

Nursing for the delivery of essential health interventions

HEALTH AND POVERTY ARE CLOSELY RELATED. IMPROVING HEALTH IS THE fundamental goal of economic development. Nurses and midwives play a major role in the health care system. The main functions of nurses are health promotion, prevention of diseases, nursing therapeutics and rehabilitation. Qualified nurses can contribute to achieving positive health outcomes such as reducing mortality, morbidity and disability, promoting healthy lifestyles, improving maternal and child health, and combating HIV/AIDS, malaria, tuberculosis (TB) and other diseases to achieve the Millennium Development Goals. To attain this, policies are required on an effective nursing workforce, appropriate distribution, deployment and utilization, and strong political leadership and commitment of the government, professional organizations and nurse leaders.

This paper attempts to identify how nurses and midwives can contribute to health care. It reviews existing situation of nursing and midwifery in India regarding nursing services, nursing education, nursing management, evidence base, nursing research and regulation. In view of the experiences of other countries, future scenario of nursing and midwifery in India is suggested. Strategies to meet the challenges and recommendations are outlined for policy-makers and organizations.

Existing situation of nursing and midwifery in India

According to the National Health Policy (NHP) of India 2002, the major health problems are infectious diseases. These diseases can be prevented by mid-level health personnel such as nurses. However, the quality of nursing and midwifery services, education, research, management and regulation is inadequate and the workforce insufficient.

Nursing and Midwifery Services

The contribution of nurses and midwives to the quality and efficiency of health services is insufficient. The nurse to population/patient ratio is low compared to other countries. In 2004, the ratio was 1:2250 in India and 1:100-150 in Europe. This ratio in African countries, Sri Lanka and Thailand is 1:1400, 1:1100 and 1:850, respectively. Many States in India face a shortage of nurses and midwives. Most of the States have no system of re-registration of nurses. As on March 2003, 8,398,620 nurses were registered with the State Nursing Registering Councils. Only 40% of registered nurses are active because there is no system of live register in India, the said figure includes all the nurses who have been trained since 1947. Nursing positions are created due to financial constraints, poor working conditions, low pay-scales, emigration, retirement or death. Further, the optimum nurse to patient ratio recommended by the Staff Inspection Unit (Ministry of Finance) is implemented in only 7 Central Government hospitals due to economic constraints. This means that one nurse has to care for more patients than he/she should.

Nursing and midwifery services do not receive high recognition from the public. The roles and responsibilities of nurses are not clearly defined. As a result, they spend most of their time in non-nursing tasks. In India, the nurse to doctor ratio is almost 1.5:1 while it is 3:1 in developed countries. Most nurses in the service hold a diploma and some hold a Bachelor's degree in nursing and midwifery. There are no specialist nurses in clinical practice. Nurses and midwives do not have much opportunity for

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continuing their education as no such system exists in most hospitals. In the interest of patient care, the NHP 2002 emphasizes the need for an improvement in the ratio of nurses vis-à-vis doctors/beds. It also emphasizes on improving the skill level of nurses and increasing the ratio of degree- holding nurses vis-à-vis diploma-holding nurses. It further recognizes the need for establishing training courses for superspecialty nurses required for tertiary care institutions.

In 2004, the Indian Nursing Council (INC) conducted a workshop to develop a quality assurance (QA) model for the nursing services. It has not yet been implemented. The model focuses on the code of ethics and professional conduct of nurses, nursing standards, nursing process and nursing care plan, patient teaching, management techniques, continuing education and research, and the nurse's role during a disaster. However, the INC does not have control over the nursing services. The quality of service depends on the policy and administration of each hospital. Many private health care institutions provide on-the-job training to their health workers instead of hiring nurses. The INC cannot control such exercise as it is not under the Indian Nursing Council Act.

Working conditions in many hospitals and communities in India are poor and unsafe. Medical equipment and supplies are inadequate. Incentives are limited. Washing and uniform allowances have, however, been revised and increased for nurses in Central Government hospitals. Limited opportunities are available for career advancement due to non-creation and non-existence of clinical specialty nurse and nurse practitioner positions. There is a shortage of nursing personnel owing to non-implementation of recommended nursing staffing norms. Promotions are limited to 2-3 times throughout the career and few supervision posts are offered.

