

מאיירס - ג'זינט - מכון ברוקדייל
MYERS - JDC - BROOKDALE INSTITUTE
مایرس - جوینت - معهد بروکدیل



SMOKLER CENTER FOR HEALTH POLICY RESEARCH

Registered Nurses in Israel: Workforce Supply – Patterns and Trends

Nurit Nirel,
Yifat Yair
Hadar Samuel

*Myers-JDC-
Brookdale Institute*

Shoshana Riba, Sima Reicher

*Nursing Division,
Ministry of Health*

Orly Toren

*Hadassah University
Medical Center*

The study was funded with the assistance of a research grant from the Israel National Institute for Health Policy and Health Services Research and a grant from Michael and Andrea Dubroff of Massachusetts, USA.



RESEARCH REPORT

RR-557-10



Related Myers-JDC-Brookdale Institute Publications

Nirel, N.; Goldwag, R.; Feigenberg, Z.; Abadi, D. and Halpern, P. 2007. *Paramedics – Supply and Demand for Professional Manpower*. RR-493-07 (Hebrew).

Nirel, N.; Shirom, A. and Ismail, S. 2003. *Specialist Physicians in Israel: Modes of Employment and the Implications for their Work Lives*. RR-418-03 (Hebrew).

Nirel, N.; Rosen, B.; Goldwag, R. and Mazliach, R. 2003. *Trends in the Employment of Medical and Nursing Manpower under the National Health Insurance Law*, RR-414-03 (Hebrew).

Nirel, N.; Pariente, M. and Haklai, Z. 1997. *Trends in Nursing Manpower 1986–1995*. RR-300-97 (Hebrew).

To order these publications, please contact the Myers-JDC-Brookdale Institute,
P.O.B. 3886, Jerusalem 91037;

Tel: (02) 655-7400; Fax: (02) 561-2391;

e-mail: brook@jdc.org.il

Reports are also available on the Institute website www.jdc.org.il/brookdale

Executive Summary

In recent years, a severe shortage of nurses and an imbalance between supply and demand have led to a growing preoccupation in the Western world with the supply of nursing staff. Surveys conducted outside of Israel have advanced understanding of the structure of the nursing workforce, identified deficiencies and contributed to the planning of professional training.

In Israel, the Ministry of Health keeps a record of the number of licensed nurses classified by clinical field and professional status. In addition, the Central Bureau of Statistics publishes a report with the estimated number of nurses employed, by geographical area. Despite this, until the current study, no comprehensive survey had been conducted that would contribute to planning with regard to characteristics of nursing work, distribution of employment by nursing specialty and by economic sectors, percentage of nurses leaving nursing work and their reasons for doing so, and survival rates in the profession whether full-time or part-time. Such information makes it possible to examine the workforce supply taking account of future sources that will supplement it and should help with decision-making on policy for the nursing workforce.

The study goals were:

1. To examine characteristics of employment and the workforce
2. To examine mobility between organizations, between the community and hospitals, and between specialties in the nursing profession
3. To examine nurses' attitudes towards their work and their profession
4. To forecast the supply of registered nurses (RNs), using data from the survey regarding the numbers leaving the profession and data from other sources regarding the future sources for additions to the workforce.

Methods

1. A nationwide telephone survey, which was conducted from October 2008–February 2009, of a random sample of 3,200 registered nurses of working age (up to 60), whether or not they were working in the nursing profession (10% of the study population)
2. Analysis of administrative data regarding: a. The total number of new RN licenses issued every year; b. The number of nurses completing advanced training every year, by specialty; and c. The number of RNs leaving the country, (data from the Nursing Division at the Ministry of Health); and mortality data (from the Central Bureau of Statistics).

Findings

Employment Characteristics

Most RNs (89%) are employed in the profession and the percentage of those in full-time positions is quite high (67%). As expected, the rate of full-time positions is higher among nurses working in hospitals. To the best of our knowledge, the rates of employment in the profession and

the percentage of full-time positions are higher than those of nurses abroad. The working week for nurses fixed by collective labor agreements is 40 hours in the community and 36 in hospitals. The average number of weekly work hours is 37.9; in hospitals, it is 38.5 (i.e., above that fixed by the labor agreement); in the community, it is 36.5 (i.e., below that fixed by the labor agreement). When we examined temporary absence and return to the workforce over a 10 year period, we found that on average, in any year, 2% of RNs were temporarily not working as nurses for, on average, a year (excluding nurses on maternity leave of up to 6 months).

