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Needs and Educational Priorities for Core Nursing Skills in Clinical Practice: An Importance–Urgency Matrix Approach

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Abstract

Purpose: This study aimed to identify and prioritize core nursing skills required for clinical practice education in Cambodia and to inform improvements in competency-based training programs. **Research design, data and methodology:** A descriptive cross-sectional survey was conducted using purposive and snowball sampling. Data were collected from 82 stakeholders, including senior nursing students, practicing nurses, faculty members, and nursing education-related personnel. The survey instrument consisted of 11 nursing skill domains derived from domestic and international protocols. Skills were rated on a five-point Likert scale for importance, urgency, and applicability. Educational priorities were classified using an Importance–Urgency Analysis framework combined with an Eisenhower matrix. **Results:** Overall applicability of core nursing skills was high, but priorities varied across domains. Nutrition nursing, examination and monitoring, emergency nursing, and perioperative nursing were identified as high-priority areas requiring immediate and intensive educational intervention due to high importance and urgency. Other domains showed relatively lower priority, indicating feasibility for phased implementation and field-based learning. **Conclusions:** The findings suggest that current nursing practice education in Cambodia does not adequately reflect clinical demands. Curriculum reform focusing on high-priority skills, expanded simulation-based education, improved training infrastructure, and standardized guidelines is recommended to strengthen nursing capacity and improve quality of care.

Keywords : Core Nursing Skills, Nursing Education, Clinical Practice Training, Educational Priority, Cambodia

JEL Classification Code A10, A19,I14, I24, N35)

1. Introduction

Cambodia experienced prolonged civil conflict during the 1970s, including the period of Khmer Rouge rule, which was characterized by mass killings and the systematic destruction of the education system. As a result, a substantial proportion of intellectuals were killed or displaced, schools were closed, and formal education was severely disrupted. These historical events led to a critical shortage of nursing personnel and long-term interruptions in nursing education and training systems (Sakurai-Doi et al., 2014; Yu, 2008). In addition to these structural challenges, Cambodia continues to face significant public health burdens. Infant and maternal mortality rates remain high, and the prevalence of infectious diseases such as malaria, tuberculosis, and HIV/AIDS is substantial. At the same time, the burden of non-communicable diseases, including diabetes, has increased rapidly in recent years. These trends underscore the urgent need to strengthen the national health system and improve access to high-quality healthcare services (Ministry of Health [MOH], 2013).

To address physician shortages, particularly in rural areas where healthcare resources are limited and unevenly distributed, the Cambodian Ministry of Health introduced a policy to prioritize the deployment of nurses to health centers and health posts nationwide. Despite these efforts, the number of qualified nurses remains insufficient to meet healthcare demands (Kanchanachitra et al., 2011; MOH, 2013). Generally, nurses constitute the largest proportion of the healthcare workforce and are widely recognized as core personnel who deliver more than 80% of direct healthcare services. In addition, nurses are responsible for the management and operation of primary healthcare facilities and provide nursing services in response to population health needs. Through their involvement in interventions for HIV/AIDS, tuberculosis, and chronic diseases, nurses contribute to improving patients' treatment adherence and to the efficient delivery of healthcare services (Purssell, 2014). Countries affected by war or internal conflict often pursue workforce expansion strategies that emphasize the rapid production of healthcare personnel through short-term training programs to support health system reconstruction. Cambodia has similarly relied on short-term nursing education programs since the 1990s, largely supported by international organizations and donor countries, to supply nurses for primary healthcare services (Fujita et al., 2011).

However, this approach has contributed to persistent concerns regarding the quality of nursing education. Nursing education in Cambodia has tended to remain at a basic level, focusing primarily on 28 fundamental nursing skills. In clinical practice, nurses are often limited to non-invasive procedures such as measuring vital signs, while semi-invasive procedures, including intravenous injections, are typically performed in collaboration with physicians. This has resulted in nurses functioning largely as assistants rather than as independent practitioners providing comprehensive nursing care (Sakurai-Doi et al., 2014). Recognizing these challenges, the Cambodian Ministry of Health has expressed concern that the low quality of nursing education may lead to poor-quality nursing services, potentially undermining public trust and satisfaction with the healthcare system as a whole. Consequently, the Ministry has emphasized the need to secure an adequate number of well-qualified nurses through formal nursing education and training programs capable of producing nurses who can deliver high-quality care (MOH, 2011). Adequate nurse staffing is essential for ensuring patient safety, preventing complications, and reducing mortality rates, and evidence suggests that nurses' educational levels are closely associated with clinical outcomes. Accordingly, nursing education in Cambodia requires a balanced approach that simultaneously addresses workforce expansion and quality assurance.

Currently, the density of nurses and midwives in Cambodia is approximately 9.5 per 10,000 population, which is substantially lower than the average of 19 per 10,000 population observed in low- and lower-middle-income countries in the East Asia and Pacific region (World Bank Group, 2020). Nurses and midwives account for approximately 70% of the Cambodian healthcare workforce and primarily serve in primary healthcare facilities (Cho & Yang, 2016). As of 2015, Cambodia had a total of 13 nursing education institutions, and only about 20% of faculty members were reported to hold a bachelor's degree, highlighting the need to strengthen educational capacity (Cho & Yang, 2016). Furthermore, in 2016, Cambodia enacted a health workforce law mandating nurse registration and license renewal, reflecting national efforts to improve nursing workforce management and regulation (World Bank Blogs, 2021).

Against this backdrop, the present study aimed to examine the detailed educational curricula related to core nursing skills in Cambodian nursing education programs and to identify strategies for improving the quality of nursing education and strengthening the capacity of healthcare services.

