E-health readiness for teams
A comprehensive conceptual model

Presented by
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Introduction

– The set of factors affecting the efficacy of eHealth technology use by patients and healthcare teams are poorly understood
  – this leads to ineffective use of eHealth technology and expensive failures due to poor implementations

– We propose a preliminary comprehensive conceptual model
  – to provide a measure of eHealth readiness in interdisciplinary healthcare teams
  – to improve healthcare delivery and health outcomes by identifying suitable environments for the introduction of eHealth technologies
Outline

- Background
  - Identification of relevant factors and themes
- Methodology
  - Model formation
  - Content validation
  - Construct validation
- Results
  - Open and closed card sorting
- Future work
Background

– Literature reviewed identified factors affecting the use of technology by individual clinicians, healthcare teams, and patients

– Factors were thematically broad and included
  – Organisational and environmental
  – Socio-cultural
  – Technical capability
  – Technological adequacy, suitability, and availability

– Ten broad factors were identified across the literature which provided for the initial conceptual model
Methodology

– Three stages of the methodology
Model construction

– Initial model adapted from HOT-fit model proposed by Yusof et al. (2006)
  – Emphasised the fit between human, organisation, and technology
– Transformed identified factors into short descriptive sentences
– Categorised factors into
  1. User factors;
  2. Organisational and external factors; and
  3. Technology factors
Content validation

– Utilised the Delphi method to validate model content
  – Five participants
  – Domain expertise in health service delivery, health informatics, and information technology
  – Three rounds until consensus reached
– Panel members provided feedback during each round which was incorporated into the model
– Panel reached consensus on the suitability of the model content after three rounds
Content validated model

- 4 factors
- 12 domains
- 59 items
Preliminary construct validation

- Determine whether the interpretation of the model factors and were consistent across participants
  - We used multiple q sorts in the form of constrained open, and closed card sorts
- 12 participants were asked to sort 59 items
  - 9 completed the open sort
  - 10 completed the closed sort
- Open card sort results sorted into a hierarchical clustering of 4 clusters
- Closed card sort results analysed for convergence
Results of the card sorts

- Open card sort clusters were
  - Organisation, Users, EMR, and Other Technology
  - Minimal intra-cluster variance between EMR and Other Technology

- Closed card sort
  - 6 Technology Capabilities items where < 60% of participants placed the item into the same category
  - 2 Technology Capabilities items which were categorised by 70% and 80% of participants into a different category than the proposed model
Summary

- 4 factor
- 59 items
- Preliminary validation
  - External Factors and Technology Capabilities clusters were validated
  - Team Capabilities and Patient Capabilities require clarifying
Conclusion

– Using the methodological framework outlined we have proposed four factor model with preliminary validation which provides a measure of eHealth readiness for interdisciplinary healthcare teams

– We believe this will allow for the identification of environments with appropriate factors for the use of eHealth technologies

– We believe this will increase the efficacy and efficiency of eHealth technologies used by interdisciplinary healthcare teams and minimise costly failures
Future work

- Further construct validation using healthcare providers working in healthcare environments
Thank you
Construct validation participants

- 12 participants
- Masters students in a health technology innovation course
- Backgrounds of
  - Clinical health
  - Health administration
  - Engineering
- Did not collect demographic information
Clustering dendrogram
References


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