Pharmacophore

ISSN-2229-5402

Journal home page: http://www.pharmacophorejournal.com

Pharmacophore
an International Journal
ISSN 2229-5402

EVIDENCE-BASED PRACTICE: KNOWLEDGE, ATTITUDES, AND BEHAVIOR OF IRANIAN SPEECH AND LANGUAGE PATHOLOGISTS

Seyed Abolfazl Tohidast[1], Mohammad Kamali[2], Leila Ghelichi [3*], Yoones Amiri Shavaki [4], Abbas Ebadi [5], Narges Shafaroodi[6] , Banafshe Mansuri[7]

1. *PhD Candidate in Speech and Language PathologyDepartment of Speech and Language Pathology School of Rehabilitation Sciences, Iran University of Medical Sciences, Tehran, Iran.*
2. *PhD, Professor Department of Basic Sciences in Rehabilitation School of Rehabilitation Sciences, Iran University of Medical Sciences, Tehran, Iran.*
3. *PhD, Assistant professor Department of Speech and Language Pathology School of Rehabilitation Sciences, Iran University of Medical Sciences, Tehran, Iran*
4. *PhD, Assistant professor Department of Speech and Language PathologySchool of Rehabilitation Sciences, Iran University of Medical Sciences, Tehran, Iran.*
5. *PhD, Associate professor Behavioral sciences research center and nursing faculty, Baqiyatallah University of Medical Sciences, Teheran, Iran.*
6. *PhD, Assistant professor Department of Occupational Therpay School of Rehabilitation Sciences, Iran University of Medical Sciences, Tehran, Iran.*
7. *PhD Candidate in Speech and Language Pathology Department of Speech and Language Pathology School of Rehabilitation Sciences, Iran University of Medical Sciences, Tehran, Iran.*

ARTICLE INFO

Received:
03th Jun 2017
Accepted:
29th Nov 2017
Available online:
14th Dec 2017

Keywords: *Evidence-Based Practice, Speech-Language Pathology, Knowledge, Attitude, Behavior*

ABSTRACT

Introduction: Speech and Language Pathologists (SLPs) have given great importance to Evidence-Based Practice (EBP) in recent years. However, little research has been done about using EBP among SLPs. Therefore, the aim of the present study was to investigate the knowledge, attitudes, and behavior of Iranian SLPs toward EBP.
Methods: This cross-sectional study was performed from September to December 2016 in Iran. A self-administrated questionnaire through a survey link was sent to 200 Iranian SLPs. Statistical Package for Social Sciences (SPSS) 18.0 software was used to data analysis. Also, we used Spearman and Mann-Whitney test for further statistical analysis.
Results: 127 SLPs filled the questionnaires and submitted it. Iranian SLPs had a positive attitude toward EBP. According to the SLPs statement, insufficient time, lack of research skills, and inability to apply research findings to individual patients with unique characteristics were most important barriers to implement EBP. SLPs reported that they reading articles or other sources, using literature and research finding, and searching databases 5 or fewer than 5 times in recent month. Half of the respondents stated they have not received formal education about EBP. SLPs who had received formal training in search strategies and literature review had more confidence in their abilities in these fields (Spearman, P=0.000). Women SLPs had more confidence in their abilities to implement EBP than men (Mann-Whitney, P< 0.05).
Conclusion: The present study showed that Iranian SLPs have good attitudes and beliefs toward EBP. According to advantages of using EBP, they need to receive training in regard the EBP and to be more attentive to it. Iranian SLPs can improve their capabilities in clinical setting by applying EBP.

