ACHSM Asia-Pacific Journal of Health Management

RESEARCH ARTICLE

BEYOND HOSPITAL TO COMMUNITY: EXPLORING THE CORE COMPETENCIES OF COMMUNITY HEALTH PROFESSIONALS

Heidi Siew Khoon Tan[1,2], *Lay Kian Goo*[3], *Sin Yi Lee*[4]

1. Department of Occupational Therapy, Tan Tock Seng Hospital, Singapore
2. Health and Social Sciences, Singapore Institute of Technology, Singapore
3. Medical Centre Operations, Tan Tock Seng Hospital, Singapore
4. St Hilda's Community Services, Singapore

*Correspondence: heidi.tan@singaporetech.edu.sg

ABSTRACT

OBJECTIVE:

To identify and validate the core competencies required of Community Health Professionals (CHPs) to deliver interprofessional team-based care in Singapore's integrated health services.

METHODS:

An exploratory sequential mixed methods design was used. Four focus groups with CHPs generated initial competency themes and items through thematic analysis. These findings informed a survey in which respondents rated the importance of each item on a five-point Likert scale. Descriptive statistics were used to analyse survey responses.

SETTINGS:

The study was conducted across Singapore's three regional health systems. Participants were health professionals who worked in, or oversaw, community health teams. 36 health professionals participated in the focus groups and 52 responded to the survey.

RESULTS:

Focus groups identified seven themes and 57 competency items. Survey findings showed strong consensus, with 49 items rated as very important or essential. Together with one contextually relevant item on multilingual communication, these informed the final CHP competency framework. Comparison with the World Health Organization health workforce framework supported reorganisation of the 50 core competencies into six clusters: patient advocacy, effective communication, teamwork, people-centred care, continuous learning mindset, and patient assessment and care management. The added competency cluster reflected local expectations for health professionals to perform biopsychosocial screening, basic management, and care escalation in community-based practice.

CONCLUSION:

This study developed a locally relevant CHP competency framework that aligns with international guidance while addressing Singapore's integrated health system context. The framework offers practical guidance for workforce development, interprofessional education, and competency-based training to support the shift from hospital to community care.

KEYWORDS
Community health professionals, Competency framework, Interprofessional teams, Health workforce development, Integrated health services.

INTRODUCTION

Healthcare systems worldwide are facing challenges arising from aging population, increasing chronic diseases, and escalating healthcare costs [1,2,3]. Conventional healthcare systems focusing on hospital-based specialist-led services are no longer able to meet the rising demands for continuity of care effectively [1]. To address the challenges, health systems are shifting focus towards integrated health services, which have proven to benefit individuals and health systems across countries at all income levels [1,2]. **Integrated health services** are defined as: "health services that are managed and delivered so that people receive a continuum of health promotion, disease prevention, diagnosis, treatment, disease-management, rehabilitation and palliative care services, coordinated across the different levels and sites of care within and beyond the health sector, and according to their needs throughout the life course" [4]. Health professionals working in integrated health systems are often expected to work collaboratively across professions to deliver high quality and effective team-based care [3,5].

Interprofessional team-based care models can enhance health service provision and improve work productivity, professional development, job satisfaction and retention of health professionals [6]. Health workforce development thus needs to prioritise cross-professional workforce planning and creation of new, collaborative care models that extend beyond traditional boundaries [6]. However, the uni-professional nature of health professional education, along with its associated profession-specific knowledge and skills, does not adequately prepare health professionals for interprofessional collaborative practice [7, 8]. Furthermore, integrated health systems necessitate that health professionals adopt new roles in prevention and pro-active patient management, focus on managing health and care rather than disease and cure, work along a continuum of care, and develop more than one vertical expertise [9]. Consequently, the transition from hospital-based services towards integrated health services requires health professionals to acquire new clinical and non-clinical competencies and become more open to working in interprofessional teams [3,4]. A tailored, contextualised competency framework is key to developing health professionals to work effectively in teams.

