

# EFFORTS IMPLEMENTED FOR DEVELOPING HEALTH MANAGEMENT WORKFORCE IN THE ASIA PACIFIC: A SCOPING REVIEW

Priyanka Pokhrel\*<sup>1</sup>, Zhanming Liang<sup>1</sup>, Judy Taylor<sup>2</sup>

1. College of Public Health, Medical and Veterinary Science, James Cook University, Douglas, Townsville, QLD, Australia

2. College of Medicine and Dentistry, James Cook University, Townsville, QLD, Australia

Correspondence: [priyanka.pokhrel@my.jcu.edu.au](mailto:priyanka.pokhrel@my.jcu.edu.au)

## ABSTRACT

### BACKGROUND AND OBJECTIVE:

A strong and effective health management workforce (HMW) is essential to underpin the comprehensive health care services provided by health care organizations. The fast-growing nature of healthcare systems suggests the required competencies for HMW continue to evolve. Hence, an up to date understanding of management competency requirements is important to the productivity and sustainability of the healthcare system. Before any investment in management competency development, understanding the current health service management workforce development strategies is one of the key steps. There has been no integrated review on the development efforts for HMW in the Asia Pacific region. The objective of this scoping review is to identify and confirm the key strategies that have been used in developing the health management workforce in the Asia Pacific region.

### MATERIALS AND METHODS:

A scoping review of the literature was conducted between May and August 2022 using the following databases: Medline, Ovid Emcare, CINAHL, Scopus, and Web of Science, to retrieve original research articles demonstrating development efforts for HMW in the Asia Pacific regions. The review was guided by the PRISMA-ScR (2018) checklist [23].

### RESULTS:

The scoping review identified four different development strategies for HMW in Asia Pacific region: i) Organisational informal professional development programs, ii) Competency assessment and identification of gaps in knowledge and skills of HMW, iii) Confirming competencies and developing competency framework and iv) Formal education and training. Among these four development strategies, organisational informal professional development programs and competency assessment and the identification of gaps in knowledge and skills of HMW were the main strategies implemented for HMW in the Asia Pacific region. The review also highlighted a relatively low level of government or system level development strategies for HMW in the Asia Pacific region.

### CONCLUSION:

The review concluded that the existing development strategies and efforts for HMW are not evenly implemented within the Asia Pacific region. Political will and policy direction are important and plays a vital role in the competency development of HMW. It is also critical to provide multilevel commitment from system and organisational level together with identifying and addressing the bottlenecks in the development strategies by considering organisation types, management levels and positions, practical training methods, motivation of participants, and other contextual factors.

## KEYWORDS:

Health management workforce, Management development, Asia Pacific region

## INTRODUCTION

A competent health management workforce (HMW) is important for the effective functioning of the health care system and improved healthcare outcomes of the population by emphasizing safe, high quality, and compassionate care as a top priority [1,2,3]. Developmental activities need to be planned and implemented to build the competency and capability of HMW. It is crucial to develop an understanding of the current strategies and actions prior to investing in new activities. An initial search of literature did not identify review articles that present evidence of the collective efforts implemented to develop health service managers (HSM)/HMW in the Asia Pacific region. According to the World Health Organisation (WHO), the Asia Pacific region includes 37 countries which are divided into two subregions: the Western Pacific consisting of 27 countries such as China, Japan, and Australia and the South- East Asia consisting of 10 countries such as India, Nepal, and Thailand [4].

While the development of HSMs' competencies and capabilities are crucial for achieving better management outcomes and ultimately positive health results, various challenges need to be addressed [1]. Using Nepal as an example, management positions are generally occupied by senior doctors with extensive clinical experience without formal management education [5, 6]. There is no documented evidence of competency-based development strategies being implemented for hospital managers. Only one study conducted in 2012 was identified which confirmed the need for in-service management training for HMW [6] to develop managerial competencies in Nepal. This lack of development of managerial competencies was one of the factors thought to limit effective and efficient hospital service provision in Nepal [5, 6].

**Challenges faced in developing a health management workforce that can meet the needs of the health system.**

The literature provides discussion on the various challenges facing the development of a competent health management workforce that contribute to meeting the growing and changing healthcare needs of the population. Evidence has been reported on the lack of understanding on competency requirements for HSMs; on the lack of competency-based approaches in guiding the design of training and education programs; and the inadequate investment in the development of competencies of HSMs may be challenging for the HMW development [1, 7]. Other challenges facing the HSM workforce include work pressures, budgetary factors, advanced technological requirements, lack of personal will, rural/remote settings, and political instability hindering sustainability of development programs [6, 8, 9, 10, 11, 12, 13, 14, 15].

In some developing Asia Pacific countries there has been limited guidance in the design of formal and informal training and development programs for HMW [1, 12]. This is because the competency requirements for health managers have not been clearly established in these countries [6, 12, 13] and the management competency improvements are often not embedded in regular management performance appraisals in healthcare organisations [1]. This provides inadequate incentives for investing in continuous, informal management development program for HMW [1, 7].

