

Current and Projected Nursing Manpower in Jordan 2003

أعضاء لجنة الاحتياجات الحالية والمستقبلية للقوى البشرية:

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جزيل الشكر إلى السكرتيرة نور عمايرة من المجلس التمريضي الأردني على عملها الدؤوب الذي ساهم في إخراج هذا التقرير إلى حيز الوجود.



Current and Projected Nursing Manpower in Jordan

Introduction

This study was conducted by a taskforce formed by Jordanian Nursing Council (JNC). The study provided information about nursing workforce currently employed in Jordan. The projected demand for nurses for the coming five years was assessed.

According to the estimates about the national nursing staffing levels, Jordan still in need for more nurses. In accordance with information provided by Ministry of Health, statistics indicated that the ratio of personnel who are working in nursing to population is 29.5/ 10000 only. This figure is close to other Arab countries such Egypt, Syria, and Bahrain. However, when this figure is compared to those in the developed countries, the ratio is very low.¹

The population in Jordan is increasing; it is estimated that the population will be 5,750,000 by 2005 and 6,385, 000 by 2010.² Thus, Jordanian decision-makers have to focus on strategic planning of nursing manpower in accordance to the new emerging challenges such as: the increased demand, patients' needs, and requirement for providing high quality health services. Beyond these variables, there are the challenges of maintaining excellence, and being innovative and responsive to the frequent changes in health care industry such as the introduction of new technology.

The collection of reliable data is an essential step in any program that documents the current situation, and develops human resources according to projected demand. Such a program should incorporate three broad functional areas:

- 1- Policy and planning which addresses the health needs of the population, and in turn assesses the needed financial and human resources.
- 2- Production which refers to all aspects of the basic and post basic education and training of health personnel.
- 3- Leadership and management which include the mobilization, motivation, professional growth, and fulfillment of human beings' needs in and through work. The scope of leadership and management covers all aspects related to employment, effective use of resources and personnel, productivity, and motivation of all categories of health workers.

Planning of Human Resources

Human resources are one of the most important elements of any health care system. Any attempt to improve the health status of a given population must include a careful review of human manpower. That is, a valid forecast of what knowledge, skills, and attitudes is required to meet the present and future organizational objectives. Planning of human resources is concerned with ensuring the right numbers of people with the right qualifications for the right jobs at the right time. ¹

Process of Planning of Human Resources

The process of planning of human resources implies a series of deliberate actions, which include:

- 1- Initiation of the planning cycle that is resulted from the identification of a problem or a need to document the present status of human resources within the health system;
- 2- Situation analysis and the development of a study design;
- 3- Data collection, analysis, and the identification of requirements;

- 4- Formulation of policies and plans;
- 5- Communication of the plans with all interested parties;
- 6- Implementation of the plans; and
- 7- Evaluation of the policies and actions to determine their combined impacts on the health care system.

The Purposes of the Study

This study aimed at evaluating the existing nursing manpower in Jordan, and estimating the numbers, qualifications, and specialties of the current nurses and the needed nurses for the coming five years. Such assessment of nursing workforce and projected demand require accurate statistics that include but are not limited to the number of population, beds at hospitals, and nurse-patient ratio.

In this study, nurses were surveyed according to their gender, qualifications, geographical regions, type of institutions, specialties, and place of work. A number of indicators/ ratios were estimated, which include male nurses: female nurses, nurse: patient, nurse: bed, and nurse: population.

Significance of the Study

This is the first study that aimed to establish a comprehensive database about nursing workforce in Jordan. Using the results of this study, the Jordanian Nursing Council (JNC) and other health care sectors will have the opportunity to utilize efficiently and cost effectively the available nursing resources. Moreover, this study will help to analyze and estimate the current and future needs for nurses as differentiated by numbers, qualifications, and specialties. This forecast will help in providing safe and standardized nursing services; it is well known that the shortage of qualified nurses results in low quality health care that is provided to clients and

patients. Furthermore, the current study will shed the light on male/female nurse ration; there is a need to decide this ration based on the needs the society. The study will also provide information regarding turnover rates; which is reported to be 40% in some health care institutions (informal contacts with some nurse executives, 2005). Assessing the turnover rate will help to set strategic plans that would enhance the stability of manpower and minimize the drain out of nurses.

