



University of the
Highlands and Islands
Oilthigh na Gàidhealtachd
agus nan Eilean

**Low Fidelity Simulation on Sensory Impairments in
Older Adults:
Undergraduate Nursing Students' Self-Reported
Perceptions on Learning**

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Overview

- Background and context to the simulation
- Evaluation summary
- Wider reach and impact



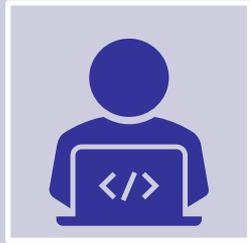
Background:

sensory and cognitive impairments

- Sensory impairment is one of the most common morbidities in later life.
- Globally more than 2.2 billion people have vision impairment or blindness (WHO, 2018)
- 466 million have disabling hearing loss (WHO, 2019a)
- 50 million people worldwide have dementia, with 10 million new cases occurring annually leading to an estimated prevalence of 152 million by 2050 (WHO, 2019b)
- Hearing, visual and cognitive disorders are common morbidities amongst older Europeans with high co-occurrence (Humes et al., 2013)



Background: pedagogy



Simulation is recognised as an excellent method for empathic communication training (Bauchat, Seropian and Jeffries 2016; NMC 2018)



Simulation training provides opportunity to practice and explore their skills to improve patient care (Foster et 2016; Haugland and Reime 2018)



DESIGN OF THE SIMULATION

- An innovative simulation workshop on sensory and cognitive impairment in older adults
- Part of the Dementia Enhanced Education to Promote Excellence (DEEPE)
- Delivered in Semester 1 prior to clinical placement
- Students across two campuses
- 130 – 150 students / year



Simulation learning objectives

- To facilitate student participation in experiential learning on sensory impairments in older adults
- To enable students to gain new insights on sensory and cognitive impairment/s in older adults through reflective learning
- To guide students to appreciate the day to day challenges faced by older adults with sensory and cognitive impairment
- To enable students to make relevant links to practice through experiential learning



PRE WORKSHOP GUIDED STUDY

Prior to the simulation workshop, students are asked to watch this video and consider how cognitive impairment impacts sensory impairment and vice versa.

https://www.youtube.com/watch?v=VH_QpmH_lhU



Simulation structure and delivery

- 24 students per workshop (4 students/station)
- Pre workshop guided study
- Five learning stations or 'microworlds' to experience visual, hearing and dual sensory impairments
- Station 6 – Solutions' Corner
- Guided reflection throughout
- Followed by debrief



Microworlds on sensory and cognitive impairment

Station	Simulation Focus	Activities
1	Vision, hearing and cognitive impairments	Reading the newspaper, completing a crossword puzzle, filling out a registration form in a different language (to simulate the co-existence of sensory & cognitive impairment/s) using sim specs that replicate a number of vision impairments such as retinal haemorrhage, field deficits, macular degeneration and ear plugs



Station 2

2

Vision and peripheral sensory impairments

Sorting out buttons of different colours, sizes and shapes (to simulate medicines management and polypharmacy).



Macular degeneration

Unilateral retinal detachment



Cataract

Diabetic retinopathy



Glaucoma

Retinitis pigmentosa



wiseGEEK



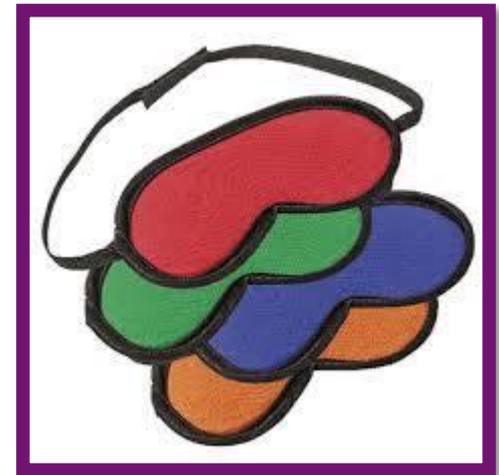
Station 3

3	Vision, cognitive and mobility impairments	Setting the table for two people using white and coloured / crockery cutlery (to simulate the importance of design and contrast)
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Station 4