A competency framework provides a guide to enable health professionals to develop and assess their competencies within a broader healthcare team setting and allows mapping of their career progression beyond their current professional roles and functions [8]. **Health workforce competencies** are defined as "the essential complex knowledge-based acts that combine and mobilize knowledge, skills, and attitudes with the existing and available resources to ensure safe and quality outcomes for patients and populations." [9]. In the World Health Organisation Strengthening a competent health workforce for the provision of coordinated/integrated health services paper, the Health Workforce (HWF) framework identifies five fundamental competency clusters for front-line health professionals and lay health workers - ***Patient advocacy, Effective communication, Teamwork, People-centred care and Continuous learning*** [9]. Specific to healthcare professionals in integrated health services, various profession-specific competency frameworks have been developed for physicians, nurses, and pharmacists [10,11,12]. While efforts have been made to align interprofessional competencies, most of these originate from North America and may have limited applicability in other regions [1,13,14]. To ensure relevance to health professionals in integrated health systems, competency frameworks need to be adapted to the local context [7,8].

Singapore, like many developed countries, is experiencing a high prevalence of chronic diseases and multi-morbidity due to an ageing population, placing a significant burden on individuals, families, society, and the healthcare system [15]. To address this, the Ministry of Health introduced the Regional Health System (RHS) model in 2012. Led by public hospitals, each RHS collaborates with healthcare and social care providers to coordinate services across the health continuum for

integrated care delivery and prevent unnecessary hospital admissions [16]. The Ministry of Health introduced the "Three Beyonds" strategy in 2016 to guide long-term transformation of the healthcare system [17]:

- *Beyond Healthcare to Health* through effective health promotion and disease prevention,
- *Beyond Hospital to Community* by shifting focus from acute hospitals to community and primary care settings, and
- *Beyond Quality to Value* by ensuring appropriate and cost-effective care.

In line with shifting care beyond hospital to community, public hospitals in Singapore have initiated various multi-disciplinary hospital-to-home transitional care programmes involving post-discharge community home visits of patients, telephonic reviews to facilitate care co-ordination, and community health posts to facilitate early screening and proactive referral of patients to appropriate community resources [18,19]. However, health professionals traditionally trained in acute care often encounter difficulties in providing holistic care as they lack interdisciplinary training, particularly in the social aspects of care which extend beyond typical health professional curricula [18,20]. There have been local initiatives to develop the Community Nursing Competency framework for community nurses [21], but no similar competency framework exists for other health professionals working in community teams. There is an urgent need to develop a Community Health Professional (CHP) competency framework to guide interprofessional education in shifting care from hospital to community [22].

Therefore, this study aims to explore the core competencies required of CHPs working in regional health systems to provide effective team-based care for patients and caregivers in Singapore. Insights gained can be valuable for other countries seeking to enhance the development of health workforce within integrated health systems.

METHODS

This study used a two-phase exploratory sequential mixed methods design to identify and validate the core competencies for CHPs [23,24]. This approach is in line with study design recommendations to use at least two different data collection methods to increase the credibility and completeness of competency identification [25]. Initial phase involved an exploratory qualitative design in which focus groups were conducted with working CHPs to capture diverse insights of competency requirements. These qualitative data were then synthesised into competency themes and items, which then informed the development of a survey instrument. In the second quantitative phase, the survey was administered to a wider sample of CHPs, who rated the importance of each competency item on a Likert scale. This exploratory sequential mixed methods approach facilitated co-production of the competency framework with experienced practitioners, enhancing contextualisation and ensuring validation of the final competencies by a broader community of health professionals [23,24].

PARTICIPANTS

Purposive and snowball sampling techniques were used for the recruitment of the study participants. The inclusion criteria for the study were any health professional who has worked or oversee a community health team for at least one year at any of the three RHS in Singapore. For the focus groups, individual invitations were sent to a contact list of CHPs who met the inclusion criteria. For the survey, mass invitations were sent to the same contact list, and participants were encouraged to forward the survey to anyone they knew who met the inclusion criteria.

PROCEDURE

Four focus groups were conducted between 8 to 16 December 2020 via teleconference Zoom platform. An open-ended semi-structured interview guide was developed and used by two of the investigators who facilitated the focus groups. The duration of each focus group was between 1 to 1.5 hours. Two key questions in the interview guide were:

1. Describe current work activities which can be interprofessional and list the core competencies required, and
2. Describe any future work activities which could be interprofessional and list the core competencies required.

The focus group interviews were transcribed by the research assistant using Zoom and OTTER Ai transcription software and then coded by two study investigators using NVivo version 12. Thematic analysis was used for the qualitative data analysis [26]. The first focus group transcript was initially coded individually, followed by team coding by the two investigators (HT, LG) to align on the agreed codes and descriptions in the code book. Subsequently, the two investigators continued independent coding of the other three focus groups using the code book. The code book and descriptions were further refined twice during the later team coding process. Finally, the two investigators identified the themes and related competency items, which were then used to develop the survey. After the survey instrument was drafted, the two investigators reviewed all survey items for clarity and face validity. The survey was not externally validated or formally piloted before administration.