Background

Health Care System in Jordan

Jordan is a small Middle East country with an area of 91,000 square kilometers and a population of 5,32 million.³ The country is highly urbanized where 78% of population is living in urban settlements. Adult male literacy rate is around 95% as compared to 85% in females. In 2002, the growth population rate was 2.8 and the average life expectancy was 71.5 years. The total expenditure on health had been estimated to be 550 millions JD.⁴ The health infrastructure in Jordan is on continuous development. The main health sectors in Jordan are: Ministry of Health (MOH), Royal Medical Services (RMS) (military services), teaching hospitals, private hospitals, NGO's, and Ministry of Education (MOE).

There are tremendous development in health care services. For example, the number of hospitals was 97 in 2003 as compared to 91 in 2001. The number of hospital beds increased from 8982 beds in 2001 to 9743 in 2003. The hospital utilization consisted of 20 beds /1000 population. The average occupancy rate of hospital beds is 63.1%.⁴

In term of the distribution of health care services, about 49% of outpatient visits occur at the facilities of Ministry of Health, 40% at private facilities, and 11%

divided between Royal Medical Services, Jordan University Hospitals, UNRWA, and NGO's.⁵

Nurses are the primary surveillance system of the hospitals. Regarding the distribution of health staff per population, the last figures indicate a number of 22.6 physicians/ 10000, and of only 29.5 nursing personnel/10000 pop.⁴ These figures indicate a shortage in health care professionals especially the nurses.

Information about Nursing in Jordan

Nursing in Jordan has developed rapidly in the recent years. This development was aided by many factors such as: doctoral prepared nurses, proliferation of baccalaureate programs, definition of the levels of nursing education, and the emergence of strong leadership. These achievements were pursued by the unity of committed nurses in the absence of a nursing regulatory body. The perseverance of the group, the strong politics, and the support of the public led to the foundation of the Jordanian Nursing Council (JNC) in 2002.²

According to the statistics of Ministry of Health (2003),⁴ there is 8700 Registered Nurses (RNs) in Jordan. Currently, there are 8 schools of nursing that graduate professional nurses with Bachelor's degree in Nursing Science (BSc). Also, there are 24 schools which provide Associate Degree in Nursing (AD). In 2003, there were 590 graduate nurses with Bachelor's degree and 738 nursing with Associate Degree. There are increasing bridging programs for personnel holding diploma, ADs, and the midwifery. In general, the ADs are medically-oriented, has some problems such as the absent of adequate numbers of faculty members or inappropriate qualifications such as having medical doctors as deans.

Not being limited to the BSc and AD, there are two universities that provide Master's Degree in Nursing Science (MSc); Jordan University (JU) and Jordan University of Science and Technology (JUST).

In Jordan, in most institutions, nurses lack: governance, authority and autonomy, and the support of others. Nurses have unclear organizational structure and unclear job description. In some institutions, especially in the private sector, nurses lack the feeling of job security. Although they represent two thirds of the employees in a health facility, nurses have less support to continue their studies or to enroll in courses inside and outside the country than other health care professionals. Nurses have no incentives or clinical ladders that promote them and recognize their expertise. Thus, nurses have no recognized specialization.

In addition, there are great variations in salaries of nurses (salaries in the military hospitals, universities, and university-affiliated hospitals are higher than those at the private hospitals or MOH). In many health care settings, standards are not incorporated into workplace. Occupational safety is not implemented in some institutions; many times nurses carry out hazardous jobs without protection. Also, fringe benefits are not available in most of health care institutions; for example health insurance is not available to some nurses especially in the private sector. Nurses have long hours of work in some organizations. Nursing ratios to patients or beds are not adequate. The turnover rate is high among the majority of health care professionals, particularly the nurses. It is reported that the turnover rate is high in the Ministry of Health, university hospitals, and private hospitals.

Methodology

This study was descriptive using a survey method.

Sample, Settings, and Data Collection

A special form was prepared by some professionals at the JNC and revised by the taskforce committee. In 2003, the form was distributed to all health care institutions including governmental, educational, private, and other related sectors. An example of these sectors were MOH, RMS, private hospitals, university- affiliated hospitals, community colleges, Ministry of Education, Ministry of Social Affairs, JNC, General Directorate of Civil Defense, and Public Security Directorate.

