HOW DO NURSING STUDENTS PERCEIVE
THE NOTION OF EHR?
AN EMPIRICAL INVESTIGATION

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Introduction

• A variety of studies pinpoint a shift towards EHR implementations in several countries over the last years, results on EHR adoption and use are not always encouraging.

• In addition, past research highlights the importance of nurses in the context of adoption and use of EHR systems

• Consequently, nursing education plays a key role for creating awareness and appreciation of such concepts

The research aim of this paper is:

• To investigate the understanding and perceptions of Electronic Health Record (EHR) at an educational nursing level.
Methods

• An empirical study, among nursing students at the Faculty of Nursing of the National and Kapodistrian University of Athens, was conducted

• A research framework was utilized, in the basis of the Innovation Diffusion Theory (IDT) (Rogers, 1995) along with the influence of past research works (Peslak et. al, 2010; Gibson et. al, 2009)

  • Based on the idea to investigate the EHR as a technology differentiating solution, compared with previous traditional practices in this field

• Certain adjustments were applied in order to reflect the context and the hypothetical nature of the study
Methods

The following Hypotheses were investigated:

• H1: How “Relative advantage” positive affects the “Attitude towards Use”

• H2: How “Compatibility” positive affects the “Attitude towards Use”

• H3: How “Ease of Use” positive affects the “Attitude towards Use”

• H4: How “Trialability” positive affects the “Attitude towards Use”

• H5: How “Observability” positive affects the “Attitude towards Use”
Methods

• Procedure and Measures

• A study questionnaire was formulated
  • With as much standardized items as possible, adopted from previous research works
  • Questions were translated into Greek and refinements were made in order to reflect the study context and language, where applicable.
  • All items followed a 7-Likert scale from strongly disagree to strongly agree along with a section for “do not know/do not answer”.
Methods

• Sample selection & Characteristics
  – The questionnaire was distributed to third-year nursing undergraduates of the Faculty of Nursing at the University of Athens, Greece.
  – Responders had a certain experience with specific Health Informatics modules (Introduction to Informatics, Health informatics, Hospital Information Systems, Biomedical Informatics) thus assumed to have sufficient theoretical background in EHR concept and technologies
  – Participation was anonymous in order to preserve confidentiality

• Data Analysis approach
  – Demographic statistics with SPSS software package
  – Partial Least Squares path modeling with the SmartPLS 2.0 M3 software package
Results

Demographics

A total of 90 valid questionnaires were completed (18 male and 72 female participants).

- 100% of the sample had attended the “Health informatics” module
- 73.3% of the sample had attended the “Introduction to Informatics” module
- 82.2% of the sample had attended the “Hospital Information Systems” module
- 98.9% of the sample had attended the “Biomedical Informatics” module
Results

Partial least squares analysis

– Investigation of the measurement and the structural model.

• Concerning the measurement model, individual item loadings, internal consistency, convergent validity and discriminant validity were investigated.

• The structural model was investigated by applying a bootstrapping technique (with 1000 resamples) and three statistically significant levels: p<0.05(*), p<0.01(**) and p<0.001(***) , based on a two-tail test.
Results

Results of the structural model (significance at p<0.05 level)

(Dotted lines emphasize the hypotheses that were not confirmed)
Discussion

• The results of the structural model highlight the very strong significant effects of relative advantage (H1 at p<0.001) and observability (H5 at p<0.001) to attitude towards using an EHR along with the significant effect of perceived ease of use (H3 at p<0.05) to the dimension of attitude towards use.

• Study findings identify a positive attitude of students towards EHR which may be explained by their experience and exposure with technology from a young age, thus being more positive in adopting technology-oriented ideas.

• The non-significant effect of trialability and compatibility may be interpreted in the context of the students’ limited experience in terms of an actual EHR system use.
Limitations & Future Work

• **Study Limitations**
  – Nursing students, in this study, did not have an actual/real-world experience of an EHR implementation
  – The study findings are restricted within a limited theoretical and contextual scope

• **Future Work**
  – A more detailed analysis in real healthcare environments that have deployed and operate EHR systems may be conducted, with a clear separation of healthcare professional groups that have an actual experience with such computerized environments.
Conclusions

• The present study attempted to shed light in health informatics aspects in relation to nursing science, with regard to EHR at the educational level

• The study results imprint the perceptions of nursing students with respect to EHR, and their appreciation of its potential to healthcare services

• Assessments of this kind may be applied at a pre-professional level in order to record the dominant trends and opinions for a variety of Health Informatics conceptual domains in general
Thank you!