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The role of healthcare professionals and telehealth in comprehensive medication management

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Abstract--Background _ Telehealth has emerged as a primary approach for providing allied health professional services on a global scale. However, many professionals lack adequate training to ensure the delivery of telehealth services of exceptional quality. Aim of Work – The purpose of this evaluation is to determine the necessary skills and abilities that allied health professionals need in order to provide telehealth services effectively. Techniques. Methods – This scoping study used the Population Concept Context framework and conducted searches in the following databases: MEDLINE, PsychInfo, CINAHL, Cochrane, Web of Science, EMBASE, PEDro, and WHO. Results – The competencies were associated with two specific areas: (1) the execution of telehealth consultations and (2) the administration of telehealth consultation services. The initial domain encompassed the subsequent areas of expertise: clinical reasoning, communication, proficient utilization of technology, patient-focused care, evaluation and intervention knowledge/behavior/skills, privacy, security, and patient safety, professionalism, and establishing the technical infrastructure. The second category included the competence topics of digital infrastructure, informing practice, and management. While the significance of telehealth competences has been highlighted by research, they have not yet been integrated into educational settings. 33.3% of the publications originated from the field of psychology. Conclusion – This scoping assessment is the first to merge telehealth capabilities that have been documented across many allied health fields. While there exists a wide array of abilities, their practical usefulness relies on their effective integration into teaching and learning. The majority of abilities were derived from the field of psychology, but they have the potential to be relevant for other allied health professions as well. An universally applicable and flexible set of standards for telehealth competences would be beneficial in guaranteeing the delivery of top-notch services by all allied health practitioners.

Keywords---telehealth, allied health professionals, comprehensive medication management, competencies, clinical reasoning, digital infrastructure.

Introduction

Telehealth has been a well-established method of delivering healthcare services by allied health professionals (AHPs) for many years. However, the COVID-19 pandemic has led to a significant increase in its use due to challenges in

delivering services. The term 'telehealth' refers to the use of information and communication technologies to provide healthcare services for diagnosing, treating, and preventing diseases and injuries, conducting research, and evaluating patients. Telehealth is also known as telepractice, teledelivery, telerehabilitation, or can be included in broader terms such as eHealth or mHealth [1-3].

The extensive advantages of telehealth have been thoroughly documented and encompass enhanced service availability, convenience, improved access to services for individuals residing in rural and remote regions, and the elimination of travel and geographical obstacles. As more individuals have had the chance to utilize telehealth, they have become more knowledgeable and potentially open to participating in this method of service delivery [4,5]. Many AHPs are expected to include telehealth into their regular practice, alongside and integrated with in-person services. It is expected that Advanced Health Practitioners (AHPs) would increasingly embrace telehealth and expand the range of telehealth services they provide in the future, especially with the emergence of new health technology [6].

Healthcare providers and governments globally have made substantial investments to support the implementation of telehealth technologies [8,9]. This includes investments in infrastructure such as telecommunications and videoconferencing equipment, access to videoconferencing platforms, the modification of standardized assessments and treatment resources, and the provision of internet access with adequate bandwidth. The government has made substantial investments in large-scale, secure telehealth video-consulting platforms, enhancements to technology infrastructure, and money to subsidize certain services [10]. Additional investments will be necessary to meet the future requirements of implementing new telehealth technologies and services. This is highlighted by Thomas et al. [11], who assert that a well-defined strategy is needed for telehealth implementation, including the identification of roles and responsibilities within the organization. If the AHP workforce lacks the necessary skills, knowledge, and behaviors to provide telehealth services that are safe, efficient, and effective, this goal cannot be accomplished.

Many Allied Health Professionals (AHPs) have to use telemedicine as a means of delivering services owing to the COVID-19 related social distancing measures and practice limitations. Several individuals lacked experience in using telehealth, as shown by studies conducted by Buckingham et al [12] and Hall-Mills et al [13]. Consequently, they had not contemplated or developed the necessary skills, resulting in emotions of doubt, dread, and trepidation, as demonstrated by Erickson et al [14]. In order to provide secure and efficient telehealth services, Allied Health Professionals (AHPs) need to possess extra competencies and behaviors compared to those necessary for face-to-face consultations.

Furthermore, apart from AHPs offering telehealth services, there is a continuous need to instruct healthcare students on the utilization of telehealth. Bridgman et al. [15] compiled the existing research on the viewpoints of allied health students about clinical placements that included telehealth. Although there is less literature on this subject, a significant discovery indicates that substantial efforts are required to fully equip students for the use of telehealth. In the past,

preprofessional or university education has mostly emphasized the execution of services related to technology, legal matters, and the development of policies, education, and training for telehealth in a clear and organized way.