4	Vision and gustatory impairments	Being blindfolded and fed with familiar flavours and textures of food
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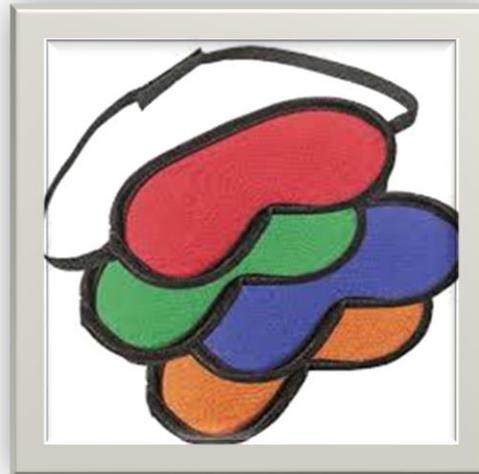


Station 5

5

Vision and olfactory impairments

An aroma guessing activity whilst being blindfolded and wearing nose plugs (to highlight the connection between smell and taste and its impact on nutrition in older people and risks [fire] associated with the loss of sense of smell.



Station 6- The Solutions



GUIDED REFLECTION



SIMULATION WORKSHOP ON SENSORY & COGNITIVE IMPAIRMENTS IN OLDER ADULTS

RECORD OF REFLECTIONS FROM THE EXPERIENCE AND LEARNING FOR DEBRIEF

Stations	Feelings and emotions experienced	Difficulties encountered	Potential impact of additional cognitive impairment	Insights gained	Relevance to practice
1. Sight impairment					
a. Reading newspaper					
b. Completing registration form					
2. Sorting buttons					
3. Setting the table					
4. Feeding					
5. Guess the aroma					



REACH & IMPACT

- **705 nursing students** in the Highlands & Western Isles have completed this training to date.
- **2014:** Nurse Education Conference represented by nine of Scotland's universities.
- **2015:** Train the Trainer Programme for Health & Social Care Staff **[80]** – Learning Disability
- **2015:** International Nurse Education Conference, Brisbane, Australia
- **2017:** International Nurse Education Conference, Banff, Canada
- Secondary school pupils at the Fortrose Academy to support their intergenerational community engagement on the Black Isle [2017, 2019].
- **2019:** 100 Interdisciplinary Stroke Practitioners at the Scottish Stroke Nurses Forum conference



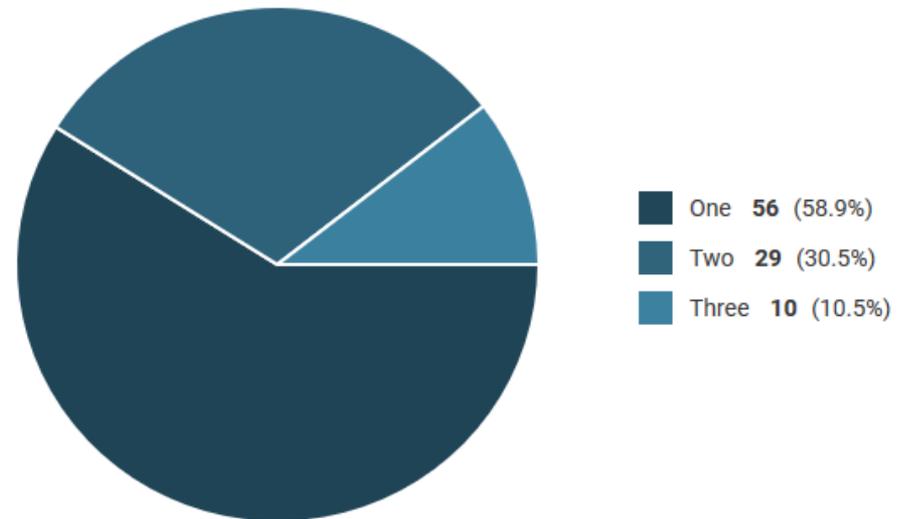
Evaluation of simulation (2020): Aim of study

- To identify the influence and relevance of a low fidelity simulation on sensory impairments in older adults for undergraduate nurse education through students' self-reported perceptions on learning