2. Research Methods and Materials

2.1. Study Design

This study is a descriptive research study to understand the education of core nursing skills among nursing education in Cambodia and to derive directions for improvement.

2.2. Participants

Participants were recruited using a combination of purposive sampling and snowball sampling to capture perspectives from both nursing education and clinical practice settings in Cambodia. With the cooperation of institutional administrators, the research team accessed nursing education institutions and healthcare facilities to recruit eligible participants.

The study sample consisted of key stakeholders involved in nursing education and clinical practice, including nursing students, practicing nurses, faculty members of nursing education institutions, and nursing education officials. A total of 100 questionnaires were distributed for the needs assessment, of which 82 were completed and included in the final analysis.

Nursing students included those aged 19 years or older who were enrolled in nursing colleges in Cambodia, while nurses were defined as registered nurses working in domestic healthcare institutions. In addition, educational personnel with experience in nursing education and clinical training environments were included to capture diverse perspectives on core nursing skill requirements. All participants voluntarily participated after receiving sufficient information about the study purpose and procedures.

2.3. Research Instrument

The questionnaire used in this study was developed to systematically identify priorities among core nursing skills required for nursing practicum education in Cambodia. Survey items were constructed based on domestic and international core nursing skill protocols. Specifically, preliminary items were derived through a systematic literature review and expert consultations, drawing on the Nursing Skills Korea (https://www.els-nursingskills.kr), U.S.-based core nursing skill lists, and textbooks on fundamental nursing skills. Based on this process, a list of core nursing skills across 11 domains—including Basic Nursing Skills, Infection Control & Aseptic Techniques, Medication Administration, Intravenous Therapy & Vascular Access Management, Wound Care & Dressing Techniques, Respiratory Nursing Care, Nutritional Nursing Care, Elimination & Urinary Care, Diagnostic & Monitoring Procedures, Emergency Nursing Care, and Pre & Post-Operative Nursing Care—was used as the research instrument.

The questionnaire was constructed to evaluate importance, urgency, and applicability for each key nursing item. All items were measured using a five-point Likert scale ranging from 1 (“not at all”) to 5 (“very much”). This approach enabled a quantitative assessment of the practical necessity and educational priority of each skill within the Cambodian healthcare context. In addition to the structured items, open-ended questions were included to allow participants to freely suggest additional nursing skills or express needs related to improving nursing practicum education in Cambodia.

In this study, applicability (%) was calculated as the proportion of participants who rated each nursing skill item as 5 on a five-point Likert scale (1 = not at all applicable, 5 = very applicable). The formula used to calculate applicability was as follows:

Applicability (%) = (Number of participants rating the item as 5 / Total number of participants) × 100

In addition, to enhance interpretability and comparability across nursing skill domains, mean scores and standard deviations were calculated and presented for each item and domain.

Content validity was assessed through expert panel review by nursing educators and clinical nursing professionals. In addition, a cognitive review was conducted with two Cambodian nursing students to examine item clarity and semantic comprehensibility.

Internal consistency reliability was evaluated using Cronbach’s alpha. For application in the Cambodian context, the instrument underwent a translation and back-translation process, and cultural and conceptual equivalence was ensured through consensus among three experts in nursing and education. The scale-level content validity index (S-CVI/Ave) was .80, indicating acceptable content validity based on established criteria in the literature.

The questionnaire was distributed to a wide range of stakeholders to capture diverse perspectives on nursing education priorities, including clinical nurses, nursing faculty members, representatives of the Cambodian Nurses Association, health authorities (including physicians), hospital administrators and practitioners, and nursing students. The instrument served as a essential tool for generating evidence to develop of a core nursing skills education program tailored to the Cambodian healthcare environment (see Table 1).

The Cronbach’s alpha coefficient for the overall scale was .85, indicating acceptable internal consistency.

Table 1: List of core nursing skills

1. Basic Nursing Skills
Hand Hygiene
Vital Signs Measurement
Temperature
Pulse
Respiration
Blood Pressure
Oxygen Therapy
Application of a nasal cannula

Oxygen mask application
Patient Positioning & Mobility Assistance
Assisting the patient to sit on the bed, in-bed repositioning, and wheelchair transfer
Fall Prevention Management
Patient Identification and Safety Check
Bed Making & Hygiene Care
Oral Care
Pressure Ulcer Prevention & Care
2. Infection Control & Aseptic Techniques
Hand Disinfection & Infection Control
Aseptic Technique Application
Personal Protective Equipment, PPE
Sterilization & Disinfection
Isolation Precautions
3. Medication Administration
Oral Medication Administration
Intramuscular Injection, IM
Subcutaneous Injection, SC
Intradermal Injection, ID
Intravenous Injection, IV
IV Fluid Therapy
Blood Transfusion Nursing
Inhalation Medication Administration
Ophthalmic Medication Administration
Otic Medication Administration
Nasal Medication Administration
4. Intravenous Therapy & Vascular Access Management
Intravenous Catheter Insertion, IV Line Setting
IV Fluid Management
Central Venous Catheter, CVC Management
Blood Sampling & Phlebotomy
Chemoport Management
5. Wound Care & Dressing Techniques
Wound Cleaning & Dressing Change
Drain Care, JP Drain, Hemovac
Suture & Staple Removal
Burn Care Nursing
6. Respiratory Nursing Care
Oxygen Therapy Application
Suctioning: Oral, Nasopharyngeal, Tracheal Suctioning
Tracheostomy Care
Nebulizer Therapy
7. Nutritional Nursing Care
Enteral Nutrition, NG Tube Feeding, PEG Tube Care
Nasogastric Tube Insertion & Management
Total Parenteral Nutrition, TPN Management
8. Elimination & Urinary Care
Assisting with Elimination
Urinary catheter insertion and management
Indwelling Catheterization & Care
Intermittent Catheterization
Bladder Training
Enema & Rectal Tube Insertion
Enema administration
Assistance with the use of bedpans and urinals
Ostomy Care, Colostomy & Ileostomy Management
9. Diagnostic & Monitoring Procedures
Blood Glucose Monitoring, BGM
Electrocardiogram, ECG/EKG
Pulse Oximetry, SpO2 Monitoring
Arterial Blood Gas Analysis, ABGA
10. Emergency Nursing Care
Cardiopulmonary Resuscitation, CPR
Defibrillator & Automated External Defibrillator, AED
Airway Management & Emergency Oxygen Therapy
Shock Management
Poisoning & Overdose Management
11. Pre & Post-Operative Nursing Care
Preoperative Preparation: Shaving, NPO Check, Consent Check
Postoperative Care: Pain Management, Drain Monitoring

