

An Overview of Speech Therapy and Audiology Services in the Kingdom of Bahrain

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Abstract

Objectives: The study's first objective is to present an overview of the demographic information of speech therapists and the current service delivery process provided by government entities in the Kingdom of Bahrain. The second objective is to analyze the caseload and workload of the Speech Unit clinics at Salmaniya Medical Complex. The study takes a descriptive, analytical approach to analyze data collected via a web-based online survey (17 questions) to determine demographic information about speech therapists in the Kingdom of Bahrain. A survey was completed by 59 participants: 45 Bahraini therapists and 45 female therapists. The significant findings show that only 24 therapists were based in medical settings, while the rest were school-based. Most speech therapists have bachelor's degrees, while there are currently seven master's degree holders. Most therapists have less than ten years of experience. Despite the Ministry of Health and the NHRA's support for allied professions, there is a severe shortage of speech therapists in all healthcare facilities and other ministries that offer rehabilitation programs to those with disabilities or in need of services. A cross-national study involving all professionals in the public and private sectors is now required to promote a broader perspective and comprehensive analysis, particularly as the Bahrain health system transitions toward autonomy and health insurance.

Keywords: *Speech therapy, Government entities, Bahrain*

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Introduction

The National Health Regulation Agency (NHRA) in Bahrain reports that over the previous three years, there was more than 50% growth in the number of speech therapists registered in Bahrain (NHRA, 2021b). In addition, the number of special needs centers operating in the private sector has reached 25, and 16 publicly funded rehabilitation centers are under the Ministry of Social Development. This rise is an indication of the growing need for rehabilitation services in general and speech therapy services in particular. The Royal College of Speech-Language Therapists in the UK (RCSLT) estimated that nearly 20% of people might struggle with communication problems at some point in their lives (RCSLT, 2022).

The increase in the number of rehabilitation centers and the need for speech therapy recently might be due to the increasing number of the population over the past 20 years, which is anticipated to expand by 1.76% (29,902 people) in 2022, which will bring the population of the Kingdom of Bahrain to 1.73 million. Moreover, a study by Al Banna et al. (2015) on the prevalence of stroke cases found a significant increase in the occurrence of stroke during the previous last 16 years. Furthermore, approximately one-third of stroke survivors have some form of communication impairment (Aphasia) (Al Banna et al., 2015). The key role of speech therapists is to provide treatment, support, and care for cases who struggle with speaking, eating, drinking, or swallowing to improve their quality of life.

The main goal of this study is to provide an overview of the current situation of the profession and the importance of speech therapy services because Bahrain lacks preliminary data on the status of professionals and information about the speech therapy services provided by government organizations in general. In order to gain a thorough understanding of the services, a brief overview of the current population, the history of speech therapy in Bahrain, and the main governmental bodies involved in providing the services will be provided.

Bahrain's Demographic Information

The Kingdom of Bahrain is located in the Arabian Gulf, east of Saudi Arabia. It is an archipelago of 33 islands with a total area of 770.9 km. The population of Bahrain reached 1,501,635 in March 2021, with 47.4% Bahraini and 52.6% non-Bahraini citizens (712,362 Bahraini and 789,273 non-Bahraini). The population density is exceptionally high, with 2,239 inhabitants per km. In 2015, Bahrain was ranked 45th on the Human Development Index (UNDP, 2021). Net migration to Bahrain in 2020 was 31.1 migrants per 1,000 inhabitants, the highest in the world and the population growth rate of 4.5% in 2019 was also one of the highest in the world. The total fertility rate was 2.0 children per woman, and the birth rate was 13.99 births per 1,000 inhabitants (World Bank, 2021).

Speech therapy in Bahrain: Background

The history of Speech therapy services in Bahrain dates back to 1991 when three female clinicians graduated from King Saud University in Saudi Arabia with a Bachelor's degree in Speech Therapy and Audiology. After more than 30 years, the number of speech therapy graduates has increased. Speech therapists work in various settings, including the government sector, which includes Government Hospitals, the Ministry of Health, the Ministry of Education, and the Ministry of Social Development, as well as the private sector, which includes private clinics and centers. To work in any medical center, a license is obtained from the National Health Regulation Authority.