Workforce Characteristics

The current RN workforce is mature – 45% of the nurses are over 45 – and highly trained and skilled: 55% have advanced (specialty) training, 48% have a bachelor's degree and 18% have a master's or PhD. Furthermore, the current workforce is stable. Few leave nursing completely and, in our sample, the annual percentage of nurses leaving over the last 10 years was very low – less than one percent per year. On the other hand, 23% of the currently employed nurses have made some shift within nursing in the last 10 years (63% of them made only one move). Most of the moves have been from hospitals to the community.

Nurses' Attitudes towards their Jobs and the Nursing Profession

Seventy-two percent of the RNs are very satisfied with their place of work and their job and 60% with the nursing profession. It is interesting to note that the satisfaction levels are much higher for place of work and the job than for the profession (and this is contrary to our findings regarding physicians and paramedics).

A multivariate analysis revealed that the nurses' feelings about their salary and their relationship with their superior affected their satisfaction with both their job and the profession itself. However, while their feelings about work overload and interpersonal relations within the nursing staff, as well as their age and the district in which they worked, all influenced their satisfaction with their job, they did not influence their level of satisfaction with the profession. Conversely, their satisfaction with the nursing profession was affected by several factors that did not affect satisfaction with their job: whether or not they worked in the community, the economic sector in which they worked, and whether they held management or teaching positions. The main factors that bothered them about their work were their salary level (particularly among nurses working in the community), too much bureaucracy, work overload, limited promotion prospects, and verbal and physical violence from patients and their families (mainly among hospital nurses). We found that the main factors keeping them in work in the nursing profession were love of the profession; contact with people; being able to give and contribute something; satisfaction; variety and interest; flexibility; and the pay and social benefits. Only a few said they continued nursing for lack of choice. The main factors they named as important in order to keep nurses in a position or organization were: remuneration, relationships with their superior/management, a reduced workload, greater prospects of promotion, social benefits and better interpersonal relations within the nursing staff.

The Likelihood of New RNs Remaining at Work in the Profession

Using a survival analysis, we found a 97% likelihood that RNs would continue to work in the profession for 5 years. In other words, it was probable that 97% of those entering the profession would continue to work in it ("survive") for at least 5 years. The likelihood of surviving 10 years was found to be 93% and for 20 years, it declined to 88%. However, survival rates differed among age groups. For example, when we compared the age groups currently in the workforce, we found that the likelihood of young RNs continuing to work in the profession for 10 years was 77%, compared to 94% and 96% in the older age groups. In addition, we found that the likelihood of nurses with advanced training certification remaining within nursing employment after 10 years was 97% compared to 87%; after 20 years, it was 94%, compared to 78% among nurses without advanced training licenses.

Variables Predicting Leaving Work in the Profession

To examine the factors predicting RNs leaving work in the profession, we conducted a Cox regression multivariate analysis. In this statistical analysis, the dependent variable was the risk of leaving work in the profession, which comprised two components: time (number of years working as an RN) and the "event" (leaving or remaining in nursing work), in other words, the likelihood of leaving work in the profession after a certain number of years. After controlling for other variables in the equation, we found that each of the following variables had an independent effect on the likelihood of leaving nursing work: Young age (24–34) (vs. older age groups); no advanced training (specialty) (vs. having advanced training); working in the private sector (vs. other sectors); being married with young children (under 18) (vs. other family status).

Supply Prediction

We conducted supply projections for 5, 10, 15, and 20 years ahead. The projections made use of the findings from the Cox regressions noted above, which had revealed that age affected the likelihood of leaving nursing work. The age variable was also found to be connected to the rate of starting work in the profession as well as mortality rates in the population. These study findings enabled us to include the age variable in our supply projection equations, since we had data on the age distribution of the employed nursing workforce as well as the survival rates of this workforce by the same age groups. We also had the estimated age-group distribution of future sources for the nursing workforce and of those expected to leave nursing work. We based the supply projections on the assumption that apart from the natural change in the age-group distribution, the exit and entry rates would remain constant. The supply forecasts show that the number of RNs in the workforce is expected to decrease over the next 20 years, from 28,500 RNs in the profession in 2008 to 21,201 in 2028 – a decline of 25% by the end of the period, or, in terms of the percentage of nurses per population, a decline from about 4 employed RNs per 1,000 population in 2008 to about 2 employed RNs per 1,000 population in 2028.

