

# Nursing Students' Perceptions and Beliefs about Immunizations

Kathryn L. Wilson, SN and Jennifer S. Avery, PhD, RN, GNP-BC

## Introduction

- Immunizations have contributed to the health of citizens for decades.<sup>1</sup>
- Nurses serve as a main source of education and greatly influence vaccine decisions.<sup>2</sup>
- Understanding nursing students' perceptions and beliefs can enhance education and advocacy.

## Purpose

- To explore nursing students' perceptions and beliefs about immunizations and the diseases they are aimed to prevent.



## Method

- Electronic survey sent to 400 BSN students.
- Survey adapted from Gellin et al.'s *Do Parents Understand Immunizations...*<sup>3</sup>
- Influenza, Human Papillomavirus, Hepatitis A, Meningococcal, Pneumococcal added to survey.
- Items scaled 10-0: strongly agree (10) to strongly disagree (0).

## Results

- 74 students responded (18.5%)
- 24 students had at least some missing data.
  - If 75% of survey completed, missing data replaced with student's mean for that section.
- No significant demographic differences between students with complete versus incomplete data.

## Demographics (n = 73)

Age	Gender	Race	Program
Range: 19-37	Male: 12%	White: 84%	Traditional: 44%
M: 24	Female: 88%	African: 10%	2 <sup>nd</sup> degree: 20%
		Asian: 1%	Collaborative: 22%
		More than one: 6%	2+2: 14%

12% (n=9) have children

16% (n = 12) are married

## Question 1: What are nursing students' perceptions of immunizations?

Table 1. M (SD) Comparison of Students' and Parents'<sup>3</sup> Perception of Disease Severity, Likelihood of Infection if not Immunized, and Concern about Side Effects from Immunizations.

Disease	Perceived Severity (n = 66)		Perceived Likelihood of Infection (n = 59)		Concerns about Side Effects (n = 53)		Vaccine
	M (SD)	MD	M (SD)	MD	M (SD)	MD	
Polio	8.06 (2.35)***	-1.24	5.39 (3.00)	-0.31	2.19 (2.43)***	-1.91	Polio
Hib	6.67 (2.18)***	-3.13	6.08 (2.35)	0.18	2.26 (2.38)***	-2.24	Hib
Hepatitis B	7.47 (1.96)***	-1.73	5.71 (2.54)	-0.59	2.11 (2.35)***	-2.09	Hepatitis B
Pertussis	7.17 (2.39)***	-1.03	5.92 (2.66)	-0.38	2.09 (2.22)***	-2.01	DTaP
Measles	7.50 (2.32)*	-0.60	5.69 (3.03)**	-1.11	2.26 (2.36)***	-1.64	MMR
Varicella	6.26 (2.36)	-0.14	6.08 (2.62)*	-2.12	1.98 (2.09)***	-1.82	Varicella
Influenza	5.76 (2.19)		6.59 (2.06)		2.66 (2.58)		Influenza
Hepatitis A	7.43 (2.07)		5.61 (2.29)		2.11 (2.42)		Hepatitis A
HPV	7.03 (2.11)		6.66 (2.61)		2.90 (2.93)		HPV
Meningitis	8.64 (1.75)		5.95 (2.51)		2.13 (2.46)		Meningo-coccal
Pneumonia	7.06 (2.15)		6.00 (2.53)		2.00 (2.13)		Pneumo-coccal