Multiple competence frameworks have been produced to assist AHPs in delivering telehealth services by identifying essential competencies. An AHP Digital Competency Framework was produced via Delphi research with a panel of 40 AHPs [16,17]. The study consisted of three rounds to establish consensus on 124 competencies across 10 areas. The findings were published by Tack [17]. This paper did not undergo a peer review process, therefore there is only a limited amount of information available on the technique that was used. The framework encompasses a wide range of digital health skills and knowledge, rather than being specifically centered on telehealth. Davies et al. [18] used a three-round Delphi methodology with 130 stakeholders from across the world to develop and publish a peer-reviewed framework outlining the essential skills and abilities that physiotherapists need in order to provide treatments using videoconferencing. Unlike Tack's [17] approach, the authors of this study offered a thorough explanation of the methods to support their core capacity framework. The creation of telehealth competence frameworks for nurses, medical professionals, and interprofessional telebehavioral health skills has been informed by expert agreement [19-23].

AHP groups have released position statements and guidelines that define the required standards of care for providing telehealth services in accordance with their professional norms and policies. For instance, the American Psychological Association has published guidelines for the practice of telepsychology, and Speech Pathology Australia has released a position statement to aid speech pathologists in implementing telehealth in Australia. The position statement was developed by a diverse working party of experienced speech pathologists and researchers [23-27].

Until now, there has been no published effort to combine the telehealth skills for Allied Health Professionals (AHPs) that have been produced by expert panels and professional, national, or worldwide organizations. Although frameworks, guidelines, and position statements offer guidance on the essential capabilities of telehealth, there has been no study that has attempted to integrate the telehealth competencies reported in all published research and non-peer-reviewed literature, such as opinion articles, guidance documents, and literature reviews that are not based on systematic methods [27-29].

Aim of The Work

The objective of this scoping study was to ascertain:

- Education programs and/or practice placements for Allied Health Professionals (AHPs) provide training and practical experience in telehealth skills and current practices.
- Telehealth competences for Allied Health Professionals (AHPs) that have been established by professional, national, or worldwide institutions.

Methods

This review included papers that included at least one AHP domain. The AHPs provided in Table 1. All forms of studies and unpublished material, such as opinion pieces, advice papers, and non-systematic literature reviews, were considered for inclusion. These theses and books were omitted. The study imposed a temporal constraint from 2012 to August 2022, since material pertaining to technologies before to 2012 was deemed obsolete owing to the fast pace of technological advancement [30-34]

A tripartite search approach was used. We conducted an initial, restricted search of MEDLINE and AHP professional body websites to determine the amount of relevant material and to select appropriate search phrases. A further search using the formulated search keywords was conducted and modified across the following databases: PEDro, MEDLINE, EMBASE, CINAHL, PsychInfo, Cochrane, Web of Science, and WHO all professional organizations for AHPs.

Representation of Professions

The included articles covered ten professions: psychology, occupational therapy, pharmacy, social work, speech pathology, audiology, physiotherapy, medical radiations/radiographers, exercise physiology, and optometry [35-60].

Themes of competence

The competences presented in this study should be seen as a synthesis of telehealth knowledge, abilities, and behaviors derived from the included papers, rather than as definitive competencies. The competences retrieved and synthesized from the literature only include those that are considered distinct from those required for in-person delivery. Hence, it is important to evaluate these competences not as standalone factors, but rather in conjunction with established practice standards, service delivery guidelines, and governance principles that are applicable to the specific profession and environment.

The process of developing the abilities was not documented in 16 of the publications included in the study. Out of the remaining 24 articles, five articles developed competencies using a Delphi process [39, 40, 57, 60], seven articles were developed through a non-Delphi expert critical evaluation [34-36, 44, 45, 47, 58], five articles were based on existing standards or guidance [46, 56, 54, 56, 58], and seven articles were based on a literature review [19, 37, 38, 41, 42, 49, 54].

Three of the included publications identified two significant research gaps. Two papers have proposed that the efficacy of evaluations should be evaluated by comparing those conducted via telehealth and in-person services. These articles emphasize the need of evaluating the variations in particular ethical issues when utilizing telehealth vs in-person services.

Suggestions were made to facilitate the deployment of telehealth competence. Bishop et al. [55] suggested that the distribution of telehealth services should be

evenly divided among all staff members to prevent a small group of staff members from shouldering the bulk of the telehealth workload within a service. Eikelboom et al. [49] proposed that a telehealth delivery model led by a facilitator would enhance the coordination of healthcare operations that are not feasible to be conducted remotely. Alqahtani et al. [39] proposed the establishment of a multi-professional team to effectively manage a telehealth service that caters to various health or social care concerns.

Discussion

This scoping assessment is the first to compile telehealth competences that have been reported across several Allied Health fields. This is noteworthy given that telehealth is a universally applicable method of delivering services that has the capacity to include several disciplines both inside and beyond healthcare systems. Based on this scoping review, it was found that telehealth competences have been examined by 10 Allied Health disciplines in the last ten years, as shown by the 40 papers included. Prior to the COVID-19 pandemic, almost 77.5% of the yield was published, suggesting that the interest in telehealth capabilities existed before the outbreak. Approximately 33% of the papers were from the field of psychology, which mostly focuses on communication. Disciplines like as physiotherapy, exercise physiology, podiatry, and occupational therapy, which include the use of equipment and hands-on evaluation and treatment, may need extra particular abilities that were not included in this analysis. Moreover, while this analysis includes 10 out of the 32 disciplines, it is unclear if the other two-thirds do not participate in telehealth or whether they just lack documented guidelines or research.