The supply projection equations presented in this report do not reflect all the variables that were identified in the Cox regression analysis as being related to the likelihood of leaving nursing work. The Cox regression analysis had revealed that, in addition to the age variable, the following

also affect the likelihood of leaving nursing work: advanced training (the likelihood of leaving nursing work is significantly greater among nurses without advanced training); economic sector (the likelihood of leaving nursing work is greater among RNs working in the private sector); family status (the likelihood of married nurses without children under 18 leaving nursing work is significantly lower than those of married nurses with young children). At this stage, we have not entered these variables into the projection equations. In some cases, this is because we did not expect any change in the distribution of the variable and in others because, although it is reasonable to assume there will be a change in the future, we cannot yet estimate the extent of the change. Obviously, at a later stage these variables can be included in projection equations, once projections of the likely changes in these variables have been developed.

Conclusions

The study findings are consistent with senior health professionals' impressions of the work characteristics of nurses in Israel. They provide more rigorous supply projections than were available in the past and contribute to decision-making regarding the training and recruitment of the workforce. The findings could serve as a foundation on which to base future studies about the demand for registered nurses and the relationship between supply and demand. In this way, they could contribute to the process of long-term strategic planning for this workforce.

Table of Contents

1. Introduction	1
2. Literature Review	1
3. Study Goals	3
4. Methodology	3
5. Future Sources of Registered Nurses (RNs)	5
6. Current Workforce: RNs with Registered Nursing Certificates Working in the Nursing Profession	8
6.1 Background Data, Professional Training and Education	8
a. Background Data	8
b. Training and Education	9
c. Advanced Training Courses	10
d. Academic Education	12
6.2 Work Characteristics	13
a. Characteristics of Work at Hospitals	13
b. Characteristics of Work in the Community	15
c. Characteristics of Additional Place of Work	16
6.3 Weekly Work Hours	16
6.4 Number of Years as RN	19
6.5 Mobility in the Nursing Profession	21
a. Entry into and Exit from Nursing Work	21
b. Mobility between Economic Sectors	23
c. Mobility of RNs Working in Hospitals	24
d. Mobility of RNs Working in the Community	27
e. Total Moves	29
f. Changes from Full-Time to Part-Time and Vice Versa	30
g. Predictors of Mobility within the Profession	31
6.6 Attitudes to the Profession and the Work	37
a. Pressures at Work	37
b. Factors that Attract Nurses to the Profession and Keep them in it	39
c. Satisfaction with the Work and the Nursing Profession	41
d. Predictors of Satisfaction with Place of Work	41
e. Satisfaction with Nursing	44
f. Intention to Leave the Profession	48
7. RNs not Working in Nursing	51
7.1 Background Characteristics, Professional Training and Education	51
a. Background Characteristics	51
b. Training and Education	52

7.2 Previous Employment	53
7.3 Giving up Nursing	54
8. Leaving Nursing Work and Likelihood of Continuing Nursing Work	56
8.1 Rates of Nurses Leaving Nursing Work	56
8.2 Likelihood that New Nurses will Continue Nursing Work for a Given Number of Years	56
8.3 Predictors of Nurses Leaving Nursing Work	62
9. Predicted Supply of Registered Nurses	63
10. Discussion	66
List of Sources	70

List of Appendices

Appendix I:	Comparison of Characteristics of Respondents in the Sample and Characteristics of Non-Respondents; and Characteristics of RNs in the Central Bureau of Statistics <i>Labour Force Survey</i> and Characteristics of RNs in the Ministry of Health Nursing Professions File	74
Appendix II:	Rates of Nurses Leaving Nursing Work	76
Appendix III:	Hospital Nurses, by Advanced Training and by Work in Departments for which they have been Trained	81
Appendix IV:	Data Used to Formulate Prediction Equations	82
Appendix V:	Tables showing Predicted Supply of RNs in the Nursing Workforce at Specified Points in Time	83