To Cite This Article: Seyed Abolfazl Tohidast, Mohammad Kamali, Leila Ghelichi , Yoones Amiri Shavaki , Abbas Ebadi , Narges Shafaroodi , Banafshe Mansuri, (2017), "evidence-based practice: knowledge, attitudes, and behavior of iranian speech and language pathologists", ***Pharmacophore, 8(6S),*** *e-1173452.*

Introduction

Evidence-based practice (EBP) is defined as ''integration of best research evidence with clinical expertise and patient values and circumstances'' (1). The advantage of applying evidence-based practice by clinicians includes: improvement in quality of healthcare; more interdisciplinary cooperation; connecting research results to practice; enhancing the professional credentials; and similar patient care according to the best research (2, 3). As a result, there has been a great emphasis on applying evidence-

Corresponding Author: Leila Ghelichi , Email: lghelichi@gmail.com

based practice in health-related professions (e.g., pharmacy, medicine, physical therapy, occupational therapy, and nursing) in recent decades (4, 5).
Speech and language pathologists (SLPs) along with other healthcare disciplines need to pay more attention to EBP (2, 4, 6). Increasing rate of scientific evidence, need to access new evidence, change in patient care due to new evidence, unanswered questions regard to treatment efficacy, and extensive specific fields in speech pathology are some of the features of speech and language pathology that causes SLPs require a greater use of evidence-based practice (7).
Despite the great interest that exists regarding documentation of knowledge, attitudes and behavior of health-related professions about EBP, little research has been performed about this field among SLPs (3). Zipoli and Kennedy (3) reported that SLPs of the American Speech-Language-Hearing Association (ASHA) have a positive attitudes toward EBP but they were more dependent on traditional sources for decision making than evidence based guides, lack of time perceived as the major obstacle to use EBP. In another survey, Vallino-Napoli and Reilly found that speech pathologists were aware of EBP and placed a great importance on best research. Also, lack of time was the greatest obstacle to the use EBP (8). Similarly, in an investigation on 32 SLPs in southern Ireland, O'Connor and Pettigrew found that lack of time was the most important barrier to implement EBP (9). So far, there has been only one survey of Iranian SLPs toward EBP which carried out in a one restricted city (Isfahan) of Iran (10) and the results of this study may not be indicative of Iranian speech and language pathology society. Due to the lack of information in this field need to do further studies. Therefore, to provide further information in this field in Iran, this study aimed to investigate the knowledge, attitudes, and behavior of Iranian speech and language pathologists toward evidence-based practice.

Materials and Methods

Study design and participants

This cross-sectional survey was performed during September to December 2016 in Iran. To obtain the target population, purposive sampling was done. Several lists of the names and telephones of the SLPs were taken from Iranian speech and language pathology association, universities, and other related organs. Then, the online survey link was sent to a total number of 200 SLPs via Email or other communication paths. The survey link includes three sections: information letter, demographic questions, and main questionnaire. SLPs were requested to read the information letter, fill the questionnaire carefully and then submit it. SLPs who do not perform clinical practice were excluded. Participation in the survey was based on the willingness of respondents. Responses of participants downloaded into Excel software and then entered to Statistical Package for Social Sciences (SPSS).
This study was approved by the Ethics Committee of Iran University of Medical Sciences (approval number IR.IUMS.REC 1395.9221363202).

Study instrument

An adapted version of the Jette et al. questionnaire was used in this study. The Jette et al. questionnaire was originally developed to investigate EBP among physiotherapists and showed adequate test-retest reliability (11). The questionnaire translated to Persian and validates to use for SLPs in the previous study (10). The questionnaire comprised of 32 questions in seven sections. These seven sections include: attitudes and beliefs about EBP (nine questions), interest and motivation in using EBP (two questions), knowledge and skills related to educational training and confidence in identification and critical appraisal of research literature (seven questions), attention to literature (three questions), ability to access information (five questions), availability and use of clinical practice guidelines (six questions), perceived barriers to EBP (one question that asks respondents to rank barriers which existed to the implement of EBP) (See Appendix 1.).

Statistical analysis

SPSS software version 18.0 (SPSS Inc., Chicago, IL, USA) was used to data analysis. Kolmogorov–Smirnov test was used to check the normality of data. We used Spearman and Mann-Whitney test to investigate correlation between variables.

