

**Review Article****The Scope and Challenges of Medical Technology Allied Health Professionals in Pakistan****Khadija Shah¹, Fahad Ahmed¹, Nazish Nizar Ali¹ and Atiya Rahman Rohilla¹**¹Department of Allied Health Sciences, Indus College of Medical Technology and Allied Health, Indus Hospital and Health Network, Karachi, Pakistan**ARTICLE INFO****Keywords:**

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khadijashah17feb18@gmail.comReceived Date: 25th April, 2024Acceptance Date: 26th July, 2024Published Date: 31st July, 2024**ABSTRACT**

WHO and the US Department of Health and Human Services both define AHPs as healthcare professionals with specific connections to the art and science of healthcare, and expertise in therapeutic, diagnostic, and preventive interventions, showing leadership in clinical and technical proficiency. AHPs include dental hygienists, diagnostic medical sonographers, dietitians, medical technologists, occupational therapists, physical therapists, and speech-language pathologists. A growing number of AHPs in Pakistan are becoming stronger and more well-known in the healthcare system. The growing population and increased demand for health care professionals. In this modern era, where the country faces a brain drain of other known professions, increasing the demand for skilled AHPs who play a vital role in patient care, diagnosis, treatment, and rehabilitation. The increasing scope of AHPs is highlighted by factors such as public awareness of preventive and rehabilitative healthcare, government initiatives supporting workforce development, and the growth of academic institutions providing AH sciences programs. On March 5, 2022, the Pakistan AHPC was established to strengthen the unified professional body on a single platform. AHPs in Pakistan face challenges such as gaining formal recognition, enhancing education by implementing master's programs in all specialties, strategizing workforce planning, and boosting advocacy to empower the council in granting global acknowledgment to registered professionals. The AHPC is in its initial stages and must develop formal job descriptions for technicians and technologists, as well as establish pay scale recognition.

INTRODUCTION

The health workforce, which includes medical, nursing, and allied health professionals, is the backbone of any healthcare system. Investments and advancement in healthcare sector lead to reduced disease burden, increased productivity, and positive economic growth. Pakistan is generally facing a dire shortage of skilled healthcare workers [1-3]. Pakistan is one of several nations suffering from the growing disparity between patient care and the healthcare staff, which has become a global concern [4, 5]. According to The Pakistan Medical Commission (PMC) 249,371 registered physicians, including specialists, and 128,744 nurses, including lady health visitors (LHVs), community-based midwives (CMWs), midwives (MWs), and family welfare workers (FWWs), to cater to the nation's population of over 232 million people

[4]. As per the 2021 Universal Health Coverage-Monitoring Report-Pakistan shows the healthcare worker ratio on population. The results indicate a doctor-to-population ratio of 1.09 per 1,000 and a nurse-to-population ratio of 0.59 per 1,000 in Pakistan [4]. According to the Pakistan Economic Survey 2020-2021. The current nurse-patient ratio in Pakistani hospital general wards is 1:40, but the Pakistan Nursing Council recommended a ratio of 3:10 [1, 6]. The country faces a brain drain of other known professions that work as a foundation of any hospital this need for skilled health professionals highlighted the skilled personnel who work along with medical and nursing parallelly this necessity lamplight the upbringing profession of allied health professional [1]. Although the scope of allied health has been in the limelight since 1966

this profession is still underappreciated as compared to other professions like nursing. During the discussions leading up to the 1967 passage of the Allied Health Professions Personnel Training Act, the term "allied health sciences" gained popularity [5-7]. The terms used may differ according to the nation and the situation. Still, typically it is seen as separate from nursing, medicine, and pharmacy [8-10]. According to The Center for Health Professions, California, Allied Health Professionals makeup 60% of the entire health workforce [11]. Medical technology, commonly referred to as allied health professionals in Pakistan, is essential to the country's overall healthcare system [12]. This line of work deals with the technical aspects of medicine and surgery, encompassing their rewards and problems [13, 14]. Effective healthcare services are essential to a successful society's foundation. Allied health assistants are an emerging group in allied health practice with the potential to improve the quality of care and safety of patients [15]. The scope of Allied health professionals is significantly elaborated as they play an important role in the diagnosis, treatment, prevention, and rehabilitation of illness or injury. Without a doubt, allied health sciences form the foundation of any nation's healthcare system [16, 17].