The Trained Nurses' Association of India was established in 1922 by amalgamating the Association of Nursing Superintendents and Trained Nurses' Association and many other associations and unions. It aims to uphold the dignity and honour of the profession, promote cooperation among nurses and provide service for its members.

Community Health Nursing Services

At the community level, there are no positions for nurses. Health care is provided by auxiliary nurse-midwives (ANMs), lady health visitors (LHVs) and female health workers. There are 5,025,030 registered ANMs, and 40,536 registered health visitors and female health workers. Due to the heavy workload, nursing care or home health care cannot be properly provided. Antenatal and delivery care are mostly provided by traditional birth attendants (TBAs), which results in high maternal and infant mortality rates. The maternal mortality varies from 79-135 lakh in better-performing States to 498-707 lakh in low-performing States. The infant mortality rate varies from 14-52 per 1000 live-births in better-performing States to 63-97 per 1000 live-births in low-performing States.

The popular norms for the three-tier rural health care infrastructure were evolved with the objective of comprehensive care. For delivery care, this meant (i) promoting institutional

deliveries; (ii) providing referral facilities close to the community; and (iii) ensuring that bulk of the remaining domiciliary deliveries were conducted by ANMs. However, even after having set up the required number of subcentres, the number of deliveries by ANMs is very low in most States.

In the community setting, it is observed that ANMs/LHVs face problems related to transportation, accommodation, gender-based harassment, lack of security, incentives and career prospects, and inadequate provision for living with their families and educating their children.

Nursing and Midwifery Education

There are 635 nursing schools and 165 nursing colleges in India. Some are attached to medical colleges. The nursing and midwifery education programmes offered are given in Table 1.

The INC has a equivalency system in accepting and recognizing qualifications or certificates awarded by other universities or countries.

The INC has set standards for all educational programmes by identifying the curriculum structure and syllabi, and has a procedure for the inspection of nursing education institutions every 3-5 years. Common problems identified are inadequate number of nurse teachers and nurse teacher specialists, non-adherence to the Council's norm for teacher to student ratio, inadequate infrastructure, facilities and budget, lack of commitment and accountability among educators for clinical supervision and guidance of students, and inadequate and improper clinical facilities for students.

Between September 2004 and October 2004, 61.2% institutions were found unsuitable for teaching. When the Council withdrew the recognition of the institutions, they continued with the permission of the State Nursing Council. There is an overlap in the functioning of the State Nursing Registration Council and the Indian Nursing Council Act with regard to opening of educational institutions of nursing, which has resulted in the mushrooming of such institutions in selected States.

The postgraduate curriculum in nursing is not adequate. Teachers with Master's and Doctoral degrees are few. Research and academic work is scarce. There is no national development plan for nursing and midwifery services to enhance the quality and quantity of nurse educators, students and staff nurses.

Evidence and Nursing and Midwifery Research

The use of evidence and research to improve practice is inadequate. Data and evidence for research are not managed systematically. They are inaccurate and out-of-date.

Nursing research as a subject is taught at the basic and graduate level. There are a number of Indian nursing journals. However, the number of nursing research studies and publications are not many. The reasons for nursing staff not doing research are inability to do research, no idea of research problems, heavy workload, no time, inadequate resources, no support from administrators, and being unaware of its

Table 1**Nursing and midwifery education programmes in India**

Programme	Eligibility	Duration of training (years)	Examination	Registration
ANM	Matriculation	1.5-2	State Nursing Council/DME	State Nursing Council
GNM	10+2 (arts or science)	3-3.5	State Nursing Council/ State examination board/DME	State Nursing Council
BSc (Basic)	10+2 (science)	4	University	State Nursing Council
BSc (post-basic)	10+2, GNM 2 years' experience	2 (regular) 3 (distance)	University	
MSc	BSc	2	University	
Mphil	MSc	1 (full-time) 2 (part-time)	University	
PhD	MSc/MPhil	3-5	University	

ANM: auxiliary nurse-midwife; GNM: graduate nurse-midwife

importance. In addition, funds for research in nursing are insufficient and not provided by the national research fund.

