

Awareness of Medical Professionals Regarding the Role and Profession of Speech-Language Pathologists in Healthcare

Dr. Hala Jarrar¹, Amani Nasrallah Aqtash², Bara'ah Ayman Madbouh³, Jana Mohammad Arar⁴,
Raneem Taha Khateeb⁵, Roaa Mahmoud Mahameed⁶, Zeina Essam Al Qudu⁷

¹Assistant Professor, Faculty of medicine and Health Sciences - Department of Allied and Applied Medical Sciences Audiology and Speech Sciences An-Najah National University, hala.jarrar@najah.edu, Nablus- Palestine

²Speech therapist, amaniaqtash12@gmail.com, Ramallah-Palestine

³Speech therapist, baraamadbouh676@gmail.com, Nablus-Palestine

⁴Speech therapist, janaarar2020@gmail.com, Hebron-Palestine

⁵Speech therapist, raneemkhateeb2002@gmail.com, Salfit- Palestine

⁶Speech therapist, roaa.mahameed17@gmail.com, Jenin-Palestine

⁷Speech therapist, zeinaqudu@gmail.com, Nablus-Palestine

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Abstract

This study aimed to evaluate the awareness levels among medical professionals regarding the roles of speech-language pathologists (SLPs) in healthcare at An-Najah University's College of Medicine and Health Sciences. A questionnaire-based survey was administered to 202 specialists to assess their awareness, perceptions of SLP roles, and strategies for enhancing collaboration in patient care teams. Results indicated varied awareness levels, with significant associations found between higher educational attainment and increased awareness of SLP roles. Direct interactions with SLPs, particularly in intensive care settings, were also correlated with higher awareness levels. However, demographic factors such as gender, age, and experience showed no significant correlations with awareness. These findings underscore the importance of targeted educational initiatives and interdisciplinary collaboration to promote greater awareness and integration of SLP services within healthcare practice.

Keywords: Speech-language pathologists, Healthcare professionals, Awareness, Interdisciplinary Collaboration, Patient care.

Introduction

Physicians' perceptions of Speech-Language Pathology (SLP) are crucial for improving verbal health. SLPs are trained professionals who assess, diagnose, and treat communication and swallowing disorders. They work in various settings, including schools, hospitals, and research institutions, and are recognized for their role in improving verbal health and quality of life. Collaboration between physicians and SLPs is essential for comprehensive patient care. Physicians may refer patients to SLPs when they identify communication or swallowing issues, and effective communication and teamwork between medical professionals can lead to better patient outcomes [1, 2].

Speech-Language Pathologists (SLPs) provide speech-language therapy in schools for students with communication disorders. They work with various etiologies and conduct assessments to identify impairments. SLPs deliver interventions based on evidence-based decision-making, tailored to individual students' age and learning needs. Therapeutic procedures are clinically oriented, despite diverse service delivery models in schools [3].

Research indicates that healthcare professionals have varying levels of awareness about speech-related issues and the role of speech pathologists in their treatment. While nursing staff have a broad understanding of speech pathologists' scope, they struggle to identify cases that should be referred to them. Over half of frontline healthcare providers perceive their knowledge of speech therapists' roles as limited. The necessity of involving a speech pathologist in medical cases depends on the severity of the condition and the patient's complaint. There is a need to enhance knowledge in their role.

Research shows that healthcare professionals' awareness of speech-related issues and the role of speech pathologists varies. While nursing staff have a broad understanding of speech pathologists' scope, they struggle to identify cases requiring referral. More than half of frontline healthcare providers perceive their knowledge of speech therapists' roles as limited.

Research shows that healthcare professionals are generally aware of speech-related issues and the role of speech pathologists, but struggle to identify cases that should be referred to them. Over half of frontline providers perceive their knowledge of speech therapists' roles as limited. The necessity of involving a speech pathologist depends on the severity of the condition and patient's complaints [2,4].

The World Health Organization emphasizes the importance of interdisciplinary collaboration between speech pathologists (SLPs) and other healthcare professionals to provide comprehensive care for individuals with speech disorders. SLPs must collaborate with doctors, nurses, occupational therapists, physical therapists, psychologists, educators, and other professionals to address the unique needs of patients with communication and swallowing issues. Doctors play a crucial role in referring patients to SLPs and conducting medical examinations to inform treatment planning. Nurses provide ongoing assistance, monitor patient progress, and assist with patient care. SLPs work with occupational and physical therapists to address overlapping issues related to motor skills, sensory integration, and physical function. Psychologists support the team by addressing emotional and psychological issues that could impact speech and language development [5].

The integration of speech-language pathology services faces challenges such as limited availability in hospitals, timing issues, and lack of knowledge among healthcare professionals. Addressing infrastructure, timing issues, and raising awareness is crucial for effective collaboration and referrals. Speech and language pathologists face challenges in healthcare integration due to limited time, resource constraints, and lack of awareness among medical professionals [2].

The healthcare organization's culture may hinder collaboration, and reimbursement issues from insurance companies may limit their ability to provide comprehensive assessments and treatments. Speech and language pathologists (SLPs) face challenges in healthcare integration, including limited time for comprehensive assessments and treatment, underutilization of their services by medical professionals, and a culture that may not support their role. The RCSLT recommends that SLPs collaborate with other healthcare professionals, create a supportive culture, and ensure adequate reimbursement for their services. This will help them provide effective care and ensure access to care for patients who need it. Additionally, insurance companies should provide adequate reimbursement for SLP services to ensure their services are adequately covered [2,6].