The National Health Regulation Agency

The NHRA license is required for speech therapists working in clinical settings. However, it is not required for therapists who work in school settings or special needs centers. The NHRA was established in 2010, according to Law No.38 of 2009. It is considered the primary body in charge of regulating health professions in the Kingdom of Bahrain, including licensing facilities and professionals (NHRA, 2010). The NHRA recognizes audiology and speech therapy as allied professions and requires at least a bachelor's degree in speech and/or audiology from an accredited university program by Bahrain's Higher Education Council. Professionals must accumulate a minimum of 10 CME/CPD hours per year to renew their licenses, and the CME/CPD must be relevant to the field of the specialty (NHRA, 2021a).

According to the NHRA Annual Report of 2021, the number of licensed audiology and speech therapists in the Kingdom of Bahrain has increased from 24 in 2019 to 56 in 2021, indicating a growing number of speech therapists in clinical settings and a greater awareness of the need to obtain a license in order to provide speech therapy services in medical settings (NHRA, Annual Reports, 2019; 2020; 2021b).

The Ministry of Health

The ministry of health provides speech therapy services through different channels and programs as listed below.

Child Periodic Screening Services

Speech therapy services are available through referral from primary care to secondary care services provided by a family physician at the health center during the Child's Periodic Screening program. There are 27 healthcare centers in Bahrain distributed across all four governorates: 9 healthcare centers in Central Governorates, six healthcare centers in Muharraq Governorate, seven healthcare centers in the Northern Governorate, and five healthcare centers in the Southern Governorate. All these facilities can refer patients to the speech therapy unit through the ear, nose, and throat department (ENT) in government hospitals (MOH, 2022a, 2022b).

During the thorough routine examination of the child, which tracks their physical and mental growth, nutrition, early disease detection, and treatment of those diseases, children are referred to a secondary care facility for further intervention (MOH, 2022c)

Public Health Department: School Health Program

Speech therapy services are offered through the school health program run by the Public Health Department of the Ministry of Health to pupils who have been found to have speech and language issues and who also need another testing, such as an assessment of their intellectual abilities or behavior skills. Currently, one speech therapist is offering assessment services through the program's student psychology unit (MOH, 2022d).

Government Hospitals

Speech therapy services are offered by the major government hospitals: Salmaniya Medical Complex (SMC), King Hamad University Hospital, and Bahrain Defense Force Hospital as well as psychiatric, geriatric, and long-term care hospitals (MOH, 2022e). Overall, 12 speech therapists are working at government hospitals. Since the authors of this study are speech therapists at SMC, detailed information about speech therapy services will be presented to describe the current caseload and subspecialty services.

The Speech Therapy Unit at Salmaniya Medical Complex

According to the Ministry of Health, SMC is Bahrain's largest public hospital and healthcare facility. On average, more than 1800 patients visit SMC's outpatient clinics

daily, which estimates a patient population of about 450,000 per year. Salmaniya Medical Complex works to meet the secondary and tertiary healthcare needs of Bahrain's residents and citizens (MOH, 2022b).

The Speech Therapy Unit in the Ear, Nose, and Throat Department was established in 1991 by Mrs. Raja Al Eid. Over the past 30 years, five other Bahrainis have gradually joined the clinic. Currently, four speech therapists with specialized training in general practice provide four major general clinics with four subspecialty clinics and inpatient treatments. One of the main objectives of the unit was to establish specialized clinics within the ENT department to deliver comprehensive patient care through a multidisciplinary healthcare team.