2.4. Data Collection Procedures and Ethical Considerations

All participants were provided with sufficient information regarding the purpose and significance of the study and voluntarily agreed to participate. During the field survey, challenges such as refusal of participation by some healthcare institutions and longer-than-expected survey completion times were encountered. Nevertheless, with the support of local research assistants, data collection was successfully completed.

This study was approved by the Institutional Review Board (IRB) (Approval No. CSIRB–2025006).

2.5. Data Analysis

Collected survey data were analyzed using IBM SPSS Statistics version 25.0, and all statistical tests were conducted at a significance level of .05. Participants' general characteristics and local demands for the development of professional nursing personnel were analyzed using frequencies and percentages. Cross-tabulation analyses were performed to examine differences across regions. Key results were visualized using graphs.

To identify priorities among core nursing skills, an importance–urgency matrix analysis was conducted using importance and urgency scores. The analysis employed a four-quadrant framework adapted from the Eisenhower Matrix, consisting of high importance/high urgency, high importance/low urgency, low importance/high urgency, and low importance/low urgency. Cut-off values for "high" and "low" importance and urgency were determined using mean scores of each dimension. To assess the robustness of the classification, a median-based sensitivity check was also conducted, which showed minimal changes in priority classification. This framework enabled a systematic classification of nursing skills according to whether they require immediate educational intervention, long-term educational planning, or can be learned through on-the-job experience. By applying this approach, educational priorities could be established strategically without overemphasizing short-term demands (see Table 2).

Table 2: Eisenhower Matrix

High Urgency	Quadrant 2 (High Urgency, Low Importance) → Rapid training is required, even if the content volume is limited. • Focus on building fundamental skills • Practice-oriented learning is needed	Quadrant 1 (High Importance, High Urgency) → Immediate and intensive education is required. • Content directly related to life and patient safety • Focused training using simulations or similar methods
Low Urgency	Quadrant 3 (Low Importance, Low Urgency) → Can be excluded from priority education. • Self-directed learning or on-the-job training is sufficient	Quadrant 4 (High Importance, Low Urgency) → Long-term and systematic education is required. • Should be incorporated into the formal curriculum and supplemented through training programs
	Low Importance	**High Importance**

3. Results and Discussion

3.1. Importance–Urgency Analysis of Core Nursing Skills for the Development of Professional Nursing Personnel

3.1.1. General Characteristics of Participants

The gender distribution of the participants showed that 31.7% were male and 68.3% were female, indicating a higher proportion of female respondents. Regarding age distribution, 28.0% of the participants were aged 25 years or younger, 51.2% were aged between 26 and 29 years, and 20.7% were aged 30 years or older (see Table 3).

Table 3: General Characteristics of Participants

(n=82)

Variable		N	%
Gender	male	26	31.7
	female	56	68.3
Age	<=25	23	28.0
	<=26, >=29	42	51.2
	>=30	17	20.7

3.1.2. Importance, Urgency, and Applicability of the 11 Core Nursing Skill Domains

The overall applicability of the 11 core nursing skill domains was 91%, with emergency nursing showing the lowest applicability at 83%.

The importance–urgency matrix analysis results indicated that domains with both high importance and high urgency (Area 6, 7, 9, 10, and 11) were identified as priority areas for education. In contrast, domains with both low importance and low urgency included Area 2, 3, 4, 5, and 8.

The basic nursing skills domain (Area 1) was characterized by high importance but low urgency, suggesting the need for long-term and systematic education. Overall, nutritional nursing, diagnostic and monitoring procedures, emergency nursing, and pre- and postoperative nursing were identified as the highest priority areas for education (see Table 4, Figure 1).

Table 4: Importance, Urgency, and Applicability of the 11 Core Nursing Skill Domains**(n=82)**

Domain	Nursing Skill Domain	Importance	Urgency	Applic-ability (%)
1	Basic Nursing Skills	4.04	3.39	97
2	Infection Control & Aseptic Techniques	3.60	3.32	97
3	Medication Administration	3.86	3.60	95
4	Intravenous Therapy & Vascular Access Management	3.46	3.35	85
5	Wound Care & Dressing Techniques	3.62	3.40	95
6	Respiratory Nursing Care	4.12	3.94	86
7	Nutritional Nursing Care	3.91	3.77	93
8	Elimination & Urinary Care	3.63	3.51	90
9	Diagnostic & Monitoring Procedures	4.06	3.91	88
10	Emergency Nursing Care	4.19	4.24	83
11	Pre & Post-Operative Nursing Care	4.27	3.85	93
Total		**3.89**	**3.66**	**91**

