

# **NURSING SHORTAGE, STRATEGY, AND FUTURE IMPLICATIONS**

**Factors related with nursing job satisfaction:  
2004 National Sample Survey of Registered Nurses**

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# Introduction

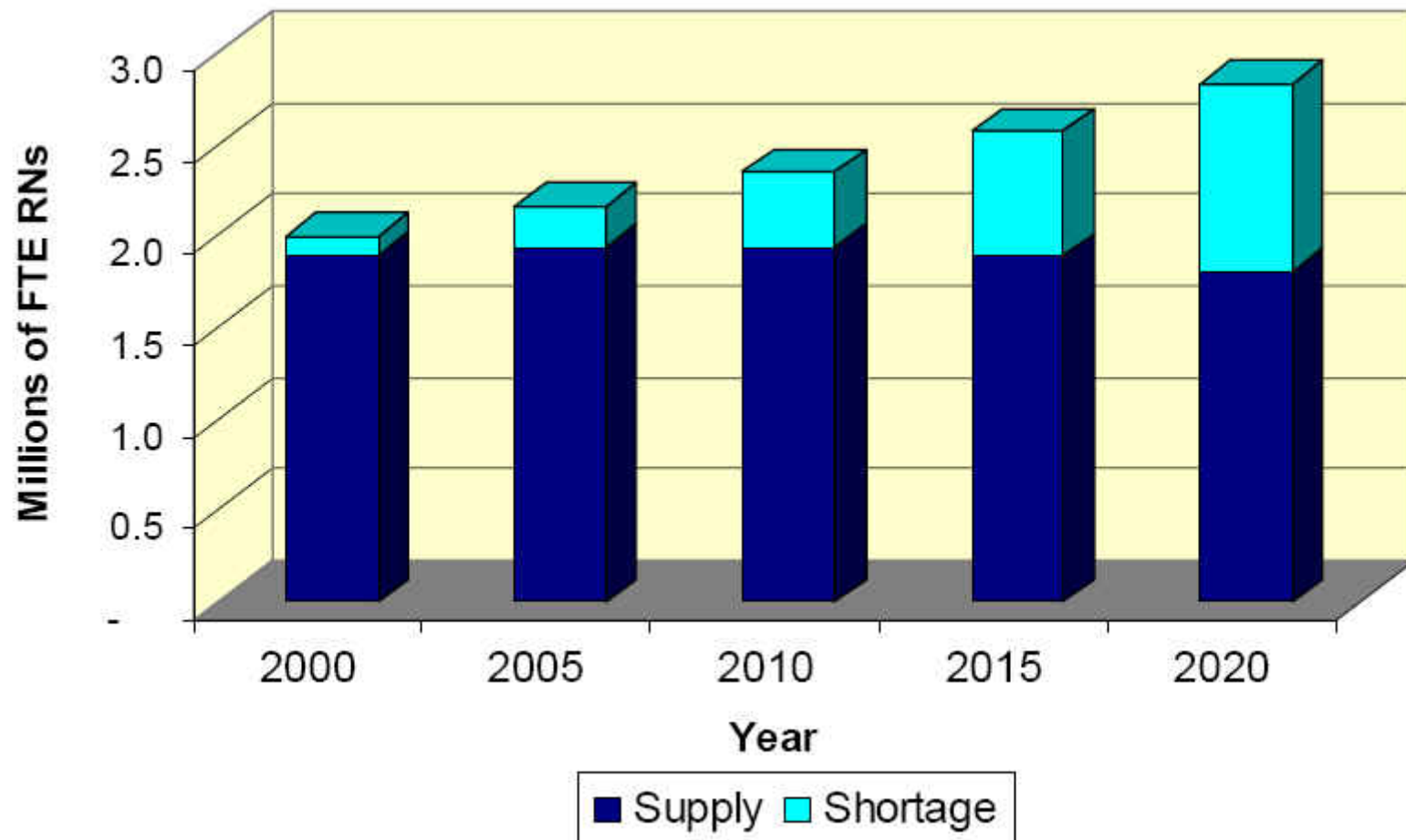
- Nursing shortage in the US has been well documented<sup>1</sup>
- Demand has outpaced supply<sup>1</sup>
- Nurses report lower job satisfaction than other workers<sup>2</sup>
- Traditional recruitment and retention techniques have not worked<sup>3</sup>