List of Tables and Figures

5. Future Sources for the Professional Workforce

Table 1: New Licenses Issued to RNs, by Year, 2000–2009	7
---	---

Figure 1: Percentage of RNs among all Nurses up to Age 60, 2006–2008	7
--	---

6.1 Background Data, Professional Training and Education

Table 2: Background Data, by Place of Work	9
--	---

Table 3: Professional Training, by Place of Work	10
--	----

Table 4: Advanced Training Courses, by Place of Work	10
--	----

Table 5: Distribution of Participation in Advanced Training Courses, by Place of Work	11
---	----

Table 6: Reasons for Participation in Advanced Training Courses	12
---	----

Table 7: Education, by Place of Work	12
--------------------------------------	----

6.2 Work Characteristics

Table 8: Characteristics of Work at Principal Place of Work	13
---	----

Table 9: Distribution of Nurses by Hospital Department	14
--	----

Table 10: Distribution of Nurses by Position at Hospital	14
--	----

Table 11: Distribution of Nurses in the Community by Work Setting	15
---	----

Table 12: Distribution of Nurses by Second Job	16
--	----

6.3 Weekly Work Hours

Table 13: Average Weekly Hours, by Place of Work	17
--	----

Table 14: Percentage of Nurses Working Given Number of Weekly Hours, by Place of Work	18
---	----

Table 15: Nursing Workforce by Full/Part-Time Employment at Principal Place of Work	18
---	----

Table 16: Shift Work at Principal Place of Work	19
---	----

6.4 Number of Years as RN

Table 17: Number of Years Worked by Nurses in the Community and Nurses in Hospitals: As RNs, in Specialist Field, at Place of Work, at Main Department/Unit, and in Current Position	20
--	----

6.5 Mobility in the Nursing Profession

Table 18: Nurses on One-Year Leave of Absence from the Profession over Past Ten Years, by Age	21
---	----

Table 19: Entry into/Exit from Nursing Work in Past Ten Years	22
---	----

Table 20: Mobility between Sectors in Past Decade	23
---	----

Table 21:	Mobility between Sectors in Past Decade – Current and Previous Sector	24
Table 22:	Hospital Nurses: Mobility between Community and Hospital in Past Decade	25
Table 23:	Hospital Nurses: Mobility within Hospital Settings in Past Decade	26
Table 24:	Nurses at General Hospitals: Mobility between Departments in Past Decade, Current and Previous Department	27
Table 25:	Nurses in the Community: Mobility between Community and Hospital in Past Decade	28
Table 26:	Nurses Working at Health Plans: Mobility within the Community	29
Table 27:	Mobility in Past Decade, by Hospital Nurses and Nurses in the Community	29
Table 28:	Changes in Part-Time/Full-Time Positions in Past Decade	30
Table 29:	Predictors of Transition from Hospital to Community and Vice Versa – Logistic Regression	32
Table 30:	Hospital Nurses: Predictors of Mobility between Sectors – Logistic Regression	33
Table 31:	Hospital Nurses: Predictors of Mobility between Types of Hospital – Logistic Regression	34
Table 32:	Hospital Nurses: Predictors of Mobility between Hospital Departments – Logistic Regression	35
Table 33:	Nurses at Health Plans in the Community: Predictors of Mobility between Settings in the Community – Logistic Regression	36
Table 34:	Predictors of Mobility in the Nursing Profession – Logistic Regression	37

6.6 Attitudes to the Profession and the Work

Table 35:	Extent to which Pressures at Work Bother the Nurses to a Great Extent or Very Great Extent, by Place of Work	38
Table 36:	Responses to an Open Question about the Extent to which Other Factors Bother the Nurses at Work, by Place of Work	39
Table 37:	Factors that Encourage Nurses to Remain in the Profession/at their Organization	40
Table 38:	Job Satisfaction	41
Table 39:	Predictors of Satisfaction with a Place of Work – Logistic Regression	42
Table 40:	Satisfaction with the Profession, by Place of Work	45
Table 41:	Predictors of Satisfaction with the Nursing Profession – Logistic Regression	46
Table 42:	Intention to Leave Nursing Work or Move Abroad	48
Table 43:	Predictors of Intention to Leave Nursing Work – Logistic Regression	49