Management of Nursing and Midwifery Services

Nurses and midwives are not well accepted or recognized as leaders or administrators. Nursing management skills, leadership, lobbying and negotiating skills are poor. There are an inadequate number of nurse and midwife leaders at the national and State levels for nursing practice, research, education, management, planning and policy development. Although the nurse is a member of the health team, she/he is never asked to represent the profession in planning and policy formulation for nursing services, education, etc. The nursing chief only looks after the nursing personnel and has no authority to make decisions on pay scales, number of posts, staff development or new interventions. In response to the demand of the Delhi Nurses' Union, the Government of India has sanctioned 5 nursing posts at the national level.

Regulation of Nursing and Midwifery Services

The INC was constituted by the Indian Nursing Council Act, 1947. The Act was amended in 1950 and 1957 to set a uniform standard of regulation and practice for nurses, midwives and health visitors by specifying the minimum requirements for courses in nursing education, institution inspection and accreditation for quality of education, and maintaining registration by compiling data from the State Nursing Councils.

There are 22 State Nursing Councils whose functions are to

inspect and accredit schools of nursing in their State, conduct examinations, prescribe rules of conduct, take disciplinary action and maintain a register of nurses, midwives, ANMs and health visitors in the State. State Nursing Councils ensure that the prescribed syllabi are followed and standards maintained.

Nurses and midwives are required to register with the State Nursing Registration Council after successful completion of nursing courses. The policy of renewal of registration every 3-5 years will be implemented soon and 1-2 continuing education programmes will be required for re-registration.

Enforcement of the provisions of the Indian Nursing Council Act, 1947 is found to be weak as many of the State Nursing Council Acts which were enacted before the Indian Nursing Council Act lack uniformity. The State Nursing Councils are virtually governed within the jurisdiction of the State Act under the Constitution of India. The Indian Nursing Council Act, 1947 being a Central legislation, should have powers overriding the State Nursing Councils Acts, by following the Medical Service Act controlled by the Ministry of Health & Family Welfare. Some of the powers prescribed in the Central Act are similar to those prescribed in some of the State Nursing Council Acts. These are major hindrances to maintaining uniform standards by the INC.

In some States, the examining body and the registering authority are the same. The INC has requested State Governments to create or establish separate examining bodies and registering authorities.

To carry out its functions, the INC works in collaboration with the State Nurse Councils, schools and colleges of nursing and examination boards.

Major issues

According to the existing situation in India, major issues that need to be solved are as follows:

- Insufficient contribution of nurses and midwives to health care development due to
 - few positions for nurses and midwives at the State and national levels
 - inadequate nursing leadership and strategic management
 - inappropriate nurse to population/patient ratio
 - inadequate preparedness of nurses and midwives
 - inadequate recognition of the nurse's status in the health care system
 - limited active involvement of professional organizations.
- Poor quality of nursing and midwifery care due to
 - shortage of nurses and midwives due to
 - (i) inadequate number of nursing positions as per the recommended staffing norms
 - (ii) migration
 - (iii) insufficient number of nurses with Bachelors' and Master's degrees and in clinical specialties.
 - limited competency of nurses and midwives due to
 - (i) too many categories of nurses and midwives with overlapping roles
 - (ii) unclear roles and responsibilities of nurses and midwives
 - (iii) ineffective clinical preparation and supervision during training
 - (iv) inadequate continuing education system
 - (v) limited utilization of evidence and research
 - (vi) insufficient clinical nurse specialists and nurse practitioners
 - (vii) inadequate facilities and opportunities for clinical nurse specialists
 - (viii) non-creation of posts for clinical nurse specialists.
 - inadequate standards and guidelines for nursing practice
 - ineffective regulation of nursing and midwifery practice
 - inadequate infrastructure for nursing and midwifery practice
 - inadequate motivation to provide effective care.
- Poor quality of nursing education to produce qualified graduates for service due to
 - an inadequate national nursing and midwifery education plan and development
 - limited involvement of nurses and midwives at the policy level
 - shortage of qualified nurse educators
 - inadequate infrastructure for nursing education
 - too many categories of nursing and midwifery personnel
 - limited production of academic work and research.
- Limited role and authority of the INC in nursing development due to

- limited roles prescribed in the Indian Nursing Council Act, 1947
- inconsistency in the Indian Nursing Council and State Nursing Council Acts
- insufficient information systems in nursing and midwifery services
- shortage of staff at the INC and State Nursing Councils.