1 Barney 2002; Beu 2004; Buerhaus; Levine 2002; National Sample Survey of Registered Nurses 2004

2 Aiken et al. 2001

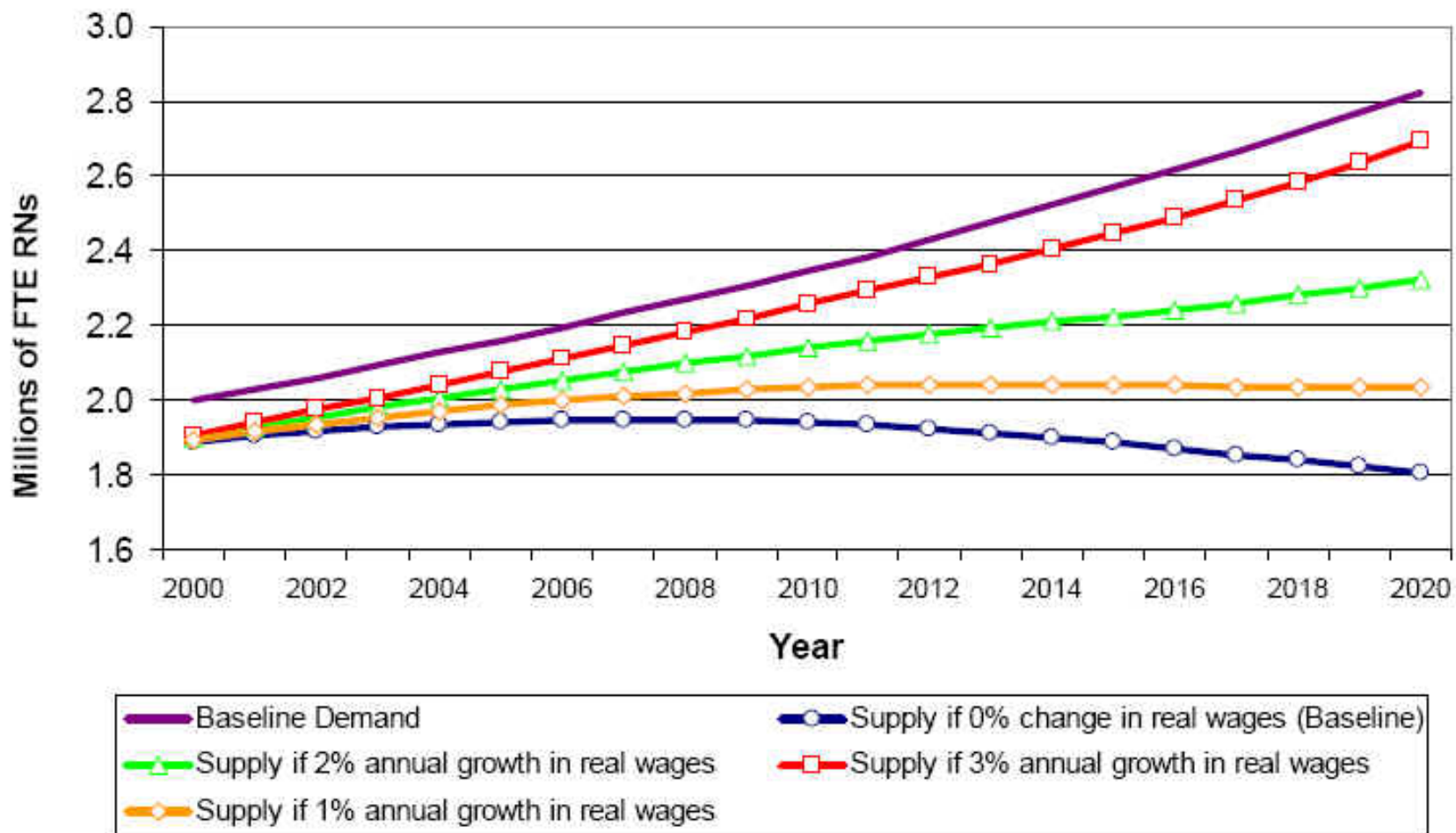
3 Spetz and Given 2003

# Nursing Shortage



Source: What is Behind HRSA's Projected Supply, Demand, and Shortage of Registered Nurses? Available at <http://bhpr.hrsa.gov/healthworkforce/reports/nursing/rnbehindprojections/index.htm>

