



Protecting the power of interventions through proper reporting

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ARTICLE INFO

Article history:

Received 16 February 2011

Revised 16 June 2011

Accepted 27 June 2011

Online 15 August 2011

Key words:

Intervention research

ABSTRACT

Authors, reviewers, and journal editors are responsible for ensuring that standards of research reporting include detailed descriptions of interventions. The impact of nursing intervention research is much reduced when interventions are poorly described. Nursing research reports often fail to detail descriptions of interventions sufficiently to move future research forward, apply new knowledge in practice, and refine theories. To address this deficit, the authors constructed detailed guidelines for reporting interventions. Based on a review of health care literature, these guidelines include a discussion of theoretical, participant, interventionist, content, and delivery intervention elements with rationale for their inclusion. Suggestions for presenting this information in limited journal space are also presented.

Cite this article: Conn, V. S., & Groves, P. S. (2011, DECEMBER). Protecting the power of interventions through proper reporting. *Nursing Outlook*, 59(6), 318-325. doi:10.1016/j.outlook.2011.06.003.

The purpose of nursing research can be viewed as threefold: (1) to increase empirical knowledge for practice, (2) to inform future research, and (3) to advance nursing theory.^{1,2} Empirical findings are vital for evidence-based nursing practice. Efficient scientific progress builds on previous study findings. Empirical findings may provide evidence that supports or refutes theoretical propositions. Because nursing is a practice discipline, intervention research is particularly valuable for improving patient outcomes.^{3,4} Research can identify specific nursing interventions or sets of interventions that result in improved patient health and well-being.^{3,5,6} Therefore, nursing intervention research is critical to

developing nursing as a profession and to improving outcomes.

Researchers have a responsibility to both conduct valid research that demonstrates interventions' effects on patient outcomes and to disseminate findings.⁷ Although a research report may represent the culmination of a specific study, the published article becomes the foundation for knowledge construction and improved practice.⁸ However, nursing research reports often fail to describe interventions well enough to judge their validity and generalizability. Poorly described interventions hinder both further research

Financial support provided by grants from the National Institutes of Health (R01NR009656 and R01NR011990) to Vicki Conn, principal investigator. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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doi:10.1016/j.outlook.2011.06.003

studies and application in practice.⁵ This article provides guidance for completely describing interventions in research reports to facilitate efficient forward scientific progress and to provide empirical evidence for practice.

Intervention Descriptions in Published Research

Scholars from several health care fields have criticized inadequate reporting of interventions in their respective disciplines, including medicine^{9,10} and behavioral health.¹¹⁻¹³ Nursing, with its particularly complex interventions, has similar problems.^{3,7,14-17} Conn et al⁵ suggest that because nursing is a relatively new scientific discipline, its researchers have emphasized methodological features that demonstrate scientific rigor to the comparative neglect of intervention detail. The Conn et al analysis of 141 intervention research reports published in 27 journals during 2005 found that only 27% of the articles reported sufficient intervention detail for replication or use in practice.

Conn reported that researchers devoted less than 10% of report space to intervention descriptions.⁵ Key details including intervention components, theoretical foundation of interventions, cultural relevance, setting, dose and frequency, and interventionist competency often are missing or unclear.⁵ Other subsequent reviews have demonstrated similar conclusions. Forbes⁷ examined 517 clinical intervention reports from 3 European nursing research journals and found inadequate and inconsistent intervention descriptions, including poor theoretical integration and categorization. McGilton et al¹⁴ performed a systematic review of communication interventions in long-term care settings and discovered that inadequate descriptions of theoretical linkage, mode, duration, and even content made it difficult to ascertain which intervention components contributed to beneficial patient outcomes. In a similar review of interventions in maternal-child home visiting, McNaughton¹⁵ found that most reports lacked intervention and theory linkages, McNaughton commented that the reports described client problems more thoroughly than the nursing interventions to address them.

It is critical to have understandable interventions to move future research forward, apply new knowledge in practice, and refine theories. Therefore, nurse researchers much reduce the impact of their intervention studies when they describe interventions poorly. Research reports that lack intervention detail inhibit investigators' capability to build on extant research, which hinders scientific progress.⁵ Complete descriptions are essential for pilot projects, efficacy research, effectiveness studies, and comparative effectiveness research because subsequent phases of research build on previous projects. Detailed intervention reporting is

important regardless of the study outcomes because future researchers need information about both effective and ineffective interventions. When intervention descriptions are inadequate, researchers are unable to replicate effective interventions, to avoid duplicating ineffective interventions, or to effectively modify interventions. For example, researchers may inadvertently test ineffective interventions that are nearly identical to previously tested interventions because the interventions were inadequately described in reports. Given scarce resources for intervention research, science can most efficiently develop when information about both effective and ineffective interventions is available.

Sufficient intervention description is necessary to move the field forward through synthesis of knowledge via meta-analysis and systematic reviews.^{5,6,12,13,18} Meta-analysis moderator analyses statistically examine associations between intervention characteristics (eg, content, dose) and outcome effect sizes. These analyses can identify intervention attributes linked with better or worse outcomes across multiple primary studies. Poorly described interventions hamper effective moderator analyses because intervention characteristics remain uncertain. To efficiently build scientific knowledge, complete descriptions are essential for both studies with positive outcomes and for studies where interventions did not result in expected outcomes. Inadequate reporting of intervention descriptions among trials without expected outcomes prevents meta-analysts from identifying common characteristics of ineffective interventions.

Many interventions are designed according to theory-based predictions of what will effectively result in the desired outcomes. Thus interventions may provide direct or indirect evidence about theoretical propositions.² Successful theory-based interventions may provide some evidence to support theories. Complete descriptions of interventions among studies that did not achieve predicted outcomes are important because they may provide some evidence about lack of support for theoretical propositions. Because individual studies often have significant internal or external validity limitations, multiple intervention studies may become part of the body of evidence regarding use of theories. Scholars struggle to advance theory when inadequately described interventions cloud interpretation of how interventions worked or why they were ineffective.^{7,11,12,19}

Finally, knowledge from intervention research provides the evidence for nursing practice.² Nurse clinicians cannot implement poorly described interventions. These descriptions are essential for providers to judge their appropriateness for their practice setting and population, as well as to replicate them in practice. Thus, the development of evidence-based practice requires clear intervention descriptions.^{5,9,16,18}

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