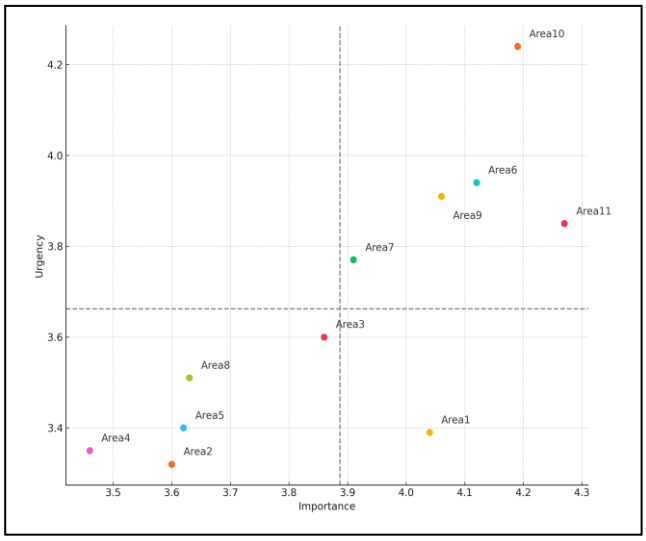

Figure 1: Importance, Urgency, and Applicability of the 11 Core Nursing Skill Domains

3.1.3. Component-Based Analysis

To account for differences in the number of items across the 11 core nursing skill domains, the importance–urgency matrix analysis was conducted after regrouping the domains into five clusters based on similar characteristics and functions (see Table 5).

Table 5: Classification of Core Nursing Skill Domains Based on Importance and Urgency

Group	Category	Constituent Domains
I	Basic Nursing Skills	1
II	Infection Control & Operative Nursing	2, 5, 11
III	Medication Administration & Intravenous Nursing	3, 4
IV	Life-Sustaining Nursing Care	6, 7, 8
V	Clinical Monitoring & Emergency Nursing	9, 10

A. Group I: Basic Nursing Skills

The applicability of the basic nursing skills domain was high at 97%. Among the individual skills, pressure ulcer prevention and management showed the lowest applicability at 80%. The importance–urgency matrix analysis of the 16 basic nursing skill items indicated that skills rated high in both importance and urgency (Items 2, 3, 4, 5, 6, 7, and 8) were classified as requiring priority education. In contrast, Items 13 and 15 were located in Quadrant 2, characterized by high urgency but low importance. Skills that demonstrated both low importance and low urgency and could therefore be excluded from educational priority included Items 9, 10, 11, 12, 14, and 16. Item 1 was identified as having high importance but low urgency, indicating the need for long-term educational planning (see Table 6).

Table 6: Group I: Basic Nursing Skills

(n=82)

Category	Basic Nursing Skills	Importance	Urgency	Applicability (%)
P1	Hand Hygiene	4.28	3.21	100
P2	Vital Signs Measurement	4.94	3.43	98
P3	Temperature	4.09	3.51	100
P4	Pulse	4.87	3.59	100
P5	Respiration	4.85	3.52	100
P6	Blood Pressure	4.95	3.57	100
P7	Oxygen Therapy	4.15	4.12	93
P8	Application of a nasal cannula	4.15	3.59	98
P9	Oxygen mask application	3.51	3.35	98
P10	Patient Positioning & Mobility Assistance	3.54	2.94	100
P11	Assisting the patient to sit on the bed, in-bed repositioning, and wheelchair transfer	3.63	2.96	100
P12	Fall Prevention Management	3.59	3.13	98
P13	Patient Identification and Safety Check	3.48	3.45	100
P14	Bed Making & Hygiene Care	3.41	3.16	100
P15	Oral Care	3.72	3.41	96
P16	Pressure Ulcer Prevention & Care	3.52	3.22	80
Total		**4.04**	**4.04**	**3.39**

Based on the importance–urgency matrix analysis, the most prioritized and focused skills for education within the basic nursing skills domain were oxygen therapy (Item 7), application of oxygen masks (Item 9), position change and

patient transfer (Item 10), and bed care and wheelchair transfer (Item 11) (see Figure 2).

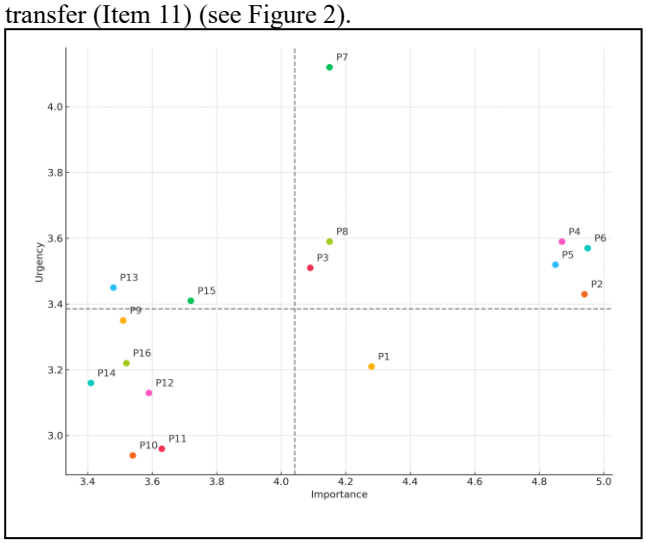

Figure 2: Group I: Basic Nursing Skills

B. Group II: Aseptic Control & Operative Nursing (Domains 2, 5, and 11)

The applicability of the aseptic technique and Operative nursing domain was 96%. Among the individual skills, Items 6, 9, 10, and 11 showed relatively lower applicability at 93%. The importance–urgency matrix analysis of the 11 skills indicated that Items 2, 10, and 11, which were rated high in both importance and urgency, were classified as requiring focused educational priority. In contrast, Item 1 was located in Quadrant 2, characterized by high urgency but low importance, indicating the need for short-term training. Skills that exhibited both low importance and low urgency and were therefore assigned a low educational priority included Items 3, 4, 5, 6, 7, and 8. No skills were identified as having high importance but low urgency, indicating that none required long-term educational planning within this domain(see Table 7).