The aim of this article was to discuss and elaborate role and challenges of allied health professionals in Pakistan. Allied health professionals or "AHP" means a Person who provides diagnostic, therapeutic, Preventive, curative, or rehabilitative services in health care, in a prescribed manner and has undergone a prescribed course of training in a recognized institution and is registered as an Allied Health Professional by the body formed for the purpose. (Allied Health Professional Council Act, 2022). Classification and affiliated bodies of AHPs in Pakistan. Allied Health professionals are typically divided into two categories as shown in table 1: Technicians/Diploma (assistants) and Therapists/technologists (Degree holder).

Table 1: Classification and Affiliated Bodies of AHPs in Pakistan

S.No.	Disciplines	Years of education	Role Domain	Affiliated body
1	Technicians	1-year certificate	Assistant	SMF, PMF, BMF and KMF
2	Diploma	2-year certificate	Assistant	
3	Technologists /Therapists	4-year degree	Supervisors/ managers	Provisional Universities

Abbreviations: SMF (Sindh medical faculty), PMF (Punjab medical faculty), BMF (Baluchistan medical faculty), KMF (Khyber Pakhtunkhwa medical faculty).

Table 2 showed specific roles performed by Allied health professionals [18-22].

Table 2: Specific Roles Perform by AHP

S.No.	Areas	Specific Roles
1	Diagnostic	Cardiovascular technologists/technicians, Clinical laboratory technologists/technicians, Radiological technologists/technicians, Ultrasound technicians and X-ray technicians

2	Medical services	Dental technologists/technicians, Emergency medical technicians, ICU technicians, Anesthesia technologists /technicians, Operation Theater technologists/ technicians, Pead's oncology Technicians, and Health technicians
3	Non-direct care	CSSD technicians, medical appliance technicians, and Pharmacy Technicians
4	Rehabilitative	Occupational therapists, Speech-language therapists, Respiratory Therapists, and Physiotherapy technicians

As Allied health workers bridge gaps in service delivery and address patients' multiple needs across diverse settings, they play a crucial role in providing comprehensive and holistic treatment in Pakistan, where access to healthcare services is still a chronic difficulty [23]. One cannot emphasize the importance of allied health professionals in Pakistan, especially given the country's rapidly changing healthcare system and growing population [18]. Current challenges faced by health professionals were mentioned in figure 1.

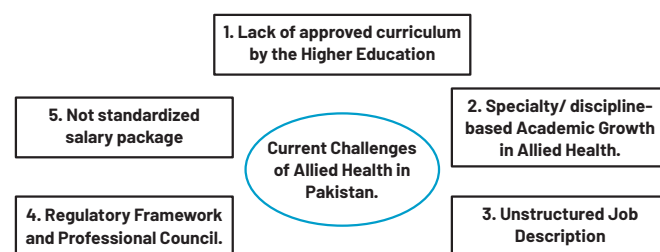


Figure 1: Current Challenges of Allied Health in Pakistan

Current Challenges of Allied Health in Pakistan: The Allied Health Medical Technology programs, particularly Bachelor of Science (BS) in Medical Technology, face several pressing challenges in Pakistan. These challenges contribute to inconsistencies in curriculum, lack of standardized job descriptions, and insufficient regulatory frameworks [24-26]. Lack of approved curriculum by the Higher Education: Unlike other healthcare programs such as Bachelor of Science in Nursing, Doctor of Physical Therapy (DPT), and Pharmacy, which have approved curricula by the Higher Education Commission (HEC), BS in Medical Technology programs lack this standardization. Each private or government universities have its own syllabus outline leading to disparities in the quality and content of education provided to students across different institutions. Academic Career Growth in Allied health: In Pakistan, there is limited academic career growth in all allied health profession specialties except in the clinical laboratory sciences. Pakistan offers master's and PhD programs in clinical laboratory science. Unstructured Job Description: The Allied health personnel face a significant challenge in the absence of a clear standardized job description for graduates/Therapists, diplomas, and technicians. Unlike professions regulated by established councils such as the Pakistan Medical Council and the Pakistan Nursing Council. workforce effectively [25]. Regulatory Framework and Professional Council: While