Future of nursing and midwifery in India

Nurses and midwives in India should play a major role in improving the health and quality-of-life of people. The Millennium Development Goals can be achieved with their active work in the community. Infectious diseases such as HIV/AIDS, TB and malaria can be prevented and health promotion strengthened for all ages, especially maternal and child health. There should be a sound research base, strong leadership, policy formulation and unity of professional organizations with the strong commitment and continuous support of policy-makers and the government.

Nurses and midwives should be deployed in the hospital and community as per the recommended staffing norms. Roles, responsibilities and competencies for each category of nurses and midwives are to be clearly defined and implemented. Nurses and midwives should actively provide care based on evidence or research and implement nursing practice standards. They will have to pursue continuing education for self-learning. There should be nurse specialists in various clinical areas. The working conditions for nurses and midwives should be good and their safety should be ensured. Nurses and midwives should be active members of the health care team and work in collaboration to provide holistic and comprehensive care for the patient and family.

The gap between nursing and midwifery staff and nurse educators needs to be bridged. They should work together to improve nursing services and provide a suitable setting for students to practise clinical nursing. Nursing education programmes must be strengthened. Nurses and midwives should have Bachelors' degrees and those with diplomas or certificates must be upgraded. Masters' programmes aimed at producing advanced practice nurses in various clinical areas need to be strengthened and expanded. Doctoral education in nursing must produce good researchers and leaders. Students can learn in an environment equipped with qualified teachers, adequate classrooms, libraries, information technology systems and nursing laboratories. Student-centred learning, self-learning and lifelong education must be emphasized. A quality assurance system for nursing services and education should be implemented. The INC should work with State Nursing Councils to regulate quality effectively. Nurses and midwives will be appreciated by society because of their good work. Nurses and midwives should be involved in policy formulation at the State and national levels. The nursing and midwifery development plan can be integrated in the health care development plan. In addition, the government should recognize the significant role of nurses and midwives in health care and be willing to support and invest heavily in nursing and midwifery.

Meeting the challenges

1. Strengthen involvement of nurses in health and nursing policy formulation and planning

Nurses need to study policy formulation and planning at all levels of education. Techniques for negotiation and lobbying should be taught. Networking within and outside the nursing profession should be built and strengthened. Data and information on nursing and health should be available, updated and accessible online, if possible.

The INC should take the lead and actively participate in health policy formulation, especially policies that will affect and impact the nursing profession. More positions for nurses are needed at the policy-decision level.

The Thailand Nursing Council and nurse leaders participated in the formulation of the National Health Act and National Universal Health Coverage Act. In Canada, the US, the UK, Australia, New Zealand, Thailand, Korea and Norway, nurses and midwives have been either elected or appointed to Parliament. The President and members of the Thailand Nursing Council sit on many national health committees to formulate policies on health care services and reimbursement, quality control of health care services, and health manpower development.

2. Empower nurse leaders

There should be a nursing division led by a nursing director in hospitals. The nurse director has to develop leadership and management skills to enhance the quality of the nursing workforce and nursing care to improve the health of the people and achieve the United Nations' Millennium Development Goals.

3. Establish a quality assurance system for the nursing service

A quality assurance system comprises vision, mission, objectives, strategic and operational plans, nursing service activity, nursing manpower management, roles and responsibilities, nursing standards, nursing indicators, nursing research, nursing administration and management, resource allocation and financial support. The objective of this system is to ensure quality care and nursing outcomes as expected by clients (less suffering, shorter duration of hospital stay, and reduction of health care costs, infection, complications and mortality), and according to professional standards. It also indicates the commitment of the care provider towards providing the best care to consumers.

Successful development and implementation of the system depends on the commitment of nursing leaders, hospital administrators, mutual goal-setting, participation of all personnel in the process, continuous quality improvement and good communication. The role of the INC in regulating nursing practice should be strengthened by amending the Nursing Act to include maintaining of registration of quali-

fied nurses, renewal of licence, and setting up a nursing service and nursing education accrediting system. If possible, a hospital QA system should have nursing as an integral part and involves nurses in a surveyor team.

In Thailand, a hospital is accredited by an autonomous organization. The nursing component is included in the assessment criterion focusing on nursing activity, nurses' notes, participation of nurses in patient care teams, and nursing activity in infection control. Nurses are members of the hospital surveyor team. This accreditation activity stimulates quality improvement.

