

# Presenting and Evaluating Qualitative Research: A Rejoinder to Anderson (2010)

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## ABSTRACT

Submitted: 02/06/2012

Accepted: 13/08/2012

This article is a response to Claire Anderson's (2010) special article on presenting and evaluating qualitative research that called for further exploration on how qualitative methodology can and should be integrated into pharmacy research agendas. This rejoinder concurs with her conclusions and advances her call. In addition, particular attention is given to issues of validity, rigor, answering research questions, and mixed-methods approach to research. As a result, the potentially complimentary nature of qualitative and quantitative research is discussed within the context of research in pharmacy.

The present commentary comes as rejoinder to Anderson's (2010) article, titled, "Presenting and Evaluating Qualitative Research."<sup>1</sup> Anderson's article is a good first step in opening a much-needed discussion regarding the potential future role of qualitative scholarship in pharmacy research. Anderson presents an apt representation of the qualitative research paradigm, and casts a vision for the role of pharmacy in the spectrum of this scholarly inquiry. This rejoinder is intended to be an extension to Anderson's work, addressing specific constructs relating to validity, rigor, answering-research-questions, and mixed methods research.

### Validity Issues

Cardinal to all research protocol is the matter of research validity. Traditionally, this is divided into the constructs of internal and external validity.<sup>2</sup> Essentially, internal validity addresses the degree to which findings appropriately reflect reality. As such, researchers address research designs in terms of empirical quality control. In quantitative research, a key component ensures that the independent variable is the only reasonable explanation for the variance between two means. To the degree that alternative explanations exist, the soundness of the reported findings is threatened.<sup>3</sup>

Internal validity in qualitative research holds some shared tenants—but the particulars differ significantly from quantitative research.<sup>4</sup> In qualitative research, there is no independent variable, no manipulation of variables, no use of control groups, statistical power has no practical usefulness, and the construct of testing a null hypothesis does apply. Nonetheless, internal validity has importance to qualitative researchers—it simply is framed in a different manner.<sup>5</sup>

Qualitative researchers have vested interests in reporting research findings that are true—or valid—reflections of research subject's experience. The results that are published in a pharmacy journal article should represent reality from the perspectives of those who experience the phenomenon. Contrariwise, the reported findings should not be the product of the researcher superimposing his or her own views on to the data.<sup>6,7</sup> Apt research findings mirror the percepts of those who were interviewed or observed. This is a significant manner in which qualitative research differs from journalism. Journalists often deductively begin with a premise, searching data that will sell the reader on their story. In contrast, the qualitative researcher approaches research study inductively, holding at bay—as much as is reasonably possible—one's biases, prejudices, and theoretical orientations.<sup>8,9</sup> The qualitative researcher tells the stories of participants—not his or her own. To the degree that the reported research results of a qualitative study rightfully reflect the perspectives of research subjects, the study is said to possess internal validity.<sup>10,8</sup> Anderson's article mentioned various means of strengthening a study's internal validity, including triangulation, respondent validation, constant comparison, examining deviant cases, respondent validation, and member checking.

Additionally, pharmacy researchers must address issues of external validity when utilizing qualitative research methods. This involves appraising how the findings relate to samples outside those of the participants involved in a given reported study. In quantitative research, this can be accomplished by means such as random sampling, whereby actual and theoretical mean distributions are compared and analyzed.<sup>11</sup> Confidence intervals help to provide confidence that the reported findings did not occur by random chance. Statistical power measures such as sample size, tight control over the independent variable, random distribution, and equal size comparisons help increase a quantitative study's external validity.

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In qualitative research, these protocols do not serve useful means in obtaining external validity. This is because the findings in a qualitative study are embedded into the context of the research participants being studied.<sup>12</sup> It is not realistic or feasible to make generalizations from one qualitative study—inferring that the findings reflect the nature or perspective of other individuals outside of the sample.<sup>13</sup> Consequently, at first blush, it may appear that qualitative research has no connection to external validity. However, this is not the case when considering the larger picture.