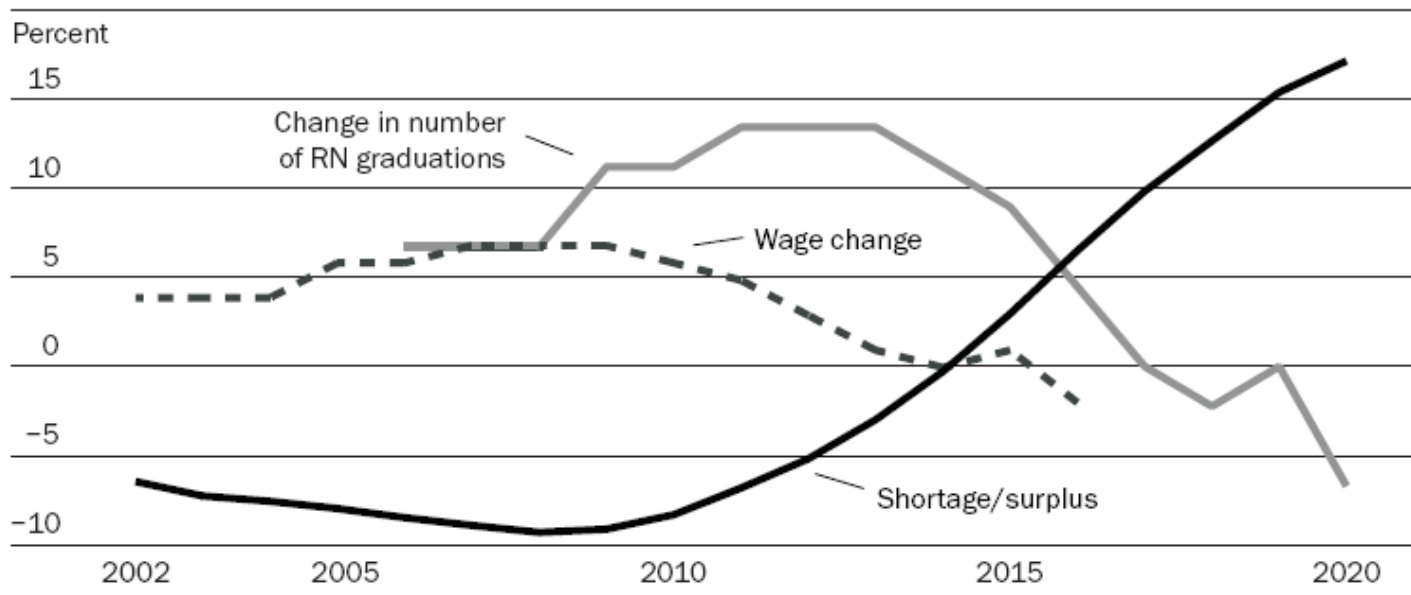
# Wage and Supply



Source: What is Behind HRSA's Projected Supply, Demand, and Shortage of Registered Nurses? Available at <http://bhpr.hrsa.gov/healthworkforce/reports/nursing/rnbehindprojections/index.htm>

# Projected RN Shortage/Surplus

**Projected Change In Shortage/Surplus Of Registered Nurses (RNs) When Wages Respond To Magnitude Of Shortage/Surplus, 2002-2020**