The form included information about the current numbers of nurses and nursing staff as classified by qualifications, gender, positions, areas of work, and geographical locations. The estimated response rate of this study was 90%.

Definition of Variables

To be familiar with the terminologies used in this study, the following terms were defined as: ^{1,6}:

Nurse¹: is a person who has graduated from an accredited program, and certified to practice by the Jordanian Nursing Council, and continued to meet the standards of this council.

Nursing¹: is an essential and integral part of the health services. Nursing encompasses both autonomous and collaborative care of individuals of all ages, families, groups and communities, sick or well people, and in all settings. Nursing includes the promotion of health, prevention of illness, and the care of ill, disabled and dying people. Advocacy, coordination of care, promotion of a safe patient and work environment, research, participation in shaping the health policy and health systems management, and education are also key nursing roles.

The practice of nursing means the performance of services for others that require the application of professional nursing knowledge, technical, interpersonal, and managerial skills in the process of care. The nurse is accountable for his/her own practice and sets the standards, and directly or indirectly supervises auxiliary categories of nursing personnel.

Need: any thing that is necessary decided by the concerned person.

Requirement: something that required an amount of services, workforces necessary to satisfy a given set of assumptions about how the health sector does, could, or should function. Standards or norms are defined as quantitative and qualitative guidelines for determining how many health workers, of what kind, with what level of training should staffs have. The ultimate result of calculating requirements will be represented by an estimated standard or ratio of personnel for a given population, geographic area, type of health facility, health specialty, and number of live births or hospital admission which is determined by: 1-external sources; 2- experts' opinions; 3- empirical experience; and 4- tasks and functional analysis of active personnel.

Supply: the availability and characteristic of resources and services at a given time or at a future time according to specified assumption about production, losses, and uses.

The supply can be influenced by many factors such as the opening of educational institutions, change in work patterns, turnover rates, and retention rates. **The potential supply of nursing** personnel take into consideration the current supply which represents the number of persons employed or seeking employment in the health sector (**active supply**) plus the number of qualified persons potentially able to serve but who are either taking a career break, prematurely retired, or engaged in other activities. **Inactive supply future increments** (new graduates, immigrants, or transfers from other occupations) must be added to the figure while estimated losses

(retirements, deaths, immigration, and transfer to other occupation) need to be subtracted.

Demand is defined as the quantity of services that employers are willing and able to purchase during a particular time at a specific price or wage. As demand is necessarily limited by available financial resources, it will usually be less than the estimated need. Demand is further differentiated into **met demands** (health services that people want, seek, are willing and able to pay for and get), and **unmet demand** (health services that people want but cannot get for reasons of access, timing, inability to pay, or other obstacles to care).

Nurse's qualifications: credentials granted by universities or colleges.

Clinical nurse: a nurse who works in hospitals and clinical centers, community health centers, outpatient departments, or have direct contact with clients.

Administrators: chief nursing officers working in hospitals and directorates.

Educators: nurses working in universities and colleges, who are in direct contact with nursing students.

Turnover Index : Number of leavers in a specified time (usually one year)

Average number of employees at the same period

Crude Turnover: average number of graduates since the establishment of nursing colleges and schools in 1946 until 2003 (in Jordan) divided by total number nurses lost from 1946- 2003 due to death, retirement, or mobility. ⁶

Current position: occupied positions.

Vacant position: non-occupied positions.

Data Analysis

Data analysis was guided by the objectives of the study. Some data were obtained from the participated institutions; however, some data were obtained from

the statistical reports of MOH (2003). Data were entered and analyzed using Microsoft Excel datasheets. Descriptive statistics were used such as numbers, frequencies, percentages, and ratios.

