Patient Education and Counseling 98 (2015) 545–552

Contents lists available at ScienceDirect

Patient Education and Counseling

journal homepage: www.elsevier.com/locate/pateducou

Review

The association between patient activation and medication adherence, hospitalization, and emergency room utilization in patients with chronic illnesses: A systematic review

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ARTICLE INFO

Article history:
Received 1 October 2014
Received in revised form 26 January 2015
Accepted 7 February 2015

Keywords:
Patient activation measure (PAM)
Chronic illness
Hospitalization
ER utilization
Medication adherence
Patient centeredness

ABSTRACT

Objective: A systematic review of the published literature on the association between the PAM (Patient Activation Measure) and hospitalization, emergency room use, and medication adherence among chronically ill patient populations.
Methods: A literature search of several electronic databases was performed. Studies published between January 1, 2004 and June 30, 2014 that used the PAM measure and examined at least one of the outcomes of interest among a chronically ill study population were identified and systematically assessed.
Results: Ten studies met the eligibility criteria. Patients who scored in the lower PAM stages (Stages 1 and 2) were more likely to have been hospitalized. Patients who scored in the lowest stage were also more likely to utilize the emergency room. The relationship between PAM stage and medication adherence was inconclusive in this review.
Conclusion: Chronically ill patients reporting low stages of patient activation are at an increased risk for hospitalization and ER utilization.
Practical implications: Future research is needed to further understand the relationship between patient activation and medication adherence, hospitalization and/or ER utilization in specific chronically ill (e.g. diabetic, asthmatic) populations. Research should also consider the role of patient activation in the development of effective interventions which seek to address the outcomes of interest.

Contents

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http://dx.doi.org/10.1016/j.pec.2015.02.005
0738-3991/

1. Introduction

Approximately half of American adults (133 million) currently live with a chronic illness, such as diabetes, asthma, and cardiovascular disease [1]. The prevalence of these illnesses is projected to increase, with over 157 million Americans expected to be living with one or more chronic diseases by 2023 [2–4]. Despite dramatic improvements in clinical management, evidence suggests that the healthcare costs related to chronic illness will continue to increase over the next decade. The cost burden of chronic illness in the United States was 1.3 trillion dollars in 2009 and is projected to exceed $4.2 trillion by 2023 [5]. Patients with chronic illness utilize hospitals and emergency rooms at a higher rate than the general population [2,3], putting further strain on the healthcare system.

In contrast to episodic medical care focused on the diagnosis and treatment of acute illness, chronic diseases often require long-term, continual care and a component of disease self-management which is dependent on the patient. Hence, recent models of healthcare delivery have underscored the teaching of self-management skills to patients with chronic illness [2,6–8]. As a result, patient self-management programs have been developed for various chronic illnesses and are widely recognized as an important contributor to improved health outcomes, including reducing short-term risks along with long-term complications [9–20]. At the core of effective self-management strategies for chronically ill populations is the concept of "patient activation" which is defined as the individual's knowledge, confidence, and ability to take on a role in self-managing their own health and health care [21]. Patient activation is important because engaged, informed, and skilled patients are more likely to engage in activities which promote their own self-care [22,23]. Emerging evidence also suggests that patient activation is a factor that may predict hospitalization, emergency room utilization, and/or medication adherence in chronically ill populations [21,24,25]. Moreover, studies have underscored the impact of poor medication adherence on increased hospitalization and emergency room utilization in chronically ill populations [26–29].

Currently, the Patient Activation Measure (PAM) is the only validated instrument that comprehensively measures the degree to which patients are activated to manage their own health care [22] The PAM, which was developed and refined by Hibbard et al., contains Likert-response questions each soliciting unique information on the patient's knowledge, skills, and beliefs to self-manage their own care, collaborate with their health care providers, and maintain health behaviors while preventing decline (Table 1). The PAM instrument yields a summary activation score, which is then categorized into one of four progressively higher 'stages of activation' (Table 2). Higher patient activation is associated with engagement in healthy behaviors (diet, exercise), adherence to preventive guidelines/screenings [22,24,25,29] and effective communication, however, the associations between patient activation and hospitalization, ER utilization, and medication adherence, endpoints very important to health care costs, still need to be scrutinized. The goal of this review was to summarize and evaluate the association of the Patient Activation Measure (PAM) and the outcomes of hospitalization, ER utilization, and medication adherence in chronically ill patient populations.

2. Methods

2.1. Search strategy

Electronic searches of the medical literature published between January 1, 2004 and June 30, 2014 were performed in Ovid, MEDLINE, PsychINFO, PubMed, Cochrane Database of Systematic Reviews, CINAHL, ISI Web of Science, and Health and Psychosocial Instruments. This timeframe was chosen because PAM was developed in 2004. Keywords and medical search terms included Patient Activation, patient activation measure, patient activation measure-13, patient activation measure-22, PAM-8, PAM-13, PAM-22, patient efficacy, self-management, patient-centeredness, disease: diabetes, hypertension, cardiovascular disease, heart failure, congestive heart failure, chronic renal failure, chronic obstructive pulmonary disease (COPD), coronary artery disease, chronic medical conditions, chronic illness, hospitalization, medication adherence, readmissions, adverse event, outpatient visit, emergency room utilization. The bibliographies of included papers and review articles were also cross-referenced for additional studies that were not identified by the primary search.

Table 1
PAM-13 items and corresponding patient activation levels[a].

Item	PAM level
When all is said and done, I am the person who is responsible doe taking care of my own health	**1**
Taking an active role in my own health care is the most important thing that affects my health	
I am confident I can help prevent or reduce problems associated with my health	**2**
I know what each of my prescribed medications do	
I am confident that I can tell whether I need to go to the doctor or whether I can take care of a health problem myself	
I am confident that I can tell a doctor concerns I have even when he or she does not ask	
I am confident that I can follow through on medical treatment I may need to do at home	
I understand my health problems and what causes them	
I know what treatments are available for my health problems	
I have been able to maintain (keep up with) lifestyle changes, like eating right or exercising	**3**
I know how to prevent problems with my health	
I am confident I can figure out solutions when new problems arise with my health	**4**
I am confident that I can maintain lifestyle changes, like eating right and exercising, even during times of stress	

[a] Patient activation measure (PAM) 13, Insignia Health LLC, 2013.