7.1 Background Characteristics, Professional Training and Education

Table 44:	Background Characteristics: Comparison of Respondents Working as RNs and Respondents not Working as RNs	51
Table 45:	Training and Education: Comparison of Respondents Working as RNs and Respondents not Working as RNs	52

7.2 Previous Employment

Table 46:	Hospital Nurses: Comparison of those Working and those not Working at Time of Study	53
Table 47:	Nurses in the Community: Comparison of those Working and those not Working at Time of Study	54

7.3 Giving up Nursing

Table 48:	Data on Respondents not Working in the Profession	55
-----------	---	----

8.2 Likelihood that New Nurses will Continue Nursing Work for a Given Number of Years

Table 49:	Aggregate Survival Rates for RNs	57
Table 50:	Aggregate Survival Rates for RNs, by Age Group	57
Table 51:	Aggregate Survival Rates for RNs, by Sector	58
Table 52:	Aggregate Survival Rates for RNs: Comparison of Nurses without Advanced Training and Nurses with Advanced Training	59
Table 53:	Aggregate Survival Rates for RNs: Comparison of Nurses who Began Working before 1998 and those who Began after 1998	59
Table 54:	Aggregate Survival Rates for Work in the Field of Advanced Training among RNs Employed in Hospitals	60
Table 55:	Aggregate Survival Rates for Work in the Field of Advanced Training among RNs Working in Hospitals: Comparison of those who Began Working before 1998 and those who Began after 1998	61
Table 56:	Aggregate Survival Rates for Work in the Field of Advanced Training among RNs Working in Hospitals, by District of Residence	61

8.3 Predictors of Nurses Leaving Nursing Work

Table 57:	Predictors of Leaving Nursing Work – Cox Regression	62
-----------	---	----

9. Predicted Supply of Registered Nurses

Table 58:	Predicted Supply of RNs Five Years Hence (2013), by Age Group	64
Table 59:	Predicted Supply of RNs in Future Years	65
Table 60:	Forecast Supply of RNs per 1,000 Population in Given Years	65

List of Tables in Appendices

Table I-1:	Predictors of Participation in Interview – Logistic Regression	74
Table I-2:	Comparison of Data on RNs Reported Working in the Nursing Profession in the Current Study and RNs in the 2007 Central Bureau of Statistics <i>Labour Force Survey</i>	75
Table I-3:	Comparison of Data on RNs Reported Working in the Nursing Profession in the Current Study and Data from the 2008 Nursing Report of the Nursing Administration	75
Table II-1:	Percentage of Nurses Remaining in Nursing Work after Five Years and after Ten Years	76
Table II-2:	Nurses Leaving Nursing Work Every Year, 1998–2006	77
Table II-3:	Percentage of Hospital Nurses Remaining in Nursing Work after Five Years and after Ten Years	77
Table II-4:	Percentage of Nurses in the Community Remaining in Nursing Work after Five Years and after Ten Years	78
Table II-5:	Hospital Nurses Leaving Nursing Work Every Year	78
Table II-6:	Nurses in the Community Leaving Nursing Work Every Year	79
Table II-7:	Aggregate Survival of RNs among Hospital Nurses	79
Table II-8:	Aggregate Survival of RNs among Nurses in the Community	80
Table III-1:	Distribution of Hospital Nurses by Advanced Training Course and by Work in Departments for which they were Trained	81
Table IV-1:	Mortality Rates per Thousand Residents (Female), by Age	82
Table IV-2:	Number of Requests for Application Forms for Work Abroad, 1996–2006	82
Table V-1:	Data on which Prediction Tables V-2, V-3 and V-4 were Based	84
Table V-2:	Predicted Supply of Nurses in Ten Years' Time (2018), by Age Group	85
Table V-3:	Predicted Supply of Nurses in Fifteen Years' Time (2023), by Age Group	86
Table V-4:	Predicted Supply of Nurses in Twenty Years' Time (2028)	87