Problems Statement:

In the healthcare sector, the under-recognition and limited understanding of the role and profession of Speech-Language Pathologists (SLPs) among medical professionals is a significant issue. Despite the critical importance of SLPs in diagnosing and treating communication and swallowing disorders, a lack of awareness and misperceptions regarding their role and expertise persist. This knowledge gap poses a barrier to the timely referral of patients to SLPs, potentially delaying essential intervention for individuals with speech-related conditions.

We, as trained speech and language therapists working in clinics, whether within or outside the university, have observed that in many cases, individuals who were diagnosed with speech or language-related medical conditions at a very early age have recently started seeking help in the field of speech and language therapy. This delay in seeking help can be attributed to various reasons, primarily the lack of referrals from the medical entities where they were initially diagnosed. Additionally, there is often a lack of awareness regarding the role of speech specialists in the treatment process. Many individuals who could benefit from speech therapy have received limited support within the medical sector. Some have found their way to us through recommendations from others who have faced similar challenges or via online platforms, including social media. In some cases, they have been referred by other healthcare professionals such as physiotherapists or occupational therapists. This situation underscores the need for increased awareness and a more coordinated approach to ensure that those in need of speech and language

therapy receive timely and appropriate care. So the primary aim of this study is to assess the level of awareness and understanding of medical professionals about the role and profession of Speech-Language Pathologists (SLPs) in the healthcare system. It seeks to investigate the extent to which medical practitioners are informed about the critical role of SLPs in diagnosing and treating communication and swallowing disorders. Additionally, the study aims to identify the factors that contribute to the under-recognition of SLPs in the medical field and propose strategies for improving recognition and collaboration between medical professionals and SLPs. Ultimately, the study intends to shed light on the current awareness deficit among medical professionals and offer insights into how this awareness can be enhanced to ensure timely referrals and better patient outcomes in the context of speech-related conditions.

Significance of Study

The significance of this study is profound on various fronts. First, it has the potential to significantly enhance patient care by raising awareness among medical professionals about the vital role of speech-language pathologists (SLPs) in diagnosing and treating communication and swallowing disorders. This can lead to more timely and effective interventions, ultimately improving the quality of life for individuals with speech-related conditions.

Additionally, the research can promote a more efficient healthcare system by fostering collaboration between medical professionals and SLPs. This can reduce delays in diagnosis and treatment, optimizing the use of healthcare resources.

Furthermore, the study is significant for the professional development of SLPs and has implications for research, policy, academic programs, and training. It can inform policymakers, improve training curricula, and influence healthcare policies to create a more informed and integrated healthcare system.

Aim of the Study:

The aim of this study is to investigate and evaluate the level of awareness among medical professionals about the role and profession of speech-language pathologists (SLPs) in the healthcare sector. This research aims to shed light on whether medical professionals, who often collaborate with SLPs in patient care, have a clear understanding of the scope, expertise, and contributions of speech-language pathologists within the healthcare system.

Objectives of Study:

1. Assess the current level of awareness among medical professionals regarding the services and expertise provided by speech-language pathologists.
2. Identify the specific roles and contributions of SLPs in patient care and the healthcare system.
3. Explore potential areas of cooperation and collaboration between SLPs and other medical professions.
4. Propose strategies to enhance the understanding and recognition of SLPs in the healthcare sector.

Questions of the Study:

1. To what extent are medical professionals aware of the services and expertise provided by speech-language pathologists (SLPs) in patient care within the healthcare sector?
2. What are the specific roles and contributions of SLPs in the healthcare system, and how well do medical professionals understand these roles?
3. How do different medical professions perceive the potential for cooperation and collaboration with SLPs to improve patient care in the healthcare sector?
4. What strategies can be proposed to enhance the recognition and collaboration between SLPs and medical professionals to ensure better patient outcomes

Methodology

Research Design

This study utilizes a cross-sectional survey design, which is appropriate for describing and analyzing the awareness, perceptions, and potential for collaboration between medical professionals and SLPs at a specific point in time. The survey method allows for the collection of data from a large number of

participants, providing a comprehensive overview of the current understanding and attitudes within the target population.

Study Population and Sample

The study population comprised faculty members with medical specialties (academic or clinical) in the College of Medicine and Health Sciences at An-Najah University. A total of 202 medical professionals participated in the study. Participants were selected based on their availability and willingness to complete the questionnaire, ensuring a diverse representation of medical specialties within the institution.

Instrumentation

A structured questionnaire was developed as the primary data collection tool for this study. The questionnaire design was informed by educational literature and previous studies on the role of SLPs in healthcare. The initial draft of the questionnaire was reviewed by a group of arbitrators for content validity and clarity, resulting in the final version used for data collection (see appendix 1).

Questionnaire Structure

The questionnaire consisted of two main sections:

1. Section One: Demographic Information

- This section gathered information on the participants' demographic and professional backgrounds, including their age, gender, medical specialty, years of experience, and familiarity with SLPs.

2. Section Two: Awareness and Perceptions

- This section contained 17 questions distributed as follows:
 - **Extent of Awareness:** 7 questions focused on the extent of awareness among medical professionals about the services provided by SLPs in the healthcare sector.
 - **Skills and Expertise:** 3 questions aimed at understanding the skills and experiences expected of SLPs based on the expectations of other health professionals.
 - **Communication and Collaboration:** 7 questions addressed ways to enhance communication and understanding between SLPs and other health professionals in multidisciplinary work teams.
- All questions were answered using a five-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree).