In order for qualitative findings to show external validity, they require replication.<sup>14,15</sup> Researchers use essentially the same research design, duplicating the essential findings among other research subjects. When this occurs consistently, then researchers can lend credibility to the notion that potential findings possess generalizability.<sup>16,17</sup> For example, pharmacists might study consumers in, say, a small, rural area in the South, Midwest, West, and Eastern regions of the U.S. If results generally are similar, then external validity of the findings are said to be strengthened. But, from one study alone, it is simply unknown to what degree a study's finding relates to other populations. As described by Price, published journal research routinely and explicitly should note limitations and discuss them.<sup>18</sup>

In quantitative research, sample size sometimes is related to external validity. This, combined with random sampling, tends to produce robust conclusions.<sup>19</sup> In qualitative research, sample size is more relative. A common technique involves a concept called “saturation”.<sup>20</sup> In this protocol, qualitative researchers begin with a core group of individuals for in-depth interviews. General findings are identified. Participants are added to the sample, one at a time, with the transcripts coded and analyzed for constant comparison. As the sample size grows, researchers look for potential new themes that emerge from the interviews. As long as new potential themes develop, the researcher continues to add subjects. At some point, however, no new themes emerge. It is at this point that data collection stops.<sup>20</sup>

All pharmacists are naturally aware of chemical saturation. Adding more salt to a beaker of water, at some point, does not increase its saline content. That concept follows with qualitative research sampling. Namely, having a sample of, say, 100 subjects is not necessarily superior to a sample of, say, 50 participants—if participants 51, 52, 53, and 54 all say essentially the same thing as did participants 14, 15, 16, and 17. In this context, external validity is not tied to sample sizes or increasing statistical power, as it is with quantitative research.

### Rigor Issues

Anderson made a noble case for including checks for internal validity when designing a qualitative research study. Simply

interviewing participants does not make for a valid research study. Rather, applying the rigor of systematic analysis of the data obtained from the transcripts provides much greater confidence in the reported findings.<sup>20</sup>

Obviously, the word “rigor” is an ambiguous term and open to interpretation. Nonetheless, there are some shared-constructs that many qualitative researchers generally have agreed should be included in published findings.<sup>23</sup> Some of these include the following. First, qualitative research articles should include a data audit, sometimes also called a data trail. This involves generating a compilation of quotes from the respective transcripts that support the results reported in an article. If the findings truly are representative of the phenomenon being studied, then there should be relatively ample support evident in the transcript data. Generating a data audit can help guard against superimposing one's own views into a study's findings. It also can help reduce the chance of research fraud, since outsiders can inspect the transcripts in an organized and systematic manner, linking the findings with the data collected.<sup>10</sup>

Second, software analysis can help aid the data analysis process. Unlike quantitative research, where software such as SPSS can essentially perform all the needed analysis, qualitative software is not so advanced at this point.<sup>24</sup> Anderson made reference to NVIVO, which helps manage the data. Additionally, programs have been written to help with frequency counts, analysis of constructs, phrases, and reoccurring concepts. Such software cannot replace human cognition. Nonetheless, it can enhance the human component, helping to ensure that the reported findings are representative of the participants overall sentiments.

Third, low inference description helps enhance a qualitative study's internal validity. This involves using citations from the actual participants in a qualitative study—rather than merely summarizing sentiments.<sup>25</sup> This protocol helps to ground the conclusions in the actual words of the subjects, ensuring that the researcher does not carry the conclusions beyond those actually communicated by the actual participants. Most qualitative research articles contain ample examples of participant direct quotes in order to help meet this rigor of low inference descriptions.<sup>26</sup>

Fourth, member checking is a step that significantly helps to add rigor to a qualitative research study. This process involves taking the essential findings of a study back to the subjects, eliciting their feedback.<sup>27</sup> The participants are invited to provide input regarding the degree to which the intended reported results aptly reflect their own sentiments. It also provides a chance for them to indicate whether the reported findings reflect the main or salient sentiments of the subjects (compared to peripheral).

Last, including outside evaluation also helps to add rigor to qualitative research studies. This entails eliciting the feedback of an experienced expert to help provide helpful feedback at each stage of the qualitative study.<sup>28</sup> Certainly, peer-review is valuable when a study is completed and a manuscript is being evaluated for potential publication. In addition, however, it is helpful to have an outsider provide evaluation and appraisal at key points in a qualitative research study. Naturally, this does not assure a quality end-product, but it does, nonetheless, help to better ensure the outcome will be rigorous. Regular meetings among the research team also can help provide important quality checks to enhance a study's rigor in design and execution.