Consequently, the following combined clinic services are currently available: a voice clinic (established in 1997), Hearing Rehabilitation Program for Cochlear Implants and Rehabilitation Clinic (2001), and The Tracheostomy Care Team (2009), Head and neck Oncology Rehabilitation – Post Laryngectomy Rehabilitation as well as Swallowing and Feeding Disorders Services (Mrs. Raja Al Eid, personal communication, 20 September, 2022). Table 1 presents the caseload of the Speech Therapy Unit and the subspecialty clinics

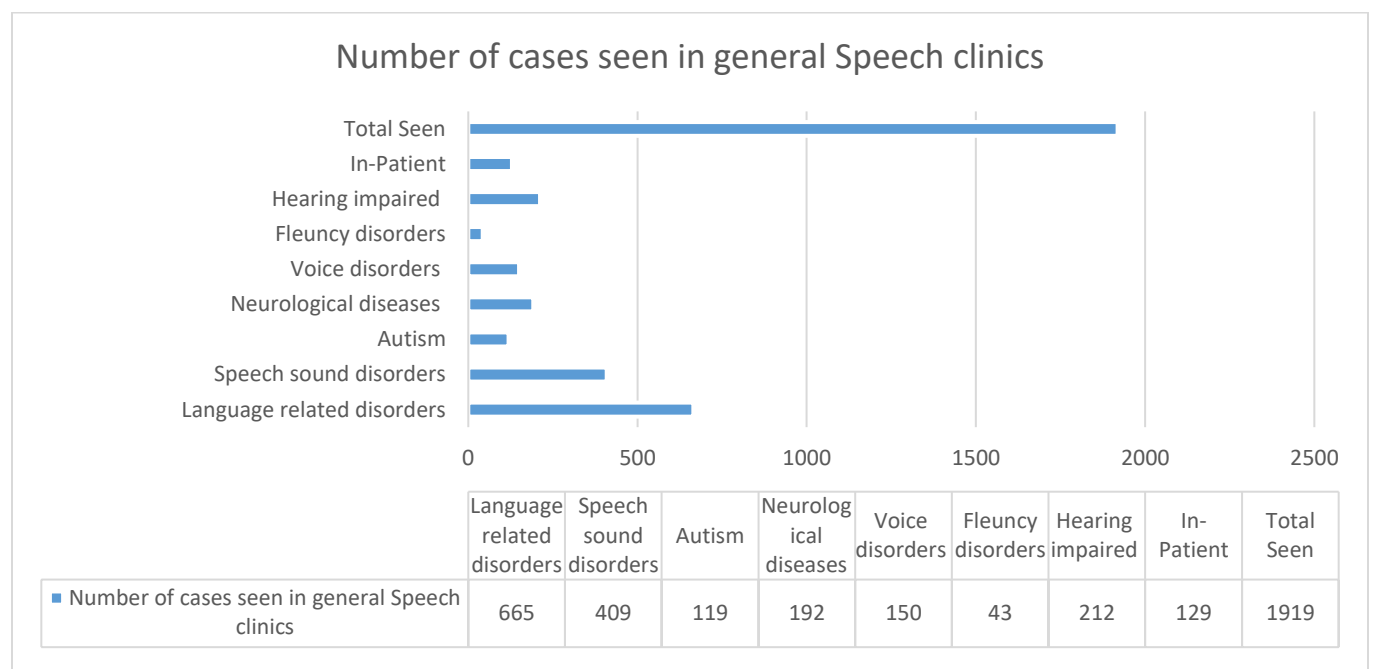
Table 1

Number of Cases Seen from February to August 2022 in Speech Unit Specialized Clinics

Clinic	Number of cases
Hearing Rehabilitation Clinic	149
Speech Therapy Clinic	1907
Tracheostomy Care Clinic	78
Voice clinic	224

Figure 1

Cases Seen Over Six Months in General Speech Clinics from February to August 2022.



The general outpatient clinics receive a wide range of cases, including neurological disorders, speech sound disorders, fluency, voice related disorders, hearing impairment that includes patients fitted with hearing aids and post-cochlear implant rehabilitation,

language related disorders, and post laryngectomy rehabilitation. In addition, inpatient service is provided daily to cases referred from different departments and wards at SMC. Figure 1 illustrates the main diagnosed cases seen in general clinics of the Unit from February to August 2022. In addition, speech and audiology clinics in the ENT department provide newly graduated students with an internship clinical training program. Over 80 trainees have received this training and supervision in the past ten years.

