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Safe medication management competence in clinical simulation in nursing students: Results and permanence in one year

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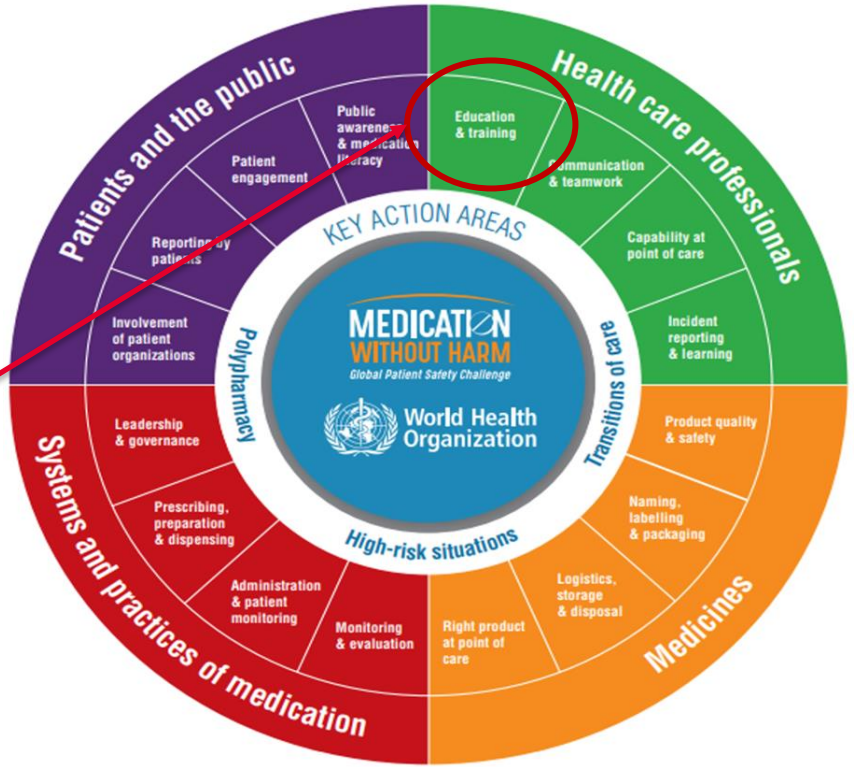
INTRODUCTION

INTRODUCTION

- ✓ Safe medication management and prevention of medication errors is a strategic line worldwide.
- ✓ 2017-2022 The third WHO Global Patient Safety Challenge: Medication without harm



EDUCATION and TRAINING

INTRODUCTION

- ✓ Nursing professional has a major role in medication management, which involves multiple professionals.
- ✓ Spend 40% of their working day managing medication.
- ✓ It is necessary the nursing perspective in the medication management

INTRODUCTION

- ✓ Clinical simulation is an effective active teaching methodology for health sciences students to acquire clinical skills.
- ✓ The stability over time of the skill acquired in simulation remains poorly studied.

AIMS

- The **primary aim** of this study was to evaluate the effectiveness of a teaching intervention in high-fidelity clinical simulation, compared to low-medium simulation, in improving safe management of medacation competence in 2nd year nursing students.

- The **secondary aim** was to evaluate the intervention's effectiveness 12 month after its implementation.

METHODS

- **Non-blinded randomized clinical trial**

- **<u>Inclusion Criteria:</u>**

✓ 2nd year nusing degree course

✓ Enrolled in the subject of LBS

✓ Academic year 2018- 19 and 2019-2020

- **<u>Exclusion Criteria:</u>**

✓ Retuning students of the subject

✓ Do not want to participated in the study



METHODS

- The study was conducted in 2 consecutive phases

1st Phase: Non blinded randomized clinical trial

Stage 1: Theory

✓ GC + GI 3h Theorical content: patient safety, drug management, dose calculation

Stage 2: Simulation

✓ GC low medium fidelity: use of mannequin (no feedback)

✓ GI high fidelity: standardized patient (feedback)

2nd Phase: Repeated measures study

✓ T0: baseline

✓ T1: post intervention

✓ T2: 12 months post intervention

METHODS

✓ **3 questionnaires were used to collect the data**

Dose calculation	8 dose calculation excercises of different difficulty
Nursing students' Perceptions about medication management (NURSPeM Instrument)	2 questionnaires: 1)Self-perception on the relevance of safe medication management 2) frequency of use and dose calculation study
Drug administration (checklist MEDISIM)	26 items (sequential steps for safe administration)