Results

127 respondents returned the questionnaire (response rate was 63.5%).

Demographic characteristics

Most respondents were women (68.5%). The majority of respondents had a bachelor's degree (45.6%) and most of them worked in private clinics (39.4%). The maximum and minimum clinical experiences of respondents were respectively 35 years and less than one year. More details about demographic data of respondents presented in Table 1.

Table 1: Demographic data of respondents

Gender N (%)	**Age**	**Education Level N (%)**	**Years Practicing SLP**	**Place of Practice N (%)**
Male 41 (32) Female 86 (68)	Mean: 27.48 SD: 5.52 Min: 20 Max: 59	BSc 58 (45.6) MSc student 35 (27.6) MSc 17 (13.4) PhD student 15 (11.8) PhD 2 (1.6)	Mean: 4.82 SD: 5.15 Min: 1 Max: 35	Private 51 (41.4) Organization 55 (44.4) Either 18 (14.5)
Total: 127	**127**	**127**	**123**	**124**

SD: Standard Deviation, Min: Minimum, Max: Maximum, BSc: Baster Science, MSc: Master Science, SLP: speech and language pathology

Attitudes and Beliefs

The results of the present study showed that Iranian SLPs agreed or very agreed that EBP is necessary for speech and language pathology (96.8%), using literature in daily practice (97.6%), interested in learning about EBP (97.6%), EBP increases the quality of patient care (96.1%), and EBP helps in decision making (96.8%). Respondents disagreed or very disagreed with the adoption of EBP places an unreasonable demand on SLPs (81.4%), EBP does not consider patient preferences (73.6%), and there is not strong evidence to support treatments that I used (68.9%). More details about responses related to attitudes and beliefs of SLPs toward EBP showed in Figure 1.

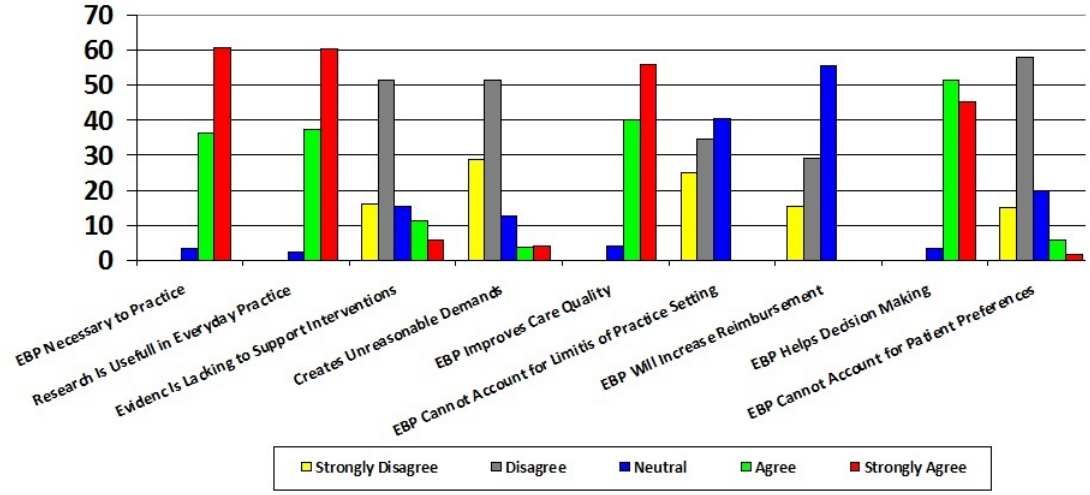

Figure 1: Attitudes and beliefs about evidence-based practice.

