



Allen College
UnityPoint Health

Nursing Education Research: Why Students Do and Do Not Participate

NURSING EDUCATION RESEARCH CONFERENCE 2020

Lisa D. Brodersen, EdD, PhD, RN, CNE

*School of Nursing, Allen College-UnityPoint Health
Waterloo, IA, USA*

Kelley Humphrey, PhD, RN

*School of Nursing, Southern Illinois University Edwardsville
Edwardsville, IL, USA*

Problem

- Research needed to advance nursing education science (Patterson & Krouse, 2017).
- Student participants essential.
- Recruiting participants often difficult (Raymond et al., 2018; Aycock & Currie, 2013).
- Incentives must not be coercive (Patterson, 2017; Roberts & Allen, 2015).
- Nursing students have competing demands (Adamson & Prion, 2015).

Background (1)

- Dissertation study of perceived stress and physiological stress reactivity associated with exit exam testing in a bachelor of science degree program (Brodersen, 2018).
- Accelerated and upper-division nursing programs in a small, midwestern health sciences college (School A).
- 90% female, white.
- Despite incentive, did not meet recruiting goal.

Background (2)

- Study required \approx 2.5 hours of student time:
 - Collection of saliva for measurement of cortisol and alpha amylase.
 - Completion of self-report measures of stress, anxiety, coping, health, sleep, personal characteristics.
- Compensated \$30 (\$5 for enrolling, \$10 for first data collection phase, \$15 for second data collection phase).
- Second study to investigate student participation in nursing education research.

Background (3)

- Opportunity for second study site: School B
- Dissertation study of stress associated with voluntary simulation learning activity (McGuire, 2019).
- Large midwestern university.
- Junior-level accelerated and traditional students.
- > 90% female, white.

Background (4)

- Simulation stress study required \geq 1 hour of student time:
 - Collection of hair and saliva for measurement of cortisol.
 - Completion of self-report measures of stress, anxiety, coping, personal characteristics.
- Compensated with \$25 retail gift card.

Purpose

- Investigate why nursing students do and do not participate in research.
- Determine what might be done to promote research participation.

Theoretical Framework

- Framework for Ethical Research Practice (Bradbury-Jones & Alcock, 2010)
- Student participation in nursing education research influenced by
 - Research contribution
 - Researcher relationship
 - Personal impact

Methods (1)

- Design: descriptive, online survey
- Instruments
 - Researcher-developed surveys
 - Survey of research participation experience
 - Survey of reasons for not participating in research
 - 7-8 items, open-ended and forced-choice
 - \cong 5 min. completion time.

Methods (2)

- Participants could opt to receive \$6 gift card to local sandwich or coffee shop.
- Protection of Human Subjects
 - Approved by school A's institutional review board.
 - Institutional authorization agreement Between School A and B, School A as IRB of record
 - Students assured of voluntary participation and confidentiality of responses.

Data Analyses of Forced-Choice Items

- IBM SPSS version 26.
- Categorical variables
 - Described with frequencies and percentages.
 - Group differences analyzed with Pearson's Chi-Square.
- Continuous variables
 - Described with measures of central tendency and variability.
 - Group differences analyzed with independent T test.

Data Analyses of Open-Ended Items

- Content analysis based on categories indicated by theoretical framework.
 - Research contribution
 - Researcher relationship
 - Personal impact variables
- Open-ended responses analyzed independently by researchers and compared.
- Discrepancies resolved through discussion.

Procedure-School A (Exit Exam Stress Study)

- Eligible participants: Final-semester students who did and did not participate in exit exam stress study fall '16, spring '17, summer '17 (Brodersen, 2018).
- Students who participated ($n = 43$) invited to do “Survey of Participation Experience in Exit Exam Stress Study.”
- Students who declined participation ($n = 63$) invited to do “Survey of Reasons for Not Participating in Exit Exam Stress Study.”
- Individual survey links sent to students’ email accounts with weekly reminders ($n = 4$) to non-responders.

Methods-School B (simulation stress study)

- Eligible participants: Junior-level students who did ($n = 29$) and did not ($n = 229$) participate in simulation stress study fall '18 (McGuire, 2019).
- Email sent to students' college email accounts by researcher with instructions and generic links to surveys:
 - Survey of Participation Experience in Study of Stress and Simulation Outcomes
 - Survey of Reasons for Not Participating in Study of Stress and Simulation Outcomes
- Reminder emails ($n = 4$) with generic survey links sent weekly to all eligible students.

