MEDINFO23

8 – 12 JULY 2023 | SYDNEY, AUSTRALIA

@aiinhealth

Healthcare professionals' perceptions of AI

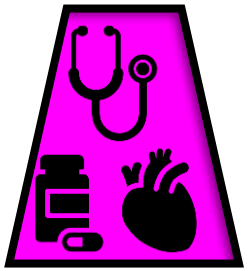
Lucy Shinners

Nursinf Lecturer

Southern Cross University

AIDH IMIA

Industrial revolutions in healthcare



1st Industrial revolution

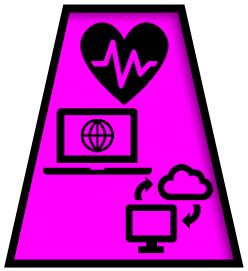
Mechanisation, water, steam power

Human anatomy discovery, Sanitation, Medical training

2nd Industrial revolution

Mass production, electricity

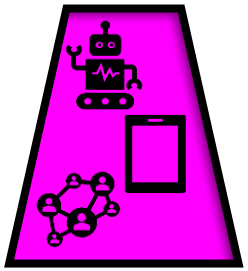
Microscope, Vaccines, X-Ray, Hospitals, University education



3rd Industrial revolution

Computer and automation

Defibrillation, EMR, Internet, Evidence-based practice, 'Digital health'

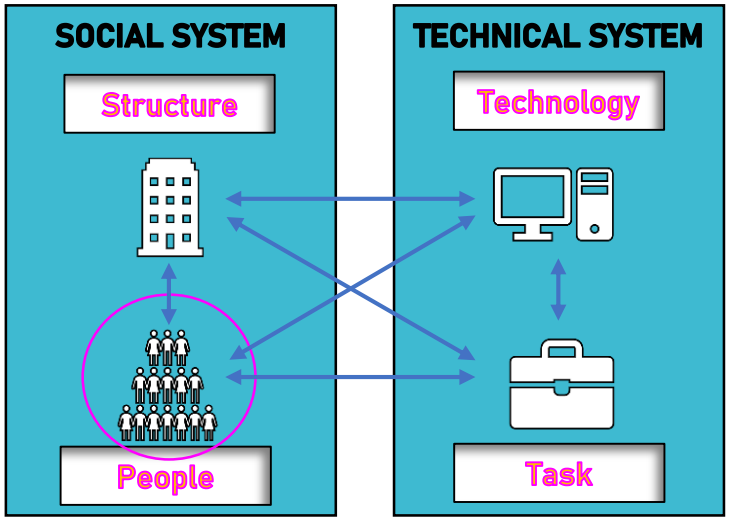


4th Industrial revolution

Cyber Physical systems

Mobile health, biosensors, analytics, AI, 'digital medicine'

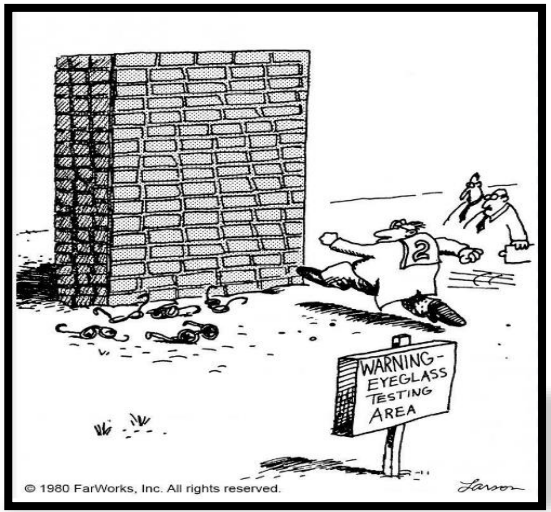
The socio-technical systems theory



Travistock Institute

Perception

- The process of gathering information to create a narrative
- Can facilitate communication, identify risk
- Powerful indicator of organisational readiness
- Promotes social construction of technology



What is known about workforce perception?

Health Informatics Journal

Regular Article

Exploring healthcare professionals' understanding and experiences of artificial intelligence technology use in the delivery of healthcare: An integrative review

Health Informatics Journal
2020, Vol. 26(2) 1225–1236
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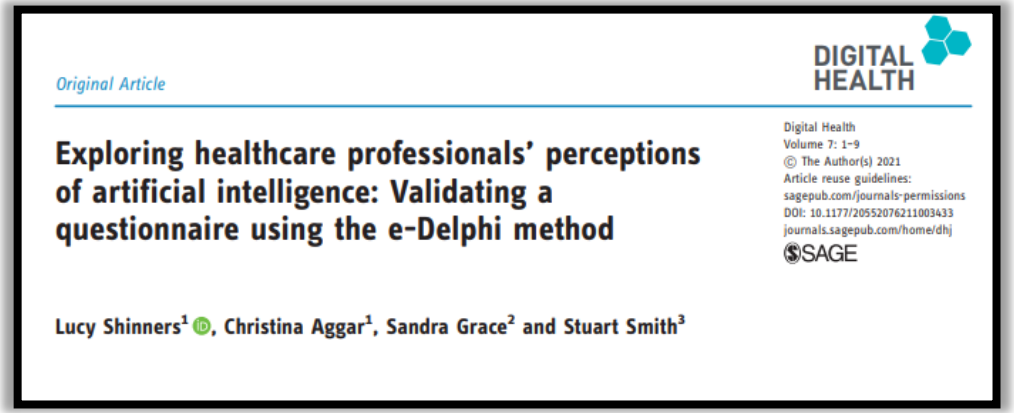
Lucy Shinners
Christina Aggar
Sandra Grace
Stuart Smith
Southern Cross University, Australia