Data Collection Procedures

- 1. IRB Approval:** Institutional Review Board (IRB) approval was obtained (see appendix 2) before distributing the questionnaire to ensure ethical compliance and the protection of participants' rights.
- 2. Distribution:** The questionnaire was distributed at the beginning of April 2024. Participants received the questionnaire via email and hand copies, allowing for flexible response options.
- 3. Reminder Messages:** Reminder messages were sent ten days after the initial distribution to encourage participation and maximize response rates.
- 4. Retrieval:** Completed questionnaires were retrieved within twenty days of distribution, ensuring timely data collection for analysis.

Data Analysis

The collected data were analyzed using statistical software to provide both descriptive and inferential statistics. Descriptive statistics, such as means, standard deviations, and frequency distributions, were used to summarize the demographic information and the responses to the Likert scale questions. Inferential statistics, including t-tests and ANOVA, were employed to assess differences in awareness and perceptions based on demographic variables. The analysis aimed to identify key trends and significant differences in the understanding and attitudes of medical professionals regarding the role of SLPs.

Ethical Considerations

- **Informed Consent:** Participants were informed about the purpose of the study, and their consent was obtained before participation. They were assured that their participation was voluntary and that they could withdraw at any time without consequences.
- **Confidentiality:** The confidentiality of the participants' responses was ensured by anonymizing the data. Personal identifiers were removed, and data were stored securely to prevent unauthorized access.
- **Voluntary Participation:** Participation in the study was entirely voluntary, and participants were free to decline or withdraw from the study at any stage without any repercussions.

Conclusion: The study's use of structured questionnaires will provide valuable quantitative data to understand the awareness and perceptions of medical professionals regarding SLPs. The analysis of survey responses will contribute to shedding light on potential areas of collaboration and improvement in the healthcare sector.

Results

Statistical analysis

Data Analysis was performed using SPSS v.25. Frequency and percentage were obtained for each categorical data. Normality was checked before performing inferential statistics by using the Kolmogorov-Smirnov test. The Non-parametric Man-Whitney U and Kruskal- Wallis H tests used to investigate the relationship between dependent variables and independent variables. Also, the reliability and internal consistency of awareness level of medical profession of speech –language pathologists in health care, its value was 0.806.

Socio demographic data

A total of 202 medical professionals participated in the study, the majority 68.8% were female, more than half of respondents 56.4% their age between 22 and 30 year old. Also, about 61.9% of respondents, their work in clinical field, 33.2% in academic filed, just 9.4% in academic and clinical fields together. Moreover, about 60.9% of participants reported them having bachelor’s degree. Finally, 38.6% of respondents reported they having an experience range from one to five years. Regarding to the field of work and specialization, 16.3% of respondents reported that they work in department of Physical Therapy and 12.4% reported thy work in department of Medical Laboratory Sciences. Other related data shown in table 1 and table 2.

Table1. Socio – demographic characteristics of the study sample.

Variable	Frequency N=202
Gender	
Male	63 (31.2)
Female	139 (68.8)
Age	
22-30	114 (56.4)
30-40	40 (19.8)
40-50	29 (14.4)
More than 50	19 (9.4)
The nature of work	
Clinical	125 (61.9)
Academic	67 (33.2)
Clinical and academic	10 (5)

Academic level	
Diploma	16 (7.9)
Bachelor's	123 (60.9)
Master's	25 (12.4)
Doctor	31 (15.3)
Higher than a doctor	7 (3.5)
Experience	
less than one year	40 (19.8)
(1 to 5) years	78 (38.6)
(5 to 10) years	31 (15.3)
(10 to 15) years	22 (10.9)
more 15 years	31 (15.3)
less than one year	40 (15.3)

Table 2. Field of work (specialization)

Variable	Frequency N=202
Department of General Internal Medicine and its specialties	8 (4)
Department of General Surgery	5 (2.5)
Department of Pediatrics	2 (1)
Department of Obstetrics and Gynecology	5 (2.5)
Department of Surgical Specialties	7 (3.5)
Department of Selected Medical Specialties and Forensic Medicine	3 (1.5)
Department of Family and Community Medicine and Psychiatry	4 (2)
Department of Optics	6 (3)
Department of Medical Physics and Medical Imaging	6 (3)
Department of Physical Therapy	33 (16.3)
Anesthesia, technical resuscitation and respiratory therapy unit	1 (0.5)
Department of Medical Laboratory Sciences	25 (12.4)
Department of Microbiology, Immunology and Pathology	3 (1.5)
Department of Physiology, Pharmacology and Toxicology	3 (1.5)
Department of Anatomy, Biochemistry and Genetics	4 (2)
Department of Public and Mental Health and Health Information	5(2.5)
Department of Clinical and Community Pharmacy	17 (8.4)
Department of Pharmaceutical Chemistry and Technology	5 (2.5)
Department of Adult Health Nursing	25 (12.4)
Other than that	35 (17.3)
Total	202

The areas in which the pathologist of speech and language contributes to health care from point of view of medical professionals

When we asked the participants about the areas in which the specialist of speech and language contributes to health care, the majority 88.6% of them identified the neurological speech disorders as an area of field of the speech – language specialist’s work, follow by 85.1% of respondents identified the voice disorder as an area of their work, then neurological speech disorder identified by 83.7% of respondents as an area of their work. About 45% of respondents reported all of the mentioned fields are areas of the speech-language specialist’s work. Other related data shown in table 3.