Response Rates (1)

	School A	School B	Total
Survey of Research Non-Participants			
Students invited (n)	63	229	292
Did survey (n)	46	70	116
Response rate-research non-participants (%)	73.0	30.6	39.7
 Survey of Research Participants			
Students invited (n)	43	29	72
Did survey (n)	40	23	63
Response rate-research participants (%)	93.0	79.3	87.5

Response Rates (2)

- Total students invited = 364
- 179/364 (49%) of invited students answered one or more items on survey.
- Significantly more invited students in School A participated in survey:
 - School A: 86/106 (81%)
 - School B: 93/258 (36%)
- $\chi^2 61.105 (1), P < .001$

Device Used For Survey

	Research Participants		Research Nonparticipants		All	
	n	%	n	%	n	%
Phone	19	30.2	44	38.9	63	35.8
Tablet	0	0.0	1	0.9	1	0.6
Laptop	38	60.3	60	53.1	98	55.7
Desktop	6	9.5	8	7.1	14	8.0
Totals	63	100.0	*113	100.0	176	100.0

*3 respondents did not answer question.

χ^2 2.111(3), $P = .550$

Perception of monetary incentive

	Research Participants		Research Nonparticipants		All	
	n	%	n	%	n	%
Too much	3	4.8	3	2.6	6	3.4
Just right	58	92.1	98	86.0	156	88.1
Too little	2	3.2	13	11.4	15	8.5
Totals	63	100.0	*114	100.0	177	100.0

*2 respondents did not answer question.
 χ^2 3.957(2), $P = .138$

If you had it to do over, would you have participated in the study?

	Research Participants		Research Nonparticipants		All	
	n	%	n	%	n	%
Yes	59	93.7	47	41.2	106	59.9
No	2	3.2	28	24.6	30	16.9
Unsure	2	3.2	39	34.2	41	23.2
Totals	63	100.0	*114	100.0	177	100.0

*2 respondents did not answer question.

χ^2 46.443(2), $P = <.001$

School Differences (1)

- Among survey respondents, significantly more School A students participated in research opportunity at their school than at School B:
 - School A: 40/86 (47%)
 - School B: (23/93; 25%),
 - $\chi^2 9.293 (1), P = .003.$

School Differences (2)

- “How much stress did participating in the study add to your life?”
- Visual analog scale: 0 = no added stress, 100 = considerable added stress.
- School B's average participation stress rating (31.57 ± 18.451) was significantly higher than school A's (10.35 ± 18.621)
 - $t(58) -4.305, p < .001$
 - CI(95%) -31.077, -11.351

“If cash incentive had been higher, would have participated in the study?”

	School A		School B		All	
	n	%	n	%	n	%
Yes	17	37.0	24	35.3	41	36.0
No	11	23.9	24	35.3	35	30.7
Unsure	18	39.1	20	29.4	38	33.3
Totals	46	100.0	68	100.0	*114	100.0

*2 respondents did not answer question.

χ^2 1.956(2), $P = .376$

Reasons for Participating in Research

Category	Description	n (%)
Research contribution	Wanted to contribute to nursing research; help future students.	9 (14%)
Researcher relationship	Wanted to help the researcher.	38 (60%)
Personal Impact	Interesting, incentive, experience, low risk.	49 (78%)

#1 Reason for Participating in Research

Category	n (%)	Examples
Research contribution	6 (10)	<p>“To provide data that may be useful in determining the effect of psychological and physiological stress and cognitive appraisal on simulation outcomes.”</p> <p>“To potentially help future nursing students.”</p>
Researcher relationship	24 (38)	<p>“Help the out the researcher by participating.”</p> <p>“I really wanted to help [researcher] with her research because she’s a very good professor and I wanted to help her further her own research and knowledge.”</p>
Personal Impact	49 (78)	[See next slide]

#1 Personal Impact Themes

Theme	n (%)	Examples
Monetary Incentive	24 (38%)	<p>“I needed the money.”</p> <p>“Probably the gift card, honestly.”</p>
Risk/benefit	2 (3.2%)	“It was non-invasive and seemed very straight forward.”
Experience	3 (4.8%)	“I thought it would be a good experience to be a part of a study...”
Interested/curious	3 (4.8%)	“To see what it all entailed.”

Reasons for not participating in research

Category	Description	n(%)
Research contribution	Study not original, would not contribute to nursing research.	1(0.9)
Researcher relationship	Lack of trust in researcher's use of biological specimens.	3 (2.6)
Personal Impact	Negative emotions, lack of time, lack of interest, study requirements.	112 (97)
Forgot, unaware	Forgot to enroll, unaware of opportunity.	6 (5.2)

#1 Reason for Not Participating in Research

Category	n(%)	Examples
Research contribution	1 (0.9)	"I did not apply because I thought that the study was not original."
Researcher relationship	2 (1.7)	"I'd rather keep my distance from ... faculty on giving them any personal information about me." "I did not like that the situation described was different than the one people experienced."
Personal Impact	106 (91.4)	[See next slide]
Forgot, unaware	4 (3.4)	"I forgot to sign up."

#1 Personal Impact Themes

Theme	n (%)	Examples
Stress, high stakes	24 (20.7)	“Current stress level over how important this test is, so my priority was preparing for the test with the time I had.”
Time, scheduling	60 (51.7)	“I seemed like a huge chunk of time and time commitment that I didn't want to commit to in this final semester.”
Study requirements	14 (12.1)	“I just don't like the thought of spit.” “I like to have a snack before my tests, I drink coffee while taking exams.” “Hair...”
Not interested	3 (2.6)	“Did not want to.”