Education, Knowledge, and Skills about Evidence-Based Practice

Thirty percent of respondents agreed with who have learned foundations of EBP at university and 28% of respondents disagreed with this. More than 71% of SLPs agreed or strongly agreed that they had appropriate knowledge toward medical search engines such as MEDLINE. Approximately 30% and 37% of SLPs disagreed that have received formal training in search skills and critical appraisal, respectively. Approximately 67% and 63% of SLPs agreed or strongly agreed that their ability in critical appraisal and search skills, respectively. Figure 2 showed the results of the responses related to education, knowledge and skills of Iranian SLPs toward EBP.

According to respondents, a complete understanding of technical terms related to EBP in order from highest to lowest understand include: effectiveness, systematic review, outcome measurement, meta-analysis, confidence interval, publication bias, absolute risk, and relative risk. Figure 3 presented SLPs' self-reported knowledge about specific terms related to EBP.

The results of our study showed there was no significant correlation between education level and receiving formal education about foundations of EBP at university (Spearman, P=0.215). But there was significant correlation between education level and receiving formal training in search skills and critical appraisal (Spearman, P=0.000). In fact, people with higher education level had more training in this regard. Also, we found that SLPs with a higher education level were more familiar with online databases such as MEDLINE (Spearman, P=0.000).

SLPs who had received formal training in search strategies and literature review had more confidence in their abilities in these fields (Spearman, P=0.000). Women SLPs had more confidence in their abilities to implement EBP than men (Mann-Whitney, $P < 0.05$).

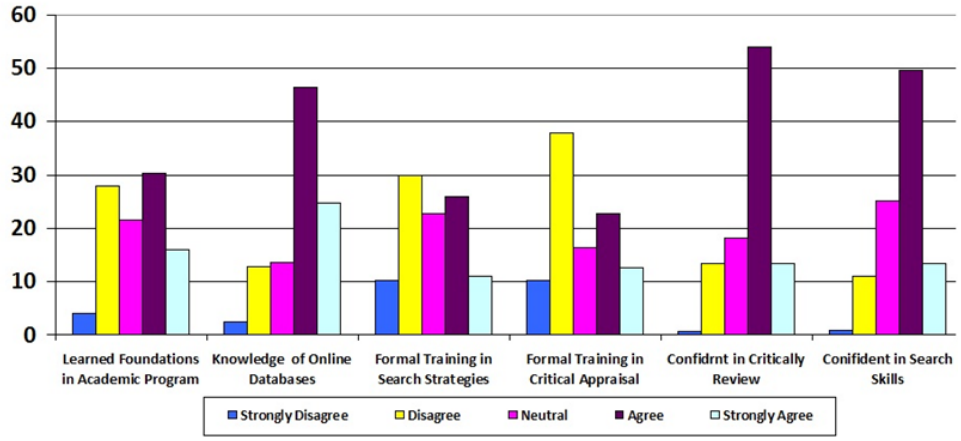

Figure 2: Self-reported education, knowledge, and skills.

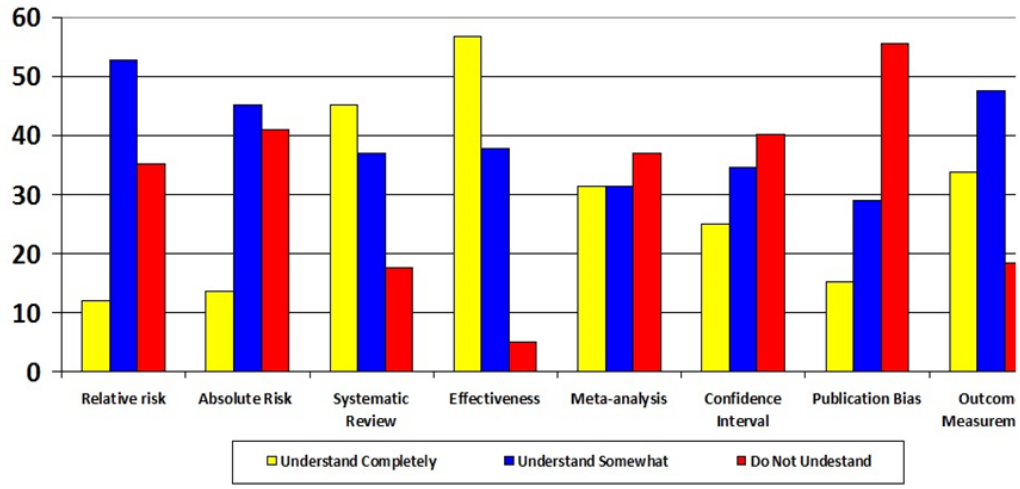

Figure 3: Knowledge of specific terms.