Table 7: Group Ⅱ: Aseptic Control & Operative Nursing (Domains 2, 5, and 11)

(n=82)

Category	Basic Nursing Skills	Importance	Urgency	Applicability (%)
P1	Hand washing and infection prevention	3.49	3.70	100
P2	Application of aseptic techniques	3.84	3.49	100
P3	Use of personal protective equipment (PPE)	3.61	3.12	95
P4	Sterilization of instruments	3.63	3.37	98
P5	Isolation patient management	3.45	2.95	94
P6	Wound disinfection and dressing replacement	3.54	3.38	93
P7	Drainage management	3.52	3.39	98
P8	Burn care and removal of necrotic tissue	3.67	3.29	99
P9	Burn wound dressing care	3.73	3.54	93
P10	Preoperative patient preparation	4.29	3.88	93
P11	Postoperative patient management	4.24	3.82	93
Total		**3.73**	**3.45**	**96**

Based on the importance–urgency matrix analysis, the highest-priority skills for education within the aseptic technique and surgical nursing domain were application of aseptic techniques (Item 2), burn care nursing (Item 9), preoperative patient preparation (Item 10), and postoperative patient management (Item 11) (see Figure 3).

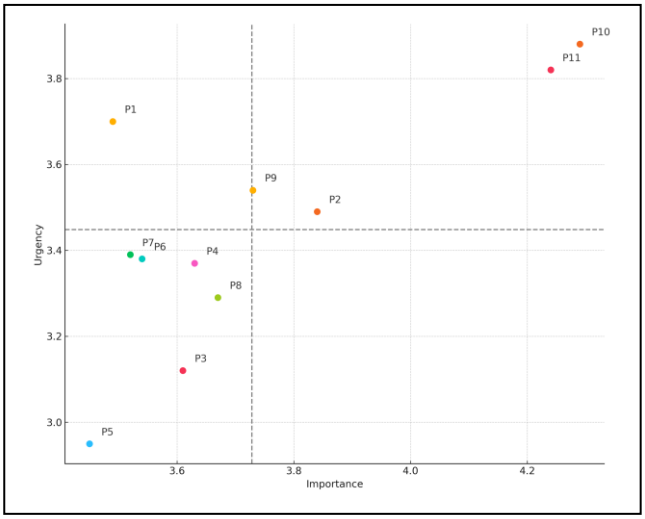

Figure 3: Group Ⅱ: Aseptic Control & Operative Nursing

(Domains 2, 5, and 11)

C. Group III: Medication Administration and Intravenous Nursing (Domains 3 and 4)

The applicability of the medication administration and intravenous nursing domain was 91%. Among the individual skills, chemoport management showed the lowest applicability at 69%. The importance–urgency matrix analysis of the 16 skills indicated that Items 6, 7, 8, 9, and 10 were rated high in both importance and urgency and were therefore classified as requiring immediate and focused educational intervention. No skills were identified in Quadrant 2, which represents high urgency but low importance. Skills that exhibited both low importance and low urgency and were thus assigned a low educational priority included Items 1, 4, 11, 12, 14, and 15. In addition, Items 3 and 13 were classified as having high importance but low urgency, indicating the need for long-term educational planning (see Table 8).

Table 8: Group Ⅲ: Medication Administration and Intravenous Nursing (Domains 3 and 4)

(n=82)

Category	Basic Nursing Skills	Importance	Urgency	Applicability (%)
P1	Oral medication administration	3.39	3.21	98
P2	Intramuscular injection	3.77	3.59	100
P3	Subcutaneous injection	3.78	3.46	99
P4	Intradermal injection	3.54	3.27	100
P5	Intravenous injection	3.87	3.55	99
P6	Fluid therapy	4.37	4.04	99
P7	Blood transfusion nursing	4.29	4.06	94
P8	Inhalation medication administration	4.05	3.90	73
P9	Ophthalmic medication administration	4.02	3.76	96
P10	Otic medication administration	4.04	3.74	91
P11	Topical medication administration	3.34	3.06	93
P12	Peripheral intravenous catheter insertion	3.35	3.39	98
P13	Peripheral intravenous catheter management	3.78	3.23	98
P14	Central venous catheter management	3.32	3.41	71
P15	Blood sampling	3.56	3.46	90
P16	Chemoport management	3.30	3.30	69
Total		**3.74**	**3.53**	**91**

Based on the importance–urgency matrix analysis, the highest-priority skills for education within the medication administration and intravenous nursing domain were fluid therapy (Item 6), blood transfusion nursing (Item 7), inhalation medication administration (Item 8), ophthalmic medication administration (Item 9), and otic medication administration (Item 10) (see Figure 4).

