RGN’s Commitment to Moving Intervention Science Forward
Specifying Targets, Mechanisms of Action, and Outcomes

Recently, there has been an increase in the number of gerontological research journals being published and a concomitant increase in the number of articles published on aging. On the face of it, more science and more publication in gerontology sound good for the field. But more is not necessarily better. As Editor of Research in Gerontological Nursing (RGN), I have a responsibility to publish articles that are notable for making a contribution to science. Replication studies contribute to science, but only up to a certain saturation point. Researchers also need to use published data as the building blocks for subsequent studies. Clinicians need fresh findings to update practice, improve the delivery of health care, and improve the quality of health and life for older adults. Educators need evidence from studies to inform new generations of student nurses on the latest innovations and practices. In this editorial, some important changes to our author guidelines are described, which we believe will improve our experimental research publications.

A recent review of evidence in neurology and psychology demonstrated to me that, compared to some intervention studies from other disciplines, nurse researchers tend to use overly broad and general models to explain how interventions work. I performed this review to understand the scientific basis for mindfulness meditation practices. Three mindfulness interventions—attentional skill exercises, body awareness exercises, and compassion meditation—have been shown to produce changes in outcomes. What impressed me was the amount of evidence and theorizing garnered to tease out and explain the series of changes that occur from each intervention. Although all three interventions come under the broad category of mindfulness interventions, each produces somewhat different outcomes through different causal mechanisms and activation of responses in different regions of the brain.

For example, the strengthening of attention regulation decreases emotion reactivity through mechanisms involved in the regulation of self-referential thought processes (Lutz, Slagter, Dunne, & Davidson, 2008; Zeidan, Johnson, Gordon, & Goolkasian, 2010). Body awareness exercises amplify the connections between bodily sensations and awareness through defined paths of signal conveyance in the homeostatic interoception system (Hölzel et al., 2011). Two competing models involving either a cognitive or affective mechanism of action are currently being studied to explain how compassion meditation leads to decreased anxiety, depression, and negative thoughts about oneself and others (Dahl, Lutz, & Davidson, 2016; Engen & Singer, 2016). Without an understanding of these different paths, a researcher could target the wrong individual for a specific intervention component, and research could yield erroneous conclusions regarding effectiveness. Although mechanisms are not necessary for causal inference, interventions not based on a specific explanation of how the treatment yields effects are likely to be weak. Understanding the series of changes that occur because of receiving an intervention helps determine who should receive an intervention, how it works, and why it is being given.

Most of the patient needs that are within the scope and standards of nursing practice are best understood through a non-reductionistic framework. Whether these needs are studied via multivariate quantitative approaches or qualitative methodologies, an understanding of the contextual variables that influence strengths, needs, and intervention effectiveness is central to much of our research. For example, the analysis of moderating effects helps target the delivery of the interventions to those most likely to benefit.

Discussions along these lines at our November 2016 Editorial Board meeting led to our decision at RGN to require that all published intervention studies explicate the
targets, active ingredients of interventions, mechanisms of action, and outcomes. Targets specify the central focus of the intervention (i.e., the individual, caregiver, environment, or health care system). Descriptions of interventions in nursing journals often do not contain enough detail for replication or use in practice. A 2008 review of 141 articles reporting experimental studies that were published in 27 journals revealed that only 38 (27%) reported enough detail for replication or translation to practice (Conn, Cooper, Ruppar, & Russell, 2008). Specific problems included incomplete reporting of intervention details, dosing frequency or dose, the setting for delivering the intervention, and interventionist qualifications (Conn et al., 2008). In addition to providing more space for intervention studies in print, lengthier descriptions of interventions, training manuals, and fidelity protocols can be published as supplemental online-only content on the RGN website as accompaniments to the article.

RGN abstracts of intervention studies will now contain four bolded subheadings: Targets, Intervention Description, Mechanisms of Action, and Outcomes. An example of a target of an intervention could be older adults with type II diabetes. The active components of the intervention will be specified under the intervention description subheading. The hypothesized or evidence-based changes that occur because of the intervention and that affect specific outcomes will be described under the Mechanisms of Action subheading. Outcomes refer to the specific effects that occur as a result of the intervention.

I hope that efforts to more stringently describe our intervention science, particularly the targets, interventions, mechanisms of action, and outcomes, will advance science more quickly and assist researchers, clinicians, educators, and public policy makers in using and endorsing nursing science. For a more in-depth discussion of these topics, examples, and application specifically to nonpharmacological interventions for individuals with dementia, read our upcoming editorial in the May/June 2017 issue titled, “Approaches to Affective, Behavioral, and Cognitive Symptoms of Individuals with Dementia: A Thorny Issue and a Rose by Another Name” (Kovach, Kolanowski, & Gilmore-Bykovskyi, in press).

REFERENCES

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