



Introduction

- Health disparities disproportionately affect vulnerable populations, particularly the poor and elderly.¹
- Studies have shown that dentists who feel that their undergraduate dental education prepared them well to treat underserved populations are more likely to treat and have positive attitudes toward treating these groups.^{1,2}
- A study conducted with nursing students found that they had more positive attitudes towards treating disabled populations before a rehabilitation conference than afterward.³

Purpose

To assess shifts in the attitudes of University of Iowa Leadership Education in Neurodevelopmental Disabilities (LEND) students, nursing students, and faculty/staff regarding treating underserved populations based on an educational model that incorporates a poverty simulation as a component of their education.

Materials & Methods

- IRB approval was obtained
- 410 LEND and nursing students were invited to participate in a poverty simulation between the years of 2019-2023.
- A 20-question survey measuring participants’ beliefs regarding poverty on a 5-point Likert scale was administered immediately before and after the simulation.
- The responses from both surveys were paired to evaluate changes in beliefs.
 - One point was assigned for each empathetic response (maximum positive score=20).
 - Negative belief responses were scored as zero.
- Data were entered into an Excel spreadsheet and analyzed using SAS Software version 9.4.
- Statistical analysis included Bowker’s symmetry test and weighted Kappa statistic (alpha=0.05).



Results

Table 1. Frequency distributions of changes in sum scores for respondents with empathetic answers between Pre- and Post-Poverty Simulation Questionnaires (N=385)

	Change in Sum Scores	Frequency (N)	Percentage (%)
More Negative	-9	1	0.3
	-8	1	0.3
	-7	1	0.3
	-6	1	0.3
	-5	1	0.3
	-3	4	1.0
	-2	7	1.8
No Change	-1	36	9.4
	0	66	17.1
More Empathetic	1	75	19.5
	2	61	15.8
	3	49	12.7
	4	34	8.8
	5	25	6.5
	6	10	2.6
	7	4	1.0
	8	4	1.0
	9	2	0.5
	10	1	0.3
	11	1	0.3
	14	1	0.3

- 385 participants completed both the pre- and post-surveys
- Average age of participants was 24.0±7.2 years
- 34.7% LEND students, 50.8% nursing students, 14.5% other
- 11.2% participants identified male
- 80.7% Caucasian
- 88.4% expressed moderate- liberal political beliefs
- Shifts in responses between pre- and post-surveys were observed for sixteen questions (p<0.05 in each instance)
- 201 subjects (52.2%) responded empathetically to 16 or more of the 20 questions prior to the simulation
- 288 (74.8%) provided empathetic responses to 16 or more questions after the simulation
- Levels of agreement ranged from kappa=0.62 to kappa=0.16 indicating that changes of opinions about poverty occurred after participating in the poverty simulation
- The highest (kappa=0.62) and lowest (kappa=0.16) levels of agreement were noted for questions respectively
 - 12) “The government spends too much money on poverty programs”
 - 17) “There are additional emotional costs associated with being poor in America”
- Substantial agreement (0.61-0.80): Q12
- Moderate agreement (0.41-0.60): Q1, Q3, Q5, Q6, Q7, Q11, Q14, Q20
- Fair agreement (0.21-0.40): Q2, Q4, Q8, Q9, Q13, Q15, Q16, Q18, Q19
- Slight agreement (0.01-0.20): Q10, Q17

Table 2. Percentage of respondents who indicated “empathetic” answers to each statement (N*= 385)

- BLUE column = Agreement between Pre- and Post-Questionnaire Responses (N=385)
- Shaded Question#Statement no significant change
- Empathetic answers: Disagree=Questions 1, 2, 3, 6, 7, 8, 12, 13, 14, 15, 16, 18, 19, 20; Agree=Questions 4, 5, 9, 10, 11, 17

		Pre-test (%)	Post-test (%)	Weighted Kappa ^a Coefficient	Consistency in Responses ^b (%)
Question # Statement					
1	Anyone can get ahead in this country.	72.6	81.7	0.49	298 (78.2)
2	An able-bodied person using food stamps is ripping off the system.	83.3	89.4	0.36	321 (83.6)
3	If poor people worked harder, they could escape poverty.	79.1	87.2	0.42	305 (80.1)
4	People are poor due to circumstances beyond their control.	73.0	78.9	0.25	266 (69.8)
5	Society has the responsibility to help poor people.	81.5	88.3	0.49	327 (85.4)
6	People on welfare should be made to work for their benefits.	34.6	53.9	0.46	242 (63.5)
7	Unemployed poor people could find jobs if they tried harder.	66.3	80.8	0.45	282 (74.2)
8	Being poor is a choice.	94.0	95.3	0.30	357 (93.2)
9	Poor people are discriminated against.	92.4	93.5	0.38	353 (92.1)
10	People who are poor should not be blamed for their misfortune.	75.0	83.6	0.20	278 (72.4)
11	If I were poor, I would accept welfare benefits.	74.7	87.0	0.42	314 (81.8)
12	The government spends too much money on poverty programs.	71.6	81.3	0.62	325 (84.6)
13	I believe poor people create their own difficulties.	80.2	89.9	0.36	313 (81.5)
14	The community provides effective and efficient services to help families with low income live.	51.3	62.0	0.44	253 (66.1)
15	People with low income do not have to work as hard because of all the services available to them.	87.4	94.3	0.26	333 (87.4)
16	People get enough money to survive from welfare, food stamps, and other social programs.	69.3	89.8	0.24	273 (71.5)
17	There are additional emotional costs associated with being poor in America.	91.6	94.0	0.16	338 (88.7)
18	The social service system in America only has a positive impact on those it serves.	56.7	65.1	0.38	256 (67.4)
19	The financial pressures faced by people with low income are no different than the financial pressures faced by other Americans.	80.2	87.3	0.28	306 (79.7)
20	People with low income just need more budgeting skills-how to stretch a dollar.	86.2	88.8	0.41	328 (85.4)

*Note: Several respondents chose not to answer specific questions.

Note: ^a Weighted kappa coefficient is a measure of agreement between two sets of ordinally scaled responses obtained from both pre- and post-surveys.
^b Consistency is defined as whether the responses in pre- and post-questionnaire stay the same.

Limitations

- The results may not be generalizable to all healthcare provider students.
- This study only measured short term changes in understanding and beliefs of students towards poverty.

Conclusions

Engaging in a poverty simulation can educate future healthcare professionals about the challenges faced by patients living in poverty while also fostering the development of empathy towards these individuals.

References

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