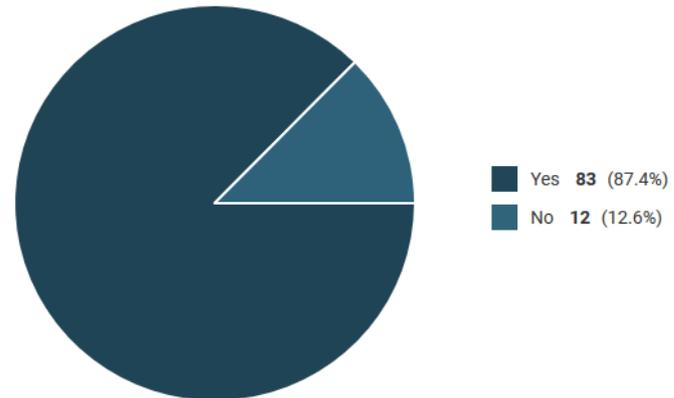
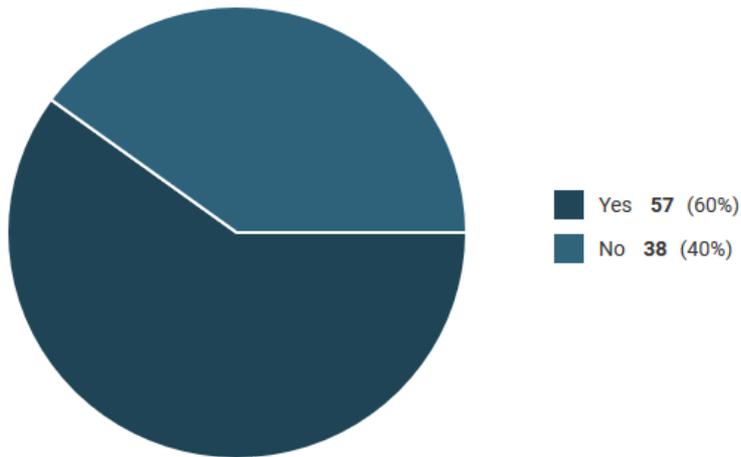
Pedagogical evaluation: Methods

- Cross sectional, online survey featuring Likert scale and free text response questions
- Questions based on intended learning outcomes and relevant supportive literature
- Participants- 95 students representing three cohorts



Previous Care Experience With Older Adults

Caring for Older Adults with SI on Placement/s



Influence on knowledge and understanding

On a scale of 1(not at all) to 10 (most certainly) to what extent did participation: Mean (SD)				
Help you understand the needs of people with the following types of impairment:	Sight	Hearing	Dual	Cognitive
	8.49 (1.850)	8.40 (1.795)	8.38 (1.751)	8.44 (1.911)
Percentage rating simulation 10/10	41.1%	35.8%	36.8%	42.1%
On a scale of 1(not at all) to 10 (most certainly) to what extent did participation: Mean (SD)				
Influence your knowledge on the following types of impairment:	Sight	Hearing	Dual	Cognitive
	8.47 (1.780)	8.22 (1.963)	8.25 (1.951)	8.28 (1.955)
Percentage rating simulation 10/10	43.2%	37.9%	37.9%	38.9%
Influence your knowledge of the difficulties encountered by older adults with the following types of impairment:	Sensory impairments		Cognitive impairments	
	8.67 (1.634)		8.39 (1.975)	
Percentage rating simulation 10/10	46.3%		41.1%	