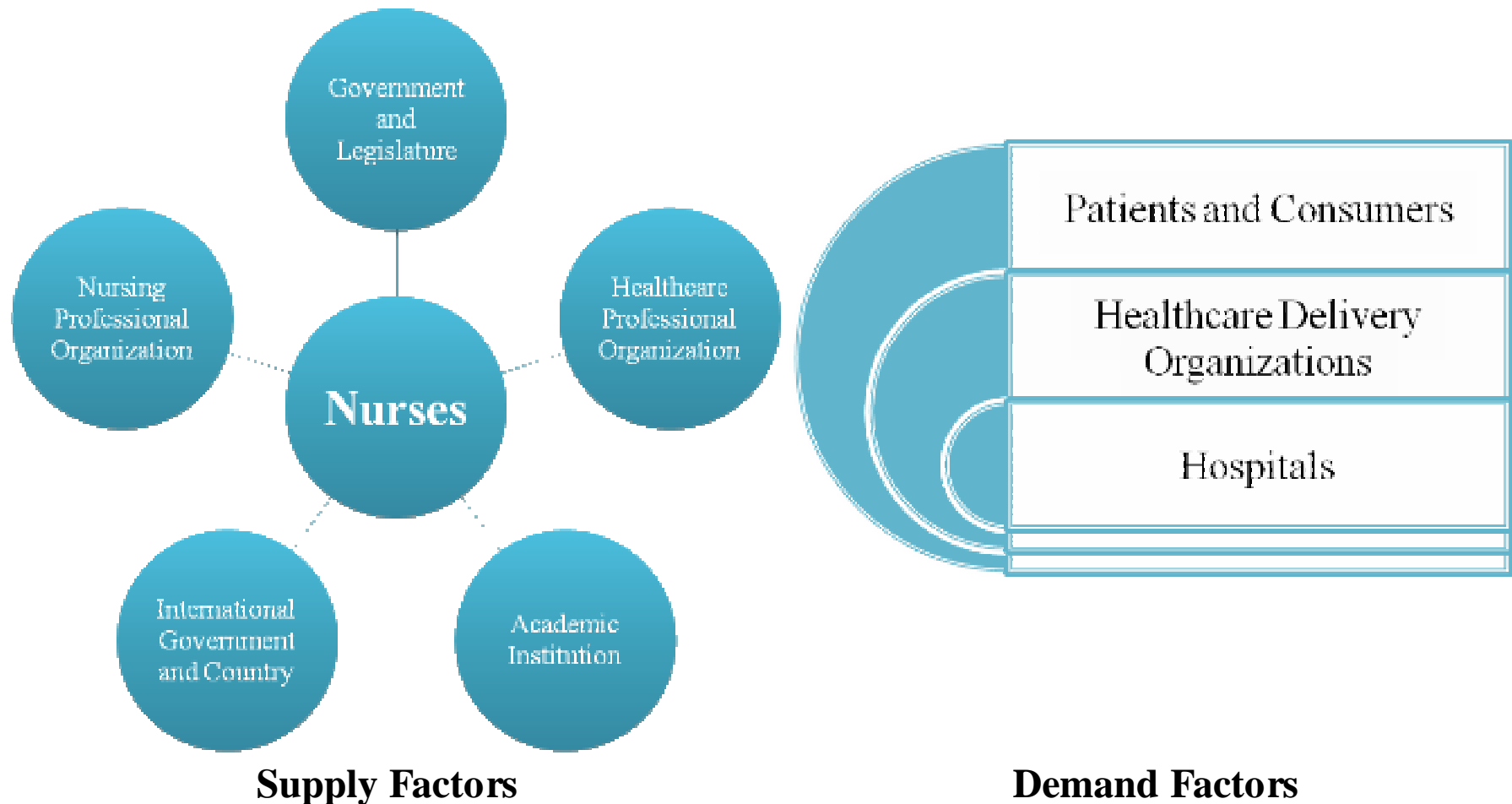


**SOURCE:** Authors' projections based on regression equations based on data from the Current Population Survey (U.S. Bureau of the Census), National League for Nursing, Bureau of Labor Statistics, and Bureau of Health Professions.

**NOTE:** The projections are based on a regression equation with change in nursing graduations as the dependent variable and change in wages lagged four years as the independent variable. An intercept is included in the equation.

Source: Spetz J, Given R. The future of the nurse shortage: will wage increases close the gap? *Health Aff (Millwood)*. 2003 Nov-Dec;22(6):199-206.

# Stakeholders in Nursing Shortage



# 2004 National Sample Survey of Registered Nurses (NSSRN)

- 8<sup>th</sup> survey since 1977
- Cross-sectional survey
- Telephone follow-up for non-respondents
- Analyzed 24,689 out of 35,724 total responses
  - Inclusion criteria
    - Age 20-65
  - Exclusion criteria
    - Hired through staffing agency
    - No response for interested question

# Model

- Job Utility = Function of (Education Extent, Task Importance, Responsibility, Economic Compensation)
- Job Utility  $\approx$  Job Satisfaction
- Job Satisfaction =  $[\beta_1 \times \text{Education Extent}] + [\beta_2 \times \text{Task Importance}] + [\beta_3 \times \text{Responsibility}] + [\beta_4 \times \text{Economic Compensation}] + \varepsilon$



# Proxy Measurements

- Satisfaction → Work Utility
- Additional Education → Combined Education Opportunity
- Task other than patient care → Task Diversity
- Dependents at Home → Job Responsibility
- Total Salary → Economic Compensation

# Study Population Characteristics

Characteristics		N	%
Gender	Female	23,144	93.7
	Male	1,545	6.3
Race	Non white	3,786	15.3
	White	20,903	84.7
Marital status	Now married	17,997	72.9
	Widowed, divorced	4,382	17.8
	Never married	2,310	9.4
Initial degree	Diploma	5,150	20.9
	Associate	11,248	45.6
	Bachelor	8,160	33.1
	Master or Doctorate	131	0.5
Highest degree	Diploma	3,549	14.4
	Associate	8,986	36.4
	Bachelor	8,936	36.2
	Master or Doctorate	3,218	13.0
Additional degree	No additional degree	18,141	73.5
	Additional degree	6,548	26.5

# Study Population Characteristics

Characteristics		N	%
Work setting	Hospital	14,361	58.2
	Nursing home	1,600	6.5
	Nursing education	700	2.8
	Public health/community health	2,699	10.9
	School health service	824	3.3
	Occupation health	194	0.8
	Ambulatory care setting	2,939	11.9
	Insurance claim/Benefit	473	1.9
	Plan/Licensing	97	0.4
	Other	802	3.3
Task	Direct patient care only	5,395	21.9
	Other work	19,294	78.2
Full time	Part time	6,138	24.9
	Full time	18,551	75.1
household income	\$25,000 or less	186	0.8
	\$25,001 to \$50,000	3,795	15.4
	\$50,001 to \$100,000	13,883	56.2
	\$100,001 to \$150,000	5,125	20.8
	More than \$150,000	1,700	6.9