Attention to Literature

Approximately 53% of SLPs reported reading between 2 and 5 articles in recent month. Only 3.2% of SLPs reported reading more than 15 articles in recent month. The most SLPs (38.6%) reported searching databases fewer than 2 in recent month. Eighty-one percent of SLPs stated using literature in decision making fewer than 6 times in recent month. More details about attention to literature presented in Figure 4.

The present study found that there was significant correlation between educational level and three questions related to attention to literature (Spearman, *P*=0.000). These findings showed SLPs with higher degree attend more to literature.

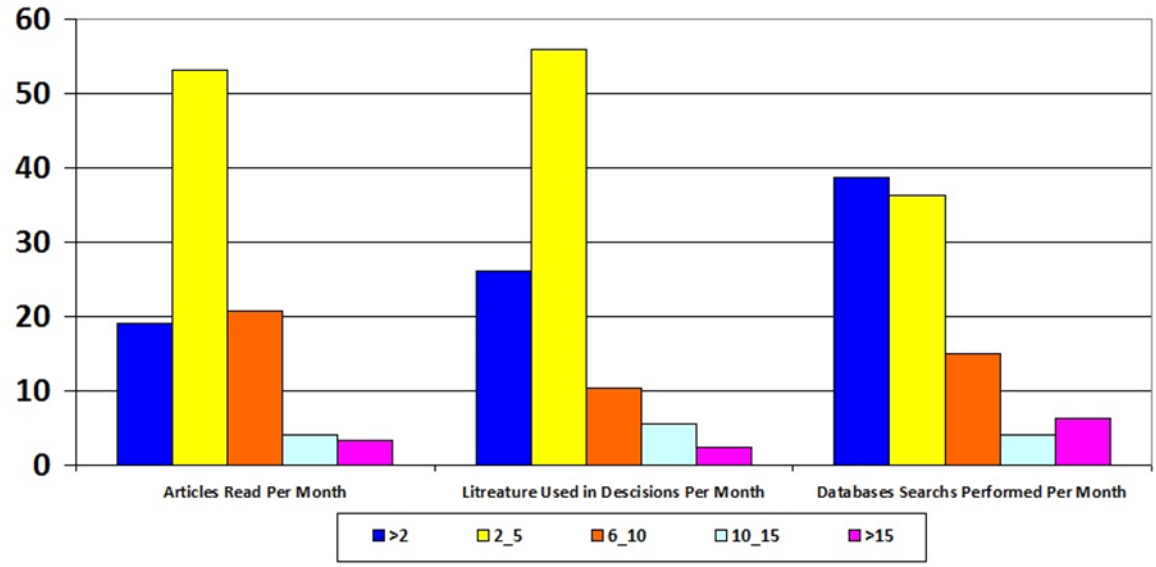

Figure 4: Self-reported attention to literature

Access to and Availability of Literature

More than half of the respondents (52%) said they have access to paper form of journals. Sixty-nine percent of the respondents declared to the availability of the clinical guidelines related to their work and 79.4% stated they have access to online practice guidelines. Less than half of the respondents (45.7%) stated they have access to databases at work place while nearly 87% of them have access to databases at home or other somewhere than work. Figure 5 showed the distribution of responses related to this section.

