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MINISTRY OF HEALTH MALAYSIA
ALLIED HEALTH SCIENCES DIVISION

TECHNICAL REPORT

IMPRESSION OF ACT 774, ROLES AND CRITERIA FOR A PROFESSION TO BE CONSIDERED AS PROFESSION OF ALLIED HEALTH IN MALAYSIA

A WHO Funded Project

ALLIED HEALTH SCIENCES DIVISION
MINISTRY OF HEALTH MALAYSIA

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Impression of Act 774, Roles and Criteria for a Profession to be Considered as Profession of Allied Health in Malaysia

A Report by Allied Health Sciences Division (AHSD)

The Report is prepared for the Ministry of Health Malaysia (MOH) by
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DEPUTY SECRETARY GENERAL (FINANCE)
MINISTRY OF HEALTH MALAYSIA

FOREWORD

DEPUTY SECRETARY GENERAL (FINANCE)
MINISTRY OF HEALTH MALAYSIA

In Malaysia, we have long recognised the indispensable role of Allied Health professionals in providing comprehensive, patient-centred care. The Professions of Allied Health has dedicated invaluable contributions in Malaysia's healthcare system. These diverse and dynamic healthcare professionals play a vital role in transforming and elevating the quality of healthcare services in our nation, setting the stage for comprehensive health care reforms. These highly skilled and specialised professionals are instrumental in promoting preventive measures, diagnosing illnesses, providing therapeutic interventions, and aiding patients' physical and mental well-being throughout their healthcare journey.

To fully harness the potential of these skilled practitioners and to strengthen their integration within our healthcare framework, it became evident that a standardised and well-defined set of criteria was essential. The journey to establish such criteria has been one of collaboration, perseverance, and dedication, involving a multidisciplinary team of experts, educators, and policymakers. The significance of defining criteria for Professions of Allied Health lies in its potential to elevate the status and recognition of these professionals. With clearly outlined qualifications, competencies, and scope of practice, we empower Allied Health practitioners to confidently contribute to patient care and collaborate seamlessly with other healthcare providers.

I extend my heartfelt appreciation to the World Health Organization for their invaluable funding support, which has been instrumental in this endeavour in Malaysian healthcare. Congratulations to all those involved in this research; the researchers, educators, practitioners, policymakers and stakeholders. This work is a testament to the spirit of collaboration and innovation that underpins our efforts to build a healthier and happier nation.

YBHG DATO' SRI NORAZMAN AYOB
DEPUTY SECRETARY GENERAL'S (FINANCE)
MINISTRY OF HEALTH MALAYSIA

DIRECTOR-GENERAL OF HEALTH MALAYSIA
MINISTRY OF HEALTH MALAYSIA

FOREWORD

DIRECTOR-GENERAL OF HEALTH MALAYSIA
MINISTRY OF HEALTH MALAYSIA

The strategic plan of the Ministry of Health Malaysia emphasises the importance of an integrated and comprehensive approach to healthcare. Allied Health professionals are key drivers of this approach, as they complement and collaborate with physicians, nurses, and other healthcare providers, forming a cohesive network of care that benefits patients at every stage of their health journey. As we strive to achieve the goals set forth in the Ministry's strategic plan, we recognise the critical role played by Allied Health professionals in realising our vision of an accessible, equitable, and patient-centred health care system.

I am pleased to note that the Technical Report: Impression of Act 774, Roles and Criteria for a Profession to be Considered as Profession of Allied Health in Malaysia is crafted by the Quality and Research Unit, Allied Health Sciences Division Ministry of Health Malaysia. This document is a supplementary report to the publication on “Developing criteria for a profession to be considered as Profession of Allied Health in Malaysia: a qualitative study from the Malaysian perspective” produced under the WHO Program Budget 2020-2021.

The criteria developed through meticulous research and collaboration will serve as a foundation for elevating the standards of Allied Health services, education and training. With a well-defined roadmap, we can now align structured professional development pathways, and ensure that these professions are prepared to meet the evolving challenges of the healthcare landscape.

It is a great pleasure to congratulate those who have been involved in the study especially stakeholders offering extensive and in-depth input and views gathered from document reviews and focus group interviews.

It is hoped that this report will be used to refine the regulation framework of Act 774 and improve healthcare for Malaysians. I would like to express gratitude to the World Health Organization for providing support under the Programme Budget 2020-2021. I hope this study provides great insight and understanding of criteria and roles related to allied health professionals in Malaysia.

YBHG DATUK DR. MUHAMMAD RADZI BIN ABU HASSAN
DIRECTOR-GENERAL OF HEALTH MALAYSIA
MINISTRY OF HEALTH MALAYSIA

DEPUTY DIRECTOR-GENERAL OF HEALTH (MEDICAL)
MINISTRY OF HEALTH MALAYSIA

FOREWORD

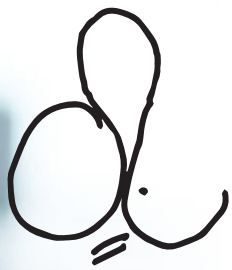
DEPUTY DIRECTOR-GENERAL OF HEALTH (MEDICAL)
MINISTRY OF HEALTH MALAYSIA

In the pursuit of providing exemplary healthcare services to all Malaysians, we have recognised the indispensable role of Allied Health professionals. Their specialised skills, expertise, and dedication contribute significantly to the holistic well-being of our population. In leveraging the potential of these professionals and integrate them seamlessly into our healthcare fabric, the establishment of clear and standardized criteria became imperative.

I applaud this project conducted by the Allied Health Sciences Division, Ministry of Health Malaysia to establish criteria for defining Professions of Allied Health (PAH) in Malaysia. The project involved the establishment of a team working group and capacity building among its members prior to the execution of the qualitative research, which took place at the AHSD, MOH between April-September 2021.

The establishment of these criteria acknowledges the dynamic nature of healthcare. As science progresses, new challenges arise, and the roles of healthcare professionals adapt accordingly. With a clearly defined framework in place, our Allied Health professionals are not only equipped to navigate these changes but are also empowered to be pioneers of innovation.

I anticipate that this report will play a pivotal role in enhancing the regulatory framework of Act 774 and elevating healthcare standards for the benefit of Malaysians. I extend my heartfelt appreciation to all of the committee members who have involved actively in the project, and the World Health Organization for their invaluable funding support, which has been immensely important in this project. I trust that this study will offer profound insights and a deeper understanding of the criteria and roles pertaining to allied health professionals in Malaysia.



DATO' DR ASMAYANI BINTI KHALIB
DEPUTY DIRECTOR-GENERAL OF HEALTH (MEDICAL)
MINISTRY OF HEALTH MALAYSIA

DIRECTOR OF ALLIED HEALTH SCIENCES DIVISION (AHSD)
MINISTRY OF HEALTH MALAYSIA

FOREWORD

DIRECTOR OF ALLIED HEALTH SCIENCES DIVISION (AHSD)
MINISTRY OF HEALTH MALAYSIA

As a cornerstone of our nation's healthcare system, we are dedicated to advancing the field of allied health to provide exemplary and holistic care to all Malaysians through commitment to excellence, innovation, and collaboration, our division stands at the forefront of healthcare advancement.

In the Strategic Plan of Allied Health Sciences Division (AHSD) and Allied Health Profession (AHP) 2021-2025, we envision a future where allied health professionals play an even more integral role in promoting wellness, diagnosing ailments, and facilitating rehabilitation in the health services. Our mission is to empower our diverse community of practitioners to thrive and excel in their respective disciplines, while ensuring that patients receive the highest quality care.

The development of criteria for Professions of Allied Health marks a defining moment in our healthcare strategic plan. By clearly defining the criteria in terms of qualifications, competencies, and scope of practice for these professionals, we empower them to deliver high-quality care, participate actively in interdisciplinary collaborations, and lead innovative initiatives that address the diverse healthcare needs of our citizens. Crucially, these criteria signify more than just guidelines; they symbolise our commitment to elevating patient care to unprecedented heights. I expect that this report will have a central role in strengthening the regulatory structure of Act 774 and raising healthcare standards to the advantage of Malaysians in receiving allied health services.

I wish to express my sincere gratitude and profound recognition to the AHSD committee and representatives from diverse fields who have contributed to the realization of the initiative aimed at establishing clear criteria for the Professions of Allied Health (PAH) in Malaysia. Also, I'm truly grateful for the World Health Organization's essential funding support, which is vital to the realization of the project. Their unwavering support have been instrumental in improving care for allied health, that is not only pertinent and forward-looking but also holds great value for the well-being of our people.

MADAM HAJAH FARINA BINTI ZULKERNAIN
DIRECTOR OF ALLIED HEALTH SCIENCES DIVISION
MINISTRY OF HEALTH MALAYSIA

TABLE OF CONTENT

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGEMENTS

This technical report is an initiative of the Policy and Strategic Planning Section, Allied Health Sciences Division of the Ministry of Health Malaysia. This project is funded by the World Health Organization (WHO) Program Budget 2020-2021.

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Sincere gratitude to Dato' Dr Asmayani Khalib, Deputy Director-General of Health (Medical) Malaysia and Madam Farina Zulkernain, Director of Allied Health Sciences Division, Medical Programme, Ministry of Health for the support and guidance in developing this technical report on Impression of Act 774, Roles and Criteria for a Profession to be Considered as Profession of Allied Health in Malaysia for the first time.

Heartfelt gratitude and thank you to Datuk Dr Muhammad Radzi bin Abu Hassan, Director General of Health Malaysia for granting the permission to publish this technical report.

Appreciation to all of the stakeholders involved in the project especially panels from higher education providers (HEP), employers, associations and regulatory bodies. Congratulations to all research committee for completing the project successfully.

Allied Health Sciences Division wishes to acknowledge the WHO Representative and Head, Office of the WHO Representative to Malaysia, Brunei Darussalam and Singapore for the continuous support, and special thanks for the technical support from Dr. Soo Chun Paul, Technical Officer and the assistance of Ms. Sheila Fernandez.