The Ministry of Education

The Ministry of Education's special education division established speech therapy services in primary schools in 2012. The services primarily consisted of assessing and counseling students with language, speech, and learning issues. More than 47 therapists have joined this division, covering practically all primary and secondary schools. Moreover, they provide support to special education classes for children with autism and children with special needs. Additionally, the services are seen as a necessary component of all inclusion classes in public schools (MOE, 2022)

Based on the inclusion services for school aged special needs children, the MOE provides special inclusion classes to allow all children access to education regardless of their disability. There are 64 boys' and 63 girls' schools that provide inclusion services and 14 schools with autism classes. All these schools are followed up by school-based speech therapists (MOE, 2017). According to the statistics of special needs students in all

government schools in 2019, the number of students with difficulties in speech and language has reached 1594, and students with cochlear implants had reached 81 according to the last statistics of the ministry (MOE, 2019).

The Ministry of Labor and Social Development

According to the Ministry's statistics, there are 12,740 disabled people registered in the Ministry records in 2021. Also, Bahrain is home to about 41 special education centers, including public and private institutions. However, the Ministry has recruited only one speech therapist specialized in cochlear implant rehabilitation at Shaikhan Al Farsi Center for Total Communication (MLSD, 2021). As for private centers, speech therapy services are included as part of the rehabilitation team.

Speech and Audiology Committee – Bahrain

Due to the increased number of specialists in the field, Mrs. Mona Mohammed (the first author) established a committee in December 2016 as part of the Cerebral Palsy Friendship Society with around 50 speech therapists. The number of members has now increased to 75. The committee raised awareness, shared experiences, and worked for the benefit of speech therapists and audiologists in Bahrain. In addition to the general information regarding the services provided in the Kingdom of Bahrain, the present study sought to collect information on the speech therapists themselves as well as the process of speech service delivery in governmental health institutions.

The study's primary goals are:

1. Collect data describing the demographic information of speech therapy professionals in Bahrain.
2. Describe the current speech therapy service delivery process in governmental entities.
3. Analyze the caseload of Speech unit clinics at the Salmaniya Medical Complex.

Methodology

The study takes a descriptive, analytical approach to analyze data collected via a web-based online survey to determine demographic information about Speech therapists in the Kingdom of Bahrain. The study is based on a survey sent to speech therapists and audiologists working in the public or private sector in the Kingdom of Bahrain.

Research Design and Data Collection

In this survey, there were 17 questions: 16 closed-ended questions (multiple choice and yes/ no questions) and 1 open-ended question (Recommendations). All of these questions were mandatory (*Appendix A*). The survey questions focused on demographic information (8 questions), therapists' practice (7 questions), and professional perspective (2 questions).

The survey was developed based on previous studies, primarily a survey conducted to analyze the speech and audiology profession in Saudi Arabia (Alanazi, 2017)

Data Collection and Sampling

The survey was created through an online form and was disseminated to all speech therapists working in all public and private facilities via social networks in order to quickly and affordably reach a large number of audiologists and speech therapists throughout the Kingdom of Bahrain. The survey link remained available for a month, and 59 replies were received.

Survey Results

Using Microsoft Excel and descriptive statistics, it was possible to organize and analyze the data by collecting the number of responses (frequency) for each question. In the following, we summarize the survey results:

Demography

Forty-five of the respondents were Bahrainis, and five were non-Bahraini. There were 54 female and only five male speech therapists in total. Thirty-nine percent of the participants were between the ages of 26 and 30, and 33.9% were between the ages of 31 and 35. Most participants held bachelor's degrees; two were pursuing master's degrees,

and seven already held master's degrees. Fifty-five participants received their diplomas from Jordanian universities, while four obtained theirs from other institutions.

It has been noted that there were 34 graduates of speech and audiology programs in the years between 2012 and 2016, while 14 graduates were recorded in the years between 2017 and 2021. Forty-three participants were employed as speech therapists, eight therapists worked in both speech and audiology, and eight were audiologists.