The findings of the correlation between accesses to literature with attention to literature showed that: significant correlation between access to paper journals with articles read per month, database searches performed per month, and literature used in decisions per month (Spearman, *P=0.000*). Significant correlation between access databases and internet at work with articles read per month, database searches performed per month, and literature used in decisions per month (Spearman, *P=0.000*).

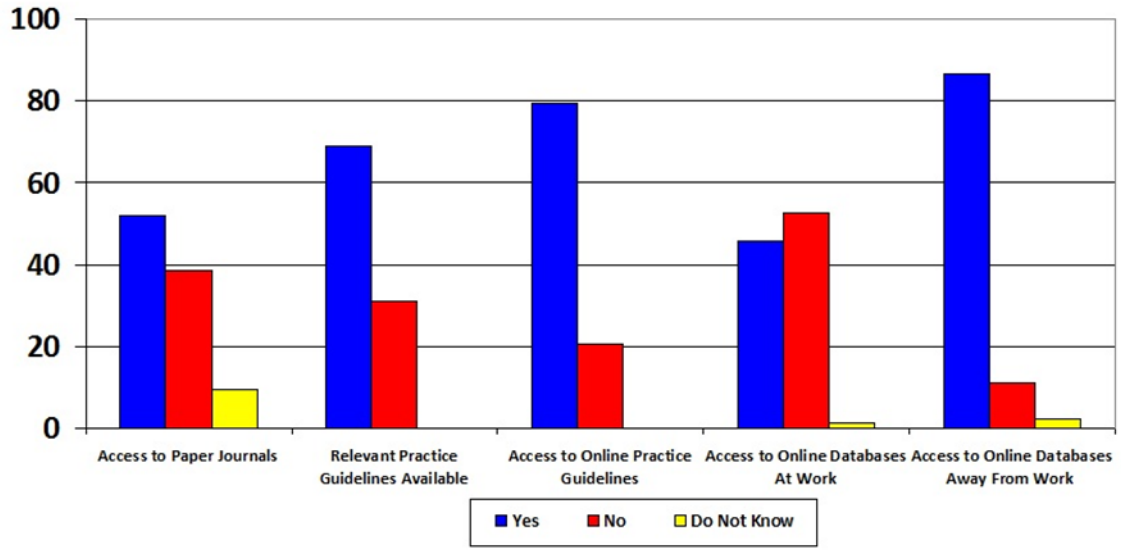

Figure 5: Access to and availability of literature.

Barriers

Sixty-two percent of SLPs stated insufficient time was the most important barrier to implement EBP. Respectively, lack of research skills and inability to apply research findings to individual patients with unique characteristics were chosen as other important barriers by 44.7% and 40.7% of the SLPs. According to statements of the SLPs, lack of the interest was the lowest important barrier. More details about perceived barriers presented in Figure 6.