# Study Population Characteristics

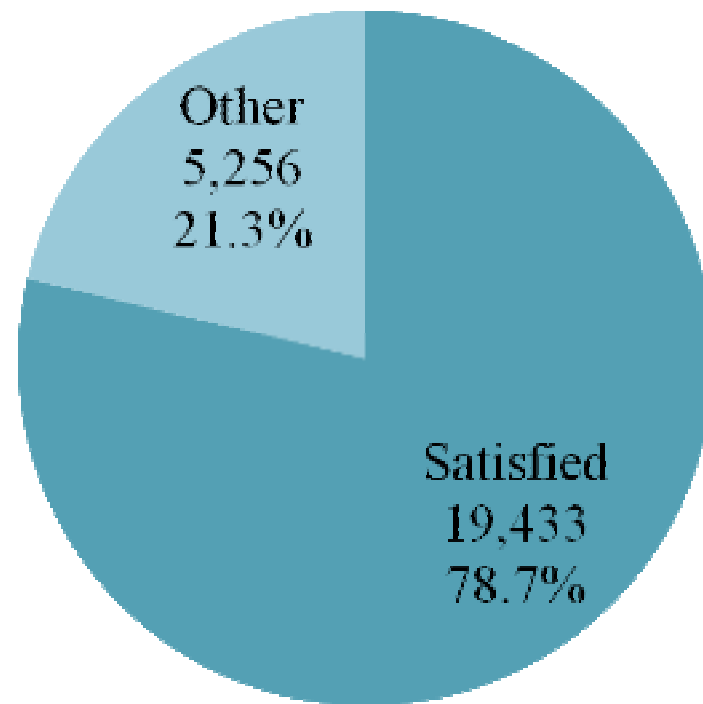
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Characteristics	Mean $\pm$ SE
Age, years	44.6 $\pm$ 0.06
Year since initial nursing education, years	17.5 $\pm$ 0.07
Total salary, \$	52,821 $\pm$ 1,491

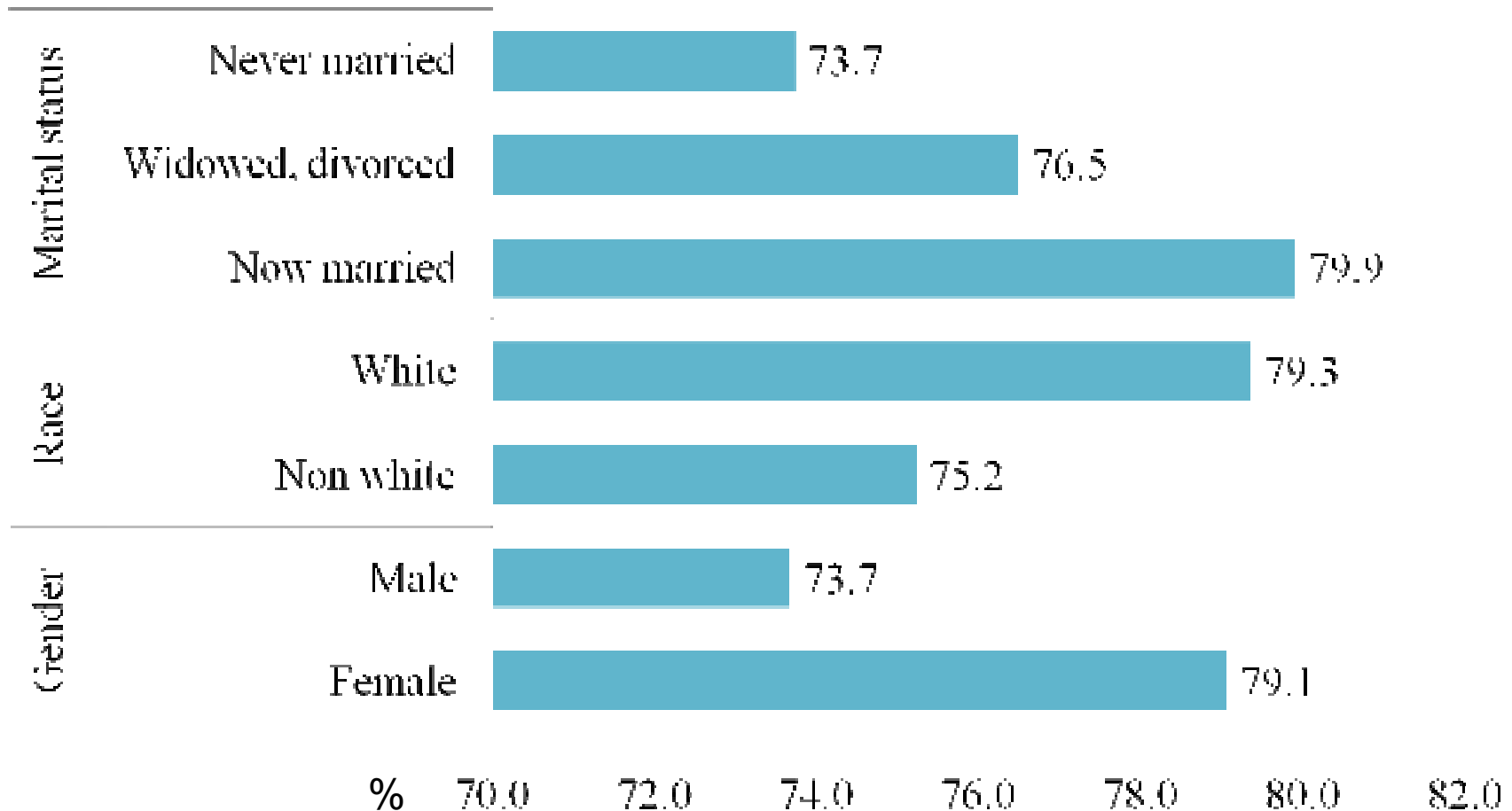
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# Main Outcome Measure

