Nurse competencies in antimicrobial stewardship:

A NATIONAL AND INTERNATIONAL OVERVIEW

AMS and nurse role

Antimicrobial resistance (AMR) is a global threat, accounting for 5 million deaths associated with bacterial AMR. In particular, 6 pathogens account for 73.4% of attributable deaths.

A proper use of antimicrobials (AMS) is mandatory to prevent AMR worldwide.

Nurses are widely recommended to be involved:

(a) in AMS Programmes and

(b) in antimicrobials management at Dept. level.

WHO Global Action Plan on Antimicrobial Resistance (2015) claims for education and training of healthcare workers to develop the necessary competencies in antimicrobial use and thus to address patient outcomes

CORNICE (Competence Of nuRses iN antImiCrobial stEwardship)

Aims:

(a) To investigate knowledges, attitudes and practices of Italian nurses about AMS

(b) To investigate organizational and process quality indicators (Donabedian, JAMA, 1988) that influence their participation in AMS programmes

Study design: cross-sectional, multicentric (with online survey , from June 2022 to June 2023)

Participating Departments: medical, geriatric, rehabilitation, othopedics, general surgery, intesive care units

Methods

Survey validation with the contribution of 7 post-bachelor students in Infection Risk Management at University of Parma, and 28 registered nurses (acute care settings) and 20 IPC nurses with expertise in Infection & Prevention & Control Programmes at their workplaces.
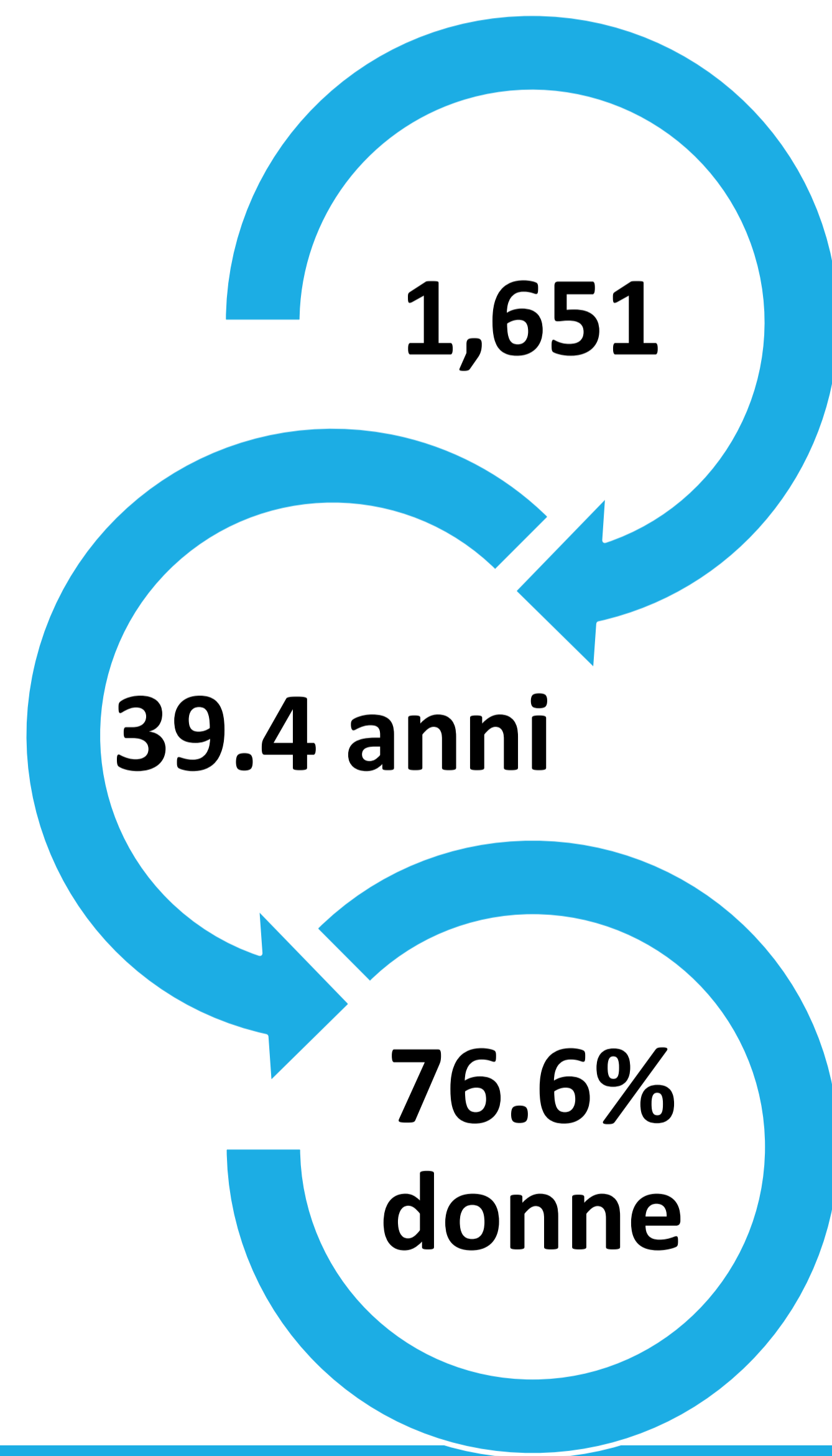

