Critique of "Cooperative Triad in Home Dialysis Care and Patient Outcomes"

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It has been a pleasure preparing a critique of Dr. MacElveen's study for two reasons. First, it is research in clinical nursing which uses sociological theory developed by eminent social scientists such as Simmel and Mills. Dr. MacElveen is the first nurse researcher to use these theories in the study of home dialysis patients. Second, it is a well-thought-through research project that indicates a sophisticated grasp of research logic and methodology.

Because of my interest in the research I have reviewed the original manuscript (all 300 pages of it). While I will try to limit my critique to just the paper that was presented, I will at times draw freely from both the original manuscript and the paper.

To recapitulate, the theoretical framework that guided the design and implementation of the study is that of cooperative and competitive groups, an appropriate choice for the kind of questions that were considered. Dr. MacElveen contends that the thrust of the study is both applied and theoretical; in other words, the theory of cooperation and competition in triads has added to our understanding of the dynamics of the home dialysis triad, and this in turn has inductively amplified the tenets of the underlying theory. In her opening remarks she identified the purposes of the study as twofold in terms of the applied nature of the investigation, but without any clear delineation as to how the first purpose—the assessment "of the heuristic value of the cooperative triad as a means of enhancing our understanding of the home dialysis situation"—differs from the second purpose—"investigation of home dialysis patient outcomes via a sociological

approach." There is no doubt in my mind that the research presented has theoretical implications and therefore the purpose of the study should be stated accordingly.

The success of any research study, according to Leininger (3), is largely dependent upon a "clear statement of the problem and the careful thought given to the overall framework or the research design." Though the problem to be investigated has not been explicitly identified in this study, the hypotheses that provide the guidelines for the design and interpretation were clearly stated as follows:

1. The higher the degree of cooperation in the triad, the higher the patient's level of physical wellness will be.

2. The higher the degree of cooperation in the triad, the more closely the patient will adhere to the medical regimen.

3. The higher the degree of cooperation in the triad, the greater the amount of total activity engaged in by the patient.

Research critiques can consider critically all aspects of a research study or only select certain facets to be examined in depth. This critique will be addressed to the operational definitions of the criterion measures, the design and methodology, the results, and the implications for further research.

Criterion Measures

The most important independent variable is that of cooperation, operationalized as high and low cooperation. Since the cooperation-competition framework has been used, and since we cannot conceptualize triads without both cooperative and competitive behaviors, a paradigm that uses two continua, one for high-low competition and the other for high-low cooperation, would indeed be a more logical way to bridge the gap between the theoretical framework and the design of the study (1). Thus the independent variable would be obtained by the following equation: Cooperation minus competition equals the independent variable. All positive results would then be classified as high, medium, or low cooperation and negative results as high, medium, or low competition.

One difficulty in the study is that it neglects to expound on the rationale and assumptions that underlie the omission of certain basic parameters that were used by Simmel to identify cooperation, e.g., frequency of communication in a triad. Perhaps Dr. MacElveen could tell us how she finally arrived at using only goals, means, and mutuality of perception as the basic elements for cooperation in this study.

Another concession made in the operationalization of the study was to combine goals and means and treat them as one factor, common goals and means. The operational definition became the number of goals expressed by all three members of a triad, plus the number of cases in which all three members mention at least one way by which they worked toward a particular common goal, minus the sum of the number of mutually exclusive or conflicting means. What criteria does the investigator have for

the identification of conflicting goals and means? Does the mere mention of a different goal or means indicate that they are conflicting? This definition was presumably based upon the conceptual framework. However, the rationale for the concessions that were made during the operationalization phase was quite ambiguous and hence the work is not amenable to replication until the prior assumptions are clearly defined and the link between the theoretical framework and the final operational definition is identified.

The third variable that was used to define cooperation was mutuality of perception. It was operationalized in terms of interdependency, reciprocity, and trust. The tool used for data collection for this variable was based on the operational definition of mutuality of perception for a triad; it was the sum of "deviance scores" (difference between predicted ratings and actual ratings) for all three members of the triad. I would like to pose the question to the investigator: Does she presume that interdependency, reciprocity, and trust are perceived and manifested equally by each member of the triad? Would you agree that perhaps mutuality of perception of patient and partner should have been weighed differently from mutuality of perception between partner and staff, or patient and staff? This might help to define the extent and the degree to which cooperation exists within the triads.