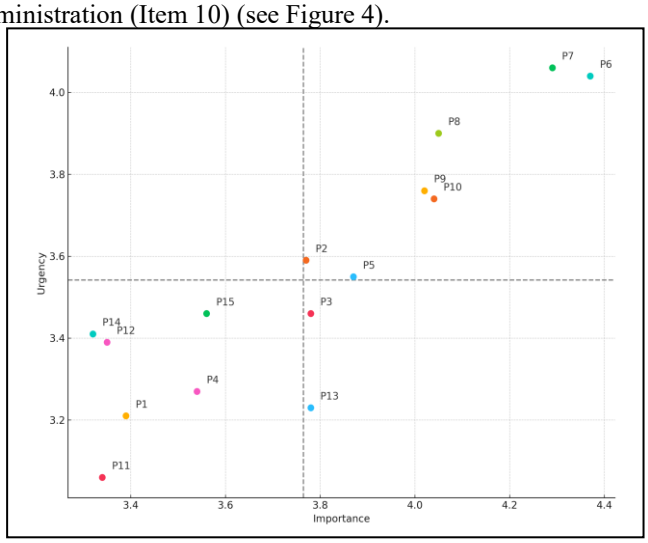

Figure 4: Group Ⅲ: Medication Administration and Intravenous Nursing (Domains 3 and 4)

D. Group IV: Life-Sustaining Nursing Care (Domains 6, 7, and 8)

The applicability of the life-sustaining nursing care domain was 89%. Among the individual skills, nebulizer therapy (Item 4) and ostomy care (Item 16) showed the lowest applicability at 77%. The importance–urgency matrix analysis of the 16 skills indicated that Items 1, 2, 3, 4, 5, 6, 8, 15, and 16 were rated high in both importance and urgency and were therefore classified as requiring immediate and focused educational intervention. No skills were identified in the category characterized by high urgency and low importance. Skills that exhibited both low importance and low urgency and were thus assigned a relatively low educational priority included Items 7, 9, 10, 11, 12, 13, and 14. In addition, no skills were identified as having high importance but low urgency, indicating that none required long-term educational planning within this domain (see Table 9).

Table 9: Group IV: Life-Sustaining Nursing Care (Domains 6, 7, and 8)

(n=82)

Category	Basic Nursing Skills	Importance	Urgency	Applicability (%)
P1	Application of oxygen therapy	4.17	4.05	89
P2	Suction nursing	4.16	3.93	90
P3	Tracheostomy tube management	4.12	3.96	86
P4	Nebulizer therapy	4.02	3.90	77
P5	Enteral nutrition	4.09	3.87	91
P6	Nasogastric tube insertion and management	4.15	4.01	89
P7	Total parenteral nutrition (TPN) management	3.49	3.44	98
P8	Assistance with urination and defecation	4.02	3.90	91
P9	Urinary catheter insertion and management	3.56	3.41	88
P10	Indwelling catheter insertion and management	3.55	3.34	94
P11	Intermittent catheterization	3.38	3.43	91
P12	Enema administration	3.54	3.46	91
P13	Rectal tube insertion	3.49	3.30	91
P14	Colostomy care	3.30	3.18	94
P15	Assistance with the use of bedpans and urinals	3.83	3.77	95
P16	Ostomy care	4.00	3.82	77
Total		**3.80**	**3.67**	**89**

Based on the importance–urgency matrix analysis, the highest-priority skills for education within the life-sustaining nursing care domain were application of oxygen therapy (Item 1), suction nursing (Item 2), tracheostomy tube management (Item 3), nebulizer therapy (Item 4), enteral nutrition (Item 5), nasogastric tube insertion and management (Item 6), assistance with urination and defecation (Item 8), assistance with the use of bedpans and urinals (Item 15), and ostomy care (Item 16). (see Figure 5).

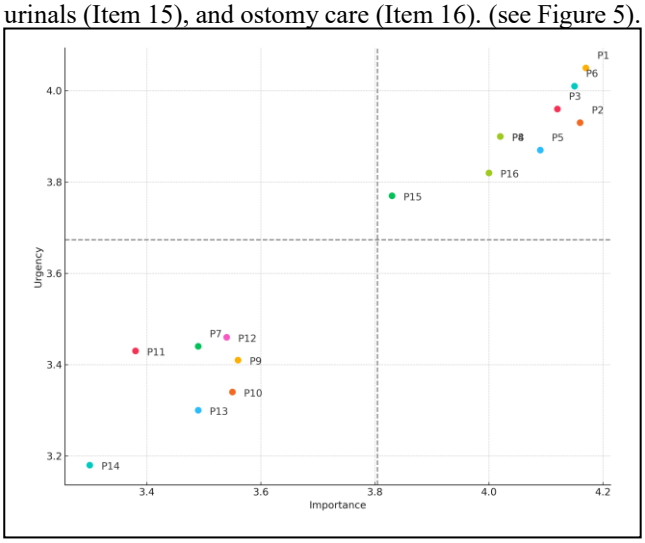

Figure 5: Group IV: Life-Sustaining Nursing Care (Domains 6, 7, and 8)

E. Group V: Clinical Monitoring & Emergency Nursing (Domains 9 and 10)

The applicability of the clinical monitoring and emergency nursing domain was 85%. Among the individual skills, arterial blood gas analysis showed the lowest applicability at 76%. The importance–urgency matrix analysis of the nine skills indicated that Items 5 and 6 were rated high in both importance and urgency and were therefore classified as requiring immediate and focused educational intervention. Skills characterized by high urgency but low importance, suggesting the need for short-term training, included Items 7 and 8. Skills that exhibited both low importance and low urgency and were thus assigned a low educational priority included Items 1, 2, 3, and 4. In contrast, Item 9 was classified as having high importance but low urgency, indicating the need for long-term educational planning(see Table 10).