Research Non-Participants: “What, if anything, could the researcher have done to motivate you to participate in the study?”

- Suggestions made for
 - Communication
 - Methodology
 - Incentive
- Some feasible, some not.

Communication Suggestions

- Simplify explanation of study.
- Present study information in video.
- Offer more information meetings.
- Provide more details about protection of privacy.
- Personally and enthusiastically present study to students.
- Give students their results (e.g., cortisol levels).

Methodology Suggestions

- Do study with a test other than exit exam.
- Do study at a different time of day.
- Do study at different (more convenient) location.
- Offer multiple opportunities to participate.
- Don't require so much time.
- Don't sample hair.

Incentive Suggestions

- Offer gift card to different store or one of greater value.
- Require participation.
- Make participation worth points in class.
- Give clinical credit.

Limitations

- Homogeneous student populations
- No demographic questions included on survey
- Greater representation of School A
- Generic link sent to students in School B
 - Some students did both surveys
 - Some students did survey multiple times

Conclusions (1)

- Good overall survey response rate (49%; 95% confidence, 5% margin of error).
- Study requirements and program level may influence research participation.
- Monetary incentive of \$25-30 considered adequate and motivates participation.
- Framework for Ethical Research Practice (Bradbury-Jones & Alcock, 2010) effective organizing scheme.

Conclusions (2)

- Why do students participate in nursing education research?
 1. Personal impact factors: Money
 2. Researcher relationship: Desire to help researcher.
 3. Research contribution: Help future students.

- Why don't students participate in nursing education research?
 1. Personal impact: No time, added stress.
 2. Forgot, unaware
 3. Researcher relationship: Lack of trust
 4. Research contribution: Lack of contribution.

Implications

- What might researchers do to promote student participation in nursing education research?
 - Offer monetary incentives commensurate with study requirements.
 - Personally recruit study participants when ethical.
 - Offer multiple opportunities for students to learn about study.
 - Ensure that informed consent process includes clear rationale for study procedures and design.
 - Design study procedures to accommodate student schedules, when possible.

Future Research on Research Participation

- More diverse samples
- Graduate students
- Influence of
 - Program type
 - Program level
 - Study design and procedures
 - Demographic variables
 - Other academic variables

References (1)

Adamson, K. A., & Prion, S. (2015b). Making sense of methods and measurement: Ethics and participant recruitment, part II. *Clinical Simulation in Nursing*, 11(7), 323-324.
<http://doi.org/10.1016/j.ecns.2015.03.007>

Aycock, D. M., & Currie, E. R. (2013). Minimizing risks for nursing students recruited for health and educational research. *Nurse Educator*, 38(2), 56-60. <http://doi.org/10.1097/NNE.0b013e3182829c3a>

Bradbury-Jones, C., & Alcock, J. (2010). Nursing students as research participants: A framework for ethical practice. *Nurse Education Today*, 30(2), 192-196. <http://doi.org/10.1016/j.nedt.2009.07.013>

References (2)

Brodersen, L. D. (2018). *Exit exam testing, stress, and test anxiety in prelicensure nursing education* (Publication No. 10784458). [Doctoral dissertation, Saint Louis University, St. Louis]. ProQuest Dissertations & Theses Global.

McGuire, K. M. (2019). *The effects of psychological and physiological stress and cognitive appraisal on simulation performance in undergraduate baccalaureate nursing students* (Publication No. 13860257). [Doctoral dissertation, Saint Louis University, St. Louis]. ProQuest Dissertations & Theses Global.

Patterson, B. J., & Krouse, A. M. (2017). Researching nursing education. In B. J. Patterson & A. M. Krouse (Eds.), *Scientific inquiry in nursing education: Advancing the science* (pp. 1-12). Wolters Kluwer.

References (3)

Patterson, B. J. (2017). Ethical inquiry in research in nursing education. In B. J. Patterson, Krouse, Anne M. (Ed.), *Scientific inquiry in nursing education: Advancing the science* (pp. 65-79). Philadelphia, PA: Wolters Kluwer.

Raymond, C., Profetto-McGrath, J., Myrick, F., & Strean, W. B. (2018). Process matters: Successes and challenges of recruiting and retaining participants for nursing education research. *Nurse Educator*, 43(2), 92-96. <http://doi.org/10.1097/NNE.0000000000000423>

Roberts, L. D., & Allen, P. J. (2015). Exploring ethical issues associated with using online surveys in educational research. *Educational Research and Evaluation*, 21(2), 95-108.

<http://doi.org/10.1080/13803611.2015.1024421>

Acknowledgements

This study was supported by an Iowa League for Nursing Professional Development Grant.

Lisa.Brodersen@AllenCollege.edu



This Photo by Unknown Author is licensed under [CC BY-SA](#)