Although formal education is an important development strategy for HMW, research from Australia has been reported that among the awarded postgraduate qualifications for HSMs, very few were management specific [1, 7]. Such situations may challenge the HMW to achieve the core foundational knowledge required for management position. Research conducted in Vietnam reported that the hospital managers have focused more on their clinical profession where they can easily foresee and earn pecuniary benefits rather than their leadership and managerial development where the benefits are not as immediate [9]. This suggests the requirement of personal will and desire for the development of managerial capability.

## The pressing needs of developing the health management workforce in the Asia Pacific region

Management competency assessments on health service managers conducted in Australia, Bhutan, China, Nepal, and India have suggested there are pressing needs for competency development amongst HSMs [5, 6, 7, 12, 16, 17]. The formal and informal management training amongst health managers before commencing their management positions has been found to be inadequate [5, 6, 7, 16]. For example, a study conducted among health managers in China identified that less than half of the health managers participated in management training either prior to or after taking up their management positions [16]. With continuous healthcare reform, health systems in the Asia Pacific region are under pressure to improve cost efficiency while enhancing access and quality of care [13, 19, 20, 21]. Competent managers are required to lead the improvement process. However, formal and informal management training amongst health managers before commencing their management positions has been found to be inadequate [5, 6, 7, 16]. Hence, there is an urgent need in utilising various strategic approaches to equip health managers in working in a complex system with a higher level of awareness and required technical expertise for positive and measurable health outcomes [21, 22].

To maximise the efforts in assisting HSM development, learning from the past experience is necessary. Thus, a scoping review was conducted to identify and learn from the development strategies for HMW in Asia Pacific countries. This paper aims to present and discuss the key strategies that have been implemented in developing the health management workforce in the Asia Pacific region. In this scoping review, HMW development efforts refers to policy and strategies that focus on building management capacity and developing capable health service managers including identifying competency gaps and management development needs.

## METHODOLOGY

The scoping review was guided by PRISMA-ScR (2018) [23]. The literature search was performed from May 2022 to August 2022 to retrieve original articles on efforts for developing HMW across the globe. Various synonyms or keywords were used in the search strategy to expand the search terms. Key words and key concepts for the data search are presented in Table 1. The word 'Asia Pacific' was precluded from the search term to avoid the potential exclusion of eligible articles reporting research conducted in Asia Pacific.

TABLE 1: KEY WORDS FOR DATA SEARCH

Management/ Manager	Competency	Competency development/Efforts/ Strategies	Health
Administrator*	Aptitude	Trainings	Hospital
Coordinator*	Achievement	Professional development	Health care
Managers*	Capacity	Upskilling, Capacity building	Health care system
"Department Head"	Proficiency	Staff development	Health sector
Team Leader	Skill	Strategy, Regulations	Health care services
Health Administrator	Competency	Mentoring	Primary Health care
Executives	Professionalism	Facility	Health facilities
		Policy, Ethics	Health service, Health system

A reference list search was conducted from the eligible research studies to identify any other relevant studies.

### **INCLUSION CRITERIA:**

The scoping review included research articles that presented empirical studies and are published in English, in or after year 2000 and in peer-reviewed journals.

### **EXCLUSION CRITERIA:**

The review excluded all types of review articles such as scoping reviews, systematic reviews, rapid reviews, non-research articles, opinion pieces or commentaries and publications in languages other than English.

### **DATA BASE SEARCHING:**

Initially the literature search focused on subject heading databases. This allowed the maximum inclusion of all related articles from these databases. It also helped to find other synonyms of key words from related searches. Then keyword database was explored to narrow the literature search.

Subject heading databases:

1. Medline
2. CINAHL Complete
3. Ovid Emcare

Keyword Databases:

4. Scopus
5. Web of Science

During database searches each of the four key words were searched individually along with identified synonyms (e.g. the management/manager search included all synonyms as: Administrator or coordinator or managers or department head or team leader or health administrator or executives or management). After completion of the search for individual key words along with their synonym, a final search was conducted among identified research studies which included search using "and" for common search between the identified research. For instance, identifying common research studies between 1 and 2 and 3 and 4. For the Scopus database, \* sign was used during keyword search to eliminate the chance of missing any relevant research studies.

### **SCREENING OF RETRIEVED STUDIES:**

The identified research studies were exported to Clarivate's EndNote product and 120 duplicate articles were removed. The remaining 3,761 studies were exported to

Covidence, a web based systematic review production tool for title, abstract and full text screening.

Title screening was conducted initially by the principal author (PP). As a result, 3,145 articles were deemed irrelevant to this study and therefore were not included in further screening. Then abstract screening of 508 articles was conducted independently by two authors (PP & ZL) with each of the articles given either a "yes", "no" or "maybe" on Covidence. Disagreement on whether the articles should be included or excluded were resolved by discussion between PP & ZL. PP performed full text screening on 117 articles. Based on the study's inclusion and exclusion criteria, 22 articles were moved onto the data extraction phase.