Findings

As shown in table (1), the total number of nursing personnel who are working in Jordan was about 16145. Of those nurses, there were 6007 RNs (37.2%). The working nursing personnel included 224 foreign nurses, 1233 midwives (7.6%), 1241 nurses held the associate degree (7.7%), 5058 practical nurses (31.3%), and 2556 nurses who held the Tawjihi (the highest secondary school certificate) (15.8%). As distributed by the sector, 7598 (47.1%) of nursing personnel were employed in the MOH, 3760 (23.3%) in the private sector, 2876 (17.8%) in the Royal Medical Services (including those who worked in medical units), and 1034 (6.4%) in the university-affiliated hospitals, and 827 (5.4%) in other institutions. As differentiated by gender, there were 9463 female nurses (58.8%) and 6632 male nurses (41.2%).

Registered Nurses (RNs) were of a particular focus in this study. As evidenced by statistics (Table 1a), the majority of RNs were employed in the MOH hospitals and Primary Health Care (PHC) Centers (2066, 34.4%), private hospitals (1606, 26.7%), RMS hospitals and units (953, 15.9 %), university-affiliated hospitals (775, 12.9%, and other institutions (607, 10%). Of those RNs, there were 3829 female nurses (63.7%) and 2178 male nurses (36.3%). Of the surveyed RNs, there were 49 (1%) nurses who held the Doctoral Degree and 246 nurses who held the Master Degree (4%).

Of the total number of nursing personnel, there were 9833 nurses (61%) who were working in the middle part of the country, 4276 (27%) in the north, and 1986 (12%) in the south (Table 1b).

In the hospitals of MOH, there were 4113 working nursing personnel. Of those, there were 1791 RNs (44.4%). Of them, there were 141 nurses who held the Associate Degree. Total number of midwives was 424. As classified by gender, there were 2567 (62.4%) female nurses and 424 (10.3%) midwives. Based on the geographical distribution, there were 1995 (48.5%) nursing personnel in MOH who were working in the middle part of the country, 1657 (40.3%) in the north, and 461 (11.2%) in the south (Table 2). It is noted that the ratio of RNs to other nursing personnel is 1:1.3.

There were 3485 nursing personnel who were working in the Primary Health Care Centers (PHCCs). Of those, there were 469 (13.4%) midwife, 287 (8.2%) nurses who held the BSc and ADs. Of the working nurses in PHCCs, there were 544 (15.6%) females. According to the geographical distribution, there were 1275 (36.6%) who were working at the middle part of Jordan, 1336 (38.3%) in the north, and only 874 (25.1%) in the south (Table 2a). It is noted that the ratio of RNs to other nursing personnel is 1:1.2.

The military sector (Royal Medical Services (RMS)) is a central part of the Jordanian health care system. As shown in table (3), there were 2876 nursing personnel who were working in this sector. None of those nurses held the PhD; however, there were 13 nurses who held the MSc degree. There were 1690 (59%) nurses who had their BSc, Diploma, or ADs. The number of midwives was 101. Of the 2876 military nurses, there were 1650 (57.3%) nurses who were working at the middle part of the Jordan, 279 (9.7%) nurses in the north, 404 (14.1%) nurses in the south, and 543 nurses in the medical units of RMSs (18.9%). It is noted that the ratio of RNs to other nursing personnel is 1: 1.5.

The workforce that is employed in the private sector was presented in the current study (Table 4). In this sector, there were 3760 nursing personnel. Of them,

there were 2301 (61.2%) female nurses and 1459 (38.8%) male nurses. In the private hospitals, there were 1123 (29.8%) nurses who had a university-based nursing degree. Of the total nursing workforce of the private sector, there were 3445 (91.5%) nurses who were working in the middle part of Jordan, 222 (5.9%) in the north, and only 93 (2.4%) in the south. There were 56 private hospitals which were varied in their bed size which ranged from 15 to 248; thus the patient-nurse and the nurse: bed ratios were different. The ration of beds: nurses in the middle was 2:1; 8:1 in the north; and 13:1 in the south. The majority of private hospitals were located in the Capital Amman; there were 44 hospitals.

The teaching hospitals are another domain in the Jordanian health care system. The two major teaching hospitals in Jordan are Jordan University Hospital and King Abdullah University Hospital. In those two hospitals, there were 1034 nurses and 823 beds, thus there were about 1 nurse:1 bed. The total number of nurses who held a university-based degree was 676 (65.4%). The remaining nursing staff held various degrees in nursing such as: diploma (99, 9.5%), AD (58, 5.4%), midwifery (18, 1.7%), practical nurses (89, 8.6%), and Tawjihi (94, 9%). As differentiated by gender, there were 651 female nurses (62.9%) and 383 male nurses (37.1%) (Table 5).