The survey was administered from 1 to 16 April 2021 using the FormsSG online platform. Participants were asked to evaluate the importance of each competency item for CHPs to work effectively in a community health team on a five-point Likert scale *(1 = not too important; 2=somewhat important; 3=important; 4=very important; 5 = essential)*. Descriptive statistics were then used to analyse the survey results.

ETHICAL CONSIDERATIONS

Ethics approval was obtained from National Healthcare Group Domain Specific Review Board (NHG DSRB Ref: 2020/00601) prior to conducting the focus groups and survey.

RESULTS

36 out of 67 (54%) invited CHPs from three RHS in Singapore participated in the focus groups. Occupational therapists, nurses and physiotherapists comprised 77% of the total participants. Majority of the participants (69%) had between 1 to 5 years of experience working in community health teams, including home-based community programs, centre-based programs, community health posts and telephonic services. Table 1 shows the participants' characteristics in the focus groups.

TABLE 1. CHARACTERISTICS OF PARTICIPANTS IN THE FOCUS GROUPS (N=36)

	Category	n	Percentage		Category	n	Percentage
Profession	Occupational Therapist	11	30%	**Regional Health Cluster**	National Healthcare Group	25	69%
	Nurse	10	28%		Singhealth	6	17%
	Physiotherapist	7	19%		National University Health System	5	14%
	Administrator	4	11%	**Experience in community health team**	1 to 2 years	12	33%
	Medical Social Worker	2	6%		3 to 5 years	13	36%
	Dietitian	1	3%		6 to 10 years	5	14%
	Doctor	1	1%		11 to 15 years	6	17%

Following thematic analysis of the coded data, seven themes and 57 competency items for CHPs were identified. Table 2 lists the descriptions of the themes and number of competency items in each theme.

TABLE 2. THEME DESCRIPTION AND NUMBER OF COMPETENCY ITEMS PER THEME

Theme	Description	Number of competency items
1	Enabling personal attributes as a CHP	8
2	Enabling professional skills as a CHP	13
3	Collaborating with other CHPs in the inter-professional team	7
4	Assessing the needs of patient and caregiver in the community	7
5	Identifying situations needing escalation of care	5
6	Planning and coordinating care of patient in the community	8
7	Educating and empowering patient and caregiver in self-management	9

52 health professionals from the three RHS responded to the survey. Due to the use of snowball sampling, the response rate could not be estimated. 27 [52%] respondents had previously participated in the focus groups. Nurses, occupational therapists, and physiotherapists continued to account for most of the survey respondents [66%]. Overall, survey respondents had more years of working experience in the community compared to focus group participants. Majority of respondents [56%] had six and more years of experience working in community health teams. Table 3 provides an illustration of respondents' characteristics in the survey.

TABLE 3. CHARACTERISTICS OF RESPONDENTS IN THE SURVEY (N=52]

	Category	n	Percentage		Category	n	Percentage
Profession	Nurse	16	30%	**Regional Health Cluster**	National Healthcare Group	32	61%
	Occupational Therapist	11	21%		Singhealth	14	27%
	Physiotherapist	8	15%		National University Health System	6	12%
	Administrator	6	12%	**Experience in community health teams**	1 to 2 years	12	23%
	Doctor	6	12%		3 to 5 years	11	21%
	Medical Social Worker	2	4%		6 to 10 years	20	39%
	Therapy Assistant	2	4%		11 to 15 years	8	15%
	Care Coordinator	1	2%		16 to 20 years	1	2%

The findings revealed a strong consensus amongst respondents on the importance of most identified competency items from the focus groups. Table 4 shows the median and mean ratings for all 57 competency items. Of the 57 competency items, 49 items had a median of 4 or above, indicating that most respondents considered them as *''very important''* or *''essential''* (ratings of 4 or 5). One item "*Having multilingual skills to improve communication with patient and caregiver*" had a median of 3.5 while the other 7 items had a median of 3.