The Thailand Nursing Council is also developing nursing service standards in addition to nursing care standards for each level of the health services. For example, at the primary care level, the structure standard indicates that there should be two professional nurses to care for 5000 people and at least one of them has to be a nurse practitioner. The outcomes standard gives indicators such as reduction of infection rate, increase of self-care capacity among patients with chronic illness, and enhanced patient satisfaction at the tertiary level as well as no bedsores, shorter length of hospital stay, reduction of urinary tract infections, etc. The process standard indicates that nurses should provide holistic health care using nursing processes by ensuring a professional code of ethics and the patient's sociocultural context.

4. Ensure nursing workforce management as an integral part of human resource planning and health system development

A well-managed nursing workforce requires an effective and efficient nursing workforce policy and planning. As a follow up to the Resolutions WHA 45.5 (1992) and WHA 49.1 (1996), Member States were urged to formulate and implement national strategic plans for development of nursing and midwifery services. Bangladesh [1994], Thailand [1994], Indonesia and Maldives [1997], Myanmar [1999], Sri Lanka and Nepal [2001] have developed national strategic plans for achieving this goal.

An essential component of the nursing and midwifery development plan is manpower planning. Planning can prevent shortage of nurses and increase efficiency in deployment, utilization and development. It is important to include nursing workforce management in human resource and health system development.

5. Enhance nursing autonomy in practice

The roles and responsibilities of nurses are identified by professional organizations, nursing education and nursing services, and they can be adapted and expanded to meet universal nursing standards.

In India, there are a number of care activities that nurses can undertake because of their educational background but cannot carry out because doctors do not delegate responsibility to them. Having nurses take on some of the care that they are trained for independently will be cost-effective. Nurses with a Master's degree in advanced nursing practice can deal

with complex health problems, have a better clinical judgement and can select the proper option for the patient by using evidence-based practice. They can also provide education and consultation.

6. Enforce implementation of recommended norms on nurse to patient ratio

The quality of nursing care also depends on the number and categories of nurses who provide care. In hospitals and community settings, there should be a norm or standard for nurse to patient ratio. Norms recommended by the Health Manpower Planning, Production and Management Committee in 1986 and INC for different wards and outpatient departments should be reviewed. The INC must propose to the government the need for more posts and develop mechanisms to enforce the recommended norms for quality of care.

The Thailand Nursing Council has developed norms for nurse to patient ratio; in medical, surgical, paediatric and gynaecological wards it is 1:4-1:8, in the delivery room or intensive care unit it is 1:2-1:1 and 1:150-1:100 in the outpatient department. The nurse to technical nurse or practical nurse ratio is 1:3-1:2. This is the standard for all hospitals at the three levels of the health care services.

7. Create posts for professional nurses at the community level and strengthen the competency of the auxiliary nurse-midwife

In India, there is a doctor and nurse at the community health centre but at the primary health centre and subcentre, only the female health worker, ANM and LHV are there. One ANM has to take care of 5000 people, which prevents her from providing effective health promotion activities, maternal and child care; conducting home visits and preventing illness. Frequently, babies are delivered by TBAs who do not have formal training, which leads to a high rate of infant and maternal mortality. ANMs sometimes cannot provide comprehensive care or make proper judgement due to their limited training.

To ensure quality of service at all community level, a public health nurse (PHN) should work with an ANM. The ANM should be qualified to provide effective maternal and child care to reduce maternal and infant mortality rates, and be able to replace the TBA. The ANM should be taught more about infectious diseases and their prevention such as HIV/AIDS, TB, malaria and be responsible for midwifery work in the community. A PHN, who is a graduate in nursing, should learn more about epidemiology, health promotion, disease prevention, primary medical care, alternative medicine, health and culture, and community nursing. Community nursing should include community assessment, family health care, school health, home health and long-term care.

The capacity of PHNs and ANMs should be strengthened so that they can provide health information and education, which are important means to improve the health behaviour of individuals, family and the community. The community

has an equal right to receive quality and accessible care. Community health care workers must understand the community and work as a partner.

To ensure quality of care, the subcentre, primary health centre, community health centre and district should have the infrastructure given in Table 2.

8. Produce advanced practice nurses

Advanced practice nurses (APNs) are prepared at the Master's level. An APN can be categorized into a clinical nurse specialist (CNS), nurse practitioner (NP), nurse anaesthetist and midwife. The roles of the APN are clinician expert, educator, researcher, consultant and manager. APNs have the competency of clinical judgement, leadership skills, are an agent of change, and help in collaboration and communication.