Although they are considered in the teaching workforce, nurses who work in universities (Table 6) and community colleges (Table 7) were surveyed. There were 362 nursing personnel in the nursing educational system. Of those who were working at universities and community colleges, there were 47 personnel who had their PhDs and 151 had MSc degrees. Of this workforce, there were 216 (60%) females and 146 (40%) males. As expected, the majority of nurses were working in the middle part of Jordan. In general, faculty members are still in their early stages of academic experience; few of them have their professorship and associate professorship. Even, some of these advanced professorships are for non-Jordanians.

Discussion

Nursing Staff

As indicated by the statistics available at JNC, it is noted that the total number of all nursing personnel who are working in Jordan is 16145. Of this workforce, 6007 RNs are considered the actual workforce inside Jordan. However, this workforce includes nursing personnel who are currently working in various institutions such as pharmaceuticals (about 30 female nurses and 20 male nurses). This workforce also includes other nursing personnel such as 224 foreign RNs, 137 foreign assistant nurses, and 12 foreign nurses who have degrees that are equivalent to Tawjihi. As evidenced in the statistics of MOH, there are 16187 nursing. *We can conclude that the JNC has reliable data as the JNC's figures are close to those of the MOH.*

Of the 16187 that reported by the MOH, there are 8720 nurse without monitoring. *Thus, standards of nursing practice have been developed by the JNC.* Also, it has been reported that the number of associate nursing personnel in the hospitals and centers of MOH is 539. However, it is important to mention that this number is referring back to 1997. *Many nursing personnel who held the Diploma or Associate Degree in Nursing are bridging their degrees in various nursing schools at Jordanian universities. This indicates that the nursing career is in its way to form a solid professionalism as it is marked by education and bridging the gaps of knowledge. Also, the nursing career is in its way to establish a safe practice environment as there are limitations on low- standard degrees such as ADs and unsafe nursing personnel. This supports the position paper of the JNC that mandates that "By 2010, the professional nurse has to have a BSc in Nursing."*

As indicated in statistic of JNC, the number of all nursing staff who were working in the in private hospitals was 3760 nurses including those who had their Tawjihi degree; while the statistics of MOH indicated that there were 6294 nurses

excluding Tawjihi and ADs. *Such large discrepancy in the statistics could indicate the high turnover of nurses in the private sectors, or the inaccurate reporting of the workforce in this sector.*

There is a debate over the number of workforce who is working outside Jordan. That is, the JNC reported that there are about 2700 RNs work outside Jordan. This number may not represent the real situation. Also, it is not clear the degree of accuracy about the number of 5257 nurses who are working in the private sector, and if some of them are working outside Jordan. *Many questions are raised here: “are these figures accurate?”, “why such large numbers of nurses work outside Jordan?”, and “how we can attract this workforce again into the Jordanian health care system?” These questions will remain silent until reliable data will be established.* It is reported that the turnover rate of nurses in some hospitals reached the 40% (informal contact with nurse managers, 2003). This could be a realistic figure based on the current statistics ($2700/6007=44\%$). If this figure is true, *when the turnover of nurses exacerbate? i.e is it an accumulative figure or a figure that escalated in the 1990s and after?*

Hospitals Beds

The total number of nursing workforce is 16145 and the total numbers of beds are 9743 (Ministry of Health Statistical Report, 2003). ⁴This means that bed: nurse ration is 1:0.60. However, if there is 6007 RNs (who include those who work in academia (207), then it is more accurate to calculate that ration as follows: $9743 \text{ beds} / 6007-207 \text{ nurses} = 1:1.68$. *However, this is a close figure not an indicative one because of the inconsistency of the reported numbers of nurses.*

Number of Nurses who are Currently Needed

From the previous statistics, it is noted that the total number of nurses who are practicing in Jordan is 8780. If we consider that around 2700 RNs are working abroad, then the number of practicing nurses in Jordan is about 6007. Then, the needed nurses are as follows:

According to Beds: for each bed a minimum of 1.1 of nurses are needed. The total number of beds in Jordan is 9743 (MOH Statistical Report, 2003). *As the RNs are legally accountable and more efficient in providing nursing care, RNs rather than the total nursing personnel are estimated. Thus, 10717 RNs are needed in hospitals excluding medical centers and medical clinics and nurses working outside Jordan. If we have 6007 RNs as an actual workforce, then we are in need for 4710 RNs.*

According to Population: it was reported that the population is 5480000 in 2003 (Department of Statistics, 2003). According to Ministry of Health report (2003), *it was indicated that is a need for 29.5 nursing personnel/ 10000 population, then the needed number of nursing personnel for the whole population is 16166 ($5480000/10000 \times 29.5$), and what we currently have is 16145 (JNC statistics, 2003). However, what we need is the *accountability and the quality of care of RNs rather than all nursing personnel.* The MOH report (2003) indicated the need for 15.9 RN/ 10000 population. Thus, the health care system in Jordan is in need for 8713 RNs ($5480000/10000 \times 15.9$). Until to 2003, there were 6007 practicing RNs in Jordan, in turn 2706 RNs are needed.*

According to International Ratios: in the developed countries, for 10000 population, there is a need for 40-70 RNs (USA, Canada, and Japan). This number is

not enough because still many countries are suffering from shortage. Taking into consideration the scarcity of resources in Jordan and its economic situations, let us fixed the figures of 20 nurses per 10000, then the estimated number of needed nurses is 10960. Currently, we have is 6007, thus we are in need for 4953 nurses.

The Number of Nurses in Specialized Units

The developed countries are trying to put a minimum ratio of nurses to patients in specialty. These ratios are as follows:

Nurse-to-Patient Ratios in California	
ICU/CCU/Neo-natal intensive care	1:2
Burn unit	1:2
OR/PACU	
Under anesthesia	1:1
Post anesthesia	1:2
ER (triage RNs not counted in ratios)	
General	1:4
Critical care	1:2
Trauma	1:1
Medical and surgical (initial ratio)	1:6
12 to 18 months phase-in	1:5
Step-down/intermediate care/DOU	1:4
Step-down/telemetry	1:4
Telemetry	1:5
Oncology/specialty care	1:5
Labor and delivery	1:2
Post Partum*	
Couplets	1:4
Mothers only	1:6
Pediatrics	1:4
Intermediate care nursery	1:4
Well baby nursery	1:8
Psychiatric/behavioral health	1:6
Mixed units (initial ratio)	1:6
12 to 18 months phase-in	1:5
If maternal child has ante-partum and post-partum	1:3

In Jordan, for example, currently the total number of beds of the critical care units at the RMS, Al-Basheer hospital, and university-affiliated hospitals are 289, and the number of nurses is 524. If the required number of nurses per critical care bed is 1:2, then for the 289 beds we need 145 nurses only for the day shift. To account for full time equivalent we need to multiply it with 4 (four shifts), thus so we need 580 nurses for the critical care beds. *It could be concluded that there is a considerable focus on critical care in Jordan. But, the question that has to be carefully answered is “are the nurses who work in Critical Care Units specialized?”*

Forecasting the Number of Nurses for the Coming Five Years

Nursing Manpower should be planned strategically. Thus, the estimated need for nurses for the coming five years is as follow:

According to the International Ratios: it is reported that there should be 20 nurses per 10000 population, with 2.8 % annual increase in population (Department of Statistics, 2003), the population will be 6291383 in 2008. In turn, the estimated number of needed nurses in 2008 will be 12582, excluding those working abroad and people who will retire.

Students who are enrolled in nursing school are expected to increase. For example, it is expected that the number of graduates in 2008 will be 1200 nurses. By 2008, the total number of available nurses is expected to be 13058. This number may increase if new schools of nursing will be opened.

If we assume that we will lose one nurse for each 2.3 graduates because of turnover, an additional number of 5677 nurses will be needed by the year 2008, in addition to the 13058 nurses. This makes a total of 18735 nurses to count for turnover and to have enough nurses in Jordan. As nurses continue to drain outside Jordan, there

will be an increased need for more nursing schools. However, with such increased demand, the gender issue of nursing students should be taken into consideration. That is, there is an increase of male students who are enrolled in nursing schools. This will create false unemployment for nurses in Jordan especially for the males.