TABLE 4. MEDIAN AND MEAN RATINGS FOR ALL 57 COMPETENCY ITEMS

Theme	Competency item	Median	Mean	SD
Enabling personal attributes as a CHP	1.1 Being adaptable and flexible	5.00	4.44	0.75
	1.2 Being open minded to changes in roles and practices in the community	4.50	4.40	0.66
	1.3 Being motivated to work in the community	4.00	4.23	0.73
	1.4 Embracing the generalist professional identity in a transdisciplinary team	4.00	3.98	0.85
	1.5 Having a patient-centred mindset over a profession-centred mindset	4.00	4.31	0.76
	1.6 Having the courage to work beyond own professional expertise	4.00	3.92	0.76
	1.7 Willingness to learn from others in the team	4.00	4.17	0.58
	1.8 Willingness to ask for help from others in the team	4.00	4.19	0.72
Enabling professional skills as a CHP	2.1 Ability to manage basic functional mobility needs of patient	4.00	3.92	0.90
	2.2 Ability to manage basic psychosocial issues of patient and caregiver	4.00	4.13	0.79
	2.3 Ability to resolve conflicts amongst multiple stakeholders	4.00	3.62	0.82
	2.4 Ability to negotiate and align care expectations amongst stakeholders	4.00	4.02	0.70
	2.5 Being resilient to manage dynamic situations	4.00	4.19	0.66
	2.6 Facilitating group sessions during community health education programs	3.00	3.33	0.94
	2.7 Having communication skills to build rapport and understand challenges of patient and caregiver	5.00	4.44	0.64
	2.8 Having counselling skills to facilitate patient to cope with challenges	4.00	3.90	0.82
	2.9 Having creativity and problem-solving skills to manage available resources	4.00	4.06	0.80
	2.10 Having multilingual skills to improve communication with patient and caregiver	3.50	3.56	0.83
	2.11 Having self-defence skills for personal safety	3.00	3.13	1.12
	2.12 Using technology-based devices to facilitate health monitoring	3.00	2.85	0.94
	2.13 Using telehealth technologies for e-consultation with patient or staff	3.00	3.02	0.90
Collaborating with other CHPs in the inter-	3.1 Being competent in own professional practice	5.00	4.50	0.64
	3.2 Communicating own professional concerns and ideas effectively	4.00	4.17	0.73

professional team	3.3 Educating other professionals in own professional knowledge and skills	4.00	3.90	0.75
	3.4 Facilitating case discussions in team to develop shared care plan	4.00	4.08	0.84
	3.5 Leading the interprofessional team	3.00	3.37	0.99
	3.6 Maintaining trust and positive relationship with interprofessional team members	4.00	4.23	0.67
	3.7 Respecting interprofessional opinions and expertise	4.00	4.38	0.66
Assessing the needs of patient and caregiver in the community	4.1 Screening for clinical parameters	4.00	4.13	0.91
	4.2 Screening for general health needs	4.00	3.98	0.87
	4.3 Screening for wound and tube care	3.00	3.60	1.07
	4.4 Screening for cognitive and mental health needs	4.00	3.94	0.80
	4.5 Screening for physical and functional health needs	4.00	4.00	0.82
	4.6 Screening for social issues	4.00	4.02	0.80
	4.7 Screening for environmental issues	4.00	3.94	0.78
Identifying situations needing escalation of care	5.1 Having basic medical knowledge of common chronic diseases	4.50	4.25	0.84
	5.2 Identifying risks and red flags which require medical attention symptoms	5.00	4.50	0.73
	5.3 Determining the complexity and urgency of the health needs of patient	4.00	4.31	0.81
	5.4 Recognising own professional competency and when to escalate to other health professionals	5.00	4.54	0.64
	5.5 Applying the available escalation protocols for appropriate care management	4.00	4.27	0.82
Planning and coordinating care of patient in the community	6.1 Maintaining a patient-centered focus during care needs assessment	4.50	4.35	0.71
	6.2 Involving patient and caregiver in collaborative goal setting	4.00	4.33	0.68
	6.3 Identifying and prioritising care needs of patient and caregiver appropriately	4.00	4.31	0.67
	6.4 Knowing the range of community resources [formal and informal] available and accessible to patient and caregiver	4.00	3.98	0.90
	6.5 Knowing the administrative aspects of the community resources to assist patient and caregiver in decision making	4.00	3.67	1.00
	6.6 Matching the health and social care needs of patient and caregiver to relevant services	4.00	3.98	0.83
	6.7 Making appropriate referrals for transition from hospital to community and within the community	4.00	3.98	0.80