Verbale n. 1 del BOARD PER L'ETICA DELLA RICERCA NON MEDICA SULLA
PERSONA (REB - RESEARCH ETHICS BOARD)
Seduta del 19 gennaio 2023

Following survey validation, **42 items** have been identified. The survey has been administered to italian nurses through ANIPIO IPC nurses network.
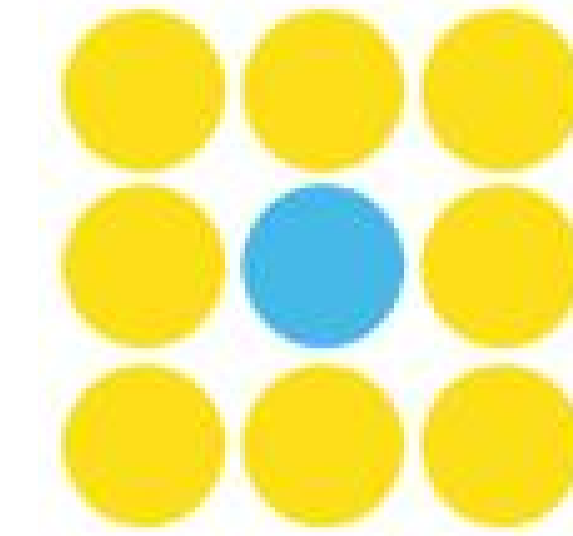
Results: sociodemographic

1,651

39.4 anni

76.6% donne
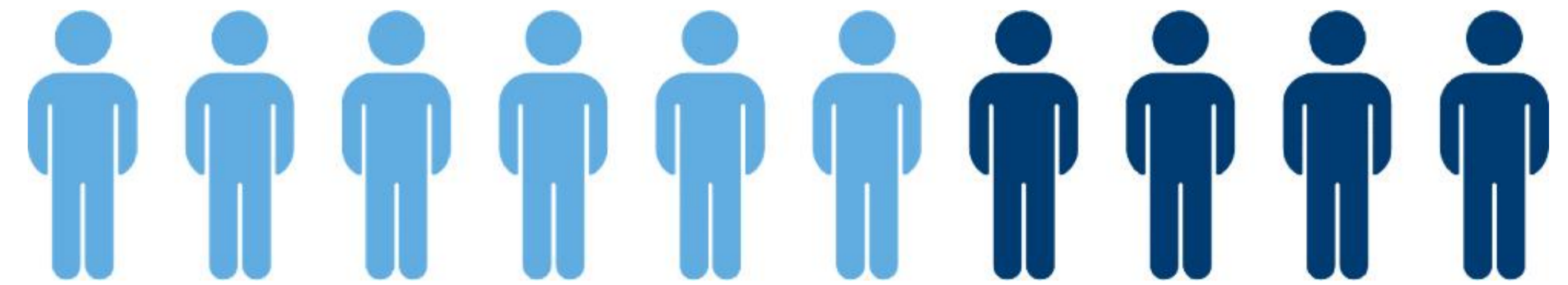
North Italy = **60%**

South Italy and Islands= **40%**

Results: sociodemographic

❖Education: BSc (73.8%) vs. MSc (26.2%)

❖Working experience (years): 15

❖Department: medical (45.2%), general surgery (27.8%), ICU/ED (27.0%)

❖Hospital: Hub (37.1%), Spoke (34.3%), primary care (28.6%)
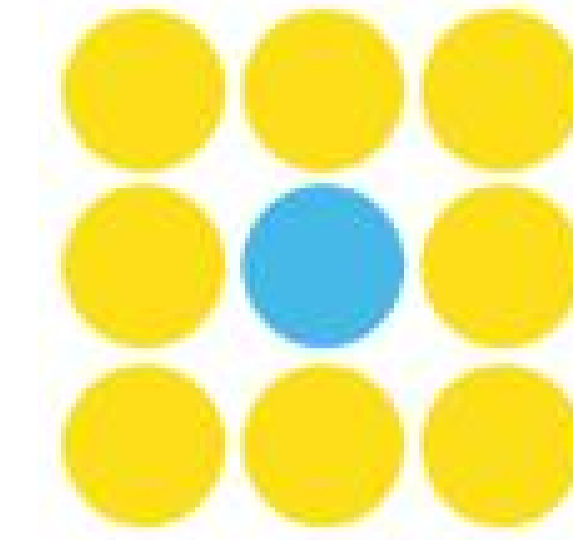
Results: three dimensions, two indicators

Knowledge
97% adequate

Attitude
69% positive

Practice/skill
87% good

Organizational variables
64% present

Process variables
82% present

Results: correlation

Is there any link among variables?