LIST OF ABBREVIATIONS

ACPA	Australian Clinical Psychology Association
ADA	American Dietetic Association (currently known as Academy of Nutrition & Dietetics)
AHP	Allied Health Professions
AHSD	Allied Health Sciences Division
ASBMB	American Society for Biochemistry and Molecular Biology
BDA	British Dietetic Association
BSA	British Society of Audiology
CPD	Continuous Professional Development
FGD	Focus Group Discussion
GSM	Genetic Counselling Society Malaysia
HEP	Higher Education Provider
HR	Human Resource
IDI	In Depth Interview
IIUM	International Islamic University Malaysia
ILO	International Labour Organization
IMU	International Medical University
IoT	Internet of Things
ISCO-08	International Standard Classification of Occupation
ISPO	International Society for Prosthetics and Orthotics
JSM	Department of Standards Malaysia
KPJUC	KPJ Healthcare University College
MAB	Medical Assistant Board
MACB	Malaysian Association of Clinical Biochemist
MAHPC	Malaysian Allied Health Professions Council
MANSA	Malaysian National Society of Audiologists
MASH	Malaysian Association of Speech-Language & Hearing
MCO	Movement Control Order
MDA	Malaysian Dietitians' Association
MDC	Malaysian Dental Council
MINDEF	Ministry of Defence
MMTA	Malaysian Music Therapy Association
MMTA	Malaysian Music Therapy Association
MNB	Malaysian Nursing Board
MOC	Malaysian Optical Council
MOE	Ministry of Education
MOH	Ministry of Health

MOHE	Ministry of Higher Education
MOSTI	Ministry of Science, Technology and Innovation
MQA	Malaysian Qualification Agency
MQF 2.0	Malaysian Qualification Framework version 2.0
MSCP	Malaysian Society of Clinical Psychology
MSU	Management & Science University
MWFCD	Ministry of Women, Family and Community Development
MYS	Ministry of Youth and Sports
NASRHP	National Alliance of Self Regulating Health Professions
NRAS	National Registration and Accreditation Scheme
NSM	Nutrition Society of Malaysia
OSHMS	Occupational Safety and Health Management System
PAH	Profession of Allied Health
PBM	Pharmacy Board Malaysia
PPOM	Malaysian Prosthetic and Orthotic Association
PPUM	University Malaya Medical Centre
RIA	Regulatory Impact Analysis
SNDA	Singapore Nutrition and Dietetics Association
T&CM Council	Traditional and Complimentary Medicine Council
UiTM	Universiti Teknologi MARA
UK	United Kingdom
UKM	Universiti Kebangsaan Malaysia
UM	Universiti Malaya
UNiSZA	Universiti Sultan Zainal Abidin
UPM	Universiti Putra Malaysia
USA	United States of America
WHO	World Health Organization

EXECUTIVE SUMMARY

This report comprises all activities undertaken for the project to determine possible criteria to define Professions of Allied Health in Malaysia undertaken by the Allied Health Sciences Division, Ministry of Health Malaysia (AHSD, MOH). With AHSD as the focal point, a team working group was established in the execution of the project. The World Health Organization (WHO) Programme Budget 2020-2021 supported this project which included capacity building among the project team members prior to the execution of the qualitative research which took place at the AHSD, MOH between April-September 2021. The project aims to provide (a) criteria for a profession to be considered as Profession of Allied Health (PAH) in Malaysia; (b) possible profession to be considered as PAH in Malaysia and (c) the roles of PAH in Malaysia.

The qualitative research consists of document review analysis and Focus Group Discussions (FGDs) among four stakeholders (academicians, employers, associations, and regulators) in exploring the criteria of PAH in Malaysia. This technical report is then produced to provide extensive and in-depth outcome and views gathered from document reviews, and FGDs. Findings are divided into impression of the Allied Health Professions Act 2016 (Act 774), criteria for a profession to be considered as PAH in Malaysia, roles of PAH as well as list of other possible profession to be considered as PAH in Malaysia; while recommendations and conclusion is provided at the end of the report, respectively.

The criteria emerged from the research include risk of harm, set of competency and skills, formal qualification, defined scope of practice, relevant training and professionals working within a healthcare team. Additionally, 10 other criteria (viz. related to people's health, autonomy in practice, Continuous Professional Development (CPD), availability of the code of conduct/ethics, health practicing certificate, professional organisation/association, career pathway, rate of charges, availability of a profession and international benchmarking) have also been identified. Being exploratory and qualitative in nature, the emergent criteria reported in this research are the first attempt to provide suitable criteria for defining PAH in Malaysia despite several limitations. In defining the roles of PAH, managing health/wellness was deemed as substancial function in healthcare followed by managing health service, and conducting screening or diagnostic assessment.

It is hoped that this report will give a better insight and understanding on criteria and roles related to allied health professionals in Malaysia, thus it may assists in the refinement of the regulation framework of the Act 774 as well as improving healthcare for Malaysians.

1.0
INTRODUCTION

1. STUDY BACKGROUND

Reforms in the healthcare systems have been widely advocated by developed countries [1,2] in tandem with a myriad of evolving factors such as the prevalence of chronic non-communicable diseases, rapidly aging populations and limited skilled healthcare professionals.[3] Moreover, the situation is further exacerbated by higher consumer expectations as well as the ever-rising cost of treatment and containment throughout the world [4,5] including Malaysia.[6] In this context, the involvements of allied health professionals within the healthcare framework appear relevant to provide sufficient services to the public at large.[7] Pertinently, the term allied health professionals alone has been prevailingly used in the literature (e.g. Bissett et al., 2021[8] and Seaton et al., 2021[9]) as well as in jurisdictions in countries like the United States of America (USA) [10], the United Kingdom (UK) [11], Australia [12] and Singapore.[13] These countries have taken several approaches in defining allied health professions and eventually concluded with a general description of allied health professionals instead.

As for Malaysia, a specific act for allied health, the Allied Health Professions Act 2016 (Act 774) was drafted in 2008, gazette on February 18, 2016, and enforced on July 1, 2020. The Act 774 has been enacted to enable the establishment of the Malaysian Allied Health Professions Council (MAHPC), the registration of allied health practitioners and persons carrying out allied health activities, as well as regulating the professions, practice, and other related matters. Interestingly, unlike other countries, the Act 774 that regulates the practice of allied health in Malaysia provides two separate descriptions of such professionals *viz.* allied health profession (AHP) and profession of allied health (PAH). The PAH is considered as the outer perimeter, while the AHP is the directly regulated subset component of the healthcare framework by the MAHPC. Hence, the flexibility gives the law the dynamics to comprehensively embrace suitable reforms in the healthcare workforce as well as other aspects of global healthcare systems. The law describes the 16 AHPs as the "profession of allied health specified in the Second Schedule and any activity relating to allied health prescribed by regulations under Section 11" (Act 774). The professionals listed are audiologist, dietition, entomologist (public health), physiotherapist, medical physicist, nutritionist, clinical psychologist, diagnostic radiographer, medical laboratory scientist, occupational therapist, speech therapist, radiation therapist, medical laboratory technologist, dental technologist, environmental health officer, and health education officer. Under the law (Part 3, Section 10), amendments can be made to the Second Schedule, considering the expansion of relevant healthcare professions in the country.

On the other hand, PAH means "any profession which has a direct or an indirect effect on patient care, or on the health of an individual or the population" (Act 774). Nevertheless, the law does not provide any criteria for identifying professions that can be considered as PAH

nor that it specifies individual professions. While a rigid definition may be too restrictive, a vague description may result in confusion at organisational levels [14], including that for PAH. Therefore, performing a specific study for addressing both aspects would prove useful in formulating a suitable regulation that is auxiliary to the law (Act 774) for its implementation in Malaysia. The establishment of a suitable regulation that would strengthen the implementation of the Act 774 proves timely and paramount in at least two contextual situations. The first relates to safeguarding the interest of the patients and/or clients as well as second, preventing unnecessary regulatory burdens within the healthcare framework. This is particularly pertinent considering the ever-expanding fields of allied health [15], the inter-relatedness of services provided [9], and the fact that there are professions with overlapping functions (such as sonographers and radiographers). Adding to the confusion, discrepancies in job titles and scopes of work (especially between the public and private sectors) further necessitate the establishment of such a regulation.[16]

Hence, this present research that aimed to provide the criteria for professions to be considered as PAH in Malaysia in the healthcare framework, through qualitative methods involving various stakeholders, merits consideration. The data would prove useful in understanding the status of the professions, in view of formulating suitable regulations that would complement the implementation of the Act 774 in Malaysia.

2.0 METHODOLOGY

2. METHODOLOGY

This project consists of series of capacity building workshops which deemed required in the execution of the explarotary research which followsuit via qualitative methods.

2.1. Series of Training on Capacity Building:

i. Virtual training using specific methods/ tools for data collection and analysis for this project, and include: Data/information collection using appropriate method/ tools/ instruments
   a. Data analysis using relevant/ appropriate method/ tools (Atlas.ti software)
   b. Report writing for decision/ policy makers

ii. Virtual meetings/ consultations/ workshops/ discussion among MOH and relevant stakeholders, this include for preparatory work, on-going technical support, lectures, group work discussion on the approach of conducting qualitative research data collection and data analysis related to allied health project.

iii. Virtual training using specific methods/ tools for data collection and analysis for this project, and include:
   a. Transcribing
   b. Coding and generating themes
   c. Interpretation/ analysis

iv. Virtual training on report writing process on the output/ outcomes gathered from this project.

v. Coordinate publication of final technical report on the project and recommendations for policy makers.

The training workshops that were conducted are as follows:

2.1.1. Research Methodology Workshop

The workshop was conducted on 17 - 18 August 2020. The main objective of this workshop is to equipped the study team members with knowledge on constructing methodology especially survey methodology. The workshop covers topics such as Overview of Research Methodology, Introduction to Survey Methodology, Construction of Questionnaire and Validation, Proposal Writing and Literature Review.

2.1.2. Workshop on Construction of Questionaire

The workshop was conducted on 14 September 2020. The main objective of this workshop is to construct a possible questionnaire for the study. The workshop also covers topic on questionnaire validation and reliability, presentation of results and discussion.

2.1.3. Research Premilinary Workshop: Conducting in Depth Interview (IDI) & Focus Group Discussion (FGD)

The workshop was conducted on 6 - 7 April 2021. The main objective of this workshop is to exposed member of the team with qualitative study especially interview-type study and FGD. Topics included were constructing interview protocol, script, the roles of moderator and note taker during the FGDs. A mock interview was also conducted among the study team members in order to experience the IDI and FGD at actual setting.

2.1.4. Data Transcribing Workshop for Qualitative Research

The workshop was conducted on 11 - 12 October 2021. The main objective of this workshop is to convert qualitative data and information (audio recording) from the FGDs into a text-based format. The workshop was conducted with the objectives: to understand and learn the basic foundation of transcribing; prepare a draft transcript for the FGDs that has been conducted; and as a preparation for coding and analysis purposes. (Annex I)

2.1.5. Data Coding, Analysis & Interpretation Workshop for Qualitative Research

The workshop was conducted on 27 - 28 October 2021. The main objective of this workshop is labelling and organising the qualitative data to identify different themes and the relationships between them while the specific objectives are: to understand and learn the basics of coding and analysis for the purpose of qualitative research; to learn how to use Atlas.ti software; to discuss and set the appropriate study code; and as a preparation before writing the final report. (Annex II)

2.1.6. Report Writing Process Workshop

The workshop was conducted on 25 - 26 November 2021 with the objective to plan for writing and framework for the findings in publishable reports. Additionally, the process of refining coding was undertaken during the workshop by the moderators of the FGDs. An extension of the report writing was conducted in the following sessions (Table 1) before the end of 2022.

Table 1 **Report writing sessions conducted for this study.**

Date	Duration (hours)	Mode of meeting
4 August 2022	6	Physical
11 August 2022	2	Online
12 August 2022	2	Online
24 August 2022	2	Online
23 September 2022	4	Online
30 September 2022	6	Physical
7 October 2022	4	Online
14 October 2022	4	Physical
3 November 2022	6	Physical
2 December 2022	7	Physical
7 December 2022	5.5	Online
14 December 2022	5.5	Online
16 December 2022	5	Physical

2.2. Exploratory Research

This exploratory research utilised two different qualitative methods (*viz*. document review analysis and FGDs) for ensuring adequate triangulation of the findings [17] in exploring the criteria of PAH in Malaysia. Ethical approval was obtained from the Medical Research and Ethics Committee, MOH (NMRR-20-3181-57869), prior to the commencement of the research. Upon providing an adequate explanation of the project, participants were required to sign the informed consent document.