In the United States, it has been found that the APN can make an early diagnosis so that the patient receives proper treatment in time, with a shorter length of hospital stay, reduced complications and high patient satisfaction. In Australia, NPs are required to work at the community level as case managers and may have an independent practice as well. In Australia and New Zealand, there are midwives whose education is at the Master's level. In Thailand 30 years ago, the Master's programme in Nursing aimed to produce nurse educators and nurse administrators, and later nurse specialists.

Table 2

Infrastructure required at various levels of the health care services

Subcentre population 5000	<ul style="list-style-type: none"> · To be manned by 2 ANMs with 2 years' training as per the revised syllabus · male health worker and one PHN (PHN-Graduate nurse/GNM + DPHN) · Strengthening the infra structural facilities
PHC 30,000 population	<ul style="list-style-type: none"> · One PHN practitioner (with additional training) and one PHN supervisor to effectively supervise all MCH and FW services · 4 staff nurses for 24 hours' service
CHC 1,00,000 population	<ul style="list-style-type: none"> · 14 staff nurses · 3 PHN supervisors · 1 PHN practitioner · 1 independent midwifery practitioner
District level	<ul style="list-style-type: none"> · Strengthen the institution of the DPHN officer to supervise and monitor the nursing and midwifery system · 2 PHN officers

ANM: auxiliary nurse-midwife; PHN: public health nurse; DPHN: district public health nurse; MCH: maternal and child health; FW: family welfare; PHC: primary health centre; CHC: community health centre.

To expand the role of nurses in India, APN programmes should be established and should be included in manpower planning. The scope of practice should be clearly identified by the INC.

9. Ensure appropriate facilities and adequate medical equipment and supplies

Facilities, medical equipment and supply form the infrastructure required for providing health service. The health care facility should have a standard for rooms and space for out-patient departments and inpatient wards, and a standard for essential medical equipment and supplies. Good environmental sanitation and waste management can reduce the outbreak of infectious diseases such as hepatitis B and C, and reduce injuries and health risks such as needlestick injury. Adequate medical equipment and supplies provide the patient with proper treatment and care, reduce nursing time and the rate of infections. However, there should be a good maintenance and control system.

The National Infection Control Committee of Thailand sets a minimum standard for health care facilities such as room, sink, isolation room, incinerator room to prevent infection.

10. Promote evidence-based practice and nursing research

Establishment of policies on the use of evidence in practice is required. Nurses with a Master's degree should be encouraged to provide evidence, read nursing research and use evidence to improve or change nursing practices. An academic atmosphere should be created in the workplace. An information system and library should be provided. Multidisciplinary research should be encouraged. At the hospital, there should be a person who is responsible for nursing research activity including fund seeking for research and building of research network.

Nurse educators should develop a short-course training on evidence-base and research or to supervise research activity. Resources such as journals and books can be shared. Joint research between nurse educators and clinical staff should be encouraged to strengthen the capacity of both groups and improve education and practice. The INC can be a part of nursing research development.

The INC should set nursing research priorities in collaboration with nursing and non-nursing organizations to provide research funds and promote nursing activities for policy formulation. Establishment of a nursing research information system is encouraged to monitor research work, areas of research and researchers. Dissemination of nursing research and models for best practices should be established.

11. Establish a continuing nursing education system

Continuing education is an informal study or activity to gain knowledge and learn about new technology. Lifelong edu-

cation is essential for self-development, knowledge-building and learning. In the US as well as in Thailand, nurses are required to have continuing education credits for renewal of their licences.

Continuing education stimulates nurses to keep up with new knowledge and technology, to increase their skills and competency, and to be able to contribute to the health care team. The nursing service department or hospital should formulate a policy on staff development and set aside a budget to strengthen their competency in providing quality nursing care. This is an incentive for nurses.

The existing continuing nursing education programmes should be strengthened or new units established. The appointment of responsible persons for continuing education activity is needed. Continuing education programmes should get approval from the INC.