Table 10: Group V: Clinical Monitoring and Emergency Nursing (Domains 9 and 10)

(n=82)

Category	Basic Nursing Skills	Importance	Urgency	Applicability (%)
P1	Blood glucose measurement	4.07	3.85	84
P2	Electrocardiography (ECG)	4.06	3.90	96
P3	Oxygen saturation	4.10	3.96	96

	measurement			
P4	Arterial blood gas analysis	4.02	3.94	76
P5	Cardiopulmonary resuscitation (CPR)	4.23	4.29	83
P6	Defibrillator use	4.30	4.27	80
P7	Emergency oxygen supply	4.13	4.26	90
P8	Shock patient care	4.10	4.29	79
P9	Poisoned patient care	4.20	4.09	83
Total		**4.13**	**4.09**	**85**

Based on the importance–urgency matrix analysis, the highest-priority skills for education within the clinical monitoring and emergency nursing domain were cardiopulmonary resuscitation (Item 5) and defibrillator use (Item 6) (see Figure 6)

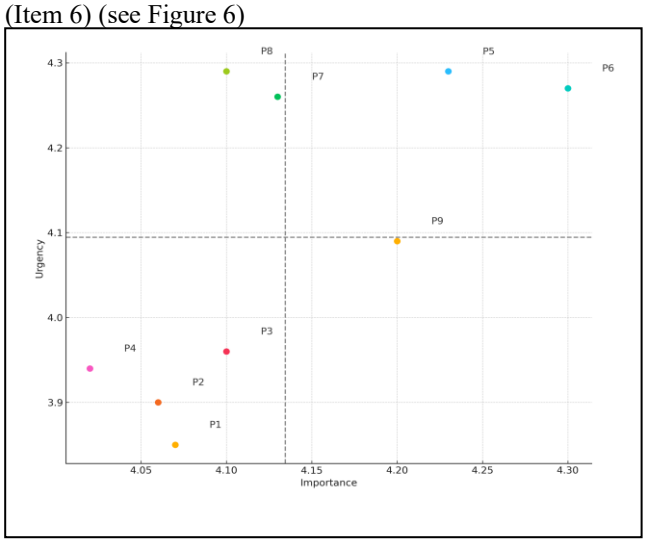

Figure 6: Group V: Clinical Monitoring and Emergency Nursing (Domains 9 and 10)

This study was conducted to identify priorities among core nursing skills required for nursing practicum education in Cambodia and to propose directions for educational development based on these priorities. The findings showed that although the overall applicability of the 11 core nursing skill domains was high, the importance–urgency matrix effectively distinguished educational priorities based on perceived importance and urgency. Notably, nutritional nursing, diagnostic and monitoring procedures, emergency nursing, and pre- and postoperative nursing emerged as high-priority domains, highlighting the need for immediate and focused educational interventions. These findings suggest that there is a strong demand in Cambodian clinical settings for skills directly related to life-saving care, and that existing educational systems may not sufficiently reflect these clinical needs.

The results of this study demonstrate that the project has the potential to make a substantive contribution to strengthening clinical nursing competencies in Cambodia. Specifically, the development and implementation of customized education programs centered on core nursing skills are expected to enable nurses to systematically acquire up-to-date clinical knowledge and skills, thereby substantially enhancing their clinical competence. Such improvements extend beyond technical proficiency and are likely to contribute to improved patient safety and higher quality nursing services.

Furthermore, the development of professional nursing personnel is expected to play an important role in improving access to healthcare services in Cambodia. In particular, in contexts where access to healthcare remains limited—especially in rural areas and among vulnerable populations—the expansion of a skilled nursing workforce may strengthen community-based healthcare delivery systems. Through these mechanisms, the overall health status of the Cambodian population may be improved.

In addition, strengthening the capacity of nursing education institutions and standardizing educational frameworks may have a positive impact on the broader Cambodian health system. Consistent educational standards and structured practicum-based training can enhance the quality of healthcare workforce development and provide a foundation for improving the effectiveness of public health policy implementation. This direction aligns closely with national strategies aimed at strengthening health system capacity.

Finally, the cultivation of professional nursing personnel may generate meaningful socioeconomic benefits through the expansion of employment opportunities. In particular, by providing stable employment for young people and women, may promote greater participation in economic activities and contribute to economic stability at the community level.

In summary, the priorities among core nursing skills identified in this study reflect the practical needs of nursing education in Cambodia. Education programs developed on the basis of these priorities may yield multidimensional benefits, including enhanced clinical competence, improved access to healthcare services, strengthened health system capacity, and job creation. These findings may serve as important evidence to inform future nursing education policy development and the implementation of international cooperation project.

4. Conclusions

This study applied an importance–urgency matrix analysis to identify educational priorities among core nursing skills required for nursing practicum education in

Cambodia. Educational priorities were clearly differentiated across skill domains based on levels of importance and urgency. In particular, nutritional nursing, diagnostic and monitoring procedures, emergency nursing, and pre- and postoperative nursing were identified as domains with both high importance and high urgency, indicating the need for immediate and intensive educational interventions. In contrast, several domains were characterized by relatively low importance and urgency, suggesting that these skills may be addressed through phased and practice-based learning approaches. These findings indicate that the current nursing education system in Cambodia does not sufficiently reflect the demands of clinical practice and highlight the need for educational reform centered on core competencies.

Based on these findings, this study offers the following recommendations. First, practicum-based education programs focusing on core nursing skills with high importance and urgency should be prioritized, and effective instructional strategies such as simulation-based education should be introduced. Second, for skill areas with low applicability, efforts should be made to improve educational environments and expand practicum infrastructure to enhance accessibility to training. Third, strengthening the capacity of nursing education institutions should be pursued through the standardization of curricula, enhancement of faculty competencies, and the establishment of collaborative systems with clinical training institutions. Fourth, as the development of professional nursing personnel may contribute to reducing regional disparities in healthcare and improving access to healthcare services in Cambodia, sustainable government-level support policies are required.