2.2.1. Document Reviews

The qualitative document review analysis on the suitable criteria and roles of PAH from the existing documents in Malaysia and other Southeast Asian Countries, as well as in developed countries (like Australia, the UK and the USA) was conducted during April to June 2021, prior to performing the FGDs. The documents reviewed included the Act 774, concept papers, books and official brochures; program handbooks by higher education providers (HEPs); organisational and institutional reports; authentic official websites (HEPs, association, employers and regulatory bodies) and various other public records related to the study aims. Table 2 represents the types of documents included in the document review analysis as well as the information gathered.

Table 2 Main findings from documents identified for the suitable criteria of PAH

No	Source Documents	Main Findings
1.	**Higher Education Providers:** Official brochures, program handbooks, authentic official websites (MQF 2.0 and Framing Malaysian Higher Education 4.0: Future-Proof Talents) Malaysian Qualification Agency (MQA) has released the latest version of Malaysian Qualification Framework version 2.0 (MQF 2.0). **Public Institutions:** Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), Universiti Malaya, International Islamic University Malaysia (IIUM), Universiti Sultan Zainal Abidin (UNiSZA), Universiti Teknologi MARA (UiTM) **Private Institutions:** KPJ Healthcare University College (KPJUC), MAHSA SEGi University, UCSI University, Management & Science University (MSU)	**Faculties with Allied Health** Science & Technology, Health Science, Social Sciences & Humanities, Education, Medicine and Health Sciences, Food Science & Technology, Educational Studies, Biotechnology & Biomolecular, Education, Islamic Revealed Knowledge and Human Sciences, Allied Health Sciences, Bioresources & Food Industry, Applied Social Sciences, Sports Science & Recreation, Health Sciences, Medicine, Business & Management Medicine, Bioscience & Nursing, Dentistry, Health Sciences, Social Sciences & Liberal Arts, Pharmaceutical Sciences, Medicine & Health Sciences, Applied Sciences, Health & Life Sciences, Education & Social Sciences **List of Courses related to Allied Health** Biochemistry, Bioinformatics, Food Science & Nutrition, Food Science with Business Management, Genetics, Nuclear Science, Physics, Audiology, Biomedical Science, Clinical Psychology, Diagnostics Imaging & Radiotherapy, Dietetics, Environmental Health & Industrial Safety, Forensic Science, Occupational Therapy, Optometry & Vision Science, Physiotherapy, Speech Science, Developmental Science, Social Work, Special Education, Biomedical Sciences, Dietetic, Nutrition & Community Health, Environmental & Occupational Health, Food Science & Technology, Food Science & Management, Food Studies, Physical Education, Guidance Counselling, Biotechnology, Molecular Biology, Counselling, Educational Psychology, Special Education, Professional Counselling, Physical and Health Education, Microbiology & Molecular Genetics, Biomedical Science, Guidance & Counselling, Speech-Language Pathology, Medical Imaging, Biomedical Science, Radiography, Medical laboratory Technology, Medical Imaging, Biomedical Science, Nutrition Science, Medical & Health Sciences, Occupational & Environmental Health, Food Technology, Halal Food Development, Biology & Biochemistry, Food Processing, Social Work & Counselling, Food Science & Technology, Medical Laboratory Technology, Medical Imaging, Environmental Health, Environmental Health & Safety, Physiology, Health Promotion & Education, Sports Science, Health & Fitness, Physical & Health Education.
2.	**Employers with Allied Health services authentic official websites[18]:** Pantai Hospital* (Ampang branch), Naluri Hidup Sdn. Bhd., Hospital Pusrawi Sdn. Bhd., KPJ Ipoh Specialist Hospital, Sunway Medical Centre Velocity, Gleneagles Hospital, Penang LifeCare, Regen Rehab Hospital, Daehan Rehabilitation Hospital Putrajaya, WeCare Allied Health Center	**Services related to Allied Health** Face-to-face, conventional manner while only one provide services digitally, common functions and services of a hospital (diagnostic, curative, rehabilitation), health screening services, corporate wellness programs, mental health, chronic diet-related diseases screening, digital health coaching team, food & weight/blood pressure management, monitoring tools, extended care services, customized rehabilitative programs for various neurological and orthopedic disorders

No	Source Documents	Main Findings
		Personnel providing Allied Health services clinical lab technicians, physiotherapists, occupational therapists, speech therapists, exercise therapists, radiographers, dietitians, cardiovascular technologists, clinical psychologists, mental health counsellors, fitness coaches, optometrists, audiologists, pain specialists, physical therapists, speech language therapists, traditional Chinese medicine practitioners
3.	**Associations with Allied Health Professions** **authentic official websites:** Malaysian Dietitians' Association (MDA), British Dietetic Association (BDA), Academy of Nutrition & Dietetics (formerly American Dietetic Association (ADA), Singapore Nutrition and Dietetics Association (SNDA), Malaysian National Society of Audiologists (MANSA), British Society of Audiology (BSA) Malaysian Association of Clinical Biochemist (MACB), American Society for Biochemistry and Molecular Biology (ASBMB), Royal College of Podiatry, Malaysian Society of Clinical Psychology (MSCP), Australian Clinical Psychology Association (ACPA), Malaysian Music Therapy Association (MMTA), Persatuan Prostetik dan Ortotik Malaysia (PPOM)	**Professions related to Allied Health** dietetics, nutrition, audiology, biochemistry, podiatry, clinical psychology, music therapy, as well as orthotics and prosthetics **Functions of associations** Associations serve as a platform to advance the profession as well as increasing and maintaining the professionalism of its members. Other functions include to promote collaboration with other health professionals and to protect its member by providing insurance and legal coverage. Among the memberships offered are ordinary/full membership, student membership, affiliate and honorary membership. Some professions offered more categories of membership, such as non-practising membership, retired membership, corporate/business membership as well as overseas membership.
4.	**Healthcare Professionals' Acts and Regulations** **Legislation documents retrieved online:** Dental Act 2018, Act 804 Optical Act 1991, Act 469 Registration of Pharmacists Act 2951, Act 371, Nurses Act 1950, Medical Act 1971, Act 50, Traditional and Complementary Medicine Act 2016, Food Analysts Act 2011	The main function of regulatory body across all acts are registration for practitioners and regulating the practices (standards of practice, ethics and professional conduct, scope of practice) and recognise qualifications. In disciplinary inquiry and punishments. In addition, the Food Analyst Act also function to issue guidelines to specify procedures and test methods for food. All acts enforced with at least two other acts which indirectly related to own act such as Dental Act 2018 and Medical Act with Private Healthcare Facilities and Services Act 1998. On top of those acts, there are additional regulatory framework documents that complements the legislation of the acts. Council members are respective profession members who must be Malaysian, residing in Malaysia, affiliated with institution from both public and private sector. The number of council members are odd, proportionate to the size of the professions the act is regulating.

2.2.2. Participants Survey

Prior to their participation in the FGDs, participants were required to complete a survey form that consisted of two components namely (a) sociodemographic information and (b) administrative information of the participants (associations, regulatory bodies, universities and employers). The sociodemographic information asked included age, gender, ethnicity, name and type of organisation, current job title and department in the organisation, location (state) and the highest education level. With regards to the administrative information for regulatory bodies and associations, the general questions include the number of year of establishment, functions/roles, requirement to become a member, occupation of the registered members and categories/types of membership/registration.

Specific questions for regulatory bodies were: the list of council members, the type of regulation (laws which impose burdens, laws which directly confer rights and/or provide protection, self-regulation, licensing bodies and inspectorates, economic regulators, and regulators of public sector activities) and the specific act that regulate the body. As for the association the specific questions were: list of associations representing the profession and type of continuous professional development activities. While five specific questions were asked from respondents representing universities, the same for employers involved four questions. The questions for universities were: the list of allied health related programs with industrial training placement/internship, number of years the programs have been offered, entities where industrial placement/internship took place as well as components of syllabus/contents of curriculum for the program. The four questions for the employers were: the number of years of establishment, the list of allied health services in the organisation, qualifications for admitting allied health personnel for junior, senior and management levels as well as the type of training/activity/plan to improve the quality of service.

2.2.3. Focus Group Discussion

The FGDs were applied in this study to obtain relevant information relating to the criteria of PAH in Malaysia, in view of providing suitable justifications and recommendations to facilitate the implementation of the Act 774. Six FGDs were performed, whereby four being homogenous groups (academicians, employers, associations, and regulators) with the remaining two as heterogeneous ones (mixture of the four groups), consisting of four or five participants in each FGD, bringing the total number of 25 participants included in the research. A pilot study was conducted for assessing the appropriateness of the developed protocol. Participants with similar background to the actual FGDs were included, so that the improved protocol can be developed for conducting the actual ones.

2.2.3.1. Participants for FGDs

In view of selecting participants with adequate proficiency in the subject matter as well as voluntarily sharing their experiences and opinions “in an articulate, expressive, reflective

manner"[19], participants that fulfil the inclusion criteria representing varying stakeholders were recruited. In order to obtain immersive and relevant discussion, the study outlined specific inclusion criteria for recruiting participants according to the stakeholder groups as follows:

A. University
- Academics with experience of at least 15 years,
- have deep understanding of the medical or health sciences or related program in the education industry,
- have held senior leadership position for at least 5 years in curriculum and program development as well as academic related matters to the faculty, and/or
- are/were the appointed representative with an equivalent responsibility.

B. Employers
- Individuals holding the position of senior human resource (HR) manager, head of recruitment or Chief HR Officer or higher,
- have involvement in the HR management including HR strategy and planning, recruitment, selection and induction, training, development and career planning, and performance appraisal, and
- at least 10 years of working experience in the healthcare organisation or institution.

C. Health science related associations
- Individuals holding any executive position such as President, Vice President or Secretary of the association,
- have the minimum qualification of a diploma in health sciences (minimum candidature for graduation of 2 years), and
- at least 5 years of membership in that association.

D. Regulatory bodies
- Individuals having at least 5 years of experience in the executive board/council.

One exclusion criterion applicable to all the categories of participants was the fact that they did or have served as officers at Allied Health Sciences Division, Ministry of Health Malaysia. Table 3 represents the demographic breakdown of participants recruited for the FGDs.

Table 3 Demographic breakdown of participants recruited for the FGDs

Indicators	University	Employer	Association	Regulatory Body	Total participants
Male	3	1	2	2	8
Female	4	5	4	4	17
Age (years)					
≤30	-	-	1	-	1
31-40	1	1	2	1	5
41-50	3	2	2	4	11
51-60	3	3	-	1	7
>60	-	-	1	-	1
Ethnicity					
Malay	6	5	2	4	17
Chinese	1	1	4	-	6
India	-	-	-	2	2
Highest education level					
Degree	-	2	1	3	6
Master	-	4	2	2	8
PhD	7	-	3	1	11

2.2.3.1.1. The Execution of FGDs

Except for the heterogeneous groups (moderator, co-moderator and a note taker), each homogeneous FGD was facilitated by only a moderator and a note taker. The appointed moderators were individuals with general knowledge on allied health and well-versed in general regulations relating to healthcare practitioners with no vested interest in the research. Each moderator was required to encourage the discussion as well as to provide equal opportunities for all participants to express their opinions on the topic, without exerting his/her own opinion that may influence the participants when responding to the questions. As such, the moderator used a set of open-ended questions for addressing the topics on the general understanding about the definition of AHP and PAH, possible criteria for professions to be considered as PAH in the healthcare system in Malaysia.