12. Strengthen payment scales, incentive systems and working conditions

Emigration of nurses has been a critical issue in recent years in many countries including India, because developed countries faced with nursing shortages import skilled nurses from developing countries by offering higher salaries. In addition, there is evidence of nurses resigning from the workforce. Both events affect the number of nursing personnel, which is already inadequate. A shortage of nurses and understaffing have been linked to many negative consequences including increased incidence of cross-infection rates, accidents, injuries and poor delivery of services.

Factors encouraging Caribbean nurses to emigrate were financial, poor working conditions, lack of opportunities for professional development, non-involvement in decision-making and lack of support from supervisors. Therefore, good payment and incentive systems, and better working conditions should be established.

The payment scales of nurses in many countries are low compared to other health care workers. Payments should reflect education, type of work, roles and responsibilities, and workload. A nurse's job requires good knowledge, skills, hard work and commitment. In India, the payment scale was adjusted in 1996 but is still low compared to other professions; it should be increased.

An incentive system for nurses could include allowances, uniform, housing, reimbursement for health care services, extra payment for working in the evening and night shifts or overtime, or working at remote or unsafe areas, and opportunities for continuing education. Transportation and safe housing for nurses who work in the community or remote areas should be provided for the convenience and safety of home care service.

Recognition should be given to good workers at the institutional, local and national levels. Opportunities to obtain a higher degree, short-course training or to attend nursing conferences or workshops should be given to each nurse at least once a year for self-improvement and career advancement. Potential nurses should be encouraged to study for a higher

degree and take study leave with pay. Career ladders for promotion of nurses should be established at the national level. Therefore, each nursing service must have a human resource development plan and implement it effectively.

Good working conditions including adequate and appropriate working facilities, cleanliness and safety can also facilitate productive work and the quality-of-life of nurses.

13. Ensure quality of nursing education by strengthening nursing programmes, increasing qualified nurse educators and allocating appropriate resources to maximize efficiency and effectiveness

Education is a key factor for human resource development. With good education, people can learn and earn money. Education programmes should be reviewed intensively and revised. There should be only 2 levels of nurses, first, a professional nurse who studies for four years in the Bachelor of Science programme in nursing offered at the university level. The admission criterion is 12 years' schooling. Second, an auxiliary nurse who studies for 2 years in the certificate Auxiliary Nursing programme offered at the school of nursing. There should be a continuation Bachelor of Nursing Science so that those from diploma school can upgrade their qualification. Auxiliary nurses should be able to continue their studies in the Bachelor of Nursing Science as well. The Master of Science programme in nursing should focus on advanced nursing practice.

The INC has set standards and syllabi for all nursing programmes. However, the roles and responsibilities of nurses at each level should be clearly defined, and the curriculum structure and training experience may have to be revised. Inspections for nursing education institutions are being carried out by the INC. A workshop for inspectors should be held to discuss common issues in nursing education, review the inspection process and revise the inspection criteria and guidelines. The Thailand Nursing Council accredits nursing education every 1-4 years using criteria similar to the quality criteria used by the QA system of higher education. The quality components are (i) vision, mission, objective, strategic and operational plan; (ii) teaching, learning including educators, teaching learning activity, evaluation method; (iii) student development including financial support, student activities, alumni; (iv) research including a number of projects, grants, publications, utilization; (v) community service including projects, outcome; (vi) cultural and environmental reservation; (vii) finance and budgeting; (viii) administration including leadership, supportive staff, management system; and (ix) QA system.

The quality of education depends on the quality of the educators. The teacher for the BSc programme in nursing should be at least a Master's degree holder and have teaching experience as prescribed by the INC. The teacher at the graduate level should do research and publish at least one article every two years. Educators should coordinate closely with the nursing staff in hospitals to achieve education that is relevant to the needs of the service. Educators should collabo-

rate with the nursing service in research and nursing service development. The teaching-learning activity should emphasize participatory learning and cultivation of lifelong education. Infrastructural needs such as a library, information technology system and nursing laboratory should be of good quality. In addition to learning activity in the classroom, students should participate in extracurricular activities such as sports, music, student clubs, social work and community development projects. The curriculum should be revised regularly, and alumni and stakeholders should be involved in the process so that the curriculum meets the demands of society.

A nursing development plan should be developed at each nursing institution and at the national level. Effective nursing education management requires planning to develop a group of nursing education leaders with the involvement of policy-makers.