Therapists' practice

Regarding specialization in the workplace, the majority of respondents, 30 worked as school-based speech therapists, 22 therapists were working in medical settings, and seven therapists were working in both government and private sectors. Only 33 of them held NHRA licenses. Only two respondents reported having 20 years of experience, while 32 were employed for 6 to 10 years, and 15 had less than five years of experience.

While 52.5% of the participants worked with children and adults, 47.5% worked only with children. Additionally, the distribution of a speech therapist's caseload varies by the workplace. The most common diagnoses were developmental language disorders, speech sound disorders, autism, and fluency difficulties. The cases with a medically related disorder were fewer in school-based settings.

Professional perspective

Most respondents (43) felt that there were not enough audiologists and speech therapists working in their workplaces. There were many demands by the therapists to improve speech therapy and audiology services in the Kingdom of Bahrain and to have more collaboration between Ministries that provide the same service. (*Appendix. B*)

Discussion

The speech therapy profession plays a vital role in the field of allied health, especially after the substantial advancements in healthcare services in the Kingdom of Bahrain. There has been a significant rise in the number of speech therapists, as highlighted in the literature review. However, there has been no reliable data on speech and audiology professionals or related statistics for the last 30 years. In order to achieve the goals of the research, the study focused on the key demographic data currently available for the allied health professions.

This study showed that most speech therapists and audiologists in Bahrain were female (54 out of 59 participants). There were 43 participants who worked as speech therapists, eight working as audiologists, and eight working as both speech therapists and audiologists. Only five participants were non-Bahrainis (out of 59). Fifty-two practitioners held bachelor's degrees, and seven held master's degrees with no Ph.D.

holders. Furthermore, there are 22 therapists in private and public hospitals, 30 speech therapists working in school-based settings, and seven working in both settings.

The number of speech therapists in governmental entities is as follows: the Ministry of Education has 47 speech therapists, the Ministry of Labor and Social Development has only one speech therapist, and government hospitals have 12 speech therapists distributing accordingly: four at Salmaniya Medical Complex, four at Bahrain Defense Force Hospital, three at King Hamad University Hospital, and one at the Psychiatric Hospital. The Ministry of Health also has one speech therapist that works under Public Health Department. This shows a severe scarcity of speech therapists in all healthcare facilities and other ministries offering rehabilitation programs to those with disabilities or in need of speech therapy services.

There is an urgent need to increase the number of therapists in various facilities to meet the public's needs. Participants recommended that speech therapy services be available in all 135 primary government schools in order to meet the growing demand for these services in educational settings, as opposed to just a small number of schools. Additionally, it was suggested that primary health care services involved in school screening tests and the school health care system should collaborate more closely with the education system, particularly in the process of diagnosis and referral.

Furthermore, the caseload of the Speech Unit at SMC, which included over 2300 patients during the six months from February to August 2022, was described and

presented in the paper. The data showed that, among other problems, language related disorders accounted for the highest proportion of patients, followed by speech sound disorders and neurological disorders.

Limitations and Future Studies

The main limitation of this study is that the data were collected via a web-based survey distributed randomly to all speech therapists and audiologists on social media, which may have affected the sample size and representation. This implies that additional research is needed to prepare an online survey that will be completed with the official collaboration of all public and private sector entities. The second limitation is that this survey focused on the participants' demographic information rather than speech therapy practices and other dimensions, which are acknowledged as a rich source of data. However, despite its limitations, the study adds to our understanding of speech therapy and audiology services in Bahrain. A more comprehensive study involving all professionals in the public and private sectors is now required to provide a more comprehensive view of the profession, especially as Bahrain's health system moves toward autonomy and health insurance. Furthermore, future studies must compare the results to those of other countries. Moreover, to overcome the challenges of the lack of training and academic programs, and regulation, an official regulatory professional body should apply common quality assurance/control and performance measurement to promote the effectiveness of the services provided by speech therapists in Bahrain.

