it pertains to a conventional or an unconventional model has not been empirically tested and is unknown in terms of its impact on the development of student competency 6. All mentioned evidence and most research to date have only focused on the perceptions and opinions of students and other participants 6. There is a paucity of research measuring and comparing behavior change and the actual development of skills during clinical challenges to the provision of clinical education[6]. It has been suggested that institutions are perhaps focusing on providing SLP students opportunities to experience the broadest range of clinical sub-groups through their clinical education rather than focusing on the educational philosophy of their clinical program 4. Therefore, providing clinical exposure is of initial concern whether it is of a conventional or an unconventional model is not tantamount. This study has measured the general impact of clinical exposure on the development of student competency amongst SLP students of Riphah and has obtained results in line with most research that has focused on opinions of participants with respect to this subject matter.

Some limitations evident in the study arise from the small obtained sample size. Some variables that were marked to be causing a confounding effect may be subject to a low level of elimination. A semester-related difference amongst students, such as a change in their instructor for the subject of speech disorders could have affected their score on the questionnaire as it tested the ability to differentiate between a phonological disorder and a delay. As well, students possessing a speech therapy diploma would also be more likely to do better on the questionnaire aside from the presence of practical experience as they would have studied speech disorders and delay more than once. Keeping these in mind, out of the collected questionnaires, 10 were randomly selected for each group. Therefore, the effect of a change in instructor (semester-related differences) and the effect of possessing a speech therapy diploma (individual differences) were randomly distributed. Though a small sample size was a limiting factor in this study, it is one of the very few studies to empirically test the efficacy of clinical education on promising clinical competency amongst SLP students. It is also the very first study of this nature to be conducted on a Pakistani SLP program, that of Riphah International University's. Hence it has added valuable information to the existing knowledge gap. Since this study poses as evidence for the efficacy of clinical education amongst SLP students of Pakistan, SLP programs of this nation should ensure that the existing speech-language pathologists with clinical exposure to enhance their development of competency in the field.

CONCLUSION:

This quantitative study was conducted to test the need for clinical education on developing student competency after observing the existing challenges of Riphah International University's SLP program to provide for such exposure. It tested the ability of students with practical experience and those without it to differentiate between phonological disorder and delay. Students with clinical exposure were found to hold a greater ability to differentiate between phonological disorder and delay therefore promising more clinical competency than students without clinical exposure. This study, on a broader spectrum can be seen as evidence for the necessity of clinical education for SLP students in Pakistan. Future studies that deal with outlining the actual challenges of SLP programs of Pakistan in the provision of clinical education and their elimination and as well as the philosophy behind the educational models and its suitable types (conventional or unconventional) would help enhance our knowledge of an ideal SLP program for students in Pakistan.

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