Table 3. The areas in which the pathologist of speech and language contributes to health care from point of view of medical professionals

Variable	Frequency N=202
Dysphagia among adult	123 (60.9)
Dysphagia among children	129 (63.9)
Neurological language disorder	169 (83.7)
Voice disorder	172 (85.1)
Neurological speech disorders	179(88.6)
CVA	116(57.4)
Cleft palate and cleft lip	120 (59)
Stuttering speech fluency disorder	143 (70.8)
Attention and concentrating disorder	122 (60.4)
Autism disorder	113 (55.9)
All of above	91 (45)
Other	31(15.3)

Awareness level of medical professionals about the specialist of speech and language in health care

Regarding to the classification of the awareness level based on percentage score (70 -100% highly aware, 40-69% moderately aware , less than 40% lowly aware) (zaid et al ., 2017) , the medical professionals **highly aware** about the specialist of speech and language in health care , the overall mean score of awareness was **3.949 ± 0.407** with percentage **78.9%**. According to items of the awareness scale, the question number (9) “How important do you think it is for speech-language pathologists to have strong communication skills with patients? “Had the largest mean 4.569 ± 0.604 . Follow by the question number (1) “Is there an urgent need to raise awareness about the role of specialist?” with mean 4.495 ± 0.7613 . However the lowest mean was 3.163 ± 0.9661 for question number 15. Other related data shown in table 5.

Table4. Awareness level of medical professionals about the specialist of speech and language to health care

Variable	Mean	Std. Deviation
1.Is there an urgent need to raise awareness about the role of specialist	4.495	.7613
2.Based on your personal experiences, have you noticed speech-language pathologists being well regarded or understood by your healthcare colleagues?	3.748	.8757
3.Do health professionals generally have a thorough understanding of the role of speech-language pathologists in improving quality of care?	3.649	.8923
4.Are educational programs about speech-language pathologists available and effective in the institutions where you work?	3.233	1.0791
5.Is there agreement on the importance of including speech-language pathologists in integrated health care plans?	4.124	.8636
6.Is more training needed about interacting with speech-language pathologists?	4.292	.6140
7.Is there a discrepancy in the level of awareness about the role of speech-language pathologists between different branches in the health sector?	3.911	.6706
8.Do you promote the importance of speech-language pathologists having strong technology skills in the health setting?	4.193	.7447

9.How important do you think it is for speech-language pathologists to have strong communication skills with patients?	4.569	.6048
10.Do you consider it important for speech-language pathologists to participate in efforts to improve the quality of health care?	4.485	.5663
11.Are there effective measures to enhance communication between speech-language pathologists and their colleagues on the clinical teams in the institution where you work?	3.446	1.0022
12.How do you evaluate the effectiveness of workshops or trainings allocated in your organization to improve understanding between the medical professions and speech-language pathology?	3.416	.9801
13. Do you think that having formal communication mechanisms can improve coordination between speech-language pathologists and other health teams?	4.153	.6550
14. Are communication workshops and training courses effective in improving collaboration between speech-language pathologists and other medical specialties?	4.178	.6676
15. To your knowledge, are there formal plans for communication with speech-language pathologists in health care settings?	3.163	.9661
16.Is there a need to improve communication coordination between you and the speech-language pathologist and the various medical specialties?	4.054	.8055
17. Are electronic communication systems considered an important part of efforts to improve communication between you and your speech-language pathologist?	4.025	.7360
Overall awareness score	3.949	0.407

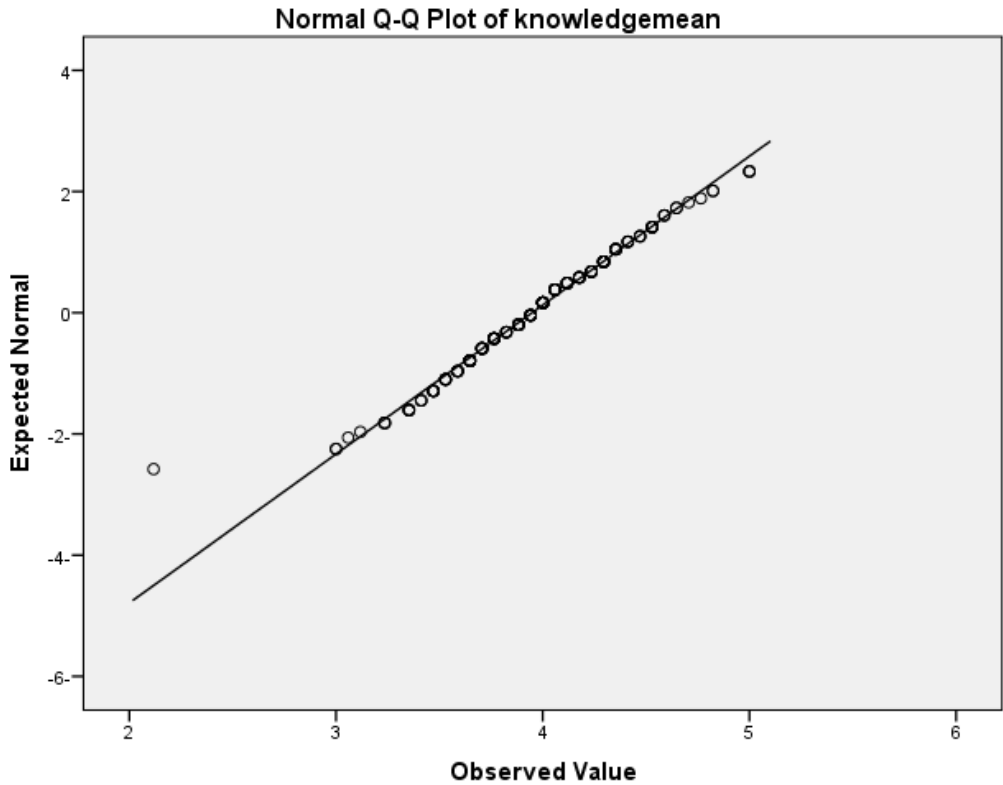
When the participants asked if they dealing with speech and language specialist, nearly half of respondents 56.9% have ever dealt with a speech and language specialist. About 30.2% involved in field and they come to ICU for dealt with correctly answer on consult follow by sentence of I don't know. Other related data shown in table 6.