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Appendix A: Survey questions

Survey questions:	
1	Nationality (if Non-Bahraini, please specify)
2	You are mainly working as
3	gender
4	Your age group
5	Your current Degree
6	Bachelor's degree (Mention the university name)
7	Master's degree (Mention the university name)
8	Year of graduation
9	Place of Work
10	NHRA licensed
11	Years of experience
12	If you are an audiologist, what services are you providing?
13	If you are a speech therapist, what services are you providing?
14	What is the age distribution of your patients?
15	Do you have local protocols to follow at your workplace?
16	Do you think the number of audiologists/ speech therapists in your workplace is enough to cover the workload?
17	What do you think is needed to improve the audiology & speech therapy profession in Bahrain?

Appendix B: Data of the respondents (n=59)

	Variable		Frequency	%
1	Nationality	Bahraini	54	91.5%
		Non-Bahraini	5	8.5%
2	Working As	Audiologist	8	13.6%
		Speech therapist	8	72.9%
		Both	43	13.6%
3	Gender	Male	5	8.5%
		Female	54	91.5%
4	Age Group	20-25	8	13.6%
		26-30	23	39%
		31-35	20	33.9%
		36-40	4	6.8%
		41-45	4	6.8%
		46-50	0	0
		55-60	0	0
		Above the 60s	0	0
5	Current degree	Bachelor's Degree	50	84.7%
		Seeking master's Degree	2	3.4%
		Master's Degree	7	11.9%
		Ph.D. Degree	non	0%
6	Bachelor's degree from	University of Jordan	29	

		Applied Science University_ Jordan	6	
		Jordan University of Science and technology	19	
		Kerala University of Health and Science	1	
		King Saud University	1	
		Graduated from Egypt	1	
		Bangalore university	1	
		Alahliya Amman University	1	
7	Master's degree from	University of Jordan	5	
		University of Groningen/ The Netherlands	1	
		Tamilnadu Dr.MGR Medical university	1	
8	Year of graduation	2000-2006	5	8.5%
		2006-2011	6	10.2%
		2012-2016	34	57.8%
		2017-2021	14	23.8%
9	Place of work	Medical Governmental sector	13	22%
		School-based Governmental sector	23	39%
		Medical private practice	9	18.6%

		School-based private practice	7	11.9%
		Both Governmental & Private	7	15.3%
10	NHRA licensed	Yes	33	55.9%
		No	26	44.1%
11	Years of experience	Less than five years	15	25.4%
		6-10 years	32	54.2%
		11-15 years	6	10.2%
		16-20 years	4	6.8%
		More than 20 years	2	3.4%
12	If you are a speech therapist, what speech services you are providing?	Language Disorders	50	98%
		Articulation & Phonology disorder	48	94.1%
		Fluency Disorders	45	88.2%
		Aphasia	20	39.2%
		Voice Disorders	22	43.1%
		Swallowing and Feeding difficulties	14	27.5%
		Apraxia	23	45.1%
		Autism	43	84.3%
		Hearing Rehabilitation with CI	33	64.7%

		Reading and Writing Difficulties	14	27.5%
		Neurological disorders (Cerebral palsy, ALS, MS...	18	35.3%
13	If you are an audiologist, what audiology services you are providing?	OAEs (Otoacoustic Emissions)	10	62.5%
		Tympanometry	13	81.3%
		PTA (pure-tone Audiometry)	14	87.5%
		ABR (Auditory Brainstem response)	9	56.3%
		Cochlear implants fittings	10	62.5%
		Hearing Aids fittings	10	62.5%
		BAHA (Bone-anchored hearing aids)	5	31.1%
		Speech Audiometry	11	68.8%
		Vestibular Assessments	2	12.5%
		VRA	1	6.3%
		Cochlear microphonic	1	6.3%
		Real Ear measurements	1	6.1%
14	What is the age distribution of your patients?	children	28	47.5%
		adults	0	0
		both	31	52.5%
15		Yes	32	54.2%

	Do you have a local protocol to follow at your workplace?	No	8	32.2%
		I am not sure	19	13.6%
16	Do you think the number of audiologists/ speech therapists in your workplace is enough to cover the workload?	Yes	12	20.3%
		No	43	72.9%
		I am not sure	4	6.8%
17	What do you think is needed to improve the audiology & speech therapy profession in Bahrain?			