Due to the restriction of movement control order (MCO) following COVID-19 pandemic in Malaysia, the FGDs were conducted *via* a virtual Webex by Cisco platform (audio-recorded) between August-September 2021. The length of each FGD was between 1.5 - 2.5 hours, and they were conducted in English, with 6 to 8 primary questions. In view of providing the criteria for professions to be considered as PAH in Malaysia, relevant questions were developed as provided below:

Questions for HEP academics

a) Programs considered as related to allied health at the institutions
b) Programs perceived as high and low risks to patients/clients, the types of risk and management
c) Relevance for regulating low risk professions
d) Industries/sectors that employ graduates from programs related to allied health

Questions for health sciences related professional associations

a) Characteristics of PAH that would require statute regulations
b) Relevance to regulate PAH under Act 774
c) Roles and functions of associations in the regulation of PAH
d) Self-regulation of PAH and its suitability in Malaysia

Questions for employers

a) Importance of having PAH in their institutions
b) Criteria for recruiting PAH
c) Scopes of practice for PAH
d) PAH and the associated risk to patients/clients

Questions for regulatory bodies

a) Functions/roles of the council
b) Criteria for recognising a profession as PAH
c) Relevance of regulating all PAH under Malaysia's Act 774
d) Characteristics of PAH that would require statute regulations
e) Characteristics of PAH that can be considered for other types of regulation (e.g. self-regulation and co-regulation etc.)

2.3. Data Analysis

2.3.1. Document Reviews & Survey

Upon reviewing the selected documents, the data were transformed into thematic tables that consisted of the source of the documents, publisher's name (if any), title of the documents and the main findings. To identify the key themes, iterative thematic analysis was used by literally interpreting the actual words/sentences published in the documents, followed by summary of the findings.

2.3.2. FGDs

Each FGD was verbatim transcribed manually, and grammatical errors made by the participants were corrected as necessary for better comprehension. In cases whereby a participant used mixed languages (e.g. English and Malay) to answer a question, the phrases

in Malay were translated by Malay native speakers (with high proficiency in English) into English to ensure consistency. A third person/party name was removed from the transcript to maintain its confidentiality. The improved transcripts were submitted to the respective participants for them to verify the accuracy of their answers without adding new statements. Subsequently, changes were made (if any) to the initial transcription according to the revised version, and rendered anonymous by assigning a pseudonym to each participant. The final 6 transcripts were read repetitively before coding was made, taking into consideration the structural elements that disclosed the participants' critical perspective, resolutions and assessments.

Following the steps described by previous researchers [20], thematic analysis of the data was made. The steps included (a) familiarising with the data, (b) generation of initial codes, (c) search for the appropriate themes, (d) review of the themes initially chosen, (e) defining and naming of themes and (f) report production. Both the deductive and inductive approaches were used in the analysis, considering the existing knowledge on the subject matter (from the findings of document review analysis performed earlier), as well as for allowing the inclusion of unexpected themes that may emerge during data collection, respectively. Using ATLAS.ti version 9, the thematic analysis was conducted.

The FGD transcripts were read by all the moderators and note takers, and to ensure inter-rater consistency, series of discussions were held for them to compare and resolve discrepancies in individual coding. Upon completion, independent analysis was performed and any newly identified codes and themes (if any) were discussed in other discussion series. Once the codes were finalized, the subsequent analysis of all the FGD transcripts was performed by one of the authors (DAH). The results were shared in the updated thematic code-book with other researchers and discussed until consensus was achieved. Next, reviewing, defining and naming of themes as well as the production of final reports were performed by DAH. Finally, the narrative summary of the findings for each of the theme analysed substantiated by relevant quotes made by participants was prepared.

3.0
FINDINGS FROM DOCUMENT REVIEWS

3. FINDINGS FROM DOCUMENT REVIEWS

3.1. Demographic Data and Basic Information of Participants

Table 3 represents the demographic data for participants recruited for the FGDs, representing the important stakeholders (viz. HEPs, employers, associations and regulatory bodies). Twenty-five participants were included, involving 17 females and eight males with the majority of them aged above 41 years old. It was observed that the majority of the participants had PhD degrees (11 participants) with seven of them were academics working with local HEPs while the remaining three were from associations. In addition, eight and six participants had the highest qualification of master and bachelor degrees, respectively. Majority of the participants were Malays (17 participants), followed by six Chinese and two Indians.

Participants from 4 public HEPs (Universiti Malaya (UM), Universiti Teknologi MARA (UiTM), Universiti Putra Malaysia (UPM) and Universiti Sultan Zainal Abidin (UNiSZA)) and 4 private HEPs (MAHSA University Malaysia (MAHSA), SEGi University and KPJ Healthcare University College (KPJUC)) were included in the FGDs. The most commonly offered programs relating to allied health by these HEPs included physiotherapy, dietetics, nutrition and medical laboratory. Six different employers included in this research were Pusat Perubatan Universiti Malaysia (PPUM), International Medical University (IMU), Jabatan Standard Malaysia (JSM), Naluri Health, Pantai Integrated Rehab and Pantai Premier Pathology. The allied health practitioners employed are mostly dietitian, nutritionist, physiotherapist, audiologist, occupational therapist, counselor, speech language therapist, radiation therapist, diagnostic radiographer, medical laboratory technologist and medical social worker. The participants from association represented the Malaysian Music Therapy Association (MMTA), Malaysian Association of Speech-Language & Hearing (MASH), Genetic Counselling Society Malaysia (GSM), Nutrition Society of Malaysia (NSM) and International Society for Prosthetics and Orthotics (ISPO)-Malaysia Chapter. The functions of these associations included setting up the minimum standard for professional practice, providing continuous education development and promoting research and evidence-based practices. As for the regulatory bodies, the participants were from the Traditional and Complimentary Medicine Council (T&CM Council), Pharmacy Board Malaysia (PBM), Malaysian Optical Council (MOC), Malaysian Dental Council (MDC), Medical Assistant Board (MAB) and Malaysian Nursing Board (MNB). The main functions of all these regulatory bodies include registering the practitioners and issuing practicing certificates (temporary, provisional or full registration).

3.1.1. Higher Education Provider

In view of curriculum development for HEPs in Malaysia, the Malaysian Qualification Agency (MQA) has released the latest version of Malaysian Qualification Framework version 2.0 (MQF 2.0). Among others, the document focuses on the relevant graduate attributes, program

educational outcomes, program learning outcomes, course learning outcomes and constructive alignment. In this regard, involvement of stakeholders is an integral aspect for curriculum development by the HEPs to ensure that the curriculum is relevant and it covers important aspects of practice including risk management. Acknowledging the importance of embracing the fourth industrial revolution in the higher education sector, the Ministry of Higher Education (MOHE) has published an important document depicting the aspirations, objectives, and approach to produce graduates that are capable to deal with artificial intelligence, digitisation, automation, and Internet of Things (IoT) in daily experience. The document (Framing Malaysian Higher Education 4.0: Future-Proof Talents) has become one of the sources of reference in curriculum development including for those of medicine and health sciences programs.

The document review on HEPs in Malaysia, offering courses that are related to allied health, revealed six public HEPs namely Universiti Kebangsaan Malaysia (UKM), UPM, UM, International Islamic University Malaysia (IIUM), UniSZA and UiTM. As for the private HEPs, numerous universities/colleges are offering health-related programs. Examples of private HEPs included KPJUC, MAHSA, SEGi University, UCSI University, and Management & Science University (MSU). The courses offered can be divided into three categories *viz*. clinical, laboratory and public health. The clinical courses consist of examination, assessment, evaluation and management components in their curricular: for example dietetics, audiology, speech language pathology and physiotherapy. In the meantime, the laboratory courses included curricular with pure science and technology such as biochemistry, microbiology, genetics and biotechnology.

In general, the education programs that are related to the categories of clinical, laboratory and public health are offered by various faculties in public HEPs namely Faculty of Health (e.g., UM), Faculty of Health Sciences (e.g., UKM), Faculty of Applied Sciences (e.g., UiTM) and Faculty of Science and Technology (e.g., UKM). In addition to the similar establishment of faculties like the public HEPs, it is found that programs related to the allied health are offered by the private HEPs *via* the Health Sciences (e.g., KPJUC), Social Sciences & Liberal Arts (e.g., UCSI University), Health & Life Sciences (e.g.,MSU) and Education & Social Sciences (e.g., MSU). These specific programs (e.g., biomedical sciences, audiology and dietetics) are offered at bachelor, master and doctoral level of studies, of which bachelor degree alone would be sufficient for one to be considered as PAH. However, it is important to indicate here that there are also courses (e.g., psychology as well as guidance and counselling) offered under the Faculty of Education or Faculty of Social Sciences, which graduates from these programs can be considered as PAH. However, obtaining the appropriate postgraduate qualifications in health-related fields (e.g., clinical psychology) may prove necessary. As a matter of fact, educational programs relating to health-related fields are also offered by colleges under the purview of the MOH, and they are at diploma levels. As such, it can be seen that HEPs in Malaysia are providing various levels of education for catering the needs for health-related

practitioners in the country, resulted in at least 2-tier of practitioners. PAH practitioners with the minimum qualification of bachelor degree whom provided clinical services included speech language therapist, audiologist, dietitian, optometrist, counsellor, medical physicist and medical social worker. On the other hand, occupational therapist, physiotherapist, diagnostic radiographer, radiation therapist and dental therapist are the PAH practitioners with the minimum qualification of diploma practicing clinical services. The same 2-tier situation also prevailed for PAHs whom providing laboratory services; general laboratory services are provided by diploma holders, whereas specialised services would require the personnel to have the minimum of bachelor degree qualification in specific fields.

3.1.2. Employers

In the context of employment for PAHs in Malaysia, the MOH remains the primary employer for the public sector followed by several other ministries (MOHE, Ministry of Defense (MINDEF), Ministry of Education (MOE), Ministry of Women, Family and Community Development (MWFCD), Ministry of Youth and Sports (MYS) and Ministry of Science, Technology and Innovation (MOSTI)). Being the largest employer, MOH manages 135 hospitals and 11 special medical institutions, 2890 health clinics, 257 community clinics, 6 research institutions and 19 training institutes (Health Facts MOH, 2021). Under the MOHE, PAHs are employed in 9 teaching hospitals (e.g., Hospital Canselor Tuanku Muhriz) as well as the teaching and support staff at faculties of medicine, allied health and sciences. As for the MINDEF, PAHs are employed in their hospitals and health facilities, while the same are in their welfare facilities for MWFCD. Moreover, a number of different specialties of PAHs (e.g., physiotherapist and nutritionist) are also employed at the National Sports Institute and National Sports Council of the MYS, as well as in sports schools managed by the MOE. Specifically, for MOSTI, PAHs are currently working in their research facilities. Having considered the different government entities that were involved, it can be seen that the name of profession as well as the job scope remains generally similar.