According to Beds

In the Jordanian health care system, the number of beds is increasing. By 2008, it is expected that the number of beds will be 11295. If we need 1.1 nurses for each bed then we will be in need 12424 nurse, excluding nurses working outside Jordan, nurses working in non-hospital settings, and nurses who will retire.

Obstacles of the Study

There were many issues faced the researchers in the current study. These include the following:

- 1- Poor communication between health workers, producers, and users.
- 2- Inadequate and inappropriate participation by some parties.
- 3- Inappropriate timing.
- 4- Excessively long planning process.
- 5- Insufficient, inappropriate, or inaccurate data.
- 6- Lack of knowledge regarding projected needs for nursing quantities, qualifications, and specializations.

Recommendations

Manpower planning is a very essential step to forecast the needed nurses, especially in the light of increased turnover rates among nurses.

Currently, in Jordan, there is under utilization of RNs in community health centers. There will be increased demand for more nurses; globally nurses are needed and employed in community health centers.

New nursing schools should be opened or the number of graduates in each school should be increased. It is reported in the literature that inadequate nursing staff has been associated with adverse events such as medication errors, decubitus ulcers, pneumonia, post-operative infections, and urinary tract infections.⁷

There is a need for specialization; it was noticed in this study that there are numbers of nurses who were working in specialized units without preparation. Also, it is very important to focus on the number of nurses per critical care patient as it is differentiated based on the sector.

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	M	F	Total
5- Total Number of Registered Nurses			
6- Total Number of Associate Degree			
7- Total Number of Practical Nurses			
8- Total Number of Midwives			
9- Total Number of Nursing Tawjihi Holders			
Nature of work of High school graduates 1- Clerical 2- Services of patients 3- Services for Institutions 4- Other specify			

10- Nursing Training Programs Running in the Institution

Specialty	Duration of Course	Date of commencement	Participants

Human Resource Planning

Date:

Name of Institution:

Type of Institution:

Number of Hospital Beds:

Patient Classification System if Available:

Ratio of RN to Beds

Ratio Male/Female

Ratio of RNs to Clients

Ratio of Assoc. D to Beds

Ratio Male/Female

Ratio of Assoc. D to Clients

Ratio of PNs to beds

Ratio Male/Female

Ratio of PNs to Clients

Ratio of High school Nursing to bed to Pts

Ratio Male/Female

Ratio of High School Nursing

Ratio of Midwives to Beds

Ratio of Midwives to Clients

Other:

Number of Current and Vacant Positions And Needed Staff

	Number of Current Positions	Number of Vacant Places	Number of Places Needed for the coming 5 Years
Chief Nursing Officers			
Supervisors			
Head Nurse			
Registered Nurse			
Associate Degree			
Practical Nursing			
Professors in Nursing			
Associate Professors			
Assistant professors			
Teachers			
Teaching Assistants			
Preceptors			
Other			



Curriculum Vitae

Name of Employee : Gender: M () F ()

Permanent Address :
.....

Governate:

National Number..... Nationality.....

E-mail: Fax Tel

..... Age..... Place of Birth Date of Birth

S() M() W() Other () : Number of Children M () F () Marital status

..... Date & Place of Issue :Passport Number

: Number of High School Years and Type of Tawjihi

Professional Classification:

Technical Qualification:

Start With the Current Qualification & Include Post Graduate : Education & Qualification Studies One Year or More

Specialty or Type of Education	Name of Training or Educational Institution	Place	Duration	From	To	Degree

(Start with the current Job):Employment Experience

Name of Position	Type of Institution	Name and Address of Institutions	Type of Unit specialty	From	To

Continuing Nursing LEARNING/ TRAINING COURSES

Name of Training Institution/ Place	Name of Course	Duration From	To	Date of Graduation

RESEARCH AND PUBLICATION

NURSING LICENSURE(REGISTRAION)

Type of License	Registration Number	Country of origin	Date of Issue	Expiration Date

Language Proficiency

Language	Written			Reading		
	Fair	Good	Fluent	Fair	Good	Fluent