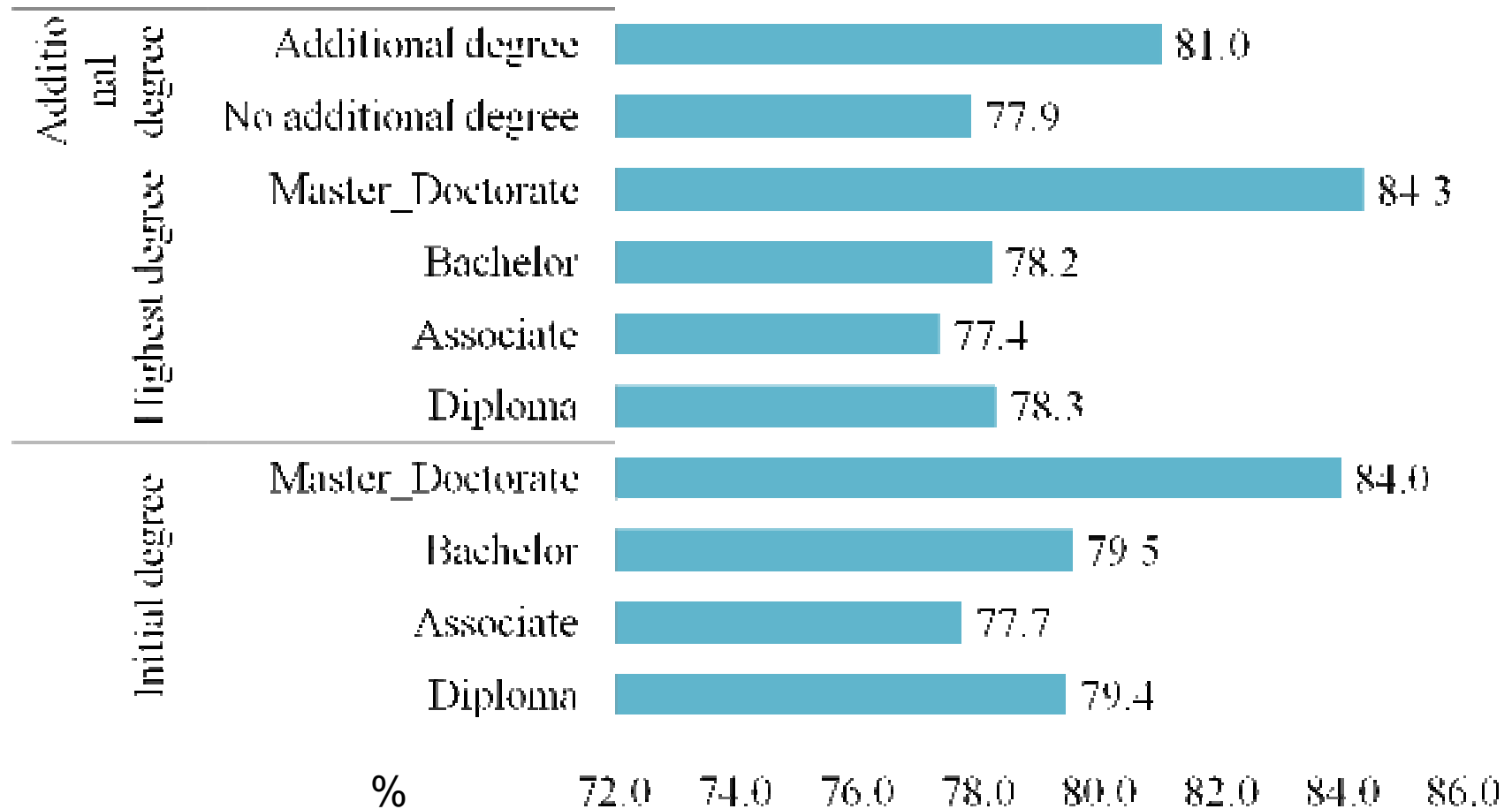
## Satisfaction



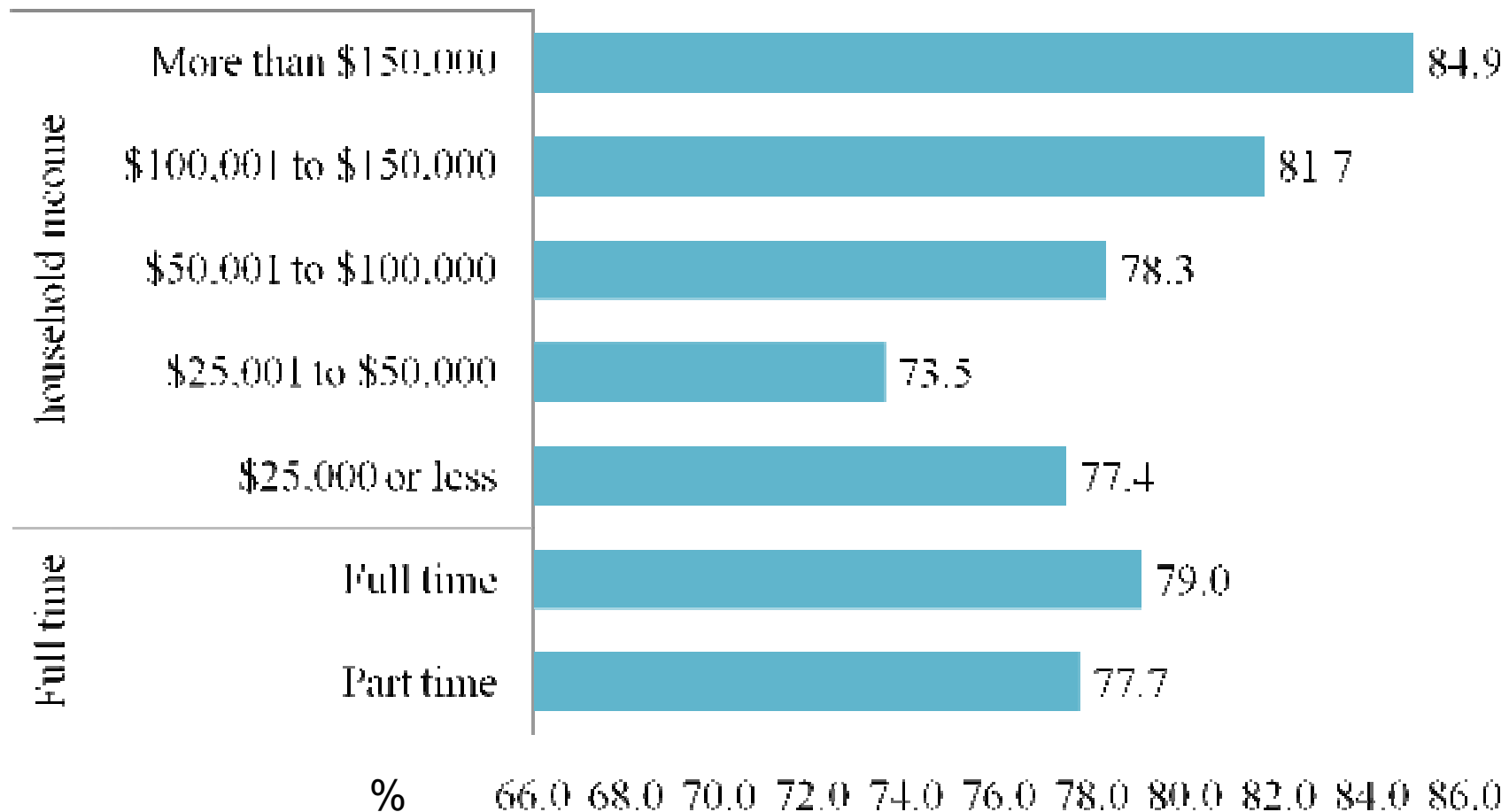
# Gender & Marital Status



# Degree

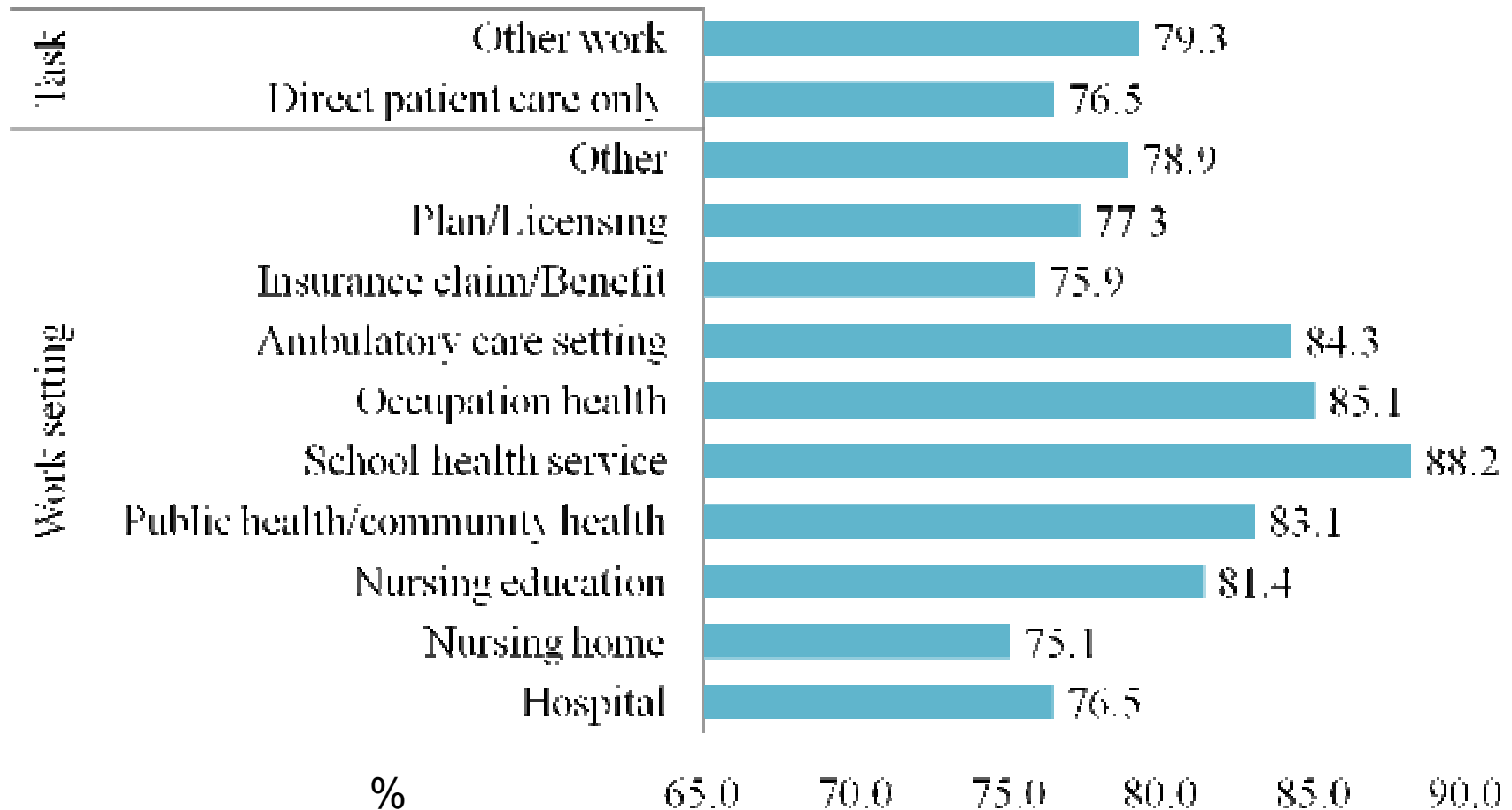


# Household Income and Work Setting





# Work Setting, Task & Time Commitment



# Satisfaction Odds Ratios

Odds ratios\* of satisfaction for the characteristics of 2004 National Sample Survey of Registered Nurses whose ages are between 20 and 65

<b>Characteristics</b>	<b>Crude odds ratio</b>	<b>95% CI</b>	<b>Adjusted odds ratio**</b>	<b>95% CI</b>
Additional education	1.266	1.165 to 1.376	1.220	1.110 to 1.340
Task other than direct care	1.166	1.078 to 1.263	1.124	1.040 to 1.214
Dependant at home	1.110	1.016 to 1.213	1.146	1.029 to 1.277
