Prevalence and use of high-fidelity simulation in family nurse practitioner programs

Christina Pepin PhD, RN, CNE[1] & Jessica Doolen PhD, APRN, CNE, CHSE[2]

1) Marian University   2) University of Nevada Las Vegas

Introduction

Background

- Nurse practitioner programs (NP) have grown 60% between 2012 and 2016[1,2] causing a shortage in clinical sites and increased competition[2-6].
- To respond many programs have implemented high-fidelity simulation (HFS)[7].
- Regulating agencies vary on acceptance of simulation as clinical hours due to lack of evidence to support replacement.
- There is growing support for replacement from 49% in 2013[9] to 77% in 2019[10].

Purpose

To examine if and how Family Nurse Practitioner (FNP) programs use high fidelity simulation (HFS) during 2017-2018 .

Methods

- Descriptive survey modified from NCSBN simulation survey with permission
- 12 questions on prevalence of HFS, 6 questions on use of HFS, and 5 program characteristics questions.
- Content validity established by expert panel.
- Survey piloted with n= 4 FNP programs.
- Survey managed through Qualtrics and open Aug 2-Oct 6, 2018.
- Survey link emailed to dean, director, chair, or coordinator of 377 FNP programs.
  - 131 programs participated (34.7%)
  - n= 119 fully completing survey (31.6%)

Results

Prevalence of HFS

- 112 (85.5%) utilize HFS in at least one course; the most common is Advanced Health Assessment at 59 (14.9%).
- Average amount of HFS per program = 36 hours, average per course = 10 hours.
- 243 simulation topics were reported as required. The most common topics included diabetes management, women's health, chest pain, and hypertension management.
- 288 (72.9%) courses reported using Standardized Patients (SP) (n=395) . Types of SPs used included professional SPs (59, 65.6%), community volunteers (34, 37.8%), and undergraduate nursing students (26, 28.9%) (n=90).
- 166 (42%) of courses reported used computer programs (n=395). Shadow Health was the most frequent program used (42, 63.6%) (n=66).
- 84 (71.8%) reported they should be using more HFS (n=117).
- 118 reported type of scenarios used. The options of OSCE, traditional, both, or neither reported nearly equally used.
- Median simulation length 1 hour and 0.5 hours of debriefing (n=107).

Type of High-Fidelity Simulation Used per Course Theme

Theme	Frequency	HFM	SP	Computer-based	Unknown
3Ps	65	17	45	43	0
Diagnostics and Procedures	9	2	6	5	0
General Clinical Experiences	43	5	35	12	1
FNP/Primary Health Care	61	8	47	24	1
Adult Gerontology	35	6	20	15	0
Mental health	6	1	4	4	0
Women and Children	26	8	18	10	0
Role Development	6	0	6	0	0
Other	26	8	17	9	0
Course Number Only	118	16	90	44	6
Total	395	71	288	166	8

Note. HFM = high-fidelity manikin, SP = standardized patient, 3Ps = physical/health assessment, pharmacology, and pathophysiology, FNP = family nurse practitioner.

Results Cont.

