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Addressing Barriers to Medication Adherence: A Screening Instrument Validation Study

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Background

Adherence to a prescribed medication regimen is often critical to successful disease management. Cancer diagnoses often further complicate control of the comorbid diseases. Older cancer patients with multiple comorbidities receiving chemotherapy treatment are at increased risk for adverse health outcomes from uncontrolled disease when nonadherent to their medication regimen. At least half of patients are nonadherent to their prescribed treatment regimen often resulting in uncontrolled illness such as diabetes, hypertension, and chronic obstructive pulmonary disease, and mental illness. While working in the outpatient oncology clinical research setting over a nine-year period, this researcher detected multiple complexities to medication adherence. Interventions tailored to the patients' needs reduced nonadherence and subsequent hospitalization rates.

Purpose

The purpose of this pilot research study was to test the validity of an evidence-based screening instrument developed from literature and designed to identify patients at risk for medication nonadherence and uncontrolled illness. Identifying the barriers to adherence allows the healthcare worker to intervene and improve the adherence to treatments, thus lowering the possibility of uncontrolled illness. The robust literature supports the evidence-based science behind the W-BMA (Washburn-Barrier to Medication Adherence) instrument, while an increased number of patients identified by the instrument who also have uncontrolled illness support the proposed outcome that the instrument would have an appropriate level of sensitivity.

Methods

Multiple databases and professional web resources produced 990 research articles on the topics related to this problem. Out of those, 29 articles and several professional web resources provided the robust information needed to support this project. The Iowa model was used to guide the researcher to the conclusion that there was not adequate research to address all of the most common barriers found to prevent adherence. The literature helped form the criteria used to develop the W-BMA screening instrument. The criteria are divided into five categories including (1) Financial/Social; (2) Depression/Distress/Anxiety; (3) Medical; (4) Behavior/Lifestyle; and (5) Educational. After development of this instrument in its very raw form, it was then applied to retrospective data of cancer patients with multiple co-morbidities. Due to inability to locate a comprehensive instrument containing all of the major barriers identified in the literature, an instrument was developed using the evidence found and a study conducted. The pilot study design was a retrospective, quasi-experimental, observational comparison study to evaluate the validity of a new evidence-based screening instrument. The population sample studied included a purposeful sample of 250 out of 759 Oncology Care Model patients treated and seen at the clinic at least twice in the previous year. The sample was chosen to ensure a 95% to 99% confidence interval with 1% to 5% margin of error. Most of the population was born between 1934

and 1950 with a mean, median, and mode of 1944. English was the primary language spoken by almost 99% of the sample that included 119 male patients and 131 females. The average number of prescribed medications in this sample was 10 with 10% taking over 20 medications each.
SPSS was used to analyze the data using classification trees to compare the W-BMA screen with the current screens used in the clinic alone. Additional variables were studied such as presence or absence of oncology support services intervention and follow-up.

Conclusion

The W-BMA identified a significantly larger number of patients with barriers than the current screens alone. 184 out of 250 (73.6%) of W-BMA screened patients had uncontrolled illness or events consisting of extra clinic visits, emergency room visits, or hospitalizations. Of those patients, 82.8% had barriers in the category of medical related concerns undetected with current screen methods and had uncontrolled illness. For those patients either without barriers, or whose medical related barriers were fully addressed by a healthcare worker, 34% had uncontrolled illness. To further evaluate the impact of barriers found by the W-BMA instrument, over half (56.6%) of the time, uncontrolled illness was found in patients prescribed a medication for their illness. Of those patients for which medication was prescribed, 62.0% ($P < .0002$) had undetected medical related barriers using current screening methods. Barriers found by the W-BMA screening instrument are strongly related to uncontrolled illness, and, these barriers are often multi-layered and complex, impacting adherence and the health of the patient. Incidentally, there was strong evidence that patients who have barriers addressed by oncology support services (nurse navigation and social work) often fare much better than patients who do not. The instrument studied in this pilot project requires additional analysis and refinement, however, there is strong evidence that proper use of the W-BMA screening instrument used as part of a comprehensive medication adherence program may improve adherence and lower risk of uncontrolled illness and adverse events.

Title:

Addressing Barriers to Medication Adherence: A Screening Instrument Validation Study

Keywords:

Adherence, Barriers and Medication

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Abstract Summary:

Adherence to a medication regimen is often critical for chronic disease management. Unfortunately, it is well-documented that at least half of patients are nonadherent, resulting in uncontrolled illness. Barriers to adherence are complex. This research study describes development and testing of an instrument to detect patient's barriers to adherence.

Content Outline:

ABSTRACT

Background
Adherence to a prescribed medication regimen is often critical to successful disease management. Interventions tailored to the patients' needs reduced nonadherence and subsequent hospitalization rates.
Purpose
The purpose of this pilot research study was to test the validity of an evidence-based screening instrument developed from literature and designed to identify patients at risk for medication nonadherence and uncontrolled illness.
Methods
29 articles and several professional web resources provided the robust information needed to support this project. The literature helped form the criteria used to develop the W-BMA screening instrument. The criteria are divided into five categories including (1) Financial/Social; (2) Depression/Distress/Anxiety; (3) Medical; (4) Behavior/Lifestyle; and (5) Educational.
Due to inability to locate a comprehensive instrument containing all of the major barriers identified in the literature, an instrument was developed using the evidence found and a study conducted. The pilot study design was a retrospective, quasi-experimental, observational comparison study to evaluate the validity of a new evidence-based screening instrument.
Conclusion
The W-BMA identified a significantly larger number of patients with barriers than the current screens alone. Barriers found by the W-BMA screening instrument are strongly related to uncontrolled illness, and, these barriers are often multi-layered and complex, impacting adherence and the health of the patient. Incidentally, there was strong evidence that patients who have barriers addressed by oncology support services (nurse navigation and social work) often fare much better than patients who do not. The instrument studied in this pilot project requires additional analysis and refinement, however, there is strong evidence that proper use of the W-BMA screening instrument used as part of a comprehensive medication adherence program may improve adherence and lower risk of uncontrolled illness and adverse events.

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Author Summary: Dr. Washburn is a clinical nurse specialist since 2006, registered nurse since 1989. Donna has nine years of experience in oncology clinical research including trials for some of the first biotherapy and gene therapy cancer treatments. During this time Donna developed a growing concern for patients and their lack of adherence to prescribed treatments. Her doctoral project focused on developing a comprehensive screening instrument to help medical professionals discover and address barriers to medication adherence.