

Chapter 6

Trends in Gerotechnology: A Literature Review

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ABSTRACT

A review of the literature highlights the ways in which information technology offers opportunities in long-term care, an area of research and application that might be called gerotechnology. The authors reviewed eight books about long-term care to find evidence of the possibilities for information technology. That led to the hypothesis that quality control, workflow, and telehealth are important topics for the gerotechnology journal literature. A query about gerotechnology was presented to PubMed, and patterns in that literature supported the hypothesis. A further experiment examined year-by-year trends over the last quarter century and highlighted the increasing importance of telehealth and monitoring in gerotechnology. The trends are consonant with the emergence of computer-assisted life flow as a future topic for gerotechnology.

INTRODUCTION

Gerotechnology is a new term that is increasingly being used by diverse people who are interested in geriatrics and technology. For the purposes of this paper, the term is taken to mean the use of technologies to support the elderly. In particular, the focus here is on information systems in long-term care (LTC). This work reviews literature in which information technology offers opportunities in Long-Term Care, more specifically Gerotechnology. Gerotechnology is the field that emerges from the merging of gerontology and technology. In this work, the authors reviewed 8 books about long-term care to find evidence of the possibilities for information technology. Based on the findings, we posit that quality

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control, workflow, and telehealth are important topics for the gerotechnology journal literature. A query about gerotechnology was presented to PubMed, and patterns in that literature supported the hypothesis. A further experiment examined year-by-year trends over the last quarter century and highlighted the increasing importance of ‘telehealth’ and ‘monitoring’ in gerotechnology. The trends are consonant with the emergence of computer-assisted life flow as a future topic for gerotechnology.

The demographics and economics of aging create major demands on society and a kind of humanitarian crisis as regards the care of the elderly (Wolff, Starfield, & Anderson, 2002). Information technology for LTC might facilitate care and reduce cost, but progress has been relatively slower (Ekeland, Bowes, & Flottorp, 2010) than in other areas of healthcare (Meyer & Degoulet, 2010). To address the inadequacies of LTC, governments have introduced quality control regulations, and the information systems implementations in LTC are partly driven by the need to satisfy these regulations (Rada, 2002). However, much more research is needed on theory and applications of gerotechnology (Mei, Marquand, Jacelon, & DeFeo, 2013).

This paper reviews the literature, both in journal and book form. An earlier version of this paper was published as (Rada, 2015) but has been extended and updated here. The claim remains that three topics are most interesting in research in gerotechnology, and those topics are quality control, workflow, and telehealth. The paper’s contribution is to identify those trends, to provide synopses of key literature describing the trends, and to show the patterns in the literature that support the claim that those are the dominant themes.

In addition to identifying the currently dominant themes in the gerotechnology literature, this paper proposes a combination of those themes in a new theme that should shape the future. That new theme would extend workflow models to represent the life of the LTC resident. Gerotechnology enterprise systems are useful when a model of the enterprise is encapsulated in code (Rada, 2008). One approach to modeling health care enterprises (Krabble & Wetzell, 1999) shows health care providers processing patients. For LTC this model must be extended for the patient is instead a resident; namely, the ‘customer’ lives in the LTC facility for the remainder of his or her life (Goffman, 1961). The proper model for gerotechnology puts the resident at the center so that data and decisions based on that data can readily enter the workflow of the health care professional (Vesely, 2013). Research on computerized life-flow is a natural sequel to research on quality control, workflow, and telehealth.

BOOKS

To get an overview of the issues facing gerotechnology one might first consult a variety of relevant books. These books might be categorized by their intended audience as public, policy maker, and LTC staff books. Herewith a convenience sample of several such books is reviewed. One book for the general public describes the challenges faced by a nurse’s aide (Gass, 2004). A nurse aide is an entry-level position in long-term care, requires no formal education, and does not require computer skill. The author Gass makes a poignant case for the labor-intensive character of elder care and says that the major determinant of success of a facility is that staff are dedicated to their work rather than focused on money. Conversely, Gass’s experience shows that when the places where he worked had staff who primarily cared about the money made, that the residents suffered. The other book for the general public focuses on poor quality control in LTC (Kane & West, 2005).

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