Table 5 .Dealing with speech and language specialist

Variable	Frequency N=202
Have you ever dealt with a speech and language pathologist?	
Yes	115 (56.9)
No	87 (43.1)
what is the field that was dealt with	
I don't know	58 (28.7)
Consult	61 (30.2)
Participate in a treatment evaluation	34 (16.8)
Scientific research	19 (9.4)
Referral medical case	29(14.4)
Receiving medical case	23 (11.4)
Participate in treatment	40 (19.8)
Other	45 (22.3)

4.3 Correlation

The Shapiro-Wilk test conducted to determine if the data was normally distributed, revealed that the data was not normally distributed ($p < 0.001$), as illustrated in paragraph 5. Therefore, nonparametric analyses, such as the Mann-Whitney and Kruskal-Wallis tests were used to investigate the correlations between independent and dependent variables.



Socio demographic data –awareness level correlation

In data analysis, we used the Man Whitney U test used to investigate the relationship between binary independent variables that had two answers (yes, no) or gender and continue dependent variable;also we used the Kruskal-Wallis test to investigate the relationship between categorical independent variable that had more than two answers with dependent variable. The results revealed that there was a significant association between academic level and the level of awareness about the specialist of speech and language ($p = 0.004$) < (0.05), we found who had higher than degree of doctor more likely than another to have awareness about specialty of speech and language. Also, the results demonstrated that there was a significant association between dealing with speech- language specialist ($p < 0.001$), who had been dealt with speech and language specialist more likely than who hadn't been dealt with specialist to be awareness about the speech- language specialist. However, the results indicated that there no significant association between other independent variables and dependent variable. Other related data illustrated in table 6.

Table 6: Socio demographic data –awareness level correlation

Variable	N	Mean	St.Deviation	p- value
Gender				0.591
Male	63	3.9290	.43034	
Female	139	3.9581	.39728	
Age				0.233
22-30	114	4.0015	.37042	
30-40	40	3.9206	.38551	

40-50	29	3.8418	.59140	
More than 50	19	3.8576	.27543	
The nature of work				0.092
Clinical	125	3.9882	.36826	
academic	67	3.8569	.46546	
Clinical and academic	10	4.0765	.37415	
Academic level				0.004
diploma	16	4.0331	.43011	
Bachelor's	123	3.9861	.39597	
Master's	25	3.8965	.37369	
doctor	31	3.7287	.35153	
Higher than a doctor	7	4.2689	.54217	
Experience				0.29
less than one year	40	3.9044	.49029	
(1 to 5) years	78	3.9940	.36761	
(5 to 10) years	31	3.8786	.35650	
(10 to 15) years	22	4.0535	.49844	
more 15 years	31	3.8899	.35351	
less than one year	40	3.9044	.49029	
Have you ever dealt with a speech and language pathologist?				<0.001
Yes	4.0711	115	.37297	
No	3.7877	87	.39565	

From the previous results, it has been shown that there are statistically significant differences between the educational level and the level of awareness among professionals. To find out in whose favor these differences belong, we have tested post hoc comparisons (LSD), and it has been shown from this test that there are differences between the diploma level and the doctor's level, and that these differences are in favor of diploma level, this is because mean of the diploma level is higher than mean of the doctoral level about awareness level. Also we found differences between bachelor's level and doctor level, the differences are in favor for bachelor level due to mean of bachelor level higher than mean of doctoral level. Moreover, we found the differences between master's level and higher than doctor level, the differences are in favor for the level of higher than doctor due to mean of higher than doctor higher than the mean of master's level. Other related data shown in table 8.

Table 7: post-hoc comparisons test (LSD) for differences between educational level and level of awareness among professionals

Dependent Variable: awareness level						
LSD						
(I) educational level	(J) educational level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
diploma	Bachelor's	.04696	.10496	.655	-.1600-	.2539
	Master's	.13662	.12644	.281	-.1127-	.3860
	doctor	.30444*	.12157	.013	.0647	.5442
	Higher than a doctor	-.23582-	.17897	.189	-.5888-	.1171
Bachelor's	diploma	-.04696-	.10496	.655	-.2539-	.1600

	Master's	.08966	.08664	.302	-.0812-	.2605
	doctor	.25748*	.07937	.001	.1010	.4140
	Higher than a doctor	-.28278-	.15346	.067	-.5854-	.0199
Master's	diploma	-.13662-	.12644	.281	-.3860-	.1127
	Bachelor's	-.08966-	.08664	.302	-.2605-	.0812
	doctor	.16782	.10616	.116	-.0415-	.3772
Doctor	Higher than a doctor	-.37244-*	.16888	.029	-.7055-	-.0394-
	diploma	-.30444-*	.12157	.013	-.5442-	-.0647-
	Bachelor's	-.25748-*	.07937	.001	-.4140-	-.1010-
	Master's	-.16782-	.10616	.116	-.3772-	.0415
Higher than a doctor	Higher than a doctor	-.54025-*	.16526	.001	-.8662-	-.2143-
	diploma	.23582	.17897	.189	-.1171-	.5888
	Bachelor's	.28278	.15346	.067	-.0199-	.5854
	Master's	.37244*	.16888	.029	.0394	.7055
doctor	doctor	.54025*	.16526	.001	.2143	.8662

*. The mean difference is significant at the 0.05 level.