- No studies that measured perception
- No validated tools to measure perception



Original Article

DIGITAL HEALTH

Exploring healthcare professionals' perceptions of artificial intelligence: Validating a questionnaire using the e-Delphi method

Digital Health
Volume 7: 1–9
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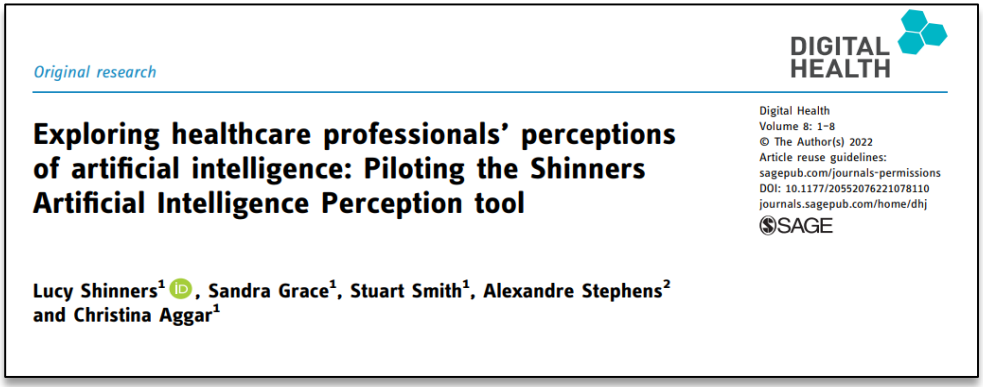
Lucy Shinners[1], Christina Aggar[1], Sandra Grace[2] and Stuart Smith[3]

Piloting the SHAIP tool

- n= 272: medicine, nursing/mid, allied hlth, non-clinical, other
- Findings supported the structure and reliability of a 10-item tool.
- Further testing needed



Original research

DIGITAL HEALTH

Exploring healthcare professionals' perceptions of artificial intelligence: Piloting the Shinners Artificial Intelligence Perception tool

Digital Health
Volume 8: 1–8
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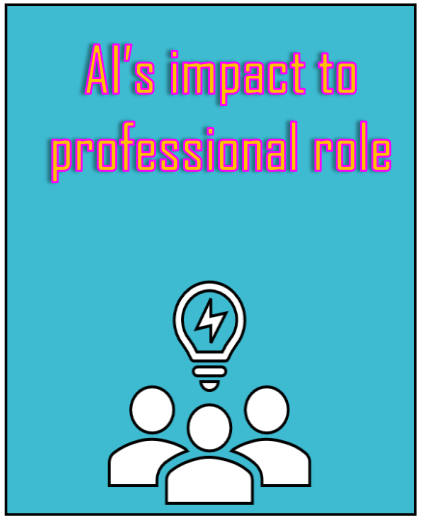
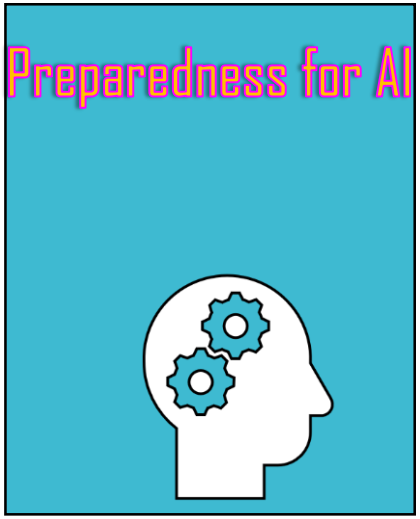
Lucy Shinners[1], Sandra Grace[1], Stuart Smith[1], Alexandre Stephens[2] and Christina Aggar[1]