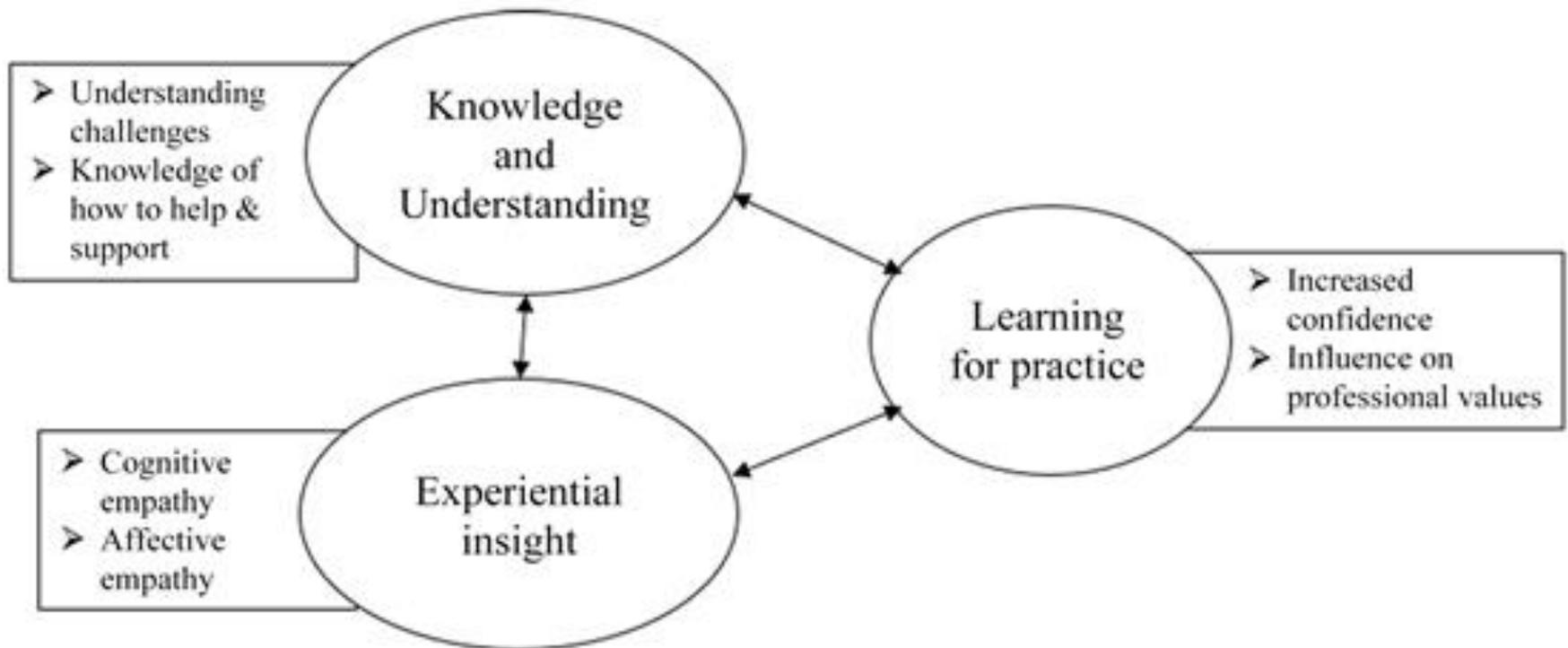


Influence on professional values

Did participation influence your professional values: Mean (SD)	
Empathy	8.97 (1.591)
Compassion	9.04 (1.474)
Dignity	8.99 (1.578)
Respecting choice	9.04 (1.351)
Supporting inclusion	9.03 (1.564)
Teamworking	8.81 (1.783)



Thematic analysis



Influence on cognitive and affective empathy

COGNITIVE EMPATHY

- Students reported that the simulation enabled them to see alternative perspectives and difficulties faced.
- *'understanding and experiencing the difficulties person with sensory impairment has with everyday tasks'* (1A).

AFFECTIVE EMPATHY

- Students reported insight into emotional challenges and feelings faced and reflected on general emotional impacts of impairment.
- Anxiety: *'feeling disadvantaged was very intimidating and caused increased anxiety'* (3A)
- Fear: *'how disorientating and scary having cognitive impairment can be'* (1MH).