Chi – square test between socio – demographic data and awareness level category

The results indicated that there was no significant correlation between gender and awareness level among professionals. Other related data shown in table 9.

Table 8: Gender – awareness level.

			Awareness level			P value
			low level	moderate	high level	
Gender	Male	N	0	23	40	0.349
		%	0.0%	11.4%	19.8%	
	Female	N	1	38	100	
		%	0.5%	18.8%	49.5%	
Total	N	1	61	140		
	%	0.5%	30.2%	69.3%		

The results by Chi –square indicated that there was no significant correlation between age and awareness level among professionals(p – value >0.05). Other related data shown in table 10

Table 9: age – awareness level.

			Awareness level			P – vale
			low level	moderate	high level	
age	22-30	N	0	29	85	0.156
		%	0.0%	14.4%	42.1%	
	30-40	N	0	14	26	
		%	0.0%	6.9%	12.9%	
	40-50	N	1	10	18	
		%	0.5%	5.0%	8.9%	
	More 50	N	0	8	11	
		%	0.0%	4.0%	5.4%	
	Total	N	1	61	140	
		%	0.5%	30.2%	69.3%	

Chi- square test run to investigate the correlation between educational level and awareness level The results indicated that there was no significant correlation between educational level and awareness level among professionals (p – value >0.05). Other related data shown in table 11.

Table 10: educational level – awareness level correlation

			Awareness level			P value	
			low level	moderate	high level		
Educational level	diploma	N	0	4	12	0.078	
		%	0.0%	2.0%	5.9%		
	Bachelor's	N	1	29	93		
		%	0.5%	14.4%	46.0%		
	Master's	N	0	10	15		
		%	0.0%	5.0%	7.4%		
	doctor	N	0	17	14		
		%	0.0%	8.4%	6.9%		
	Higher than a doctor	N	0	1	6		
		%	0.0%	0.5%	3.0%		
	Total		N	N	61		140
			%	%	30.2%		69.3%

Chi- square test run to investigate the correlation between educational level and awareness level The results indicated that there was no significant correlation between the nature of work and awareness level among professionals (p – value >0.05). Other related data shown in table 12.

Table 11. The nature of work – awareness level correlation

			Awareness level			P - value
			low level	moderate	high level	
work	clinical	N	0	34	91	0.130
		%	0.0%	16.8%	45.0%	
	academic	N	1	26	40	
		%	0.5%	12.9%	19.8%	
	Clinical and academic	N	0	1	9	
		%	0.0%	0.5%	4.5%	
	Total		N	61	140	
			%	%	30.2%	

The results by Chi –square indicated that there was no significant correlation between experience and awareness level among professionals(p – value >0.05). Other related data shown in table 13.

Table 12: experience – awareness level correlation

			Awareness level			P – value
			low level	moderate	high level	
experience	less than one year	N	1	14	25	
		%	0.5%	6.9%	12.4%	
	(1-5) years	N	0	18	60	
		%	0.0%	8.9%	29.7%	
	(5 to 10) years	N	0	13	18	
		%	0.0%	8.9%	12.4%	

		%	0.0%	6.4%	8.9%
	(10 to 15) years	N	0	4	18
		%	0.0%	2.0%	8.9%
	more 15 years	N	0	12	19
		% of Total	0.0%	5.9%	9.4%
Total		Count	1	61	140
		% of Total	0.5%	30.2%	69.3%

Discussion and conclusion

Discussion:

The result of: Awareness level of medical professionals about the specialist of speech and language in health care:

The results of this study reveal that a substantial majority of medical professionals recognize the significant contributions of speech-language pathologists (SLPs) in addressing neurological speech disorders (88.6%), voice disorders (85.1%), and other speech disorders (83.7%). These findings align with previous research, [7] which demonstrated the integral role of SLPs in managing neurological conditions like stroke and traumatic brain injury. The high awareness among medical professionals in this study mirrors these findings, indicating consensus on the vital role of SLPs. However, the lower percentage (45%) of respondents acknowledging all mentioned fields suggests a gap in comprehensive awareness, indicating a need for further education and interdisciplinary collaboration. This gap is consistent with Simpson and Everard (2010), who noted variability in understanding SLP roles among different medical specialties, suggesting areas for improvement in integration and recognition of SLPs in healthcare teams [8].

Awareness Level of Medical Professionals about the Specialist of Speech and Language in Healthcare

Based on the classification of awareness levels (70-100% highly aware, 40-69% moderately aware, less than 40% lowly aware), medical professionals demonstrated a high level of awareness about speech and language specialists in healthcare, with an overall mean score of 3.949 ± 0.407 , equating to 78.9% [8].

The highest mean score (4.569 ± 0.604) was for the importance of SLPs having strong communication skills with patients. The second highest mean score (4.495 ± 0.7613) concerned the urgent need to raise awareness about the role of SLPs. The lowest mean score (3.163 ± 0.9661) was for a less clearly defined aspect of SLPs' roles, suggesting areas for improved education and awareness.

When asked about their direct experience with SLPs, 56.9% of respondents reported having dealt with a speech and language specialist. About 30.2% noted that SLPs come to the ICU for consultations, indicating a moderate level of direct interaction and highlighting the need for increased interdisciplinary collaboration.