Out of the eight papers analyzed, only five of them failed to include the majority of the abilities highlighted in this analysis, despite their focus on presenting competencies within a standard or framework. This discrepancy may arise from a lack of consensus over certain telehealth skills, or it may be attributed to the variation in telehealth practices across different allied health fields. The competences' development process was not described in one article [48]. The two remaining papers, authored by Davies et al. [18] in the field of physiotherapy and Tack [17] in relation to Allied Health Professionals (AHPs) as a whole, included the majority of the competences found in this study. Nevertheless, as stated in the introduction, the Tack [17] framework lacks peer review and encompasses a wide array of proficiencies pertaining to digital health, rather than focusing solely on telehealth delivery. Davies et al. [18] performed Delphi research that was published in a peer-reviewed publication. The study included a thorough explanation of a strong methodology and specifically focused on telehealth in the context of physiotherapy.

The competences identified in this scoping study consist of eight areas pertaining to the provision of telehealth consultations and three domains pertaining to the administration of telehealth services. The clinical competences associated with clinical reasoning, communication, person-centred care, and professionalism seem to have been more recently identified as important skills in the field of telehealth. This is in contrast to earlier telehealth studies, which mostly focused on implementation logistics, law, and insurance. The incorporation of practice-

based evaluation and intervention aligns more closely with the primary objective of telehealth. The majority of these competences are derived from frameworks, standards, and expert opinion, with just 12.5% of the output being based on original research. It is crucial to assess if telehealth competency frameworks have been validated rather than just being treated conceptually as evidence-based practice. None of the standards or frameworks identified in this scoping study have undergone validation. Consequently, their conclusions are based only on the expertise of professionals rather than being backed by factual data.

The second aim of this research was to identify any literature pertaining to education programs. Out of all the articles, only five focused on telehealth education and training, specifically research studies. The rest of the articles were about telehealth position statements and guidelines. However, these documents did not address the methods for teaching current and future AHPs the necessary skills, behaviors, and knowledge related to telehealth. It is crucial to assess this, since it will provide valuable insights for effectively and enduringly deploying a telehealth service. Cook et al.⁶⁹ discovered that pessimistic beliefs on the simplicity of telehealth implementation often led to the choice of not providing telehealth services. Gaining a comprehensive understanding of the most effective methods for training practitioners in telehealth will help alleviate these negative perceptions and demonstrate how telehealth can enhance and work alongside current health and social care services.

Ultimately, the word "competency" is not a universally recognized concept that is often used in academic publications. However, the study focuses on words associated with knowledge, abilities, and behavior. Curiously, several papers failed to clearly distinguish between abilities that are specifically needed for telehealth consultations as opposed to in-person consultations. Although this approach is likely to prevent the oversight or assumption of generic competencies in telehealth delivery, it may create confusion between skills that are generic or transferable across all service modalities (such as strong interpersonal skills and active listening) and skills that are specific to telehealth (such as proficiency in the technology platform being used). Clearly distinguishing between general or transferable abilities and telemedicine-specific competences will enhance the education on efficient telehealth delivery for both pre-registration and practicing Allied Health Professionals (AHPs).

There are many constraints associated with this scoping review. While this research thoroughly searched through grey literature sources, it is conceivable that there may be further telehealth competency materials that remain unpublished and were inadvertently overlooked. The search technique exhibited a bias towards the English language, perhaps resulting in the omission of non-English items that are pertinent to the topic. This evaluation included a date constraint, excluding publications published before 2012 in the literature search to exclude obsolete material, perhaps resulting in the exclusion of some pertinent documents.

Conclusion

This analysis emphasizes the need of clearly defining the required skills for telehealth delivery and assessing them in terms of education and training. Subsequent research should investigate the efficacy of telehealth education and training to equip our healthcare and social care staff with the skills necessary to provide efficient and high-caliber telemedicine services.

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Table 1. The allied health fields covered by this scoping review

Arts therapy	Operating department practitioners
Audiology	Optometry
Biomedical scientists	Orthoptists
Chiropractic	Orthotics/prosthetics
Chinese medicine practitioners	Osteopathy
Clinical scientists	Paramedic practitioners
Credentialed diabetes educators	Pedorthist
Dietetics	Perfusion
Diversional therapists	Pharmacy
Drama therapists	Physiotherapy
Exercise physiology	Podiatry
Genetic counselling	Psychology
Hearing aid dispensers	Rehabilitation counselling
Medical radiations/radiographers	Social work
Music therapy	Sonography
Occupational therapy	Speech pathology