### Issues of Answering Questions

Pharmacists certainly are both grounded and embedded in science. As such, they conduct research that discovers cutting edge advances in drug molecules and their pharmaceutical applications. At the same time, pharmacists also maintain significant connections with the human element of the profession: patients. The research methods of hard science do not always best fit the research questions pertaining to end users of pharmacy services. As Anderson duly noted, qualitative research methods can help best answer these research questions.

In cases where they desire to answer “what” or “how many” questions, then quantitative research is the only practical methodology.<sup>29</sup> In contrast, however, sometimes pharmacists want to know answers to “why” or “how” questions. The latter two constructs, in most instances are better answered through qualitative methodology.<sup>30</sup>

As an example, pharmacists might wish to know how many patients willingly choose to take more expensive brand medicines, though less expensive generics are readily available. Naturally, this is valuable data that best can be obtained through quantitative study design. However, this study won't address the reasons behind the patients preference for brand medicines compared to generics. Checklists or even surveys fail to capture the logic and reasoning behind such choices. Moreover, most human decision-making is complex, requiring follow-up and reflexivity when probing true versus socially-acceptable reasons. Additionally, how did consumers come to those choices? Even after understanding the facts, why do people make various choices in drug stores? What thinking, feelings, and perceptions are loaded into the reasons behind their choices? Researchers must appraise their fundamental research questions at the time of research design. Those questions drive the methods of inquiry.<sup>31</sup>

### Mixed Methods Issues

It is faulty to approach research with an either-quantitative-or-qualitative mindset.<sup>32</sup> Research methodology selection should

be driven by the research questions being posed. In some cases, perhaps many-or even most cases-researchers actually do want to know the answers to both “what” and “why.” In those instances, a mixed-method research design is most appropriate.<sup>33</sup>

On a practical level, most published mixed-method research articles are foremost quantitative studies. Ideally, of course, this should be due to the fact that the respective researchers are pursuing the answers to “what” questions.<sup>34</sup> We believe a perusal of many mixed-methods research publications shows that the researchers also possess interests in probing their studies deeper. Either simultaneous with quantitative data collection, or following it, researchers added a qualitative component to the design—such as interviews, open ended survey questions, or focus groups.<sup>35</sup> They were interested in knowing how it was that subjects came to their present positions or ways of thinking. Investing rationale or why participants held views, made choices, and/or developed attitudes tend to be the focus.<sup>29</sup>

On a more conceptual level, qualitative research [theoretically] should precede quantitative research. In this model, qualitative research is used for exploring new, uncharted research domains. The purpose of qualitative studies is not to test hypotheses. Rather, it is to generate hypotheses or, in some case, grounded theories.<sup>36</sup> Once the hypotheses are posited, then they can be tested, using quantitative methods.

One of the classic examples of qualitative/quantitative complimentary research was pioneering work of Elizabeth Kubler-Ross. During her time, relatively little was known regarding how people come to process death and dying. Kubler-Ross received permission from numerous Midwest hospitals to interview individuals when they were first diagnosed with terminal illnesses. Systematically, she followed these individuals through their respective courses—until death. Using rigorous qualitative methodology, she uncovered themes and eventually generated a theory that was grounded in her transcript data (today, we would refer to this as a grounded theory). She posited a five stage model for how individuals experience stages of grief.

The reason that most psychologists knew of Kubler-Ross's work, however, is not due to her qualitative methodology. Rather, quantitative researchers used her theory of death and dying as the basis for generating their quantitative studies. Over time, Kubler-Ross' model was shown to be relatively robust.<sup>37</sup> The complimentary process of exploratory theory-building through qualitative research and the follow-up hypothesis testing of quantitative research advanced scientific understanding of grief, dying, and death in ways that either research method alone could not have accomplished.

We advocate that pharmacy researchers would do well to follow this model. The days of either-or, quantitative or qualitative have past. Significant advances in clinical pharmacy await, as researchers view research more holistically. Seeing the bigger picture and complementary nature of multiple research designs will be the way of the future for research in pharmacy.

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