

Promoting Medical and Allied Health Students' Readiness to Engage in Health Technologies in Future Practice



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Presenter Disclosure

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Background

Attitudes towards Health Information Technology (HIT) may influence medical and allied health students' (MAHS) successful adoption, willingness to learn, and utilization of HIT tools to improve patient outcomes.

Background (cont'd)

However, scarce information is available on which factors influence students' readiness for HIT engagement and utilization prior to residency training which is especially important for those desiring a practice in primary care and rural settings.

Relevance to Medical Student Education

- Technology readiness is the ability to understand and be prepared to use these technology tools in the future.
- The technology-readiness construct refers to people's propensity to embrace and use new technologies for accomplishing goals in home life and at work.

Relevance to Medical Student Education (cont'd)

- With growing class sizes and construction of new medical schools in the U.S. there will be roughly 230,000 graduates entering the work force during the next 10 years.
- These new physicians will not only need to master medical knowledge, but will be need to be ready to effectively utilize HIT tools in their practice.

Purpose of the Study

This study was conducted to determine medical and allied health students' attitudes toward emergent HIT tools used in medical practice as well as determine which factors influenced their readiness to utilize HIT after graduation.

Relevance to Medical Student Education (cont'd)

- Physicians' may harbor negative attitudes toward the technology's ability to assist them in their practice, such as preventive opportunities, time management, and medical record accuracy.
- One of the first steps in ensuring the effective utilization of HIT tools by physicians is to assess their readiness while still in school.

Methods

Data were collected from 854 students in two large medical schools with allied health programs via online and paper-and-pen formats.

The following content areas were assessed:

- 1) computer self-efficacy
- 2) perceived ease of use and usefulness of HIT
- 3) attitudes to toward mobile technology
- 4) information technology (IT) utilization
- 5) personal characteristics

Methods (cont'd)

Multivariate regression modeling was used to determine if knowledge about HIT, certain attitudes, behaviors, and experience with HIT, and personal characteristics (i.e., gender, age) would influence (i.e., predict) students' readiness to utilize HIT tools in future practice.

Assessment Instrument

- The Technology Readiness Index (TRI)
- Using New Computer Applications Scale (computer-related self-efficacy)
- Perceived Usefulness (PU) and Perceived Ease of Use (PEOU)
- The Flexibility scale (openness to change)
- Uses of Personal Mobile Technologies in a Clinical Environment
- Personal characteristics, including prior experience with IT and HIT

Sample ($N = 854$)

- Data analyzed using Pearson (r) correlation and regression analysis in SPSS software.
- Surveys administered via online and paper-and-pen formats
- Ages ranged from 20-47 years ($M=25.3$ years).
- 43.6% ($n=353$) reported no approach had been established by their school for learning HIT.
- 70% ($n=566$) reported having little or no training in HIT systems.
- 67.5% ($n=546$) were instructed in the use of EMR.

Results

- greater IT self-efficacy
- more favorable attitudes toward HIT utilization
- majored in computer science
- previous use of HIT
- worked as a scribe
- previous EMR instruction in school

...Were all associated with readiness to utilize HIT.



Regression

Predictor variables	<i>B</i>	Standard Error	Beta	<i>t</i>	Sig
Self-efficacy	-.277	.090	-.207	-3.071	.002
HIT utilization	.373	.070	.353	5.314	.000
Majored in computer science	4.314	2.033	.134	2.122	.035
Worked as scribe	-2.790	1.310	-.136	-2.130	.035
Previously used HIT	1.601	.751	.147	2.133	.034
Instructed on EMR/HER in medical school	-1.272	.616	-.142	-2.066	.040

Multivariate regression modeling successfully explained 27% of the variance in predicting students' readiness to utilize HIT tools in future practice, $F(6, 185) = 19.324$, $p < .000$, $R^2 = .295$ (adjusted $R^2 = .273$).

Discussion

- Increasing student self-efficacy regarding HIT use and engaging students in hands-on HIT utilization practice in school may help encourage more favorable attitudes toward HIT utilization and promote their readiness to use HIT technology in future practice.



Conclusion

- Medical informatics should be integrated using specially designed classrooms where students are motivated and strategically guided to learn how to use HIT technologies.



- While more research in this area is warranted, findings from this study may help guide medical education curriculum enhancements to better prepare tomorrow's physicians in HIT engagement and utilization.