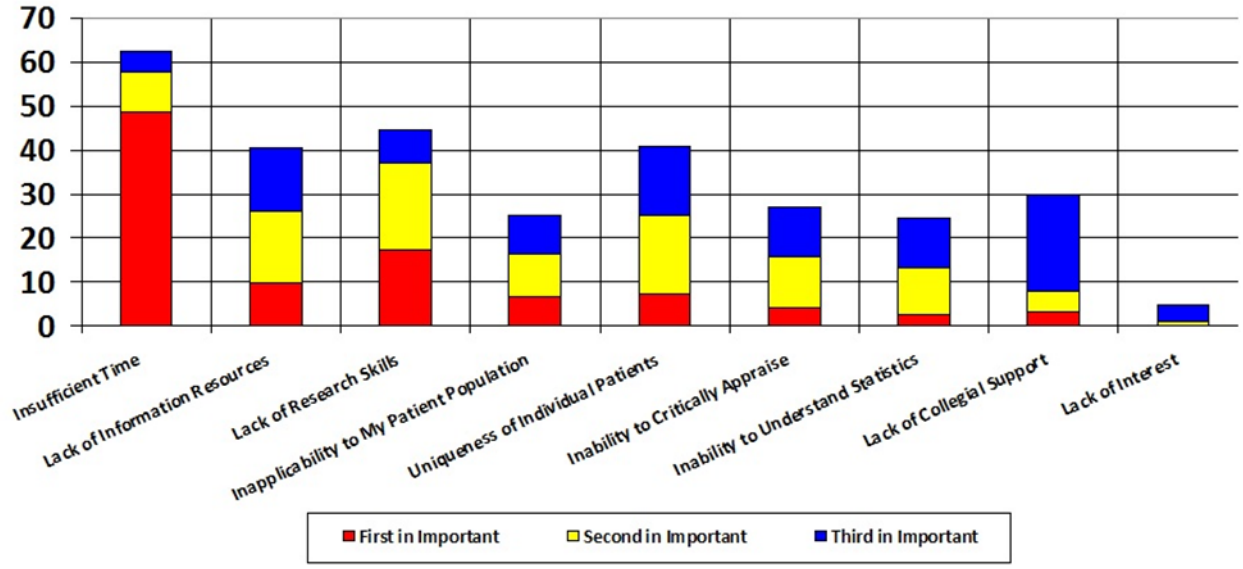

Figure 6: Perceived barriers to implement evidence-based practice.

Discussion

Iranian SLPs who participated in the present study have positive attitudes and beliefs toward EBP. Similar findings were reported in previous studies (10-15). Zipoli and Kennedy (3) and Tahmasebifard et al.(10) reported that SLPs have positive attitudes toward EBP. Furthermore, other health care professionals such as physicians, physiotherapists, occupational therapists, and nurses have positive attitudes about EBP (12, 13).

Less than half (46.4%) of the SLPs stated that they have received formal education about EBP at university and 32% of the SLPs disagreed with receiving formal education. Forty percent of SLPs disagree or completely disagreed with receiving formal training about search skills.

Our respondents' knowledge was low for most technical terms related to EBP. For example "publication bias" and "absolute risk" were not understood by 55.6% and 41.1% of respondents. Only two technical terms ("effectiveness" and "systematic review") were understood by 56.5% and 45.2% respondents respectively. In consistent with previous studies, our findings

showed that Iranian SLPs have little knowledge toward technical terms of EBP (10, 16-18). SO, Iranian SLPs need to receive more teaching in this field.

Results of the present study showed that higher educational level is associated with higher familiarity with online databases and higher confidence in abilities related to implement EBP. These results indicated that Iranian SLPs need to receive training in relation to EBP.

In all questions investigated attention to literature (reading articles or other sources, using literature and research finding, and searching databases), the most Iranian SLPs who participated in our study reported 5 or fewer than 5 times in recent month. The findings are consistent with previous studies carried out by Jette et.al and Tahmasebifard et.al (10, 11).

Insufficient time was the most important barrier to implement EBP in our study. This finding has been reported in most other studies (9, 11-13, 18-21). Also, in consistent with other studies that have been done in the field of nursing and medicine, inability to apply research findings to individual patients with unique characteristics was one of the main barriers to implement EBP in our study (11, 22).

Limitations of this study include: dependency of the questionnaire on the SLPs' self-evaluation of their own attitudes and behaviors, and low response rate. Despite these limitations, this study can indicate the status of the EBP among SLPs society in Iran because it was conducted across the Iran and not restricted to a certain city.

Conclusions

The present study showed that Iranian SLPs have good attitudes and beliefs toward EBP. According to advantages of using EBP, they need to receive training in regard the EBP and to be more attentive to it. Iranian SLPs can improve their capabilities in clinical setting by applying EBP.

Acknowledgements

This study was the part of a PhD thesis in speech and language pathology and was supported by Iran University of Medical Sciences. We would like to thank the Iranian speech and language pathologists who participated in this study.

Conflict of Interest:

There is no conflict of interest to be declared.

Authors' contributions:

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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