	6.8 Establishing networking and partnership with community service providers to facilitate transition of care	4.00	3.77	0.83
Educating and empowering patient and caregiver in self-management	7.1 Educating on behavioural management for patients with various psychosocial issues	4.00	3.81	0.93
	7.2 Educating on different types of exercises for patients with various physical issues	3.00	3.37	1.03
	7.3 Educating on falls prevention at home and in the community	4.00	3.85	0.87
	7.4 Educating on medication administration, compliance and side effects	4.00	3.75	0.97
	7.5 Educating on use of basic assistive devices and environmental modifications	4.00	3.67	0.92
	7.6 Educating on wound care, tube care and prevention of pressure injuries	4.00	3.62	1.01
	7.7 Empowering patient in health promotion for disease prevention	4.00	3.87	0.84
	7.8 Empowering patient in lifestyle modifications for chronic disease management	4.00	3.90	0.87
	7.9 Supporting caregiver to manage own caregiving stress	4.00	4.04	0.71

Table 5 showed the two highest rated themes were *"Identifying situations needing escalation of care"* and *"Enabling personal attributes as a CHP"*.

TABLE 5. MEAN RATINGS FOR EACH THEME, RANKED IN ORDER

Theme	Description	Mean	SD
5	Identifying situations needing escalation of care	4.37	0.77
1	Enabling personal attributes as a CHP	4.21	0.74
3	Collaborating with other CHPs in the inter-professional team	4.09	0.83
6	Planning and coordinating care of patient in the community	4.05	0.84
4	Assessing the needs of patient and caregiver in the community	3.95	0.88
7	Educating and empowering patient and caregiver in self-management	3.76	0.92
2	Enabling professional skills as a CHP	3.71	0.96

DISCUSSION

A locally developed competency framework for CHPs outlines the key roles they play in patient care, promotes collaboration among different professional groups and supports the formation of interprofessional teams in community-based care [8,9]. This study used an exploratory sequential mixed methods design to investigate the core competencies of CHPs working in RHS community health teams in Singapore. Seven themes with 57 competencies were identified through the focus groups. Following analysis of the survey findings, 50 competencies were deemed to be core for CHPs. These included 49 competency items rated as *"very important"* or *"essential" (median=4 to 5)* and the item *"Having multilingual skills to improve communication with patient and caregiver"* (median=3.5), due to the importance of linguistic competence in delivering effective care in Singapore's multi-ethnic context [27].

Comparison of the study findings with the WHO HWF competency framework for coordinated/integrated health services [9] revealed both similarities and differences. The WHO HWF framework outlines five broad competency clusters comprising 42 competencies, developed as a global reference for health professionals and lay health workers delivering integrated care. These clusters emphasised patient advocacy, people-centred care, effective communication, teamwork and continuous learning as fundamental to provision of high-quality health services. Although derived independently in the Singapore community health context, the 50 competency items across seven themes identified for CHPs demonstrated strong alignment with the WHO framework, particularly across four competency clusters - ***Patient advocacy, People-centred care, Effective communication and Teamwork***, highlighting their universal relevance across integrated health systems. Consequently, the WHO HWF framework was used as a reference to align the CHP competency framework with internationally recognised standards, with definitions for the four overlapping competency clusters retained and the 37 corresponding competency items mapped accordingly.

Despite the similarities, two context-specific differences required adaptation of the WHO HWF framework. First, while the WHO ***Continuous learning*** cluster emphasised participation in formal continuing professional development activities, CHPs in this study placed greater emphasis on attitudes towards continuous learning. They highlighted the need for health professionals to transition from a traditional "*profession-led*" to a more "*patient-led*" and team-based model of care, a shift that requires openness to new roles and adaptability in responding to patient and team needs. As such, this competency cluster was renamed as ***Continuous learning mindset*** to emphasise that continuous learning extends beyond participation in professional development activities, to include personal attributes and mindset that are required in CHPs to navigate evolving roles in an interprofessional team. Second, while competencies related to biopsychosocial screening and care escalation emerged strongly in this study, they are absent in the WHO HWF framework. These competencies reflect the practice of Singapore's community-based care model, where CHPs are expected to perform early screening, risk identification, and coordinate escalation across services—roles which are not fully captured by the WHO's generic framework. To address this gap, a new competency cluster - ***Patient assessment and care management***, comprising 13 items, was added to specify the interprofessional clinical capabilities required of CHPs in Singapore.