The finding that 56.9% of participants have interacted with speech-language specialists aligns with previous research emphasizing the significant role of SLPs in healthcare settings [9]. Specifically, 30.2% mentioned encounters with SLPs in ICU settings, supporting their critical involvement in managing communication and swallowing disorders in intensive care. However, the presence of uncertainty ("I don't know") among some respondents regarding their interactions with SLPs echoes findings of knowledge gaps noted in prior studies [10]. These results underscore both the recognized importance of SLPs in clinical care and opportunities for improving awareness across healthcare professions.

In addition, the study found a significant association between academic level and awareness of speech-language specialists ($p = 0.004$), indicating higher awareness among individuals with education beyond a doctoral degree. Additionally, significant correlation was observed between having interacted with a speech-language specialist and awareness ($p < 0.001$), underscoring the impact of direct experience on

awareness levels. However, no significant associations were found with other independent variables. These findings highlight educational attainment and direct professional interactions as key factors influencing awareness of speech-language specialists among medical professionals.

The study revealed statistically significant differences in awareness levels among professionals based on their educational levels. Post hoc LSD comparisons showed that individuals with a diploma had higher awareness levels compared to those with a doctoral degree, with the mean awareness score favoring the diploma level. Similarly, there were differences favoring bachelor's degree holders over those with doctoral degrees, as well as higher awareness levels among professionals with education levels beyond a doctoral degree compared to those with master's degrees. These findings suggest that higher educational attainment beyond a doctoral degree may correlate with increased awareness of speech-language specialists among healthcare professionals.

The lack of significant correlations found between gender, age, educational level, nature of work, and experience with awareness levels among professionals underscores several points. Research by [11] similarly found no consistent relationship between demographic factors like gender or age and awareness of specialized healthcare roles, including speech-language specialists. These findings suggest that awareness of SLPs is not necessarily influenced by demographic characteristics but rather by direct exposure or professional education. In contrast, study have shown that higher educational levels can enhance awareness of specific healthcare disciplines, aligning with our findings that educational level beyond a doctoral degree correlates with greater awareness of speech-language specialists [9]. Therefore, while demographic factors may not directly influence awareness, educational background and professional exposure appear crucial in shaping understanding and recognition of specialized healthcare roles.

Conclusion

In conclusion, this study has highlighted significant findings regarding awareness of speech-language specialists among medical professionals. Educational level beyond a doctoral degree was associated with higher awareness levels, emphasizing the importance of professional education in understanding specialized healthcare roles. Direct interactions with speech-language specialists also played a crucial role in enhancing awareness. However, demographic factors such as gender, age, nature of work, and experience did not show significant correlations with awareness levels. These results underscore the need for targeted educational initiatives and interdisciplinary collaboration to further enhance awareness and integration of speech-language pathology in healthcare settings.

Limitations

- The study's reliance on participants from a single institution or specific geographical area may limit the generalizability of findings to broader healthcare contexts.
- The cross-sectional nature of the study limits the ability to establish causality between variables, warranting further longitudinal research.
- The effectiveness and reliability of the questionnaire used to measure awareness levels and interactions with SLPs could influence the robustness of study outcomes.
- There were linguistic differences and limitations that affected the understanding of the concepts presented in the study or the provision of responses by the participants.
- Psychological and social impacts: The difficult political conditions and violent events occurring due to the occupation negatively affected the psychological state of the study participants, which could affect their response and full participation in the research.
- This research had a small sample size due to difficulty accumulating emails from physician and the delayed response to it.

Recommendations:

- Develop targeted educational programs for healthcare professionals at all levels to increase awareness of the roles and contributions of speech-language pathologists (SLPs).
- Implement interdisciplinary training sessions to promote collaboration between SLPs and other healthcare professionals, enhancing understanding and improving patient care outcomes.

- Encourage more frequent interactions between medical professionals and SLPs, particularly in clinical settings such as ICUs, to foster better understanding of SLP services and capabilities.
- Offer continuous professional development opportunities focusing on communication disorders and SLP interventions to keep healthcare professionals updated with the latest advancements.
- Launch awareness campaigns within healthcare institutions to highlight the vital role of SLPs in patient care, targeting both medical professionals and the broader community.

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Appendix [1]

Dear professionals in the health sector
After Greetings:
Researchers are conducting a study entitled:
"Awareness of health sector professionals regarding the role and profession of speech-language pathologists in health care."
This is part of the requirements for the graduation project in the field of Hearing and Speech Sciences at An-Najah National University - Nablus and under supervision
Dr. Hala Jarrar
We kindly ask you to answer all paragraphs of the questionnaire, with complete transparency and objectivity, knowing that the answers will be treated with complete confidentiality and will be used
For scientific research purposes only
Thank you for your kind cooperation
_____ I agree to participate _____ I do not agree to participate

Demographic data:

1. Gender:

A- Male

B- Female

2. Age:

A – 30-22

B- 40-30

C- 40 50-

D50- and more

3. Nature of work

A-Clinical

B- Academic

4. Educational level :

Department/specialization

Department of General Internal Diseases and its Specialties

Department of General Surgery

Department of Pediatrics

Department of Obstetrics and Gynecology

Department of Surgical Specialties

Department of Selected Medical Specialties and Forensic Medicine

Department of Family and Community Medicine and Psychiatry

Department of Optics

Department of Medical Physics and Medical Imaging

Department of Physical Therapy

Anesthesia, technical resuscitation and respiratory therapy unit

Cardiac Perfusion Technology Unit

- Department of Medical Laboratory Sciences
 - Department of Microbiology, Immunology and Pathology
 - Department of Physiology, Pharmacology and Toxicology
 - Department of Anatomy, Biochemistry and Genetics
 - Department of Public and Mental Health and Health Information
 - Department of Clinical and Community Pharmacy
 - Department of Pharmaceutical Chemistry and Technology
 - Department of Adult Health Nursing
 - Department of Midwifery, Women's Health and Pediatric Nursing
 - Other
- 6. Years of experience:**
- Less than a year
 - To 5 (0 years)
 - To 10 (5 years)
 - Years (10-15)
 - More than 15 years

Questionnaire paragraphs

- a. How aware are medical professionals of the services provided by speech-language pathologists in healthcare?