With regards to the private sectors, it can be seen that PAHs were involved in three main sub-sectors *viz.* privately-owned hospitals/facilities, rehabilitation centers as well as medical laboratories, whereby the majority of them provided services in face-to-face sessions as well as *via* digital means. Those that provided services in face-to-face sessions can be identified as (a) private hospitals providing the full range of services from prevention to curative and rehabilitation, (b) institutions that focus on rehabilitation alone and (c) facilities that focus on specific health issues (i.e. mental and developmental disorders). Specifically, for private hospitals, their services included health screening, clinical and diagnostic services, dietetic and food services, and rehabilitation services (including physical and mental health). Among the professional team, professions such as dietitian, physiotherapist, occupational therapist and speech-language therapist were the commonly highlighted ones. Despite their pivotal roles in healthcare management and treatment, these private healthcare providers rarely mentioned laboratory-based personnel in published documents.

In the context of scope of practice and nomenclature of the profession, discrepancies prevailed between the government and private sectors as well as with that specified in Act 774. For example, the scheme of Medical Rehabilitation Officer (Speech) designated in the MOH is known as speech-language therapist in the Act 774, consistent with the International Standard Classification of Occupation (ISCO-08). The same profession is interchangeably known as speech therapist, speech pathologist and speech-language pathologist in the private sector although the scope of work appears similar with that of the government sector. Echoing to the global adaptation of the fourth industrial revolution that integrated human capital development, artificial intelligence, digitisation, automation, and IoT, transformation in the healthcare services in Malaysia has also taken place. This is because adaptation of such an approach would enable digital innovation in healthcare delivery and solutions, as well as talent development, preparing Malaysia to become an important digital health innovation hub.

Healthcare workers (in this context is the PAHs) are exposed to multitude of risks of harm in performing their professional tasks. Therefore, specific guidelines on occupational safety and health management have been imposed to protect the employees 'from hazards and its associated risks, the elimination of work-related injuries, disabilities, ill health, diseases, near misses and fatalities'.[21] This is also consistent with the document titled 'Occupational safety and health in public health emergencies: a manual for protecting health workers and responders' published by the World Health Organization (WHO) and International Labour Organization (ILO)[22] in facing disease outbreaks and other emergencies related to 'natural disasters, chemical incidents, radiological emergencies and emergencies involving conflicts', focusing on low resource settings. The key elements of the document revolve around reducing occupational exposures, injury, illness, and death, stress and fears, as well as promoting good health and well-being. To achieve such a goal, having the adequate managerial and technical tools as well as strategies for dealing with occupational safety and health hazards, including the complete understanding of the different types of emergencies are the central focuses of the document. To legalize this aspect in Malaysia, compliance by employers is mandatory pursuant to national laws and regulations. It requires the establishment of an Occupational Safety and Health Management System (OSHMS) that comprises elements of policy, organizing, planning and implementation, as well as evaluation and action for improvement.

3.1.3. Health-related Professional Associations

Document review analysis on health-related professional associations for PAHs from Malaysia (e.g., Malaysian Dietitian Association), the UK (e.g., British Society of Audiology), the USA (e.g., American Podiatric Medical Association), Australia (e.g., Australian Society for Biochemistry and Molecular Biology) and Singapore (e.g., Singapore Psychological Society) revealed several pertinent characteristics. They included the defining standards for the

practice of the profession, regulatory practices for maintaining professional standards, aims and objectives, communications and the different tier of memberships. While defining the standards for the profession would involve the appropriate training, practice and continuous professional development (CPD) for providing reliable and evidence-based services, regulatory practices relate to protecting the professional interests of the profession as well as for safeguarding the public at large. As for the aims and objectives, the different professional associations reviewed appear to share similar approaches and philosophies. They included promoting the professional and ethical practices, its relevance, developing a workforce strategy, collaborating with the various stakeholders (including HEPs) as well as influencing health policy and regulations. In the context of communication, the establishment of scientific journals, organising online courses and webinars as well as workshops and public engagements were the commonly discovered strategies. Considering the different levels of education and professional training, the reviewed professional associations had various types of memberships. They included ordinary/full, student, affiliate and honorary memberships. In addition, categories like non-practicing, retired, corporate/business as well as overseas memberships were observed in the documents.

3.1.4. Regulatory Bodies

The document review analysis provided the essential understanding of the established regulatory bodies related to healthcare in Malaysia, in terms of organisation, functions, regulations and member council. The reviewed regulatory bodies were the MDC, MOC, PBM, MNB, MMC and T&CM Council. These regulatory bodies were associated with the Malaysian Dental Act 2018 (Act 804), Optical Act 1991 (Act 469), Registration of Pharmacists Act 1951 (Act 371), Nurses Act 1950 (Act 14), Medical Act 1971 (Act 50), Traditional and Complementary Medicine Act 2016 (Act 775) respectively. Specifically, the Act 774 regulates 16 types of practitioners namely Audiologist, Clinical Psychologist, Dental Technologist, Diagnostic Radiographist, Dietitian, Entomologist (Public Health), Environmental Health Officer, Health Education Officer, Medical Laboratory Technologist, Medical Physicist, Nutritionist, Occupational Therapist, Physiotherapist, Radiation Therapist, Speech-Language Therapist, and Medical Laboratory Scientists (Biochemist, Biomedical Scientist, Embryologist, Medical Geneticist, Microbiologist and Forensic Science Officer). As it stands, other health professions in Malaysia are generally not regulated, and the practice of self-regulation, quasiregulation or co-regulation for the related professions has not been found in the documents reviewed.

In Australia, the National Registration and Accreditation Scheme (NRAS) for health professions regulates 16 types of practitioners, including Aboriginal and Torres Strait Islander Health Practitioner, Chinese Medicine Practitioner, Chiropractor, Dental Practitioner, Medical Radiation Practitioner, Medical Practitioner, Nurse, Midwife, Occupational Therapist, Optometrist, Osteopath, Paramedic, Pharmacist, Physiotherapist, Podiatrist and Psychologist.

In addition, the National Alliance of Self-Regulating Health Professions (NASRHP) a formal independent body aims to facilitate national consistency in quality, support for self-regulating health professionals, and satisfy national and jurisdictional regulatory requirements. The list of self-regulated allied health professions in Australia included Audiology, Dietitian, Exercise Physiology, Speech Pathology, Social Work, Orthotics/Prosthetics, Perfusion, Music Therapy and Genetic Counselling. Nonetheless, considering the differences in jurisdictions among the different states and federal territories in Australia, minor variations in the list of regulated and unregulated allied health workforce prevailed. As for the professions that were neither regulated nor accredited by the NRAS, a range of laws was still applicable to regulate the practice. The clusters of law included the health complaint laws, regulation of threats to the public health (e.g., infectious diseases), consumer protection and employment laws as well as other relevant laws (e.g. criminal law, tort (negligence) and the law of contracts).

In the UK, the Health and Care Professions Council regulated 15 types of practitioners namely Arts Therapists, Biomedical Scientists, Chiropodists/Podiatrists, Clinical Scientists, Dietitians, Hearing Aid Dispensers, Occupational Therapists, Operating Department Practitioners, Orthoptists, Paramedics, Physiotherapists, Practitioner Psychologists, Prosthetists/Orthotists, Radiographers and Speech and Language Therapists. In the context of self-regulation, the system in the UK classified the professions into Accredited Registers. This would include Acupuncture, Alexander Technique, Aromatherapy, Audiology, Bioinformatics, Biomechanical Engineering, Biomedical Science, Botulinum toxins, Bowen Therapy, Cardiac Physiology, Chemical peels and skin rejuvenation, Children's Health, Clinical Physiology, Clinical Technology, Complementary Therapies, Cosmetic Practitioners (Non-surgical), Counselling, Craniosacral Therapy, Dermal fillers, Foot Health, Gastroenterology Physiology, Hematology, Hair Restoration, Healing, Health Informatics, Healthcare Chaplaincy, Healthcare Science, Hypnotherapy, Injectable Cosmetic Providers, Kinesiology, Lasers, Intense Pulsed Light and Light-emitting Diode treatments, Life Sciences, Massage Therapy, Medical Engineering, Medical Illustration, Microbiology, Microsystems Acupuncture, Naturopathy, Neurophysiology, Nuclear Medicine, Nutritional Therapy, Physical Sciences, Physiological Sciences, Play Therapy, Psychotherapy, Public Health, Radiation Engineering, Radiation Physics, Radiotherapy Physics, Reflexology, Rehabilitation Engineering, Reiki, Renal Technology, Respiratory Physiology, Shiatsu, Sleep Physiology, Sport Rehabilitation, Sports Massage, Sports Therapy, Talking Therapy, Vision Habilitation, Vision Rehabilitation and Yoga Therapy.

4.0 IMPRESSION OF THE ACT 774

4. IMPRESSION OF THE ACT 774

Table 4 represents the codes, its frequency as well as short descriptions of impressions the participants had on Act 774 based on the FGDs conducted. *Perception on Act 774, knowledge of the act, differentiating PAH & AHP, possibility of self-regulation, understanding of AHP*, are the five codes with highest frequency out of ten derived. The frequencies for these five codes were 66, 29, 28, 23 and 23, correspondingly.

Table 4 Codes, frequency and description for impression of Act 774

Codes	Frequency	Description
Amending act	12	Suggestion for the improvement of the Act (including Schedule 2)
Perception on Act 774	66	How Act 774 is perceived by the participants Eg: agreement with the other act, agreement with the content of the act, the relevance of the act
Knowledge of the act	29	What do they know about the Act (23 professions etc)
Differentiating PAH & AHP	28	The ability/inability to explain about the differences
Hierarchy	4	Pertaining to differences in tier (grade/position)
Readiness of the regulator/professions	16	How much of a preparation a profession/ regulator has made to come under an act.
Possibility of self-regulation	23	All matters regarding self-regulation of a profession, not controlled by any body of authority
Suitability to regulate all PAH	12	Figuring out the practicality of regulating all PAH
Understanding of AHP	23	Participants' knowledge about AHP
Understanding of PAH	15	Participants' knowledge about PAH

Table 5 shows frequency of codes for impression of Act 774 according to each stakeholder groups. For the code *Perception on Act 774*, university has the highest frequency (23) followed by employer (22), association (14) and council (7). Meanwhile council has highest frequency of 15 for code *knowledge of the act* compared to other stakeholders. The third code which is *differentiating PAH and AHP* is most evident among the university group with a frequency of 14 followed by employer (8), council (4) and association (2). *Possibility of self-regulation* is mostly discussed by the associations (12) followed by councils (9), university (2) and none mentioned by the employers. Lastly, *understanding of AHP* is highest among the councils (12) followed by association (6), university (5) and none mentioned by employer. Table 6 illustrates the overall codes for impression of Act 774 as mentioned by each panel.