SHAIP tool- what it measures





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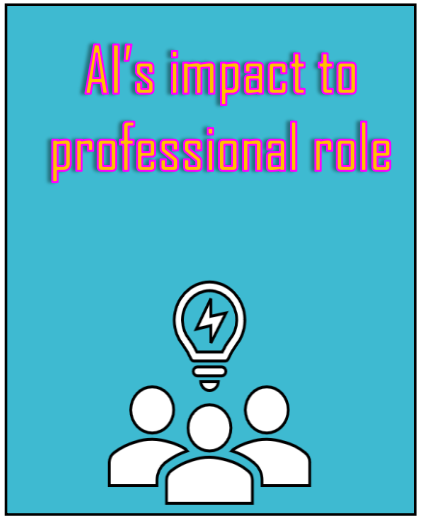
1.	I believe that the use of AI in my specialty could improve the delivery of patient care
2.	I believe that the use of AI in my specialty could improve clinical decision making
3.	I believe that AI can improve population health outcomes
4.	I believe that AI will change my role as a healthcare professional in the future
5.	I believe that the introduction of AI will reduce financial cost associated with my role
6.	I believe that overall healthcare professionals are prepared for the introduction of AI technology
7.	I believe that one day AI may take over part of my role as a healthcare professional
8.	I believe that I have been adequately trained to use AI that is specific to my role.
9.	I believe there is an ethical framework in place for the use of AI technology in my workplace
10.	I believe that should AI technology make an error; full responsibility lies with the healthcare professional

Perceptions around the world

- UK
- USA
- Turkea
- UAE
- Poland
- Saudi Arabia
- Korea
- Japan
- India
- Spain
- Slovenia
- Croatia
- Italy
- Iran
- Pakistan

Perceptions of AI impact to professional role



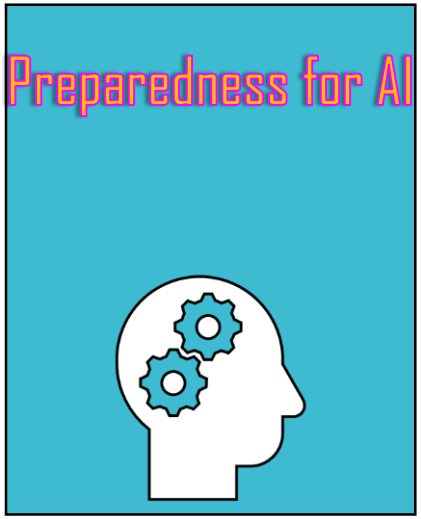
HCP using AI (27%)

Want education (75%)

Overall HCP perceive that AI will impact their role professionally

Well situated to respond the HCP desire for education

Perceptions of preparedness for AI



HCP using AI (27%)

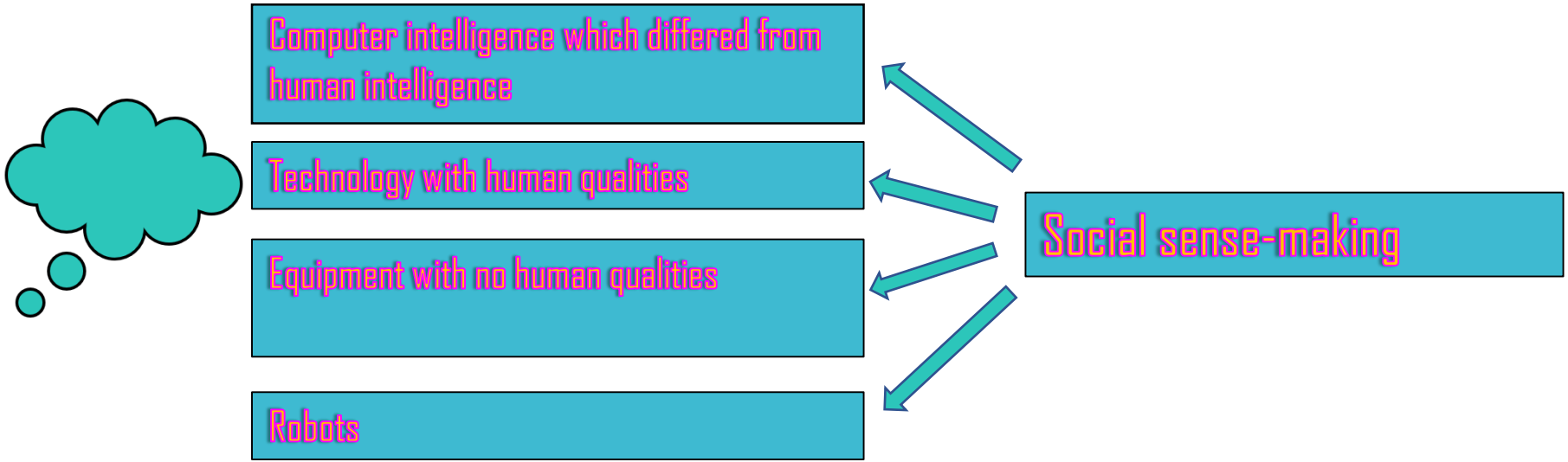
Nurses (50%)

Age (Mean= 45.88)

Overall HCP perceive that they are not prepared for AI

Education needs to be tailored to meet the needs of older HCP

HCP understanding of AI



Challenges to AI implementation

1. Workforce knowledge
2. Cost to implement
3. Organisational support
4. Interoperability
5. Infrastructure
6. I don't know

HCP education needs

1. Application of AI
2. General education
3. Ethics of AI
4. AI techniques
5. AI for business

Recommendations for the future

1. Education about AI
2. Leadership in the technology space
3. Social dimensions of implementation
4. AI techniques
5. AI for business