		Knowledges	Attitudes	Practices
Knowledges	r Pearson	1		
Attitudes	r Pearson	0.339**	1	
Practices	r Pearson	0.072*	0.105**	1

* p<.01, ** p<.001

K->A

Examples
a) *Promoting transition from IV to oral antibiotic therapy*
b) *having viewed laboratory results*
c) *Educating patients and carers*

If staff increases (general surgery dept): increased scores in relation to items investigating *good practice adhesion* (β 0.467, p<0.01)

If staff increases (intensive care units): decreased scores in relation to items investigating *good practice adhesion* (β -0.398, p<0.01)

A->P

Examples

a) *Computerized alert system that monitors clinical data relating to possible infections;*
b) *alert system relating to the number of days of antimicrobial treatment*

Structure → Process → Outcome
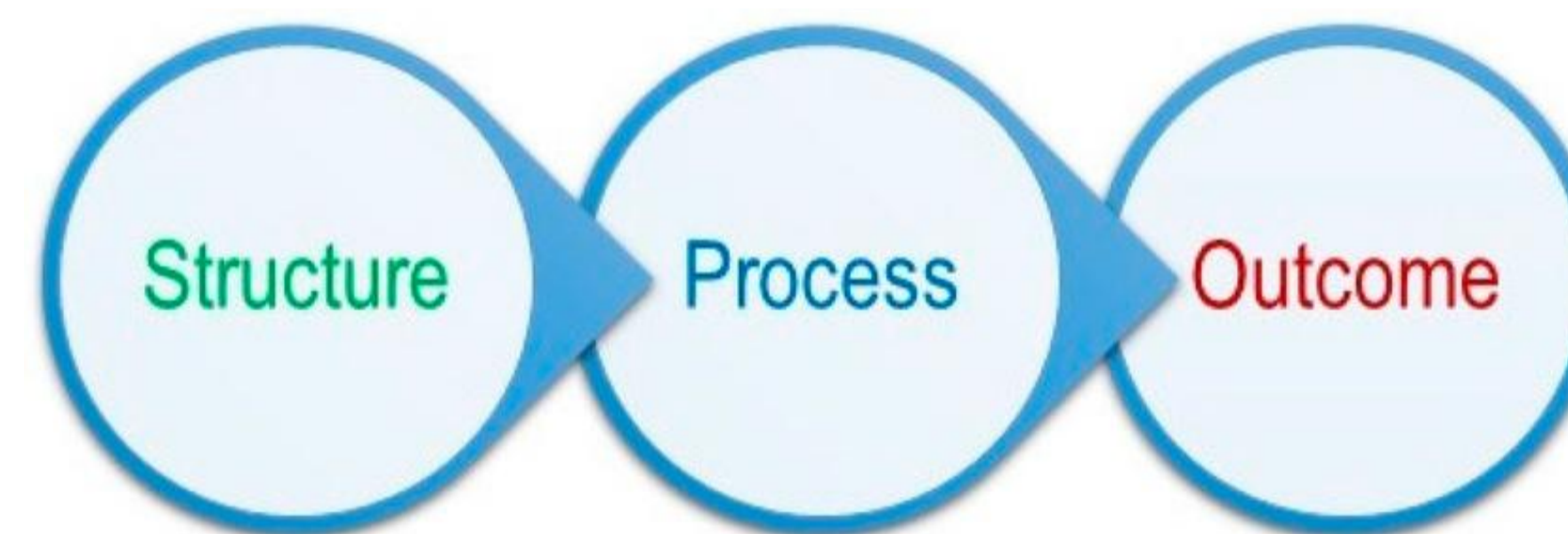
If staff increases (general surgery dept): decreased scores in relation to items investigating organizational quality indicators (β -0.315, $p<0.01$).

International overview on AMS

Internal dimensions affecting AMS may vary at knowledge, attitude and practice levels

✓ Knowledge factors have the most influence on AMS (K. of antibiotics, K. of nurse's role in AMS, etc.)

✓ Attitude factors include opinions, perceptions and beliefs.

✓ Practice feactors are measured as behaviors and professional performances.

External dimensions affecting AMS are related:

✓ to organizational quality indicators (context of care, education, policy availability)

✓ to process quality indicators (leadership support, group dynamics

(Danielis et al., 2022)

Conclusion

From Knowledge to Attitude, from attitude to practice/skill

Organizational and process indicators can contribute to the relationship among the three dimensions K, A, P

Thank you for your attention

ANIPIO INTERNATIONAL

Maria Mongardi, ANIPIO President, presidente@anipio.it

Monica Ronco, mokena76@hotmail.it, referenteformazione@anipio.it

Alessia Arcangeli, alessia_arcangeli@yahoo.it

Giovanni Civile, giovannicivile@gmail.com

Maria Gabriela Festa, gabriela.festa@asst-spedalicivili.it

Silvana Gastaldi, silvanagastaldi72@gmail.com

Raffaella Rossetti, raffaellina981@gmail.com

Giulia Zavagno, gizavagno@gmail.com