Use of HFS

- Most common use of HFS is practice of skills, knowledge and abilities at 85 (75.9%).
- 37 (28.2%) using HFS count simulation hours towards clinical ranging from 6 to 100 hours (mean 36 hours).
- 82 (70%) of respondents would use a maximum of 5 to 30% of HFS in lieu of clinical if regulation allowed.
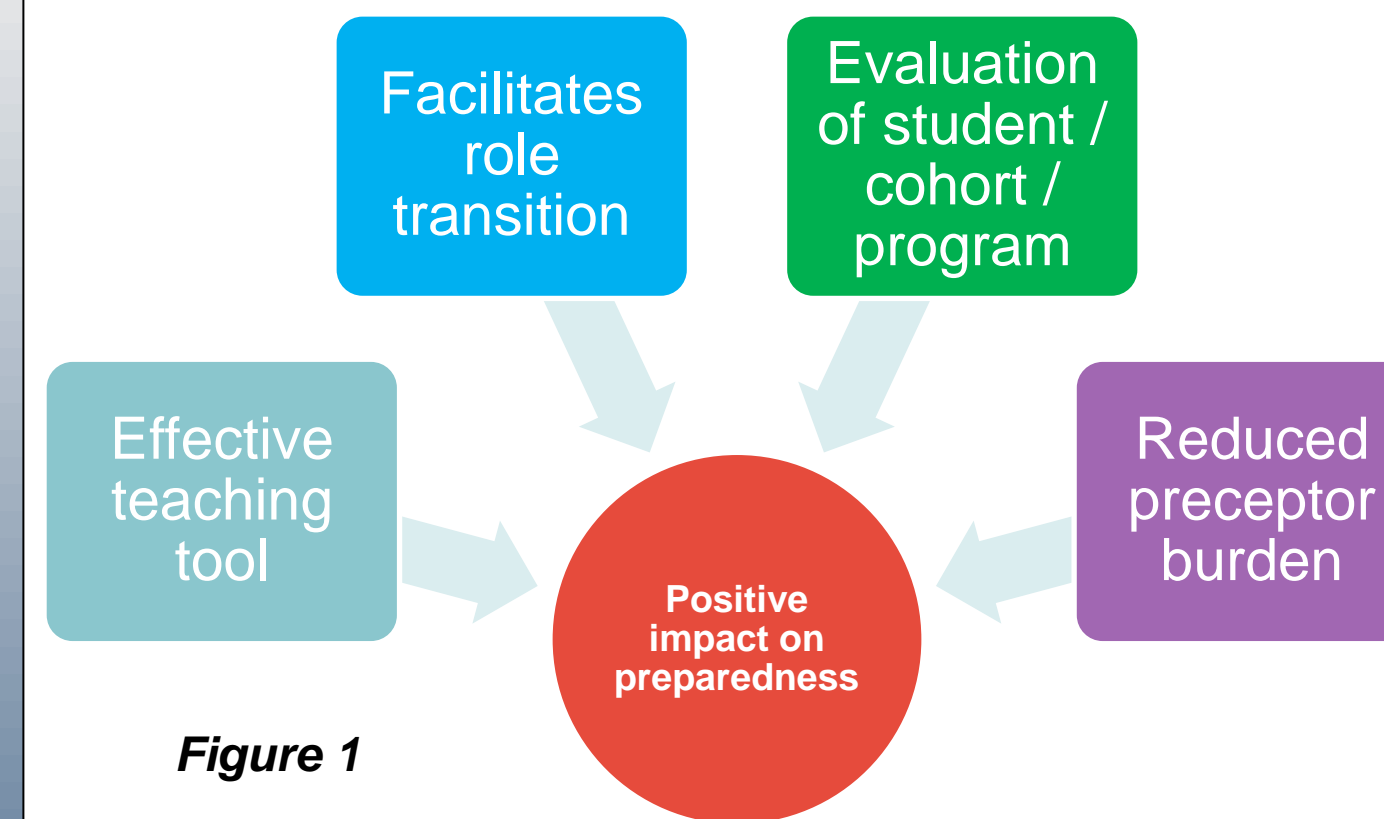- Perceived benefits of using HFS revealed 4 themes (see fig. 1) (n=121).

Figure 1

Conclusions

HFS is a widely used tool in FNP programs. Additional research should be conducted to determine the quality of simulation being conducted including faculty knowledge of simulation best practices and validation of evaluation tools used.

Opportunities

- Need further exploration of barriers
- Investigate FNP faculty training & support
- Multi-site scenario & grading rubric testing
- Telehealth implementation – especially in online programs

References

1. American Association of Nurse Practitioners. (2018). *NP facts*. Retrieved from https://www.aanp.org/images/documents/about-nps/npfacts.pdf
2. U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis. (2013). *Projecting the supply and demand for primary care practitioners through 2020*. Rockville, Maryland: Author. Retrieved from https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/projectingprimarycare.pdf
3. Cook, M. J. (2012). Design and initial evaluation of a virtual pediatric primary care clinic in Second Life. *Journal of the American Academy of Nurse Practitioners, 24,* 521–527. doi:10.1111/j.1745-7599-2012.00729.x
4. Fulton, C. C., Clark, C., & Dickinson, S. (2017). Clinical hours in nurse practitioner programs equals clinical competence: Fact or misnomer? *Nurse Educator, 42,* 195–198. doi:10.1097/NNE.0000000000000346
5. Gardenier, D. (2014). Point counterpoint: Should simulation count toward nurse practitioner student clinical practice hours? *Journal for Nurse Practitioners, 10,* 538–539. doi:10.1016/j.nurpra.2014.07.025
6. Giddens, J. F., Lauzon-Clabo, L., Gonce Morton, P., Jeffries, P., McQuade-Jones, B., & Ryan, S. (2014). Re-envisioning clinical education for nurse practitioner programs: Themes from a national leaders' dialogue. *Journal of Professional Nursing, 30,* 273–278. doi:10.1016/j.profnurs.2014.03.002
7. Parry, M. & Fey, M. K. (2019). Simulation in advanced practice nursing. *Clinical Simulation in Nursing, 26,* 1-2. doi:10.1016/j.ecns.2018.11.004
8. American Association of Colleges of Nursing. (2017). *Planning your NP education: NP program database*. Retrieved from https://www.aanp.org/education/student-resource-center/planning-your-np-education
9. National Organization of Nurse Practitioner Faculties. (2013). *NONPF special meeting: NP education today, NP education tomorrow: Executive summary*. Retrieved from http://c.ymcdn.com/sites/nonpf.site-ym.com/resource/resmgr/Docs/Executive
10. Nye, C., Campbell, S. H., Hebert, S. H., short, C., & Thomas, M. (2019). Simulation in advanced practice nursing programs: A north-American survey. *Clinical Simulation in Nursing, 26,* 3-10. doi: 10.1016/j.ecns.2018.09.005