### **SELECTION AND EXTRACTION OF DATA**

Twenty-two research articles were found to be eligible for data extraction in order to meet the research objectives. The types of data extracted were study setting, target group/size, study type, study design, aims/objectives, sampling technique and efforts/strategies in HSM workforce development from each study.

### **DATA ANALYSIS**

Data analysis has identified four different types of efforts that has been put in place for development of HMW in the Asia Pacific region: i. Formal education and training; ii. Organisational informal professional development programs; iii. Research process confirming competencies and developing competency frameworks; and iv. Embedded competency assessment.

The review author (PP) synthesised the data from the 22 research articles that best met the topic requirements which were finalised by review author (ZL). The included studies that were evaluated based on the type of efforts implemented to develop HMW in the Asia Pacific region. The first step included an overview of 22 research studies and identifying the findings in each study. The second step led to condensing and summarising of these findings which was followed by a third step of grouping the findings thematically into four different categories.

## **RESULTS**

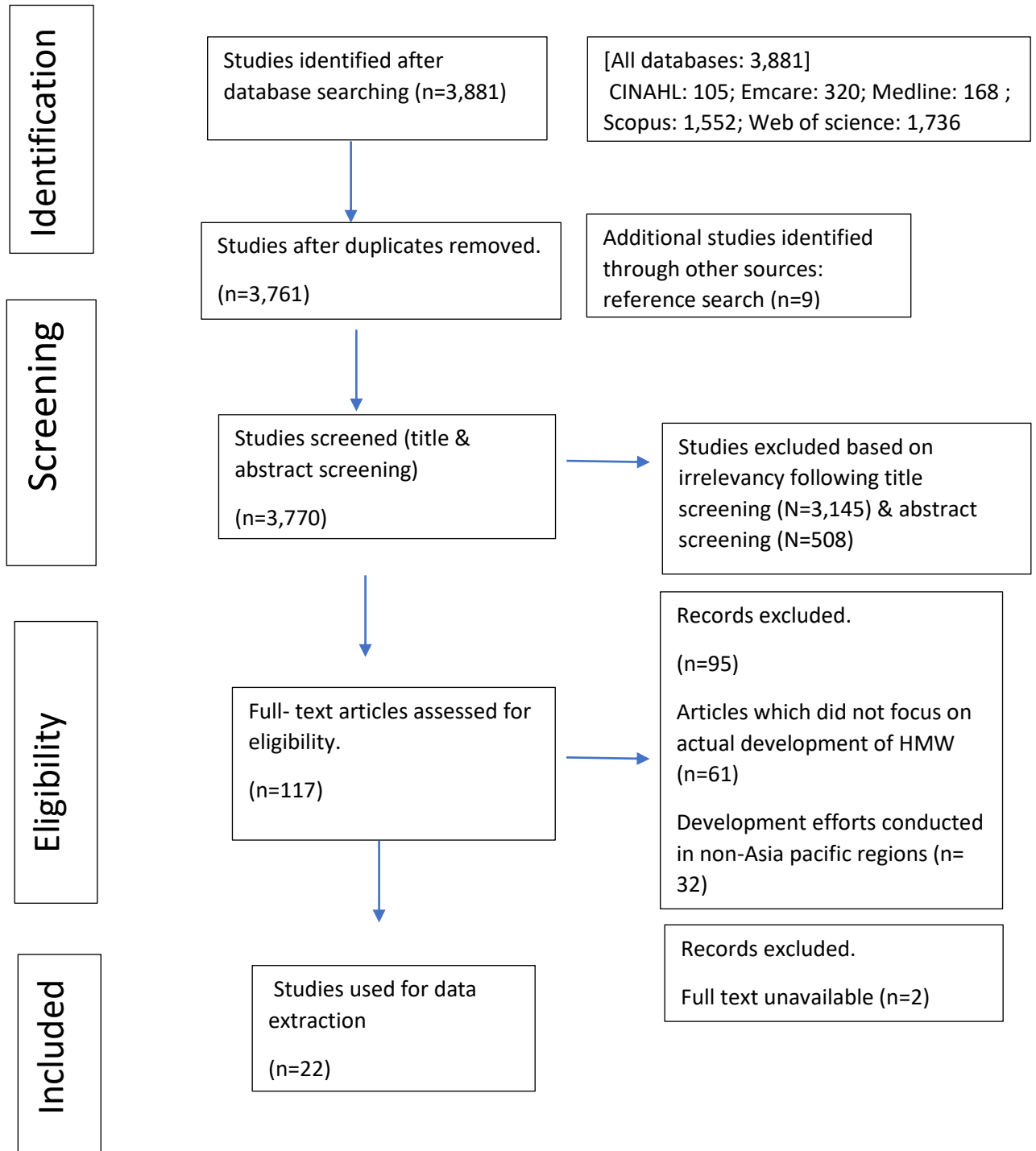
Twenty-two articles that represented studies undertaken in Asia Pacific countries were included in the scoping review. Figure 1 (PRISMA flowchart) shows key steps and results of the review process.