Table 5 **Frequency of codes for impression of Act 774 according to stakeholder groups**

Codes	Association	Council	Employer	University	Totals
Amending act	5	0	1	6	12
Differentiating PAH & AHP	2	4	8	14	28
Hierarchy	2	1	1	0	4
Knowledge of the act	7	15	3	4	29
Perception on Act 774	14	7	22	23	66
Possibility of self-regulation	12	9	0	2	23
Readiness of the regulator/professions	9	5	0	2	16
Suitability to regulate all PAH	0	5	4	3	12
Understanding of AHP	6	12	0	5	23
Understanding of PAH	4	6	1	4	15
Totals	61	64	40	63	228

Table 6 Codes of impression of Act 774 mentioned by each panel

Impression	ID (Panel)																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Perception on Act 774	•	•	•	•			•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•
Knowledge of the act			•		•	•	•	•	•	•			•		•	•	•	•			•	•	•		•
Differentiating PAH & AHP		•		•			•		•	•		•	•				•	•	•	•		•	•	•	•
Understanding of AHP			•		•	•	•	•	•	•	•	•	•	•	•	•					•				
Possibility of self-regulation		•		•	•	•	•	•					•	•		•									
Readiness of the regulator/profession		•	•	•									•	•	•	•									
Understanding of PAH					•	•		•		•		•	•		•		•				•				
Amending act									•	•	•	•	•		•	•		•			•				
Suitability to regulate all PAH	•	•	•		•	•		•												•		•	•		•
Hierarchy							•						•				•								

5.0
CRITERIA TO BE CONSIDERED AS PROFESSIONS OF ALLIED HEALTH

5. CRITERIA TO BE CONSIDERED AS PAH

Table 7 represents the codes, its frequency, and short descriptions of criteria for identifying PAH used in this present research. Sixteen codes were derived from the FGDs, with *risk of harm, set of competency and skills, formal qualification, defined scope of practice, relevant training and healthcare team* being the six most frequent codes (by hierarchy) as indicated by participants.

Table 7 Codes, frequency and short descriptions used to identify criteria of PAH

Codes	Frequency	Description
Risk of harm	62	Risk / harm relating to the practice and patient/client
Set of competency & skills	46	Possessing the relevant competency and skill for healthcare system
Formal qualification	40	Relevant tertiary education
Defined job description/scope	37	Having specific job description/scope
Relevant training	36	Any form of formal training; recognised (by the academic body/services) and unrecognised
Professionals working within healthcare team	18	Involve as part of multi-disciplinary healthcare services
Related to people's health	8	Direct/indirectly involved with people's health (e.g. preventive, promotion, rehab, therapy, palliative)
Autonomy in practice	7	Issues related to work independently
Continuous professional development	7	Having specific professional development requirement
Availability of code of conduct/ethics	7	Whether the profession have the COC/ethics or not
Health-practicing certificate	7	Possessing valid Practicing Certificate
Professional organization / association	5	Qualified to register with specific organisation/association
Career pathway	4	A profession should have a career pathway from beginning till the end
Rate of charges	2	The amount of charges set for their services
Availability of a profession	2	Whether the profession is available across sectors or only within certain settings.
International benchmarking	1	Comparison to what is happening oversea/worldwide

Meanwhile Figure 1, the Sankey Diagram illustrates the codes and categories of stakeholder, showing the flow between each pair for the criteria of PAH.

Figure 1 Sankey diagram showing the frequency for each criterion of Profession of Allied Health.

Table 8 below illustrates the frequency of codes for criteria of PAH according to each stakeholder group. *Risk of harm* was mentioned the most by university (22) followed by employer (18), association (12) and employer (6). Council and employer groups mentioned about *set of competency and skills* the most (12 each), followed closely by university (11) and association (8). Council representatives also discussed the most (13) regarding *formal qualification* while university, employer and association mentioned about the code with frequencies of 11, 8 and 6 each. For *defined job description/scope* it was mainly discussed by the employer (13) followed by council (11), university (7) and association (5). *Relevant training* was mainly concerned by university representatives with a frequency of 15, followed by association (12), council (5) and employer (4). Representatives from university also discussed the most regarding *professionals working within healthcare team* with a frequency of 10, followed by association (6), employer (2) while none is mentioned by council. Table 9 indicates codes for criteria of PAH as mentioned by each panel.

Table 8 Frequency of codes for criteria of PAH according to stakeholder groups

Criteria of PAH	Association	Council	Employer	University	Totals
Autonomy in practice	1	1	3	2	7
Availability of code of conduct/ethics	2	5	0	0	7
Career pathway	2	0	0	2	4
Continuous professional development	2	2	1	2	7
Defined job description/scope	5	11	13	7	36
Formal qualification	6	13	8	11	38
Health-practicing certificate	0	4	2	1	7
International benchmarking	0	1	0	0	1
Professional organization / association	2	2	1	0	5
Professionals working within healthcare team	6	0	2	10	18
Rate of charges	0	2	0	0	2
Related to people's health	7	0	0	1	8
Relevant training	12	5	4	15	36
Risk of harm	12	6	18	22	58
Set of competency & skills	8	12	12	11	43
Totals	65	64	64	84	277

Table 9 Codes for criteria of PAH mentioned by each panel

Criteria of PAH	ID (Panel)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Risk of harm	•	•	•	•	•	•		•	•	•	•	•	•	•	•		•	•	•	•	•	•	•		•
Set of competency & skills	•	•	•	•	•	•	•	•	•			•		•	•	•	•	•	•		•	•	•	•	
Formal qualification	•	•	•	•	•	•	•	•	•	•		•	•			•	•	•	•	•					
Defined job description/scope	•	•	•	•	•	•		•			•		•				•	•	•	•	•	•		•	
Relevant training	•	•		•	•		•	•	•	•	•	•	•	•		•	•	•	•			•	•		
Professionals working within a healthcare team		•		•					•							•	•		•		•	•			
Related to people's health														•		•					•				
Autonomy in practice					•							•					•		•		•	•			

Table 9 Codes for criteria of PAH mentioned by each panel (cont.).

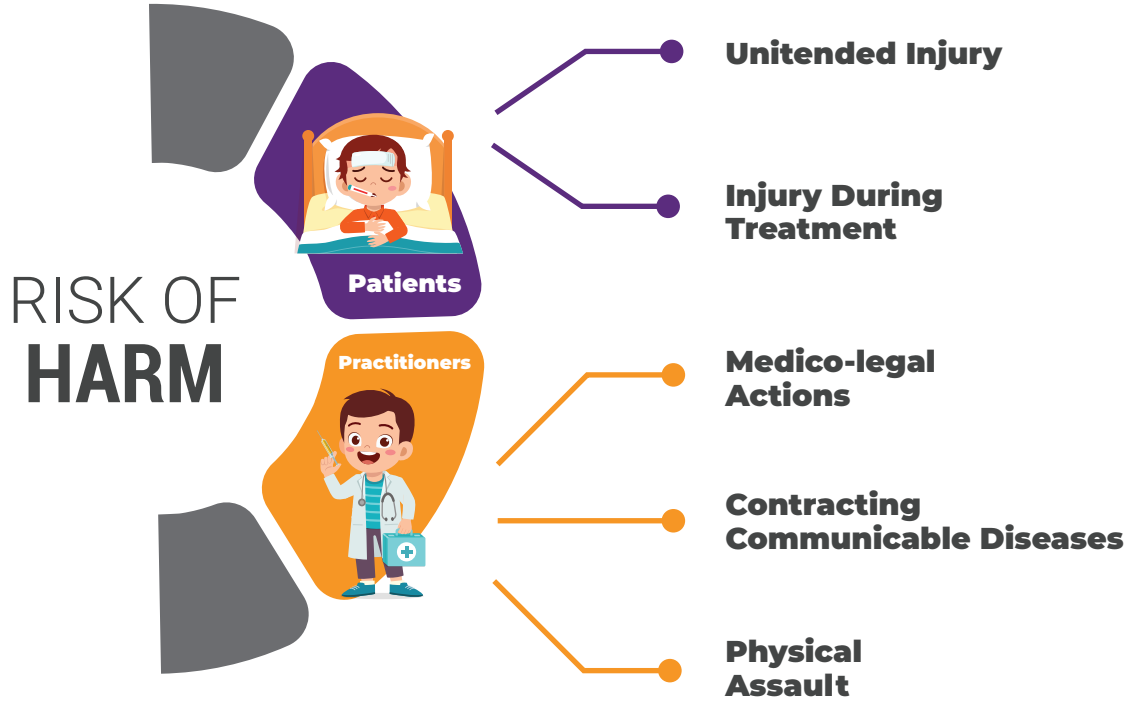
Criteria of PAH	ID (Panel)																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Continuous professional development		•					•						•						•		•			•	
Availability of code of conduct/ethics			•		•	•	•						•												
Health-practicing certificate	•				•	•	•			•							•							•	
Professional organization / association	•		•										•	•											
Career pathway												•	•												
Rate of charges							•																		
Availability of a profession																					•				
International benchmarking							•																		
Related to people's health		•																							

5.1. Risk Of Harm

Risk of harm possesses significant relevance to public safety. Any professions working with patients or clients, who pose a risk of harm must follow precise and standardised protocols of procedures to prevent and reduce such potential harm directly or indirectly.

The "risk of harm" in healthcare settings can also be implied as adverse events which consists of [23]:

i. unintended injury such as patient fall
ii. injury resulted in prolongation of hospital stay such as nosocomial infection, temporary or permanent disability or death
iii. injury caused by the healthcare management rather than the patient's disease



5.1.1. Risk to Patients

Practitioners' misdiagnosis leading to mistreatment would have negative implications on the patients' ability to recover and overall well being. Practitioners whom providing medical/health laboratory services would exert lesser risk to the patients because of their indirect involvement in patient care and the presence of safety measures.

Measuring the effectiveness of the existing policy for minimising harms and the determination of potential adjustments necessary to the policy are critical in determining patients' safety to prevent any undesirable events from recurring. Direct observations are required in assessing the awareness of the related profession towards the existing policy and the changes made. This should include measuring the effectiveness of the policy's implementation.

5.1.2. Risk to Practitioners

Risk of harm also pertains potential harms to the practitioners in carrying out their duties such as:

i. medico-legal actions
ii. contracting communicable diseases
iii. physically assaulted

The key issue that should be addressed in mitigating the harm to practitioners is identifying the hazards and their appropriate hazard managements. Both identification of hazards and their managments should form a part of both academic curriculum and operational procedures.

This risk management subject is embedded in current curriculum at HEPs, as requirement in the MQF 2.0 by the MQA for curriculum development and accreditation. HEPs integrate operational risk management into the academic syllabus and to enhance the understanding of the risk of harm inflicted on patients and practitioners. The involvement of industry stakeholders is equally important in assessing the relevance and quality of the curriculum structure, including aspects related to risks and harms.

Medico-legal actions such as criminal and civil cases can be applied to cater the risk of harm on practitioners in order for “misconduct” or “malpractice” to be justified. Apart from that, workplace is an important aspect that incurs harm to the practitioners. Practitioners are at risk of contracting contagious diseases, exposure to hazardous chemicals, and potentially be physically assaulted by patients/clients and guardians.

As stated in documents on occupational safety and health by the WHO, ILO, and Malaysia's Department of Occupational Safety and Health, it is pertinent in ensuring workplace safety and/or minimizing risk and having periodical audits of these aspects.