METHODS

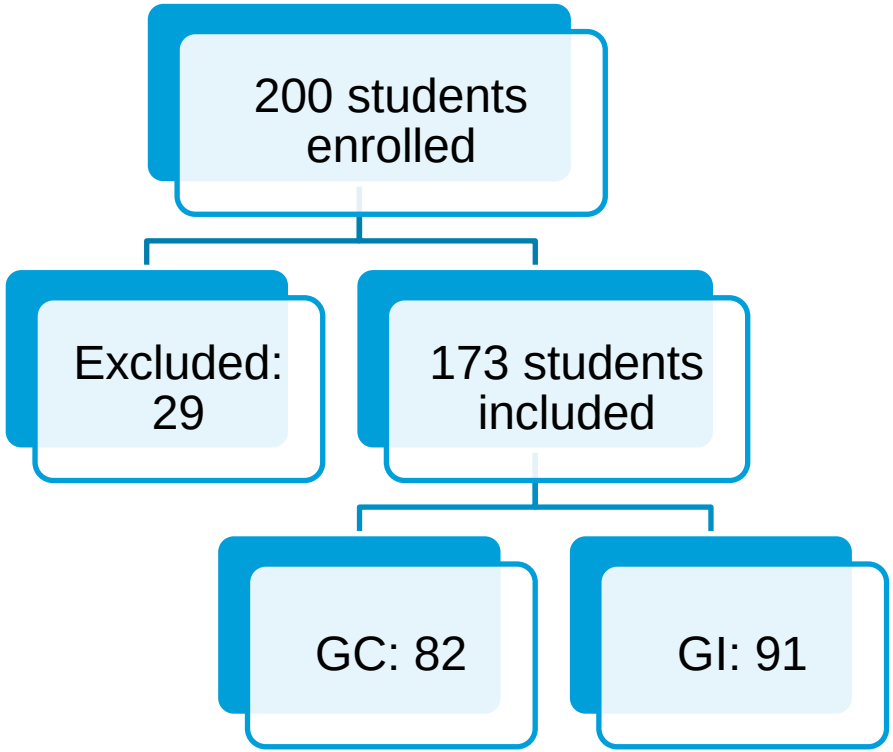
✓ **Simulation Description:**

- Prebriefing- Simulation- debriefing
- Individual simulation with possibility of help
- No evaluative
- No pre-established time limit
- 2-3 simulation/day
- Each scenario had a diferente dose calculation
- In the scenarios there were some errors that had to be detected to make a safe administration (ex. expired drug)
- Debriefing after simulation: Pearls Model

METHODS

- ✓ **International Nursing Association for Clinical Simulation and Learning**

RESULTS



	Global (n=173)	GI (n=91)	GC (n=82)	P
Mujeres^	143 (83,6%)	76 (84,4%)	67 (82,7%)	**0,922**
Exp. Lab. Sanitaria^	51 (29,8%)	30 (33,3%)	21 (26%)	**0,374**
Trabaja actual^	34 (19,9%)	19 (21,1%)	15 (18,5%)	**0,816**
Edad (años)*	21.3 (3.8)	21,5 (4,2)	21,1 (3,4)	**0,393**
Cohorte 18-19*	79 (46,2)	40 (44,4)	39 (48,1)	**0,740**
Cohorte 19-20*	92 (53,8)	50 (55,6)	42 (51,8)	

RESULTS

Dose calculation

Nota (DE)	T0	T1	T5
GI	5,64 (2,05)	7,83 (2,08)	7,72 (1,82)
GC	5,46 (2,25)	8,02 (1,9)	7,69 (1,82)
Global	5,56 (2,14)	7,91 (1,99)	7,70 (1,81)

Administration Skills

Nota (DE)	T0	T1	T5
GI	13,98 (4,97)	21,59 (2,51)	20,8 (5,15)
GC	12,74 (4,4)	20,8 (5,15)	21,59 (2,51)
Global	13,30 (4,74)	21,24 (3,91)	17,30 (6,91)

DISCUSSION and CONCLUSIONS

- The simulated intervention was **very effective.**
- There were **no differences between the fidelities evaluated** . Possibly it is due to the physical context in which the study was carried out, which increases realism 1 . Furthermore, it was the first time they faced a simulation like this and they are 2nd year students.
- The simulation intervention combined with the theoretical intervention was very effective in calculating doses and safely administering drugs 2 .
- It was less effective in self-perception . This could be because this fact is more personal and requires an internal process and is more complex to create an impact

DISCUSSION and CONCLUSIONS

- **The effectiveness of the intervention was maintained up to 12 months later** in some aspects . Instead, the practices had a negative impact on safe administration and the checks carried out before administering a drug. Possibly because they do not see nurses doing it specifically [1] .

LIMITATIONS

- The level of pharmacology knowledge was not evaluated
- We do not have a control group that had not done simulation
- Only conducted in one university.

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Gracias
Gràcies
Thank you
Merci