## DISTRIBUTION OF REVIEWED RESEARCH ARTICLES

Nine of the research articles selected originated from Australia while three research articles were from India and

two from Nepal. China, South. Korea, Thailand, Cambodia, Bhutan, Vietnam, Indonesia, and Timor-Leste each generated one research article (Map 1).

FIGURE 1: SCOPING REVIEW PRISMA FLOW DIAGRAM [23]



MAP 1: ASIA-PACIFIC REGION DISPLAYING THE NUMBER OF STUDIES USED IN THIS REVIEW ORIGINATING FROM VARIOUS COUNTRIES (TAKEN FROM WWW.ENGLISH-BLOGS.COM ACCESSED: 19 OCTOBER 2022).



### CHARACTERISTICS OF REVIEW ARTICLES

The characteristics of the review articles are presented in Table 2. Sample size varied with quantitative studies ranging from 44 to 339 participants while qualitative studies sample size ranged from 17 to 300 participants and mixed method sample size ranged from 7 to 891 participants.

**TABLE 2: CHARACTERISTICS OF DEVELOPMENT EFFORTS FOR HMW IN THE ASIA PACIFIC REGION**

Reference	Study Setting	Target Group/Size	Study Type	Study Design	Aims/Objective	Sampling Technique	Summary of Findings
Cashin et al.	Australia: NSW	9 health managers	Mixed method	Maslach Burnout Inventory General Survey	Evaluated the introduction of a 12-month health manager mentoring program within a correctional facility in NSW, Australia	Non-sampling (volunteer participants)	A positive change was observed in the participants based on self-appraisal and peer's appraisal. Supervisees reported negative change on the same tool over the same period. Job satisfaction of the participants decreased, and job stress increased over the period in which the mentoring program was conducted but not to a statistically significant level.
Chadwell et al.	Nepal	103 hospital managers	Quantitative	Survey	Demonstrated the management training needs for hospital managers in Nepal	Purposive sampling	In most hospitals, overall management was provided by doctors. The need for a separate cadre of managers was supported by respondents but most doctors felt the best people to manage hospitals were doctors. Few managers had undergone training to take on management responsibilities. All types of managers, regardless of profession or type of hospital reported a competence gap.
Clarke et al.	Australia: NSW	17 nursing/midwifery unit managers(N/MUM)	Qualitative	Not stated	Evaluated the effect of 'take the lead' ('ttl') program on 17 N/MUM on their professional development components.	Purposive sampling	After the 'ttl' program N/MUM felt more valued, empowered, increment in leadership standards and increased networking opportunities.
Dorji et al.	Bhutan	339 PHC managers	Quantitative	Cross sectional	Identified the required management competencies,	Random sampling	Agencies responsible for health system need to focus more on the

					current competency levels, and strategies for improving the management competencies of Bhutanese PHC managers.		competencies defined by the study to positively influence health leadership and management development interventions.
Duffield et al.	Australia: NSW	18 Nurse unit managers	Qualitative	Delphi Survey	Studied on a master class leadership course for nursing unit managers.	Purposive sampling	The program was able to enhance participants aspects in terms of allowing the expression of opinions, networking, stretching their minds and time to reflect on their own experiences.
Gunawan et al.	Indonesia	300 First line nurse managers (FLNMs)	Qualitative	Not mentioned	Developed the managerial competence scale and psychometrically tested for first-line nurse managers of Indonesia.	Random sampling	The findings of the study demonstrated that the managerial competence scale is valid and reliable as a vehicle for assessment of competence for FLNMs.
Horvath C et al.	Cambodia	20 health managers	Mixed method	Not mentioned	Evaluated the IMPACT Cambodia program and determined the extent to which the program reached its intended outcome of increase management competence of participants.	Purposive sampling	Participant's competency in all management areas was increased. Improvement was observed in leadership and governance.
Howard et al.	Australia	117 senior and middle HSMs	Mixed method	Not mentioned	Validated the management competency assessment tool for HSMs which resulted from the development and validation of the framework, addressed by a previous paper.	Purposive sampling	Both validity and reliability of management competency assessment tool were demonstrated.



Jeon et al.	S.Korea: University Hospital, Seoul	44 Nurse Unit Managers (NUM)	Quantitative	Quasi experimental	Evaluated the ethical leadership, organizational citizenship behaviour and job outcomes of NUM.	Non- sampling (Volunteer participants)	There was improvement in competencies related to ethical leadership of nursing unit managers after the six- month leadership program.
Khadka et al.	Nepal	51 hospital manager/ad ministrator	Mixed method	Cross- sectional	Assessed the managerial competencies of hospital managers of Kathmandu, Nepal	Purposive sampling	There is enormous need for development of lacking managerial competencies among hospital managers/administrators.
Kitreerawu tiwong et al.	Thailand	487 primary care managers	Mixed method	Instrument development model	Developed and examined the psychometric properties of a competency scale for primary care managers in Thailand	Simple random sampling	The developed instrument demonstrated sound psychometric properties and therefore is considered an effective tool for assessment of the primary care manager competencies.
Liang et al.	China	498 senior hospital executives	Mixed method	Cross sectional, descriptive survey	Developed an understanding of the characteristics and training experience of hospital managers in one major Chinese city.	Purposive sampling	The survey confirmed that formal and informal management training amongst participants before commencing their management positions was inadequate.
Liang et al.	Australia	93 mid-level HSM (319 colleagues participated in the 360° assessments.)	Mixed method	Cross sectional, descriptive survey	Conducted a 360° assessment of the competence of Australian HSMs to identify managerial competence levels and training and development needs.	Non- sampling (Volunteer participants)	The study confirmed managerial competence for most of the middle- level HSMs from hospitals and CHS but found competency gaps.
Liang et al.	Australia	64 managers	Mixed method	Not mentioned	Introduced a validated process in management competency identification and development applied in Australia.	Purposive sampling	The framework developed is considered reliable and valid for developing a management competency assessment tool.