By retaining the definitions of WHO HWF framework for overlapping competency clusters, renaming continuous learning to reflect mindset-based learning, and introducing a new competency cluster to capture interprofessional clinical competencies, the final CHP competency framework balances international alignment with local relevance. Broadly, the 50 core competencies in six competency clusters can be further grouped into three functional areas, which offers a practice-oriented structure for understanding how the competencies support interprofessional team-based care in the community:

- Competencies reflecting *direct patient and caregiver service provision* - Patient advocacy, People-centred care, Patient assessment and care management,
- Competencies reflecting *interprofessional collaboration* - Effective communication and Teamwork, and
- Competencies reflecting *personal attributes and professional orientation* - Continuous learning mindset.

Table 6 presents the final CHP competency framework derived from this study, illustrating how locally grounded competencies have been systematically aligned with, and extended beyond, the WHO HWF framework to meet the demands of team-based community care in Singapore.

TABLE 6. CORE COMPETENCIES OF COMMUNITY HEALTH PROFESSIONALS IN SINGAPORE

Competency cluster	Core competency item
1. PATIENT ADVOCACY Ability to promote patients' entitlement to ensure the best quality of care and empowering patients to	***Patient education*** • Educating on behavioural management for patients with various psychosocial issues • Educating on falls prevention at home and in the community • Educating on medication administration, compliance and side effects

become active participants of their health	• Educating on use of basic assistive devices and environmental modifications • Educating on wound care, tube care and prevention of pressure injuries ***Patient and caregiver empowerment*** • Empowering patient in health promotion for disease prevention • Empowering patient in lifestyle modifications for chronic disease management • Supporting caregiver to manage own caregiving stress
2. EFFECTIVE COMMUNICATION Ability to quickly establish rapport with patients and their family members in an empathetic and sensitive manner incorporating the patients' perceived and declared culture	***Communication with patient and caregiver*** • Having communication skills to build rapport and understand challenges of patient and caregiver • Having counselling skills to facilitate patient to cope with challenges • Having multilingual skills to improve communication with patient and caregiver ***Communication with stakeholders*** • Ability to negotiate and align care expectations amongst stakeholders • Ability to resolve conflicts amongst multiple stakeholders
3. TEAMWORK Ability to function effectively as a member of an interprofessional team that includes providers, patients and family members in a way that reflects an understanding of team dynamics and group/team processes in building productive working relationships and is focused on health outcome	***Values for interprofessional practice*** • Willingness to learn from others in the team • Willingness to ask for help from others in the team Respecting interprofessional opinions and expertise • Maintaining trust and positive relationship with interprofessional team members ***Team-based practice*** • Being competent in own professional practice • Communicating own professional concerns and ideas effectively • Educating other professionals in own professional knowledge and skills • Facilitating case discussions in team to develop shared care plan
4. PEOPLE-CENTRED CARE Ability to create conditions for providing coordinated /integrated services centred on the patients and their families' needs, values and preferences along a continuum of care and over the life-course	***Care co-ordination*** • Maintaining a patient-centered focus during care needs assessment • Involving patient and caregiver in collaborative goal setting • Identifying and prioritising care needs of patient and caregiver appropriately • Knowing the range of community resources [formal and informal] available and accessible to patient and caregiver • Knowing the administrative aspects of the community resources to assist patient and caregiver in decision making • Matching the health and social care needs of patient and caregiver to relevant services • Making appropriate referrals for transition from hospital to community and within the community

	• Establishing networking and partnership with community service providers to facilitate transition of care
5. CONTINUOUS LEARNING MINDSET Attitude to demonstrate reflective practice, based on the best available evidence and to assess and continually improve the services delivered as an individual provider and as a member of an interprofessional team	***Personal attributes*** • Being adaptable and flexible • Being open minded to changes in roles and practices in the community • Being motivated to work in the community • Embracing the generalist professional identity in a transdisciplinary team • Having a patient-centred mindset over a profession-centred mindset • Having the courage to work beyond own professional expertise • Being resilient to manage dynamic situations • Having creativity and problem-solving skills to manage available resources
6. PATIENT ASSESSMENT AND CARE MANAGEMENT Ability to conduct comprehensive biopsychosocial screening, manage basic functional and psychosocial needs, and identify situations requiring care escalation	***Biopsychosocial screening and management*** • Screening for clinical parameters • Screening for general health needs • Screening for cognitive and mental health needs • Screening for physical and functional health needs • Screening for social issues • Screening for environmental issues • Ability to manage basic functional mobility needs of patient • Ability to manage basic psychosocial issues of patient and caregiver ***Care escalation*** • Having basic medical knowledge of common chronic diseases • Identifying risks and red flags which require medical attention symptoms • Determining the complexity and urgency of the health needs of patient • Recognising own professional competency and when to escalate to other health professionals • Applying the available escalation protocols for appropriate care management

IMPLICATIONS FOR PRACTICE

The findings of this study have significant implications for healthcare administrators and educators in the development of the future health workforce supporting integrated health services.