Because participants were recruited using purposive and snowball sampling, the sample may not be fully representative of all nursing students or nursing education settings in Cambodia. Although these sampling methods were appropriate for obtaining information relevant to the study objectives, the possibility of selection bias resulting from overrepresentation of specific institutions or regions cannot be excluded. Therefore, caution is warranted when generalizing the findings of this study to other countries or broader nursing education contexts. Future research should consider employing probability sampling methods or larger and more diverse samples that include a wider range of institutions and regions to enhance generalizability.

Overall, the priorities among core nursing skills identified in this study provide essential foundational evidence for guiding the future direction of nursing education in Cambodia. Educational improvement strategies developed on the basis of these priorities may yield multifaceted benefits, including enhanced clinical competence, improved access to healthcare services, and advancement of the national health system. Future research should employ expanded samples encompassing diverse regions and institutions and conduct longitudinal evaluations to examine the effectiveness and sustainability of educational programs.

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Ethics Approval and Consent to Participate

This study was approved by the Institutional Review Board (IRB) (Approval No. CSIRB–2025006).

References

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101.

Cambodian Council of Nurses. (2017). *List of recognized nursing training institutions in Cambodia*. Retrieved January 22, 2026, from https://cambodiancouncilofnurse.com/wp-content/uploads/2017/03/List-of-recognized-nursing-school_Eng.pdf

Cho, M. S., & Yang, S. J. (2016). Current status and issues of nursing education in Cambodia. *Journal of Korean Public Health Nursing, 30*(2), 288–299.

Embassy of the Republic of Korea in Cambodia. (2024). Retrieved January 22, 2026, from https://overseas.mofa.go.kr/kh-ko/brd/m_3105/view.do?seq=1297319

Joint Ministries of the Government of the Republic of Korea. (2021–2025). *The Third Basic Plan for International Development Cooperation*. Sejong, Republic of Korea.

Kingdom of Cambodia. (2019). *General population census of the Kingdom of Cambodia 2019*. Phnom Penh, Cambodia.

Korea Institute for International Economic Policy. (2023, August 3). *Cambodia's 2023 general election results and political and economic outlook*. Retrieved January 22, 2026, from https://www.kiep.go.kr/gallery.es?act=view&mid=a10102030000&bid=0004&list_no=10889

Korea International Cooperation Agency. (n.d.). *Improving the quality of nursing education through strengthening nursing education capacity in Mongolia*. Retrieved January 22, 2026, from https://www.odakorea.go.kr/kor/bbs/GalleryView

Korean Accreditation Board of Nursing Education. (2024). *Vision of the Korean Accreditation Board of Nursing Education*. Retrieved January 22, 2026, from http://www.kabone.or.kr/kabone/vision.do

Ministry of Health. (2012). *Survey on nursing education in the public sector and nursing services at sites for clinical practice in Cambodia*. Phnom Penh, Cambodia: Ministry of Health & Japan International Cooperation Agency.

Ministry of Health. (2018). *National multisectoral action plan for the prevention and control of noncommunicable diseases 2018–2027*. Royal Government of Cambodia.

Mfondoum, A. H. N., Tchindjang, M., Valery, J., Mfondoum, M., & Makouet, I. (2019). Eisenhower matrix–Saaty AHP: Strong actions prioritization? *IAETSD Journal for Advanced Research in Applied Sciences*. Retrieved January 22, 2026, from https://www.iaetsdjaras.org/gallery/3-february-880.pdf

Morgan, D. L., & Krueger, R. A. (1993). When to use focus groups and why. In D. L. Morgan (Ed.), *Successful focus groups: Advancing the state of the art* (pp. 3–19). Newbury Park, CA: Sage.

Royal Embassy of Cambodia in the Republic of Korea. (2018). *Announcement of Cambodia's National Development Strategy (Rectangular Strategy) 2019–2023*. Retrieved January 22, 2026, from https://overseas.mofa.go.kr/kh-ko/brd/m_3104/view.do?seq=1345597

Sakurai-Doi, Y., Mochizuki, N., Phuong, K., Sung, C., Visoth, P., Sriv, B., Amara, S. R., Murakami, H., Komagata, T., & Fujita, N. (2014). Who provides nursing services in Cambodian hospitals? *International Journal of Nursing Practice, 20*(Suppl. 1), 39–46. https://doi.org/10.1111/ijn.12249

Seo, H. J., & Kim, S. Y. (2018). What is a scoping review? *Health Technology Assessment, 6*(1), 16–21.

United Nations Department of Economic and Social Affairs. (2019). *World population prospects: 2019 revision*. United Nations.

United Nations Development Programme. (2022, August). *Cambodia SDG investor map: Investment opportunity areas report*. UNDP.

World Bank. (2020). *Population, total – Cambodia*. Retrieved January 22, 2026, from https://data.worldbank.org/indicator/SP.POP.TOTL?locations=KH

World Bank. (2022). *Mortality rate, under-5 (per 1,000 live births)*. World Development Indicators. Retrieved January 22, 2026, from https://ko.tradingeconomics.com/

World Bank Blogs. (2021). *Medical education reform will boost Cambodia's health care capacity*. Retrieved January 22, 2026, from https://blogs.worldbank.org/en/eastasiapacific/medical-education-reform-will-boost-cambodias-health-care-capacity

World Health Organization. (2019). *World health statistics 2019*. WHO.