Liang et al.	Australia	74 Hospital managers	Mixed method	Exploratory	Confirmed the core competencies required for middle to senior level managers in Victorian public hospitals in both metropolitan and regional/rural areas.	Purposive sampling	The study supports the use of a competency-based educational approach to train and prepare current and future healthcare managers for their roles.
Lopes et al.	Timor-Leste	183 Primary Health Care Managers	Quantitative	Cross sectional survey	Assessed the levels of management competencies of primary health care managers	Stratified random sampling	PHC managers required more professional development programs/trainings in different domains which needs to be in line with health system goals and reinforced by a positive environment.
Prashanth et al.	Tumkur district, Southern India	21 Health Manager	Mixed method (Qualitative and Quantitative)	Not mentioned	Assessed the performance of health managers after periodic contact classes, mentoring visits and assignments to help practical application of knowledge and skills discussed in classroom.	Purposive sampling	A positive change was found after training program in facility near to district headquarters while low performance was observed in remote area far from headquarters.
Sandhu & Liang	India	7 senior managers	Mixed method	Exploratory case study	Assessed the managerial competencies of project managers of a National NGO in India for developing, implementing, and evaluating a new service model effectively.	Purposive sampling	Senior managers clearly demonstrated their understanding of a project's life cycle and were able to detail the key activities and procedures they developed under each phase of the project life cycle. However, they do need training to improve their competency to allow more effective project planning, design, and implementation.

Schultz et al.	Australia: Adelaide Hospital	160 Health care middle managers (HCMM)	Mixed method	Uncontrolled pre-post study design	Evaluated a change leadership development program (leading 4 change) to support HCMM	Non-sampling (Volunteer participants)	Health care middle managers developed leadership capacity for going through period of significant organisational change and enhanced workplace resilience.
Tiwari et al.	India: Madhya Pradesh	114 Health manager	Quantitative	Not mentioned	Assessed the Post Graduate Diploma in Public Health Management (PGDPHM) program to bridge the gap in public health managerial capacity among health professionals.	Purposive sampling	This partnership between academic institutions and health system strengthened the capacities of partner institutions and networks of professionals to take the lead in designing, adapting, and sustaining innovative capacity building measures.
Tuong et al.	Vietnam	891 Hospital managers	Mixed method	Exploratory factor analysis	Developed a leadership and managerial competency framework for public hospital managers in Vietnam.	Non-sampling (Volunteer participants)	The 81 items of leadership and managerial competencies were identified for public hospital managers.
Waters et al.	Australia	Nurse manager (NM)	Mixed method	Descriptive	Determined the participant expectations on mentoring program and outcomes of the pilot program.	Non-sampling (Volunteer participants)	The pilot mentoring program was highly successful to identify and address the needs of NM in professionally or geographically isolated areas.

## HMW DEVELOPMENT EFFORTS IMPLEMENTED IN THE ASIA PACIFIC

Based on the development efforts in the 22 identified articles, four categories of HMW development efforts have emerged. All efforts identified have been grouped into these four different categories thematically as follows:

Formal education and training

Two research studies, one each from Cambodia and India, focused on formal education as the developmental efforts for HMW [11,24]. In Cambodia, formal education was provided through a competency driven curriculum which positively contributed to building leadership and governance of HMW. This also resulted in better health information and human resource system in Cambodia [24]. In India, health managers were provided with the opportunity to pursue post graduate diploma in public health management program. The study reported the improved competencies of managers after completing post graduate diploma in public health management program [11].

### Organisational informal professional development programs

Seven research studies focused on organisational informal professional development training for HMW [10, 19, 25, 26, 27, 28, 29]. These programs included contents such as: development of ethical leadership, workplace resilience and stress management, communication, and relationship management, and leading and managing change. The study conducted in Australia on a change leadership development program designed to support healthcare middle managers through a period of significant organisational change reported that the training participants felt being valued and empowered after participating in the development program [19]. The participants were also motivated to perform their tasks most effectively. Some of these studies also reported positive outcomes of the informal training programs [19, 25, 26, 27, 29]. For instance, in South Korea, the ethical leadership program developed for nurse unit managers has improved their understanding of ethical leadership and creating ethical environment and cultures in hospital [25]. Study also found that the same development program may generate differing outcomes at different settings. For instance, the management development program conducted in Tumkur district in India was not equally effective in urban and rural settings [10].