1. **Competency framework development should be context specific.** As integrated health systems differ across countries, contextually relevant competency frameworks should be developed to address local service gaps and workforce needs. The exploratory sequential mixed methods approach used in this study may be adapted for similar efforts [23,24].
2. **Workforce development should support transition to community care.** In health systems like Singapore, training of hospital-based health professionals moving into community and home-based care roles, should prioritise interprofessional clinical capabilities in patient assessment and care management, with emphasis on care escalation and enabling personal attributes. .

3. **Competency frameworks can guide interprofessional education.** Healthcare organisations and educational institutions can use competency frameworks to design interprofessional training programmes for current and future CHPs [6,10,28]. In this study, the CHP competency framework was translated into three entrustable professional activities and applied in the design of a postgraduate module "Team-based care in the community" at the Singapore Institute of Technology.

STUDY LIMITATIONS

This study had several limitations. The relatively small sample size may limit the transferability of the results across different integrated health service context, while the inclusion of health professionals only may not fully reflect the perspectives and needs of patients and caregivers. In addition, the absence of a separate external review and formal pilot testing may have reduced the survey's content validity, clarity and reliability. Nevertheless, the use of an exploratory sequential mixed methods design ensured the consistency and practical relevance of the findings. Future research on CHP competencies would benefit from larger and more diverse samples, including patients, caregivers, educators, and policymakers, and use of external expert review and pilot testing to further strengthen the robustness and applicability of competency frameworks.

CONCLUSION

This study identified 50 core competencies across six competency clusters for CHPs working in Singapore's integrated health services. Key findings included the high importance placed on competencies related to identifying situations needing escalation of care and enabling personal attributes as a CHP, together with the inclusion of patient assessment and care management, which emphasised the interprofessional clinical capabilities required for effective team-based care in the community.

Addressing a gap in the literature, this study led to a development of a locally relevant interprofessional competency framework for CHPs working in integrated health services. By aligning with the WHO health workforce competency framework while incorporating context-specific competencies, the CHP competency framework offers practical guidance for workforce development, interprofessional education, and competency-based training in Singapore and similar health systems transitioning from hospital-based to community-based care.

ACKNOWLEDGEMENTS

The authors would like to thank all the participants for their valuable input in this research study. This work was funded by the Centre for Allied Health and Pharmacy Excellence project grant [Project ID: 19-TD-008].

CONFLICTS OF INTEREST

The Authors declare that there is no known conflict of interest that could have influenced the work reported in this paper.

DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

During the preparation of this work the author(s) used Microsoft Copilot to improve the language and readability of the manuscript. After using this tool/service, the author(s) reviewed and edited the content as needed and take full responsibility for the content of the publication.

References

1. World Health Organization. WHO global strategy on people-centred and integrated health services: interim report. World Health Organization; 2015.
2. Litchfield I, Kingston B, Narga D, Turner A. The move towards integrated care: lessons learnt from managing patients with multiple morbidities in the UK. Health policy. 2022 Aug 1;126(8):777-85.