14. Expand the role and authority of the Indian Nursing Council on Nursing development by revision of the Act, Restructuring and Networking

To maintain control of the quality of practice, the Indian Nursing Council Act and regulation may be reviewed and revised. Standards of implementation should be enforced. Control over the State Nursing Councils should be considered and a clear line of command initiated. Networking with other nursing professionals is necessary and should be strengthened to create unity and power for nursing development. Strategies should be developed to work with the Ministry of Health & Family Welfare, Division of Nursing Service or other organizations both within and outside the country to improve the quality of nursing and of nurses themselves.

Recommendations

Policy level

1. Manpower planning and development for nursing must be an integral part of human resource planning of the health system and should involve nursing experts and stakeholders.
2. A study on nursing manpower should be carried out to support health manpower planning and development. This would include projections on need, production, deployment and utilization to respond to the required changes in health care reforms.
3. Adequate positions must be created for nurses working in hospitals and the community to facilitate population coverage, accessibility and quality care.
4. Budget allocation should be done for human resource development, research and infrastructure.
5. Pay scales, working conditions and incentive systems should be improved
6. A policy on QA system for health care should be established and implemented.

Nursing education

1. Planning and development for nursing education must be done at the national level. It should involve the nursing, professional organizations and stakeholders.
2. A collaborative research network should be established to strengthen research in nursing.
3. The nursing curriculum at all levels should be reviewed and revised based on nursing competencies.
4. Nursing education should be upgraded to BSc, MSc and PhD levels.
5. The qualifications of the teaching faculty should be strengthened, and facilities and equipment provided to facilitate quality nursing education.
6. Clinical practice and supervision should be strengthened.
7. Nurses should be empowered so that they can be involved in policy decisions by enhancing leadership, communication and public speaking skills.
8. There should be conformity of nursing education standards with QA systems.
9. APN programmes should be created to train nurse specialists.
10. Creative, critical thinking and innovation in education and practice must be encouraged.

Nursing service

1. Identify clearly the roles and responsibilities of nurses at each level.
2. Establish a QA system for the nursing service and ensure implementation of care standards and norms.
3. Create the post of Advanced Nurse Practitioner.
4. Establish networking among nursing directors and educators to develop and implement nursing service planning and development.
5. Strengthen independent nurses' role in the health care service.
6. Demonstrate to the public the quality of nursing services at all levels.
7. Enhance continuing education for nurses to improve quality care.
8. Plan to budget for appropriate equipment and facilities.
9. Utilize research findings and evidence-based nursing practice.
10. Establish training programmes for independent nurse practitioners.
11. Create positions for independent nurse practitioners.
12. Submit a proposal to request for the improvement of working conditions, pay scales and incentives.
13. Improve leadership and management skills of nurses by

continuing education, training or direct experience and a mentor system.

Community health nursing

The NHP 2002 states that public health delivery centres need to make a beginning by increasing the number of nursing personnel. Therefore, to overcome the shortages and as per NHP 2002 plans, there is a need to modify nursing staffing norms to provide essential health interventions to the community health nursing services at various levels.

Professional organizations and regulation

1. Establish a system for renewal of licenses.
2. Amend the Indian Nursing Council Act, 1947 for autonomy of functioning so that the INC can enforce the standards for regulating nursing education and service..
3. Develop a comprehensive information system on nursing and midwifery in the areas of education, service, clinical practice and management of workforce.
4. Conduct an assessment of the nursing and midwifery manpower according to the need for education and service.
5. Develop an in-service education centre for nursing.
6. Ensure active participation of nurses/midwives in multidisciplinary teams to advocate health regulation.
7. Increase awareness among nurses and midwives on councils and regulations.
8. Strengthen the infrastructure and manpower in the INC, i.e. create positions of Joint Secretary and Deputy Secretary (Nursing).
9. Create positions of Nurse Registrar and Deputy Nurse Registrar in the State Nursing Councils.

Conclusion

Nurses and midwives can make major contributions to health care development and achieve the Millennium Development Goals only if there is strong support at the policy level to ensure policy implementation. Strong commitment and close collaboration between professional organizations, nursing service institutes and educational institutes are needed in planning, implementation and evaluation of nursing workforce management. Maximal use of resources within the country is essential. Best practices from each State need to be shared, learned and recognized. In addition, nurses and midwives should commit themselves to continuously improve the quality of nursing services by strengthening their competencies.

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