### Research process confirming competencies and developing competency framework.

Six research studies focused on competency framework development for HMW [1, 2, 9, 21, 30, 31]. These studies confirmed competencies required for HMW and developed frameworks that guided the development of short term and long-term strategies. For instance, the management competencies identified for HSM in the validated MCAP tool included: operations, administration and resource management, evidence informed decision making, demonstrated knowledge of healthcare environment and organisation, interpersonal communication qualities and relationship management, leading people, and enabling and managing change [2]. Another study in Vietnam identified and validated 14 essential competencies for hospital managers in Vietnam [9]. The identified essential competencies in Vietnam had 7 different competencies as compared to the competencies in MCAP i.e., Policy development and implementation, strategy development and orientation, plan making, risk and disaster management, quality management, investigation, and self-management. While the remaining 7 competencies were similar to MCAP 6 competencies. Another study in Indonesia constructed 7 essential competencies for nurse managers [30]. Four of the identified competencies were different from the competencies listed in MCAP (i.e., facilitating spiritual nursing care, self-management, utilizing informatics and applying quality care improvement). While three of the identified competencies in Indonesia were similar to MCAP [2, 30]. Similarly, five of the identified competencies in Indonesia were similar to those identified in Vietnam [9,30].

### Embedded competency assessment

Seven research studies focused on presenting findings of management competency assessment of HMW [5, 6, 7, 12, 15, 16, 17] that identified competency gaps and identified the competency development needs that guided the design of targeted development programs. Competency assessment was conducted via either self-assessment only [5, 6, 12, 15, 16, 17,] or 360-degree process [7]. The findings of competency assessment of health managers in the Asia Pacific region are consistent with the findings of other studies and suggests for the competency development needs of these health managers [6, 12, 15, 16, 17]. However, competency assessment conducted in Australia confirmed managerial competence for the majority of health managers but identified competency gap [7] and it was confirmed that managerial strengths and weakness

varied across management groups in different organisations [7]. The findings also suggested the need of multifaceted development strategies for strengthening the HMW [7].

## GOVERNMENT COLLABORATION WITH ANOTHER ORGANISATION

Collaboration between government and other education, research and healthcare organisations has been an important system level strategy for HMW development. Such collaborations have led to design and development of various formal and informal management development programs for HMW. For instance, In Cambodia, the National Institute of Public health (NIPH), with the approval of the Cambodia Ministry of Health, formed a technical working group including the U.S. Centres for Disease Control and Prevention and the Korea International Cooperation Agency. The working group developed and implemented a six-month management and leadership capacity building program that resulted in the improved management competency amongst health managers [24]. The State Government of Karnataka, India, and a consortium of five non-governmental organisations was established to organise a capacity building programme for health managers in the district. The programme focused on improving the performance of health managers with respect to planning and supervision of health services [10].

## DISCUSSION

Seven out of nine studies included in the review discussed the positive outcomes of the training and development programs [11, 19, 24, 25, 27, 28, 29] indicating the necessity in investing in professional development of HSMs. There is evidence that participatory action research approach [PAR] been successful in building local capacity and enhancing the continuity of interventions [32,33]. This approach may be adapted in Asia Pacific countries for long term and sustainable improvements in program delivery. Only a small amount of management related research has been conducted in the Asia Pacific region as only 22 studies were identified during the data extraction process.

A management development program should be developed and implemented in consideration within an organisational context. There is evidence where management development programs have not produced the same result in different settings or even within the same settings at two different hospitals because of differences in

working environments, governance, management structures, and sometime due to geographical conditions such as rural settings [10, 26].

This supports the pre-existing evidence in other literature that the capacity and management competency building interventions are influenced by contextual factors such as organisation culture, geographical locations and working environment at organisation [1, 7]. This also suggests the importance of an enabling environment and adequate incentives from the state health systems. Thus, to develop the competence of the HMW, it is critical to provide multilevel commitment from both the system and organisational levels to identify and address the bottlenecks related to organisation and other contextual factors.

Evidence has emerged that discusses the importance of embedding management competency assessment into the annual performance review process to provide evidence on the strengths and weaknesses of managers that can guide the setting for a professional development focus for health managers [12, 16, 17]. All seven competency assessment studies confirmed the existence of competency gaps that must be addressed. Considering the lack of formal and informal training broadly available and provided to HSMs, improved investment in developing the capability of health managers at the system and organisational levels is needed. Such investment may not be just in the form of professional development programs, as it may also include confirming competency requirements and developing competency frameworks for HMW. It is essential for establishing clear management competency requirements to guide management position, recruitment, development, and performance management of health managers [16]. The managerial strengths and weakness vary across health service management groups, hence specific and targeted development strategies must be developed [2].

