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Chapter 8

Introducing Computer-Based Telemedicine in Three Rural Missouri Counties

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This study investigated predictors of utilization of the computer-based telemedicine in three rural Missouri counties. Participating health care agencies were given computers and access to an Internet-based workstation that provided e-mail and World Wide Web (WWW) services. Utilization data for e-mail messages sent and WWW pages accessed were collected through proxy servers. A survey was distributed to those employees who are enrolled in the Rural Telemedicine Evaluation Project (RTEP), which addressed perceptions of the Internet-based RTEP workstation. The results of the survey were analyzed to see how perceptions and demographic variables predicted actual utilization. The findings of the study revealed that for e-mail, behavioral intentions/attitude, age, organizational support, and time were the most significant predictors. For WWW, only the behavioral intentions/attitude subscale predicted utilization. The majority of respondents did not utilize the e-mail technology. Strategies need to be developed through training interventions and organizational policies to address non-utilization.

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INTRODUCTION

Technology is perhaps one of the greatest tools under the control of mankind. It can be used for positive or negative purposes, and has proven a powerful force for change (Surry, 1997). In fact, some would argue that technology is a key governing force in society, and that technological change drives social change (Smith, 1996). The Internet is one technology that has contributed to societal change, and has provided opportunities to revolutionize health care. The Internet has afforded the medical community a mechanism to provide access to information in a timely manner. This is particularly important in today's society due to the continually expanding body of medical knowledge, and the changes in health care delivery that require practitioners to make more important and complex decisions in less time (Lundberg, 1998).

The Internet has the potential to improve the care provided to patients and to enhance biomedical research by connecting practitioners to the most up-to-date information available (Gallagher & McFarland, 1996). However, an important consideration in the diffusion of information technologies was put nicely by Enrico Coiera (1995) when he said, "Medical informatics is as much about computers as cardiology is about stethoscopes. … Any attempt to use information technology will fail dramatically when the motivation is the application of technology for its own sake rather than the solution of clinical problems" (Coiera, 1995).

Rural health communities face unique issues in providing care to their population. Not only has it been difficult to recruit health care professionals, but also to retain them. Isolation, lack of communication, difficult access to updated medical information, little contact with colleagues, and lack of continuing medical education opportunities have been identified as factors contributing to low retention rates and shortage of supply of rural health care providers, particularly physicians (Conte, et. al, 1992; Harned, 1993; Mackesy, 1993; Forti, et. al, 1995; Anderson, et. al, 1994; Rogers, 1995; Davis, 1989). As a consequence, rural health care suffers. One of the main goals of telemedicine technology is to make an impact on improving rural health care, including nursing care, administrative efficiency, and communication amongst and between all health care providers.

Research on the acceptability of telemedicine as a particular form of technology is limited. Thus, this study was informed by literature and research related to adoption of innovations, medical educational technology, and rural health care to explore factors associated with acceptance of telemedicine by rural health care providers. It does so by addressing issues of acceptability of a specific aspect of the University of Missouri's Telemedicine technologies by health care providers in three rural Missouri counties.