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Mixed Methods Approaches: Controversies are Still Here.

The popularity of using mixed methods research (MMR) has extended to many disciplines such as business, education, health sciences, psychology and sociology.¹⁻⁵ This research design has been recognized largely as the mixing of two paradigms, the qualitative method (QUAL) based on interpretivism, and the quantitative method (QUAN), based on positivism, in an attempt to produce the best of both paradigms. Knowledge produced from MMR with its paradigm based on pragmatism, has been published in a number of journals in recent years. However, there are questions continuing to emerge from the international research community about MMR. This paper describes most controversies in brief, and aims to provide a direction for those reviewing articles or wanting to publish a research manuscript using mixed methods approaches (MMA) in our journal, the *Pacific Rim International Journal of Nursing Research* (PRIJNR).

MMA has promoted as “the third methodological movement” in the past few years.⁶⁻⁸ Before the beginning of MMA, many studies used multiple methods (QUAL, QUAN) in a single study to decrease biases and advanced results.⁹⁻¹¹ Multi-method research and triangulation were terms used with arguments that they can identify different facets of phenomena being studied and enhance validity when multiple findings either confirm or confound each other.¹² The central premise of mixed methods is that the use of qualitative and quantitative approaches in combination in a single study with the same or different research question(s) may provide a better understanding of research problems and complex phenomena than either approach alone.¹³ MMA has been promoted as an innovative health research design and is an increasingly popular way to address the complexity of areas such as health service interventions, quality of life, and living with chronic illness.¹⁴⁻¹⁶

The term mixed methods (MM) has emerged in the last decade as a research approach. In the 1990s, the ideas of combining qualitative and quantitative methods into a single study were promoted and since then the terms MMR and Mixed Methodology have been used.¹⁷ This terminology has caused confusion regarding definitions, applications, and publications of MMR, MMA and Mixed Methodology in literature, and has been discussed and challenged by the research community. A definition of MM that was synthesized from 21 leaders in the field of mixed methods research is that:

“Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purpose of breadth and depth of understanding and corroboration.”¹⁸

This definition is very similar to that of Creswell and Plano Clark¹⁹ who stated that:

“A mixed method is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative approaches in many phases in the research process. As a method, it focuses on collecting, analyzing, and mixing of quantitative and qualitative data in a single study or series of studies.”¹⁹

By following the above mentioned definitions, MM refers to the combining of qualitative and quantitative methods. Morse and Niehaus²⁰ defined mix method design differently. They argued that using a complete method with a supplemental component, both from the qualitative paradigm, is a valid form of MM design, stating that:

“Mixed method design consists of a complete method (i.e., the core component), plus one (or more) incomplete method(s) (i.e., the supplementary component[s]) that cannot be published alone, within a single study.”²⁰

This definition makes room for a qualitatively–driven design, especially QUAL–qual (simultaneous and sequential qualitative mixed method design) where both the core part and the supplementary part have an inductive theoretical drive. However the QUAL–qual mixed method design raises important questions, “Are qualitative mixed methods designed as a class of methods?” or “Are all qualitative methods mixed methods?”²¹ These questions are challenging discussion within the qualitative research community.

Despite differences in defining MM, Creswell²² addressed 11 controversies. These controversies range widely, from basic issues about validity and the meaning of MM to its philosophical underpinning, and on to the pragmatics of conducting a MM study, viz:

1. The changing and expanding definitions of MMR.
2. The questionable use of qualitative and quantitative descriptors.
3. Is MM a “new” approach to research?
4. What drives the interest in MM?
5. Is the paradigm debate still being discussed?
6. Does MM privilege post–positivism?
7. Is there a fixed discourse in MM?
8. Should MM adopt a bilingual language of its terms?
9. Are there too many confusing design possibilities for MM procedures?
10. Is MMR misappropriating designs and procedures from other approaches to research?
11. What value is added by MM beyond the value gained through qualitative and quantitative research?

These controversies about MM reveal that further serious discussion about the method are needed within the research community.^{21–24} Moreover, guidelines which assess the quality of MMR need consensus from MM researchers.