5.2. Set of Competency and Skills

To reduce risk of harms and enhance the quality of care for allied health services, the emphasis on acquiring competencies and skills through lifelong learning is mandatory. Competency is crucial to ensure healthcare providers have the ability to respond effectively and dynamically along with the change in community needs and other healthcare reforms. Practitioners require sufficient clinical training hours to equipped them with the necessary competencies, particularly on decision-making skills based on clinical reasoning for accurate patient evaluation and treatment planning. Competencies comprising knowledge, technical, cultural, and communication aspects have broadened the contextual relevance of skills and competencies for PAH.[24] In determining clinical practice plans, utilisation of hypothetical-deductive reasoning approaches is essential for achieving the optimum treatment outcome.[25]

According to ILO (2016), to match the actual workplace requirements and epidemiology of the populations, the skills acquired during professional education requires upscaling.[26] Hence, it is crucial for PAH to have transformative scale-up of skills and competencies in order for the professions to serve the demands of the community and country as a whole in delivering recent healthcare services parallel to the dynamic changes in the global healthcare systems.

Such continuous education is essential to equip practitioners with the most recent advancements of best practices in their specific field of expertise. This can be met by holding mutual engagements of stakeholders as the members of the board of studies in developing suitable curricula consisting pertinent topics.

The collaboration between the education and health sectors and other relevant authorities needs to be intensified. In the fourth industrial revolution era, the integration of digital, physical, and biological elements is inevitable in impacting the expansion of the different sectors 27 including healthcare.

5.3. Formal Qualification

A practitioner must possess an academic qualification that is recognised, or at least, the qualification that is equivalent to the recognized ones in Malaysia, and is aligned with the scope of the profession. It is fundamental for every profession to possess specific degree qualifications as well as differing levels of education. According to the Profile of Allied Health Professionals in the MOH, acquiring a formal specific tertiary qualification is considered an essential criterion for defining PAH despite the prevailing variability in the minimal qualifications attained by PAH prior to practicing.

Currently to register as an AHP under Act 774, PAH is required to possess formal qualifications from any accredited programs (local and international) endorsed by the MQA. All academic programs in Malaysia are adhered to the stringent requirements of the Accreditation, Equivalency and Standards Committees, utilising training competencies specified in the MQF 2.0 document published by the MQA (2017) in order to be accredited. Given the significance of formal qualifications in defining PAH and AHP in Malaysia, AHSD has collaborated extensively with key organisations, primarily with the MQA in compiling a list of recognised credentials and developing the standard curriculum.

Collaborative efforts between the health and education sectors in providing interprofessional education models and credentialing for AHPs are seen in countries such as Australia and the UK. In Malaysia, the MOH and MOHE are currently exerting remarkable efforts to periodically strengthen the curriculum contents and promote opportunities to practice. In order to improve the curriculum structure to fulfil professional demand, effective measures such as licensure and certification criteria, and societal needs, periodical engagement sessions with

key stakeholders, including academics, employers, clinicians, and accrediting bodies is highly advocated.[28–30] The academic programs by training universities and colleges should be flexible taking into account demographic and epidemiological changes, especially on issues associated with disease prevention, early intervention, and rehabilitation.[16]

However, the constraints are indeed unique in Malaysia since the career pathways for certain PAH and AHP are categorised into two levels depending on variations in formal qualifications, namely diploma and bachelor degree, indicating rooms for improvements. In this context, upgrading the diploma qualification to a bachelor's degree or higher would permit PAH to manage complex cases autonomically and with competence.

5.4. Defined Scope of Practice and Healthcare Team

In general, workforce models in the healthcare industry have adopted a restricted approach exclusive to a profession with a specified scope of practice. It is crucial to distinguish between AHPs' distinctive scopes of practice in diverse areas (clinical, diagnostic, and public health) to anneal the structures that facilitate their expansion and incorporation of role into the healthcare system. By identifying the appropriate boundaries among the professions is necessary, however, may be intricate due to the absence of awareness about the roles and skills of practitioners. Fear of losing job attributes and professional scope, as well as a lack of a shared vision and objectives can further accentuate this concern.[31–34]

The healthcare services in Europe and the UK has progressed towards extending scopes of practice, notably among nurses for performing specialized roles that would require highly advanced training.[35] Such a system is established in consideration of the scarcity of qualified specialists to accommodate the ever-escalating demographic and community dynamics.[36]

Standardisation of the nomenclature pertaining to ISCO-08 and scopes of practice for PAHs would furnish a better platform for global data exchange, accreditation of the professions, and knowledge transfer while reducing unintentional public confusion. Nevertheless, there are discrepancies in nomenclature and scopes of practice between public and private sector of PAH in Malaysia. To render efficient and cohesive health services, there is an urgent need to "standardize minimum scopes of practice for health professionals" by taking into account available global evidence while permitting adequate flexibility among the professions.[37]

Recent workforce planning models have transitioned from profession-centered models to population-based approaches.[37] By ensuring that all professionals are practicing within their full scope of practice [37], population-based approaches have not only depicted to have favorable outcomes for the public but also for the health professionals and the optimisation of the health system.[38]

The emphasis to provide a holistic approach to multidisciplinary team input is also pertinent. Practitioners under this circumstance need to be educated about the scope of practice for

other professions. Consequently, their expertise can be applied in the most appropriate manner and instances.

5.5. Relevant Training

Relevant training refers to a practitioner who has undertaken formalised and structured training modules as part of an academic qualification and certification requirements on the professional level. To ensure that a practitioner has fulfilled the minimal requirements for practice, it is important to consider two factors:

i. relevance of the training
ii. minimum duration of the training

These two factors may differ depending on the varying professions. Unlike medical doctors, dentists and pharmacists who has to complete compulsory housemanships (Medical Act, 1971; Dental Act, 2018; Registration of Pharmacists Act, 1951), PAH graduates in Malaysia are not obligated to any housemanship training. Nonetheless, the academic programs for PAHs integrated the compulsory industrial/clinical training within the academic programs taking into account it is critical in developing students' maturity and exposuring them to actual working contexts.

At present, MQA mandates HEPs to use a credit system in which one credit is equivalent to 40 hours of training. For example, the MQA has outlined that bachelor degree in occupational therapy students must complete an industrial training between 30 to 44 credits (1200 to 1760 hours) as part of graduation requirement while clinical program students such as dietitian are required to complete 800 training hours (MQA, 2016). This requirement is made mandatory for PAHs and AHPs to equip them with the relevant professional ethics, knowledge and skills that correspond with the accessibility of facilities, competency setting, and assessment [39–41], which are crucial in performing their duties.

New allied health graduates ought to be provident to adapt to the demands of contemporary practice and the evolving national and international health landscapes as an outcome of feasible and effective curricula.[30,42]

The formalised and structured training that PAH practitioners require to fulfill both the requirements of their professions and the academic qualification agency is an evident concern. Training must be authorised by the relevant bodies and fulfill the minimum duration for clinical placement to be in compliance with the regulatory council standards for registration. For the non-clinical PAH, undergoing industrial training is mandated by the MQA requirements to ensure promising competency.

5.6. Other PAH Criteria

Apart from the aforementioned criteria, there are other criteria that were derived from the FGDs for a profession to be considered as PAH, which actually inter-related with the 6 criteria

described. These less frequently mentioned criteria are equally important in moving to the next level of professionalism. The other PAH criteria are:

- related to people's health,
- autonomy in practice,
- continuous professional development (CPD),
- availability of code of conduct/ethics,
- health-practicing certificate,
- professional organisation/association,
- career pathway,
- rate of charges,
- availability of a profession, and
- international benchmarking.

In addition to the criteria, the evolving healthcare paradigm and breakthroughs of the technology have impacted the allied health professionalism. The WHO advocates that healthcare should shift from disease-oriented to a people-centred care. The role of allied health practitioners outside hospital such as in elderly care is important for the management of-non-urgent situations. Telehealth utilisation in Malaysia is growing parallel to information communications technology growth. AHP is able to deliver tele-rehabilitation through video conference for services such as voice therapy, remote monitoring for chronic conditions and managing cognitive frailty among older adults

6.0 ROLES OF PROFESSIONALS OF ALLIED HEALTH

6. ROLES OF PROFESSIONALS OF ALLIED HEALTH

For the dimension roles of PAH, the frequency of the codes identified is shown in Table 10 below. Out of the eight codes, *managing health/wellness* was mentioned the most with a frequency of 25. *Managing health service* (8) and *health & laboratory assessments* (7) came in as the second and third codes with highest frequency. Another five codes identified under this dimension have a frequency of less than five.

Table 10 Codes, frequency and short descriptions used to identify roles of PAH

Codes	Frequency	Description
Managing health/wellness	25	Providing service related to health & wellness (maintaining the wellbeing of client/patient)
Managing health service	8	Having administrative role pertaining to health service (e.g. staffing, clinic etc.)
Health & laboratory assessments	7	Conducting screening/diagnostic assessment to determine the health status
Provide training/teaching	4	Deliver teaching/coaching
Analysis of health/clinical data	3	Analysing the test diagnostic results e.g. laboratory findings
Monitoring patient/client progression	2	Follow up treatment, rehab, therapy etc.
Quality improvement of service	2	Involve in quality improvement initiatives related to service (e.g. KPI, QCC, research etc.)
Supervising	1	Day-to-day overseeing of subordinates while performing tasks

For each stakeholder group, the frequency of codes for roles of PAH is shown in Table 11. Representatives from association mentioned about managing health/wellness the most (8) followed by council and employer with a frequency of six each, while for university the frequency is five. Managing health service was discussed mostly by employers (6) and only one each for association and council. None was mentioned by university representatives. Association mentioned the most regarding health and laboratory assessments (4) other than university (2), employer (1) and none mentioned by council. Table 12 shows codes for roles of PAH as mentioned by each panel.

Table 11 Frequency of codes for roles of PAH according to stakeholder groups

Roles of PAH	Association	Council	Employer	University	Totals
Analysis of health/clinical data	3	0	0	0	3
Health & laboratory assessments	4	0	1	2	7
Managing health service	1	1	6	0	8
Managing health/wellness	8	6	6	5	25
Monitoring patient/client progression	1	0	0	1	2
Provide training/teaching	1	0	1	2	4
Quality improvement of service	0	0	1	1	2
Supervising	0	0	0	1	1
Totals	18	7	15	12	52

Table 12 Codes of roles of PAH mentioned by each panel

Roles of PAH	ID (Panel)																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Managing health/wellness					•	•		•	•	•				•	•	•	•		•	•	•	•			
Managing health service				•	•									•				•							
Health & laboratory assessments										•				•	•	•		•				•			
Provide training/teaching									•			•	•						•						
Analysis of health and clinical data				•										•											
Monitoring patient/client progression									•							•									
Quality improvement of service		•																							
Supervising									•																

7.0
WHO ARE OTHER POSSIBLE PROFESSIONS OF ALLIED HEALTH?

7. POSSIBLE PROFESSIONS OF ALLIED HEALTH

The FGDs also sought to identify other possible PAH as listed in Table 13 below. Profession prosthetist and orthotist were mentioned the most (4) followed by music therapist (3) while counseling teacher and counselor each has a frequency of two. All the other 20 professions were only mentioned once in the entire transcripts. Table 14 shows the frequency of codes for other possible professions of PAH according to each stakeholder group.