efforts have been made to address some of these challenges, such as the establishment of the Allied Health Professions Council, the regulatory framework for medical technologists is still in the process of development and implementation. The Allied Health Professions Council, although recently created, is still undergoing registration and documentation processes [25]. Not standardized salary package: As compared to Registered nurses' standardized salary package in both private and government bodies. AHPs are still facing the underrated salary package. Table 3 showed current allied health scenario in Pakistan. The allied health sector in Pakistan encompasses a diverse range of professions essential to the delivery of comprehensive healthcare services. Despite the critical role these professionals play in enhancing patient care and supporting the healthcare system, the allied health sector in Pakistan faces a complex landscape shaped by various factors. Rapidly evolving healthcare needs, limited resources, and infrastructural challenges contribute to a dynamic environment where opportunities and constraints coexist. A small effort was made to do a SWOT analysis of the current scenario of Allied health professionals in Pakistan. This section aims to provide an in-depth examination of the sector's current state, including its key strengths and weaknesses, as well as potential opportunities for growth and external threats. By analyzing these factors through a SWOT framework, we seek to offer a strategic perspective on how the allied health sector can navigate its challenges and leverage its strengths to improve healthcare outcomes in Pakistan.

Table 3: SWOT Analysis for The Current Allied Health Scenario in Pakistan

Strengths	Weaknesses	Opportunities	Threats
<ol style="list-style-type: none"> Allied health professionals cover various domains within the healthcare system. The health care system provides a safe and healthy working environment for allied health workers. Allied health professionals play an integral role in supporting the health care system. Job availability 	<ol style="list-style-type: none"> Lacking recognition and public awareness about the allied health profession. Limited chances for advancing in career and opportunities for professional growth. Lack of standardized regulatory framework for licensing and accreditation of allied health professionals. Limited research and evidence-based practice initiatives within the allied health sector. Overworked and stressful. Annual increment too less 	<ol style="list-style-type: none"> Growing demand for healthcare services due to population growth and aging demographics. New opportunities for jobs due to the high demand for technical skill professionals. High demand in the international healthcare market. 	<ol style="list-style-type: none"> High turnover. Salary structure not segregated between qualified and non-qualified staff. No structured professional development progress. Nonfunctional licensing system. Lack of standardized education.

Global Context of AHP: Around the world, there is growing proof healthcare can only get better if we focus on training and supporting healthcare workers. Over the past ten years, technology has advanced a lot, but there hasn't been enough consistency in the skills needed for these jobs [26, 27]. The classification of health professionals varies from one country to another, leading to confusion about the roles of paramedical, paraprofessional, and allied health service providers. For instance, the title given to someone who diagnoses and treats speech disorders differs among countries. In Australia, they're referred to as speech pathologists, while in the United States, they're called speech-language pathologists [28]. In the United Kingdom, they're known as speech and language therapists [29]. The definition and understanding of paramedical professionals can vary within and between countries. According to the International Standard Classification of Occupations (ISCO), these professionals work independently or with limited supervision. Paramedics are the emergency medical technicians (EMTs) who respond to medical emergencies outside hospitals in the United States, they're categorized based on their training level as

compared with France, where there is a central control function for the regulation of medical emergency services [30, 31]. Nearly more than 90,000 university-trained, autonomous AHPs play a significant role in managing the Australian health care system. Besides doctors and nurses [28]. In England, there are over 84,000 Allied Health Professionals (AHPs) working in different roles in the National Health Service (NHS). AHPs work in hospitals, clinics, and communities. They do important jobs like diagnosing and treating illnesses, from preventing problems to helping patients recover [32-36].

CONCLUSIONS

The Allied Health Council of Pakistan must take all stakeholders including educational institutions, regulatory bodies, and the higher education commission on board to develop a standardized curriculum and recruitment policy. The Allied Health Council of Pakistan must take initiative in the professional licensing to accredit the profession in the international market.

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Methodology: FA

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All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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