Other key findings

1. 87.4 % (n=83) of students gained insights on sensory and cognitive impairments
2. 53.7 % (n=51) rated the quality of the simulation to be excellent
3. 30.5% (n=29) rated the quality of the simulation to be very good / good
4. 91% (n=86) reported that the simulation was critical to their learning on the impairments



Limitations of evaluation

- Unable to conduct planned focus groups due to COVID-19
- Lack of representation of participation across student cohorts
- Self selection of study participants



Acknowledgements



Students (Participation and Feedback)



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Mrs S Croy (Initial collaboration for resource development)



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Relevant publications

1. Walters R, Macaden L, Tracey A, Smith A. (2021). Low fidelity simulation on sensory impairments in older adults: Undergraduate nursing students' self reported perceptions on learning. *Open Journal of Nursing* 11(3)
DOI: [10.4236/ojn.2021.113009](https://doi.org/10.4236/ojn.2021.113009)
2. Smith A, Macaden L, Kroll T, Alhusein N, Taylor A, Killick K, Stoddart K, Watson M (2019). A qualitative exploration of the experiences of older people with sensory impairment on their pharmaceutical care journey. *Age and Ageing*
<https://doi.org/10.1093/ageing/afz092>
3. Alhusein N, Killick K, Macaden L, Smith A, Stoddart K, Taylor A, Kroll T, Watson M. (2018). "We're really not ready for this": A Qualitative Exploration of Community Pharmacy Personnel's Perspectives on the Pharmaceutical Care of Older People with Sensory Impairment, *Disability and Health Journal*. doi: <https://doi.org/10.1016/j.dhjo.2018.10.006>.
4. Alhusein, N.; Macaden, L.; Smith, A.; Stoddart, K.; Taylor, A.; Killick, K; Kroll, T.; Watson, M. (2018). "Has she seen me?" A multiple methods study of the pharmaceutical care needs of older people with Sensory impairment.
<https://bmjopen.bmj.com/content/8/8/e023198>
5. Smith A, Shepherd A, Macaden L & Macleod K. (2018). Raising awareness of sensory impairment among community nurses: a brief intervention in a remote island setting. *Rural and Remote Health Journal*.
6. Killick, K., Macaden, L., Smith, A., Kroll, T., Stoddart, K. & Watson, M.C. (2018). A scoping review of the pharmaceutical care needs of people with sensory loss. *International Journal of Pharmacy Practice*. <https://doi:10.1111/ijpp.12456>
7. Macaden, L., Smith, A & Croy, S. (2017). Simulation on Sensory Impairments in Older Adults: A Pedagogical Initiative in Nursing Education. *British Journal of Nursing*, 26 (19), 1057 – 64. doi: 10.12968/bjon.2017.26.19.1057



Any questions?



References

- Bauchat, J.R., Seropian, M., Jeffries, P.R. (2016) Communication and empathy in the patient-centered care model—why simulation-based training is not optional. *Clinical Simulation in Nursing*, 12 (8) (2016), pp. 356-359
- Foster, A., Chaudhary, N., Kim, T., Waller, J.L., Wong, J., Buckley, P.F. (2016) Using virtual patients to teach empathy: A randomized controlled study to enhance medical students' empathetic communication. *Society for Simulation in Healthcare* 11: 181-189
- Haugland, V.L., Reime, M.H. (2018) Scenario-Based Simulation Training as a Method to Increase Nursing Students' Competence in Demanding Situations in Dementia Care. A Mixed Method Study. *Nurse Education in Practice*. 33: 164-171.
<https://doi.org/10.1016/j.nepr.2018.08.008>
- Humes, L.E., Busey, T.A., Craig, J. and Kewley-Port, D. (2013) 'Are age-related changes in cognitive function driven by age-related changes in sensory processing?' *Attention, Perception, & Psychophysics*. 75(3): pp. 508–524. doi:10.3758/s13414-012-0406-9
- Ketso. (2014) *Ketso: The Hands-on Kit for Creative Engagement* [Online]. Available at: www.ketso.com [accessed 16/01/2020]
- World Health Organisation (2018) *Blindness and vision impairment factsheet* WHO. Available: <https://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment> [accessed 17/01/2020]



References

- World Health Organisation (2019a) *Deafness and hearing loss factsheet* WHO. Available: <https://www.who.int/news-room/fact-sheets/detail/deafness-and-hearing-loss> [accessed 17/01/2020]
- World Health Organisation (2019b) *Dementia factsheet* WHO. Available: <https://www.who.int/news-room/fact-sheets/detail/dementia> [accessed 17/01/2020]