Table 13 Codes and frequency of other possible PAH

Codes	Frequency
Prosthetist and orthotist	4
Music therapist	3
Counseling teacher	2
Counselor	2
Clinical exercise physiologist	1
Hypnotherapist	1
Podiatrist	1
Orthoptist	1
Chiropractor	1
Sonographer	1
Acupuncturist	1
Optometrist	1
Perfusionist	1
Educational psychologist	1
Child life specialist	1
Genetic counselor	1
Kinesiologist	1
Bioinformatician	1
Health psychologist	1
Ergonomist	1
Special education teacher	1
Respiratory therapist	1
Art therapy	1
Naturopathy	1

Table 14 Frequency of codes for other possible professions of PAH according to stakeholder groups

Other professions	Association	Council	Employer	University	Totals
Acupuncturist	0	1	0	0	1
Art therapy	1	0	0	0	1
Bioinformatician	0	0	1	0	1
Child life specialist	1	0	0	0	1
Chiropractor	0	1	0	0	1
Clinical exercise physiologist	0	0	1	0	1
Counseling Teacher	0	0	0	2	2
Counselor	0	0	2	0	2
Educational psychologist	1	0	0	0	1
Ergonomist	0	0	1	0	1
Genetic counselor	1	0	0	0	1
Health psychologist	0	0	1	0	1

Table 14 Frequency of codes for other possible profession of PAH according to stakeholder groups (cont.)

Other professions	Association	Council	Employer	University	Totals
Hypnotherapist	0	1	0	0	1
Kinesiologist	0	0	1	0	1
Music therapist	1	0	1	1	3
Naturopathy	0	1	0	0	1
Optometrist	0	1	0	0	1
Orthoptist	0	1	0	0	1
Perfusionist	0	1	0	0	1
Podiatrist	0	1	0	0	1
Prosthetist and orthotist	1	0	1	2	4
Respiratory therapist	0	1	0	0	1
Sonographer	0	1	0	0	1
Special education teacher	0	0	1	0	1
Totals	6	10	10	5	31

The result indicates that there are more PAH who can be considered in the regulatory options either (1) to be included in the Act 774 or (2) self-regulation by their respective associations. A regulatory impact analysis (RIA) should be conducted in order to determine the consequences of practice to public and practitioners prior to decision on the regulatory options. For professions who are not inflicting moderate or severe harm, they should continue practicing at their own due diligence and their professional conduct.

8.0
RECOMENDATIONS

8. RECOMENDATIONS

It is important to note that the criteria, which have emerged from qualitative research, represent a preliminary attempt to define PAH roles in Malaysia. Despite some limitations, they can serve as a foundation for establishing standards and guidelines for PAH practitioners in the country. The primary functions of PAH practitioners in healthcare, as identified in the research, include managing health and wellness, providing health services, and conducting screening and diagnostic assessments. Therefore, it is recommended that these criteria be considered in defining the roles, competency standards and qualifications of PAH practitioners in Malaysia.

This report also highlights the importance of conducting a RIA, the need for operational risk management in academic curriculum for healthcare practitioners, the establishment of recognised formal qualification and competency standards, defined job scope, autonomy in practice, the necessity for CPD programs to be made mandatory for practitioners, and the strengthening of career pathways for PAH. The study accentuates the need to explore a single-tier qualification entry level into workforce for PAH. Additionally, there is a call for establishing clear policy directives and raising awareness to effectively address regulatory challenges within the profession. Moreover, issues related to policy implementation require reconciliation efforts.

As we understand better on the criteria to defining PAH, the following are the key recommendations for policymakers, education providers, regulators, professional associations and practitioners to establish a strong governance for allied health in Malaysia.

Risk of Harm

- The AHSD to conduct RIA to aid in analysing the nature of problems and evaluate the potential risk of harm associated with the practitioner's activities. The results will provide a more profound understanding of suitable regulatory options, along with cost-benefit considerations, while prioritising the public interest.
- The HEPs to incorporate operational risk management into the educational curriculum to improve awareness regarding the potential harm risks to both patients and practitioners.

Formal Qualification

- A feasibility study is required to explore the establishment of a unified qualification standard for the initial entry level of PAH practitioners, which mandates a minimum requirement of a bachelor's degree or higher. This calls for collaboration between various stakeholders such as the MQA and the Public Service Department to examine matters related to the policies and determine the most suitable implementation model.

Competency

- To develop a comprehensive framework that incorporates multiple elements related to credentials, competencies, and capabilities, to facilitate the development of diverse career paths.
- In order to enhance skills, CPD programs must become obligatory for allied health practitioners, while also permitting them to tailor their CPD activities to their unique learning requirements.
- Should it become a requirement, the regulation of PAH practitioners can be viewed as a crucial measure in establishing proficiency standards for their profession.

Scope of Practice and Healthcare Team

- Regulating scopes of practice necessitates finding a balance between flexibility and accountability, while also taking into account the needs of the community and the diversity of practitioners.
- Clear policy decisions and heightened awareness are essential when addressing the challenges associated with regulating a profession within its primary practice scope, especially in light of the evolving skill-mix and shifting professional boundaries within a multidisciplinary healthcare team.
- To conduct a research to assess the suitability of creating a standardised definition for the scope of practice that transcends geographical boundaries and jurisdictions. It is also crucial to address the issue of variation within PAH profession across different authorities. This would ensure that practitioners have a clear understanding of the scope of their practice and the legal and ethical boundaries that they must adhere to.
- Reconciliation initiatives are essential to tackle delicate matters concerning discrepancies in authority, competency assessment, broadened scopes of practice, and the validation of CPD.

Autonomy and Career Pathway

Autonomy of practice and career pathways in allied health professions are intertwined, with career progression often leading to greater autonomy. As AHPs gain experience, advanced qualifications and recognition, they can take on more independent and leadership roles in their practice, contributing to both their personal and professional growth.

- Encourage AHPs to pursue advanced degrees and specialised training to expand their knowledge and skills.
- Develop and support programs that offer lifelong learning opportunities and continuing professional development.
- Acknowledge and reward allied health practitioners who pursue specialised areas of practice by creating career pathways that highlight expertise in specific domains.
- Consider designations or titles for specialised allied health role.

- Create pathways for AHPs to take on leadership roles within their profession or healthcare organisations.
- Provide training and mentorship programs for allied health aspiring to lead or manage teams.
- Create diverse career pathways that allow AHPs to choose from clinical practice, education, research, management, and other areas of specialisation.
- Promote flexibility in career choices to accommodate different interests and strengths.
- Advocate for AHPs in healthcare policy discussions and initiatives.

Moving Forward

Having defined criteria, roles and responsibilities, the professional standards of allied health practitioners and the presence of Malaysian Act 774 collectively instil a sense of assurance among AHPs. This would also help in establishing a more comprehensive and cohesive healthcare system that ensures the safety and well-being of patients.

There is a need for fostering public awareness and advocacy. It is vital to engage in public awareness campaigns to highlight the roles and contributions of allied health in patient and community care as well as the significance of allied health practitioners in the healthcare system. This would help in building trust and confidence among patients and their families, and ensure that they receive the best possible care from qualified and competent practitioners. It would also help in attracting more students to pursue PAH as a profession, leading to an increase in the number of qualified practitioners in the field.

Finally, the PAH is constantly evolving, and there is a need to keep pace with the latest developments and advancements in the field. This requires ongoing research and development to ensure that the profession remains relevant and effective in meeting the changing needs of patients and the healthcare system. It also requires collaboration among various stakeholders, including policymakers, practitioners, educators, professional bodies and researchers, to ensure that the professions are regulated effectively and efficiently in Malaysia.

9.0
CONCLUSION

9. CONCLUSION

The specific objectives of this project are to determine the type of criteria for a profession to be considered profession of PAH in Malaysia, to determine the functions/ roles of PAH which will guide in the identifying the type of governing model for PAH in Malaysia. This project will assist decision makers to make informed decisions based on the criteria developed for effective implementation of the Allied Health Professions Act 2016 (Act 774) and the legislation that will be enforced.

With Malaysia recently becoming the latest country in Southeast Asia to establish legislation for allied health professions, the findings of this qualitative research provide a significant breakthrough for the healthcare system and policy direction of allied health in the country. This research reports for the first time, 6 primary criteria for defining PAH within the context of the Malaysian healthcare system, as stipulated by Act 774. These criteria include risk of harm, competency and skill sets, formal qualifications, defined scope of practice, relevant training, and the professional's integration within a healthcare team. Additionally, the study identified 10 other additional criteria, such as people's health, autonomy in practice, CPD, availability of the code of conduct/ethics, health practicing certificate, professional organisation/association, career pathway, rate of charges, availability of a profession, and international benchmarking. Although no single criterion can fully define PAH, policymakers should consider integrating all criteria to establish a cohesive approach for defining the profession, at least from a Malaysian perspective. Therefore, the research findings are relevant for policymakers looking to consolidate healthcare governance and formulate appropriate regulations and policies to strengthen the regulatory framework of allied health practitioners in Malaysia.

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ANNEX I

Assessment Report: Data Transcribing for Qualitative Research Workshop

1. Introduction

Data Transcribing for Qualitative Research Workshop was conducted on 11-12 October 2021 at *Bilik Mesyuarat 2*, Allied Health Sciences Division.

2. Background

The workshop was attended by 10 officers from the Policy and Development Branch and Malaysian Allied Health Professions Council (MAHPC), Allied Health Sciences Division. They were the researchers for this qualitative study.

This workshop was conducted by Dr. Duratul 'Ain binti Hussin, Senior Principal Assistant Director, Quality & Research Unit, Section of Policy & Strategic Planning who is also the Co-Principal Investigator for this study.

3. Objectives

i. Understanding and learning about basic transcribing for the purpose of qualitative research.
ii. Preparing drafts of transcripts for the FGDs conducted as part of the research procedure.
iii. Preparation before the process of coding & analysis of the result.

4. Tentatives

The following activities were conducted during the 2-days workshop:

- Introduction to data transcribing
- Performing data transcribing
- Summary of data transcribing

ANNEX II

Assessment Report: Data Coding, Analysis & Interpretation for Qualitative Research Workshop

1. Introduction

Data Coding, Analysis & Interpretation for Qualitative Research Workshop was conducted on 27-28 October 2021 at *Bilik Mesyuarat 2*, Allied Health Sciences Division.

2. Background

The workshop was attended by 18 researchers of this study in which 10 were from Policy and Development Branch and Malaysian Allied Health Professions Council (MAHPC), Allied Health Sciences Division. Another 8 were officers from Allied Health Professions that were recruited as researchers for the study.

This workshop was conducted by Prof. Dr. Tong Seng Fah, a lecturer of Faculty of Medicine from National University of Malaysia and assisted by Dr. Ani Munirah binti Mohamad, a lecturer from College of Law, Universiti Utara Malaysia.

3. Objectives

i. Understanding and learning about basic coding and analysis for qualitative research.
ii. Learning how to use Atlas.ti application for both web and desktop version.
iii. Discussing and determining relevant codes based on the FGD transcripts prepared.
iv. Preparation for the write up of final report as part of research requirement.

4. Tentatives

The following topics were covered during the 2-days workshop:

- Introduction to basics of data analysis: Coding and themes
- Introduction to Atlas.ti & its features
- Data analysis: moving from themes to explanatory narratives and models
- Review and rigor in analysis

ANNEX III

Advisor

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Director, Allied Health Sciences Division

List of Research Committee Members

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ANNEX IV

Panels of Focus Group Discussions

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