3. Mitchell P, Wynia M, Golden R, McNellis B, Okun S, Webb CE, Rohrbach V. Core principles & values of effective team-based health care. Discussion Paper, Institute of Medicine, Washington, DC; 2012.
4. World Health Organization. Framework on integrated, people-centred health services. Geneva: World Health Organization. 2016 Apr 15.
5. World Health[10 Organization. Framework for action on interprofessional education and collaborative practice. World Health Organization; 2010.
6. Anderson M, O'Neill C, Clark JM, Street A, Woods M, Johnston-Webber C, Charlesworth A, Whyte M, Foster M, Majeed A, Pitchforth E. Securing a sustainable and fit-for-purpose UK health and care workforce. The Lancet. 2021 May 22; 397(10288):1992-2011.
7. Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T, Fineberg H, Garcia P, Ke Y, Kelley P, Kistnasamy B. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. The Lancet. 2010 Dec 4; 376(9756):1923-58.
8. Maeda A, Socha-Dietrich K. Skills for the future health workforce: Preparing health professionals for people-centred care. OECD Health Working Papers. 2021 Jan 28(124):0_1-42.
9. Langins M, Borgermans L. Strengthening a competent health workforce for the provision of coordinated/integrated health services: working document. World Health Organization. Regional Office for Europe; 2015.
10. Sunderji N, Waddell A, Gupta M, Soklaridis S, Steinberg R. An expert consensus on core competencies in integrated care for psychiatrists. General Hospital Psychiatry. 2016 Jul 1;41:45-52.
11. Suprapto S, Mulat TC, Lalla NS. Nurse competence in implementing public health care. International Journal of Public Health Science (IJPHS). 2021 Jun 1;10(2):428.
12. Lee JK, Hume AL, Willis R, Boon H, Lebensohn P, Brooks A, Kligler B. Pharmacy Competencies for Interprofessional Integrative Health Care Education. American journal of pharmaceutical education. 2018 Aug 1;82(6):6302.
13. Kligler B, Brooks AJ, Maizes V, Goldblatt E, Klatt M, Koithan MS, Kreitzer MJ, Lee JK, Lopez AM, McClafferty H, Rhode R. Interprofessional competencies in integrative primary healthcare. Global advances in health and medicine. 2015 Sep;4(5):33-9.
14. Sockalingam S, Chaudhary ZK, Barnett R, Lazor J, Mylopoulos M. Developing a framework of integrated competencies for adaptive expertise in integrated physical and mental health care. Teaching and learning in medicine. 2020 Mar 14;32(2):159-67.
15. Low LL, Kwan YH, Ko MS, Yeam CT, Lee VS, Tan WB, Thumboo J. Epidemiologic characteristics of multimorbidity and sociodemographic factors associated with multimorbidity in a rapidly aging Asian country. JAMA network open. 2019 Nov 1;2(11):e1915245.
16. Nurjono M, Yoong J, Yap P, Wee SL, Vrijhoef HJM. Implementation of integrated Care in Singapore: a complex adaptive system perspective. International journal of integrated care. 2018 Oct 16;18(4):4.
17. Tan CC, Lam CS, Matchar DB, Zee YK, Wong JE. Singapore's health-care system: key features, challenges, and shifts. The Lancet. 2021 Sep 18;398(10305):1091-104.
18. Foo CD, Yan JY, Chan ASL, Yap JC, editors. Identifying key themes of care coordination for patients with chronic conditions in Singapore: A scoping review. Healthcare; 2023 May 25: MDPI.
19. Koh A, Cheah J. No hospital is an island–emerging new roles of the acute general hospital in the Singapore healthcare ecosystem. Future Healthcare Journal. 2015 Jun 1;2(2):121-4.
20. Ong SE, Tyagi S, Lim JM, Chia KS, Legido-Quigley H. Health systems reforms in Singapore: A qualitative study of key stakeholders. Health Policy. 2018 Apr 1;122(4):431-43.
21. Community Nursing Competency Framework workgroup. Community Nursing Competency Framework (Internet). Singapore: Nursing National Academy; 2017 (cited 2025 Dec 15). Available from: https://www.nna.gov.sg/resources/competency-frameworks/community-nursing-competency-framework/
22. Nurjono M, Shrestha P, Ang IY, Shiraz F, Eh KX, Toh SA, Vrijhoef HJ. Shifting care from hospital to community, a strategy to integrate care in Singapore: process evaluation of implementation fidelity. BMC Health Services Research. 2020 May 24;20(1):452.
23. Creswell JW, Creswell JD. Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications; 2017 Dec 12.

24. Creswell JW, Plano Clark VL. Designing and conducting mixed methods research. 3rd ed. Thousand Oaks (CA): SAGE Publications; 2018.
25. Marrelli AF, Tondora J, Hoge MA. Strategies for developing competency models. Administration and Policy in Mental Health and Mental Health Services Research. 2005 May;32(5):533-61.
26. Braun V, Clarke V. Thematic analysis. APA handbook of research methods in psychology. Research designs: Quantitative, qualitative, neuropsychological, and biological. 2012;2:57-71.
27. Olayiwola JN, Shih JA, Shiow SA, Wee HL. Could values and social structures in Singapore facilitate attainment of patient-focused, cultural, and linguistic competency standards in a patient-centered medical home pilot?. Journal of patient experience. 2015 Nov;2(2):37-42.
28. Ten Cate O. Competency-based postgraduate medical education: past, present and future. GMS journal for medical education. 2017 Nov 15;34(5):Doc69.