In addition, the partnership between government, healthcare and professional organisations should be strengthened maximising the efforts in HSMs development [10, 11, 24]. Evidence suggests the importance of partnership in attaining the common goals for building capacity of HMW [10, 11, 24]. Academic partnership is an example of the interface between academia and the health system where the common goal for building capacity of health professionals may be achieved. An example of collaborative partnerships between academic

institutions and government could be jointly designing and providing educational degree program for health managers aiming to develop managerial capacities and competencies [11]. Also, collaborations between government and other organisations, such as non-government organisations and international organisations, may be able to achieve the intended outcome of building capacity of HMW. For instance, in Cambodia, the National Institute of Public Health collaborated with the U.S. Centres for Disease Control and Prevention to provide management and leadership trainings to health managers [24]. Improvement in leadership and governance was observed among the participants after the training [24]. Such collaboration may also help to form a technical working group of expertise from diverse regions and knowledge sharing to develop management and leadership capacity building program for HMW.

Healthcare is operating in a resource constraint environment and therefore benefits of any investment should be well demonstrated. Therefore, it is important to incorporate a valid evaluation process in management development programs so that benefits of the programs can be well demonstrated [29]. This will also allow effective learnings for future program improvement. These evaluations need to be conducted by following standard review protocols and using suitable validated tools [26].

### **STRENGTHS AND LIMITATIONS OF THE METHOD**

This review relied upon reported development programs to highlight the development strategies within Asia Pacific nations. To the best of our knowledge, this is the first article to study the development efforts for HMW in Asia Pacific nations overall. This scoping review provides useful information on existing development strategies for health managers throughout the Asia Pacific region along with the type of development program in the specific country. However, the included studies were not evenly distributed as most of the studies were from Australia [1,2,7,19,26,27,28,29,31] and the number of available articles was relatively small in comparison with the number of countries included in the region. The exclusion of grey literature and articles not written in English created possible grounds for oversight.

### **CONCLUSIONS**

The scoping review confirmed four different categories of existing development strategies for HMW in Asia Pacific nations: organisational informal professional development

programs; competency assessment to identify management competency gaps; research process confirming competencies and developing competency framework; and formal education, and training.

Managerial strength and weakness vary across health service management groups thus, specific development programs must be designed to meet the differing competency development needs of health managers. The study reinforces the importance of evaluating the benefits of management development programs to maximise learnings and allow improvements. Government should play a key role in supporting HSM workforce development by setting clear policy direction and strengthening collaboration with healthcare organisations and professional institutions.

### **AUTHOR CONTRIBUTIONS:**

Writing - Original draft preparation PP; writing - Review and editing, PP, ZL, JT. Both ZL and JT provided critical review and extensive editing during the initial development and revision of the paper. All authors provided final approval for publication.

### **FUNDING:**

This research received no external funding.

### **ACKNOWLEDGEMENTS:**

The authors thank Stephen Anderson for help with database searches and PhD fee waiver provided by the College of Public Health, Medical and Veterinary Sciences, James Cook University.

### **CONFLICTS OF INTEREST:**

The authors declare no conflicts of interest.

### **References**

1. Liang Z, Leggat GS, Howard FP, Koh L. What makes a hospital manager competent at the middle and senior levels? *Aust Health Rev.* 2013; 37: 566-573.
2. Liang Z, Howard FP, Leggat S, Bartram T. Development, and validation of health service management competencies. *J Health Organ Manag.* 2018; 32(2):157-175
3. Kantanen K, Kaunonen M, Helminen M, Suominen T. Leadership and management competencies of head nurses and directors of nursing in Finnish social and health care. *J Res Nurs.* 2017; 22(3): 228-244.