	Strongly agree	I agree	neutral	Strongly Disagree	I dont agree
1. Is there an urgent need to raise awareness about the role of speech-language pathologists in medical teams?					
2. Based on your personal experiences, have you noticed a good appreciation or understanding of speech-language pathologists by your health care colleagues?					
3. Do health professionals generally have an accurate understanding of the role of speech-language pathologists in improving the quality of care?					
4. Are educational programs about speech-language pathologists available and effective in the institutions where you work?					
5. Is there agreement on the importance of including speech-language pathologists in integrated health care plans?					
6. Is more training needed about interacting with speech-language pathologists?					
7. Is there a discrepancy in the level of awareness about the role of speech-language pathologists between different branches in the health sector?					

B. What skills and experiences are expected of speech-language pathologists based on the expectations of other professionals in the health sector?

	Strongly agree	I agree	neutral	Strongly Disagree	I dont agree
8. Based on your experience, how do you rate the effectiveness of communication between speech-language pathologists and the rest of the health teams?					
9. Do you promote the importance of speech-language pathologists having strong technology skills in the health setting?					
10. How important do you think it is for speech-language pathologists to have strong communication skills with patients?					
11. Do you consider it important for speech-language pathologists to participate in efforts to improve the quality of health care?					

C. How can communication and understanding between speech-language pathologists and other health professionals in multidisciplinary teams be enhanced?

	Strongly agree	I agree	neutral	Strongly Disagree	I dont agree
12. Are there effective measures to enhance communication between speech-language pathologists and their colleagues on the clinical teams at your institution?					
13. How do you evaluate the effectiveness of workshops or trainings tailored in your organization to improve understanding between the medical professions and speech-language pathology?					
14. Do you think that having formal communication mechanisms could improve coordination between speech-language pathologists and other health teams?					
15. Are communication workshops and training courses effective in improving collaboration between speech-language pathologists and other medical specialties?					
16. To your knowledge, are there formal plans for communication with speech-language pathologists in healthcare settings?					
17. Is there a need to improve communication coordination between you and the speech-language pathologist and different medical specialties?					
18. Are electronic communication systems an important part of efforts to improve communication between you and your speech-language pathologist?					

Appendix 2

An-Najah National University

Faculty of Medicine & Health Sciences
Dean's office



جامعة النجاح الوطنية

كلية الطب وعلوم
مكتب العميد

التاريخ : 2024/03/21

ع.ك/40358/2024

حضرة الدكتور النائب الاكاديمي المحترم

تحية طيبة وبعد،،

الموضوع: تسهيل مهمة طلبة لإجراء مشروع بحث

تهديكم كلية الطب و علوم الصحة/ أطيب التحيات، ونرجو موافقتكم على تسهيل مهمة الطالبات وهنّ :
"اماني اقطش، براءة مدبوح، زينة القدع ، رنيم خطيب ، رؤى محاميد، جنى عرار، وهنّ طالبات في برنامج السمع و النطق في كلية الطب و علوم الصحة/ جامعة النجاح الوطنية، وذلك تحت اشراف د. هالة جرار . حيث تهدف هذه الدراسة الى استقصاء مستوى الوعي بين اعضاء الهيئة التدريسية من مختلف الاقسام والتخصصات في كلية الطب وعلوم الصحة في جامعة النجاح الوطنية بشأن دور ومهنة أخصائيي اللغة والنطق (SLPs) في إعدادات الرعاية الصحية. وذلك عن طريق توزيع استبيان الكتروني يتم ارساله عبر الايميل حيث سيتم جمع البيانات لتحليل الفهم والتصورات وأنماط التعاون بين الأطباء وأخصائيي اللغة والنطق.
تهدف النتائج إلى تسليط الضوء على الفجوات المحتملة في الوعي واقتراح استراتيجيات لتعزيز التعاون الاحترافي بين الفرق لتحسين رعاية المرضى بصورة مثلى.

علماً بأن:

1. عنوان البحث :

"وعي المهنيين في القطاع الصحي فيما يتعلق بدور ومهنة أخصائيي أمراض النطق واللغة في مجال الرعاية الصحية في نابلس- فلسطين".

"Awareness of Medical Professionals Regarding the Role and Profession of Speech-Language Pathologists in Healthcare In Nablus- Palestine".

2. المعلومات ستستخدم لأغراض البحث العلمي فقط وسيتم المحافظة على السرية التامة للمعلومات.

3. مرفقة لحضرتكم موافقة لجنة أخلاقيات البحث ومختصر البحث .

شاكرين لكم حسن تعاونكم ومساعدتكم للعملية التعليمية.

مع وافر الاحترام،،

د. خليل عيسى / د. سعاد دلتاي
عميد كلية الطب وعلوم الصحة



- نسخة : المشرفين

- نسخة : الطلاب

- نسخة : الملف