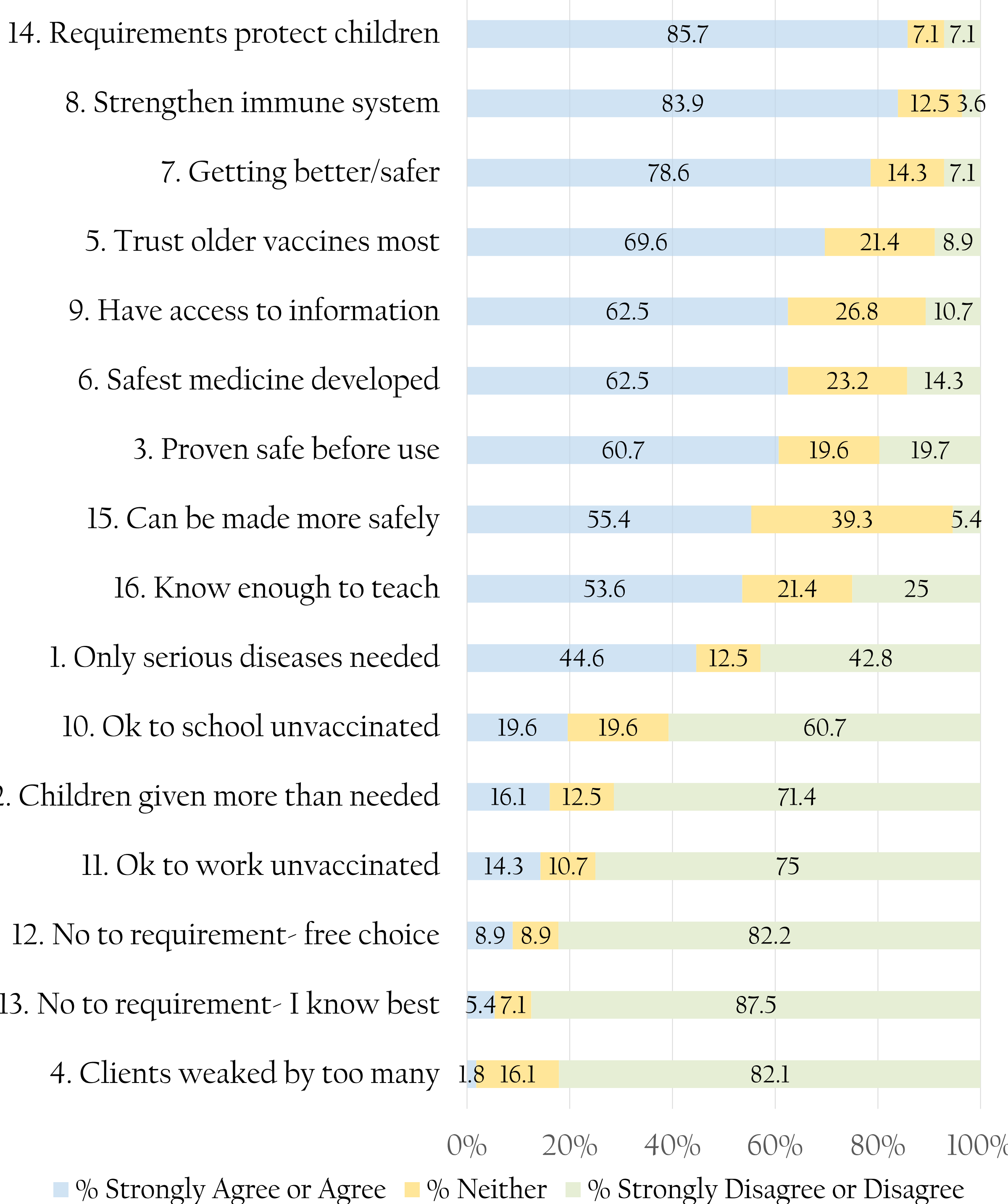
\*p ≤ 0.05 \*\*p ≤ 0.01 \*\*\*p ≤ 0.001

## Hypotheses

- ❌ 1.1) Nursing students will have an increased average perceived severity of disease compared to Parents.<sup>3</sup>
- ❌ 1.2) Nursing students will have an increased average perceived likelihood of infection compared to Parents.<sup>3</sup>
- ✅ 1.3) Nursing students will have a decreased perceived concern about side effects from receiving a vaccine compared to Parents.<sup>3</sup>

## Question 2: What are nursing students' beliefs about immunizations?

Table 2. Nursing Students' Beliefs about Immunizations (n = 56)



## Question 3: How do perceptions and beliefs differ between students based on their demographics?

- No significant difference in beliefs by race, programs, marital status, or child status.
- Men have significantly ( $p \leq 0.05$ ) more agreement ( $MD = 0.72$ - $0.86$ , Range = 0-4) compared to women on immunization safety (Beliefs 3, 7), efficacy (Belief 8), and education (Belief 16).
- Significant negative ( $p \leq 0.05$ ) relationship between age and immunization safety (Belief 6).
- Significant positive ( $p \leq 0.05$ ) relationship between age and unvaccinated children at school (Belief 10).

## Belief about General Vaccine Safety

- Overall vaccine safety rated 0 (not at all safe) to 10 (completely safe) ( $n = 57$ ).
- Overall vaccine safety rating high ( $M = 8.49$ ,  $SD = 1.4$ ) and similar to Parents<sup>3</sup> ( $M = 8.6$ ,  $SD = 1.6$ ).

## Discussion

- Hypotheses likely unsupported given lack of preventable disease student experiences.
- Perceived likelihood of infection for Measles and Hep A lowest despite recent outbreaks.<sup>4,5</sup>
- Students' trust in older vaccines is supported by their perceptions of Polio vs. HPV.
- Influenza perceived as least severe, yet the likelihood of infection was one of the highest.
- Only 53%** of students agree that they are prepared to educate their clients about immunizations.
- Limits include sample size, sample from one institution, incomplete data, and lack of access to data from comparison study.

## Conclusion

- Students believe immunizations are safe and important for the protection of the public.
- However, current education of preventable diseases and immunizations are not fulfilling the needs of nursing students to be able to properly advocate for and educate clients.
- Schools and hospitals can use these results to identify future nurses' immunization-related education needs.



## References

- Casey, G. (2016). Vaccines - how and why they work. Kai Tiaki: Nursing New Zealand, 22(1), 20-24. Retrieved from <https://www.nzno.org.nz>
- Wiley, S. K. (2015). Encourage patients to roll up their sleeves for influenza vaccination! Nursing, 45(11), 50-54. doi:10.1097/OLNURSE.0000472565.07858.53
- Gellin, B. G., Mailbach, E. W., & Marcuse, E. K. (2000). Do parents understand immunizations? A national telephone survey. Pediatrics, 106 (5), 1097-1102. doi:10.1542/peds.106.5.1097
- Phadke VK, Bednarczyk RA, Salmon DA, & Omer SB. (2016). Association between vaccine refusal and vaccine-preventable diseases in the united states: A review of measles and pertussis. JAMA, 315(11), 1149-1158. doi:10.1001/jama.2016.1333
- Campos-Outcalt, D. (2018). CDC provides advice on recent hepatitis A outbreaks: Although rates of hepatitis A virus infection have steadily declined since 1995, recent spikes in community outbreaks compel a renewed effort in adult immunization. Journal of Family Practice, 67(1), 30-32. Retrieved from <https://www.mdedge.com/jfponline>