4. World Health Organization. Regional Office for South-East Asia. (2008). Health in Asia and the Pacific. [Cited 2023 Dec]. Available from Health in Asia and the Pacific (who.int).
5. Khadka KD, Gurung M, Chaulagain N. Managerial competencies- A survey of hospital managers' working in Kathmandu valley, Nepal. *J Hosp Adm.* 2014, 3 (1), 62-72.
6. Chadwell I, Bhitrakoti R, Khadka R. Measuring management training needs of hospital managers in Nepal. *J Nepal Med Association.* 2012, 52(186): 52-60.
7. Liang Z, Blackstock CF, Howard FP, Briggs SD, Leggat GS, Wollersheim D, Edvardsson D, Rahman A. An evidence-based approach to understanding the competency development needs of the health service management workforce in Australia. *BMC Health Serv Res.* 2018; 18:976.
8. Kantanen K, Kaunonen M, Helminen M, Suominen T. The development and pilot of an instrument for measuring nurse managers leadership and management competencies. *J Res Nurs.* 2015; 20(8): 667-677.
9. Tuong VP, Thanh DN. A leadership and managerial competency framework for public hospital managers in Vietnam. *AIMS Public Health.* 2017; 4(4): 418-429.
10. Prashanth SN, Marchal B, Devadasan N, Kegels G, Criel B. Advancing the application of systems thinking in health: a realist evaluation of a capacity building programme for district managers in Tumkur, India. *Health Res Policy Syst.* 2014; 12:42.
11. Tiwari R, Sharma A, Negandhi H, Zodpey S, Vyas N, Agnani M. Building public health capacity in Madhya Pradesh through academic partnership. *Glob Health Action.* 2014; 7:24839.
12. Dorji K, Tejavataddhana P, Siripornpibul T, Cruickshank M, Briggs D. Leadership and management competencies required for Bhutanese primary health care managers in reforming the district health system. *J Healthc Leadersh;* 2019; 11:13-21.
13. Cathcart E, Greenspan M and Quin M. The making of a nurse manager: The role of experiential learning in leadership development. *J Nurs Manag.* 2010, 18(4):440-7.
14. World health statistics, World Health Organization (WHO) Report [Internet]; 2009; [cited 2022 Aug]. Available from: <http://www.who.int/docs/default-source/gho-d>
15. Lopes GA, Narattharaksa K, Siripornpibul T, Briggs D. An assessment of management competencies for primary health care managers in Timor-Leste. *Int J Health Plann Mgmt.* 2020; 35:520-531.
16. Liang Z, Howard P, Wang J, Xu M, Zhao M. Developing senior hospital managers: does 'one size fit all'? - evidence from the evolving Chinese health system. *BMC Health Serv Res.* 2020; 20:281.
17. Sandhu VM, Liang Z. Competency Assessment of Project managers of a national NGO in India. *J Health Manag,* 2021; 23(3): 558-574.
18. Hulzen VG, Martin N, Depaire B, Souverijns G. Supporting capacity management decisions in healthcare using data-driven process simulation. *J Biomed Inform.* 2022:129.
19. Schultz T, Shoobridge J, Harvey G, Carter L, Kitson A. Building capacity for change: evaluation of an organisation wide leadership development program. *Aust Health Rev.* 2018; 43:335-344.
20. Omar M, Gerein N, Tarin E, Butcher C, Pearson S, Heidari G. *Hum Resour Health,* 2009; 7:20.
21. Kitreerawutiwong K, Sriruecha C, Laohasiriwong W. Development of the competency scale for primary care managers in Thailand: Scale development. *BMC Fam Pract,* 2015;16:174.
22. Gonzalez-Garcia A, Pinto-Carral A, Villorejo SJ, Marques-Sanchez P. Competency model for the middle nurse manager (MCGE-Logistic Level). *Int J Environ Res Public Health.* 2021; 18: 3898.
23. Tricco A, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, Moher D, Peters MDJ, Horsley T, Weeks L, Hempel S, Akl EA, Chang C, McGowan J, Stewart L, Hartling L, Aldcroft A, Wilson MG, Garritty C, Lewin S, Godfey CM, Macdonald MT, Langlois EV, Weiser KS, Moriarty J, Clifford T, Tuncalp O, Straus SE. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med.* 2018; 169 (7):467-473.
24. Horvath C, Hong K, Wheeler P, Ir P, Chhea C, Kinzer HM, Ly V, Willacy E. How management and leadership training can impact a health system: Evaluation of findings from a public health management training program in Cambodia. *Front Public Health.* 2022; 9: 1-10.
25. Jeon HS, Park M, Choi K, Kim KM. An ethical leadership program for nursing unit managers. *Nurse education today.* 2018; 62:30-35.
26. Waters D, Clarke M, Ingall HA, Jones DM. Evaluation of a pilot mentoring programme for nurse managers. *J Adv Nurs,* 2003; 42(5): 516-526.
27. Clarke E, Diers D, Kunisch J, Duffield C, Thomas D, Hawes S, Stasa H, Fry M. Strengthening the nursing and

- midwifery unit manager role: an interim programme evaluation. *J Nurs Manag.* 2012; 20: 120-129.
28. Duffield C. A master class for nursing unit managers: An Australian example. *J Nurs Manag.* 2005, 13: 68-73.
  29. Cashin JA, Newman C. The evaluation of a 12-month health service manager mentoring program in a corrections environment. *J Nurses Staff Dev.* 2010; 26(2): 56-63.
  30. Gunawan J, Aunguroch Y, McDaniel MA. Development and psychometric properties of managerial competence scale for first-line nurse managers in Indonesia. *SAGE Open Nurs.* 2019; 5: 1-12.
  31. Howard FP, Liang Z, Leggat S, Karimi L. Validation of a management competency assessment tool for health service managers. *J Health Organ Manag.* 2018; 32(1): 113-134.
  32. Tetui M, Coe AB, Hurtig AK, Kiracho EE, Kiwanuka SN. Experiences of using a participatory action research approach to strengthen district local capacity in Eastern Uganda. *Global Health Action.* 2017; 10:1346038.
  33. Tetui M, Coe AB, Hurtig AK, Kiracho EE, Kiwanuka SN, Coe AB. Building a competent health manager at district level: a grounded theory study from Eastern Uganda. *BMC Health Services Research.* 2016; 16:665.
  34. Map of Asia-pacific region [Internet]; 2014; [cited 2022 October]. Available from [www.english-blogs.com/wp-content/uploads/2014/05/Asia-Pacific.gif](http://www.english-blogs.com/wp-content/uploads/2014/05/Asia-Pacific.gif).