MMA and the difference between Method and Methodology

As these controversies are being discussed, PRIJNR has received manuscripts which employed a MMA but a number of these were confusing. They often showed misunderstanding in the use of the terms “methodology” and “method”. Methodology covers the theoretical assumptions and principles that underpin a particular research approach. However, methods focus on the tools for data collecting and analyzing data. When authors confuse these terms this leads to poor clarification of what is being mixed and how these intercept in the research process. We believe that the research question and context should lead to the choice of appropriate research approaches. If the phenomena are complex, and research question(s) require various kinds of methods to answer and understand them, then MMA is needed for complementary purposes. It may be that quantitative and qualitative approaches alone or one method of data collection and analysis are not able to answer the research question(s). Therefore the level of mixing methodology or methods, should be clearly identified. When multiple paradigms are used in a single study, each paradigm needs to be recognized and a description made about how their attributes were combined to strengthen the study and produce new findings. Each study question may lead to different methods, and each research method produces different phenomena. The distinction of phenomena in MMR is crucial.

Publishing your MMR

Researchers might need to write their MMR report for funding bodies or organizations, and can do this in one report. However, in a manuscript for an academic journal various elements of the study can be separated into two or more papers in a specific manner. Would-be authors need to remember that most journal manuscripts are limited in length according to the guidelines of a journal, and often all of a MMR study cannot be put into one paper. To do so would mean very tight summarization of description of methods, findings and discussion, and this might lead to a loss of description of the rich depth of findings. Therefore publishing the study in a number of papers is warranted, but authors must clearly write about how a paper actually links to the other paper(s), and where their point of intercept is within that MMR.^{25, 26} If the study used both QUAL and QUAN, the author might use the following suggestion given by Stange, Crabtree and Miller.²⁷

1. Publish qualitative and quantitative manuscripts in different journals, but with clear references and links to the other article(s);
2. Publish concurrent or a series of qualitative and quantitative papers in the same journal;
3. Publish an integrated single paper that describes both methods and findings and draws overarching lessons, with or without appendices that provide study details; or
4. Co-publish separate qualitative and quantitative papers accompanied by a third paper that draws overarching lessons from analyses across the 2 methods.

It is not scholarly to try to publish a study in several papers where a qualitative-driven mixed method design has been used (either QUAL-qual or QUAL-quan), and in which the core element would not be complete without the supplementary element. The paper has to show the point of linkage or the position in the research process in which the two elements meet.²⁸

The Guidance for Good Reporting of a Mixed Methods Study (GRAMMS) developed by O’Cathain, Murphy and Nicholl²⁹ for reviewing manuscripts using MMA suggests that a paper needs to describe the following:

- justification for using a MMA for the research question;
- design in terms of the purpose, priority, and sequence of methods;
- each method used in terms of sampling, data collection and analysis;
- interception of methods occurred, how it has occurred, and who has participated in it;
- limitation of one method associated with the presence of the other method; and
- insight(s) gained from mixing or integrating methods.

In conclusion, MMA has emerged to serve specific purposes, including producing a more complete picture of a complex phenomenon, improving the accuracy of data, compensating specific strengths and weaknesses associated with particular methods, and developing the analysis and building upon initial findings using different kinds of methods. The history and concepts of MMA arose from the use of multiple methods in the mid 20th century, but today the outlook for MMA is still being debated. For nursing research, MM papers have been published in journals over the last few years. The complexity of nursing phenomena, for example care of the chronically ill, care of the elderly, health promotion and risk prevention, symptoms management, improving nursing outcomes through strengthening and restructuring health care environment, care coordination, and impacting health care policy are crucial areas that require MMR.

Often only one research approach in a single study is not enough to provide a deep understanding of the phenomenon and explore to nursing interventions. Therefore, MMA could fill the gap in revealing the “what” and “how” components of the nursing phenomenon. It has been found that using MMA in nursing research varies according

to the different types of integration such as combining notions at research conceptualization stage, and mixing data collection methods and synthesizing findings.³⁰ As an editor and qualitative researcher I am concerned that researchers conduct studies using MMA when they have misunderstandings of its important concepts and lack awareness of the debates about it. The result is a weakening of research paradigms. Both reports and research articles of studies using MMA have to demonstrate a clear rationale for employing MMA. Research paradigms have to be honored. And as MMA is done for complementary research purposes, it is crucial that the “what” and the “how” of the “mixing” occurred are described by the researchers.

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