Total annual salary (in \$1000)	1.003	1.002 to 1.004	1.003	1.000 to 1.004
Full time	1.093	1.001 to 1.194	1.046	0.947 to 1.155
Gender(male)	0.739	0.635 to 0.860	0.698	0.603 to 0.808
Age	1.002	0.999 to 1.006	1.001	0.996 to 1.006

\* Weighted logistic regression accounting for complex sample design

\*\*Weighted logistic regression accounting for complex sample design and controlling other variables in the model

# Strength and Limitation

- Strengths
  - Sample size
  - Standardization of questions and protocols
- Limitations
  - Cross-sectional survey
  - Population average

# Recommendations

- Education Reform (Advanced Degree)
  - Provide a more well-rounded training in the early stages of nursing school
  - Cater education programs toward serving the current population's health needs

# Recommendations

- Organizational Restructuring (Task Diversity)
  - Reorganize responsibility in patient care
  - Influence nursing associations to play a role in the development of the profession
  - Allow nurses to pinpoint problems in their work place and propose solutions
  - Acknowledge job utility within family dynamic

# Conclusion

- In response to the demand for nurses, supply of nurses will be affected by nurse satisfaction
- Nurse satisfaction is related to education, task diversity, and family responsibility as well as salary
- Policy makers need to take into account factors that affect job satisfaction to close the nursing shortage gap

# Acknowledgements

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