The investigator made the point so eloquently in her original manuscript that all subjects in the study had been kept informed of the progressive deterioration of their kidney. "If the doctor perceives him as possibly eligible for dialysis or a transplant, these are mentioned as alternatives for when kidney function is depleted beyond the support of life." Yet it was the observation of some of the members of the staff in the Denver dialysis center that a patient would later say, "Why didn't you tell me it would be like this?" In fact, he had been told (4:108). Perhaps such patients were using denial mechanisms or selective perceptions to deal with the newly acquired dialysis, or perhaps there is another variable that was being overlooked: What was the patient told? And how different was the message with each subject? Do the patients' expectations before going into dialysis coincide with the realistic expectations as perceived by the staff? Are the expectations of dialysis in terms of sensations or in terms of the procedures? What effect would differences in these areas have on the well-being of patients, on their adherence to regimen and/or cooperation?

What I am proposing is an essential intervening variable that could have significant implications on the nursing care of the home dialysis patients and on the investigation under consideration. Subjects could have been classified in terms of the quality and quantity of preparation for going on home dialysis. It would also be of interest to know how much information the partners have received prior to the initiation of dialysis.

The Research Design and Methodology

Subjects

The subjects who made up the sample for this study were 11 males and

10 females and their partners: wives, husbands, or mothers. The age of clients ranged between 13 and 61 years with a mean of 40.9. No information is given as to the effects of age on the criterion measures.

Though the researcher was able to classify male subjects in terms of their working hours and resting hours, she only indicated in her classification of females that 80 percent are housewives. This is an inadequate classification and presumes housewives to belong in a homogeneous occupational category. Instead, the role of housewives varies in terms of the number of hours worked each day, the level of responsibility, and the quality and quantity of involvement in those activities. Perceptions of such roles also vary, thus they should be considered.

Dr. MacElveen indicates clearly how the clients and their partners were selected for participation in the study. The third member of every triad was identified by both patients and their partners from the staff of the dialysis center. Did the investigator always receive a congruent statement from both patient and partner? What decision did she make when an incongruency was manifested? How reliable is it to consider the staff member as a significant other for both patients and partners when it might have been the case that the staff member was named by only the patient or the partner?

Tools

One of the major ambiguities that is apparent in this research is in the transition from conceptual definitions to tool construction. The complexity of the tools required a great deal of research and a large number of decisions were made before the methodology was completed. Perhaps it was because of the demands that were placed on the researcher for the many tools to be constructed that we find inconsistencies in the process of construction, pretesting, and validation. I shall demonstrate several examples in the next few minutes.

The researcher indicated that judges were used to provide reliability on items of the tools; however, it was not indicated how reliability was established, what criteria were used, or what percentages were used. The small number of judges involved probably reduced the reliability and the validity of some of the tools.

The researcher chose the open-ended question over an instrument with preconceived items for the collection of data on the common goals and means. She should be commended on such a choice for an initial investigation of a variable. Perhaps a pilot study would have succeeded in eliciting all possible goals of patients on home dialysis to permit the construction of a more systematic tool that could be validated for future use. Responses from a pilot study might be classified in terms of self-goals, self-other goals, present- or future-oriented goals. It would be interesting not only to explore the congruency between goals as perceived by clients, partners, and staff, but also to analyze the qualitative congruency as well. Subjects could be asked to rank goals in terms of priorities on a Likert-type scale. If the investigator plans to continue with her research in

this area, there would be definite merits in constructing such a scale, validating its items, and weighting them according to quality. One can hardly treat the following two goals as though they were qualitatively the same: (1) "Restore health, be well, stay alive, regain my strength, remain well to benefit from new advancements, live as long as possible," and in contrast: (2) "Try not to make such a big thing about dialysis."

To find out and to know when others need help is an essential element in the complicated and elaborate process of learning to cooperate. Dymond's (2) empathy scale was used in this study to test the level of mutuality of perceptions with modifications of statements to be relevant for the present study. There is no indication that the tool with these modifications was pretested or validated.

The Dependent Variable

Dr. MacElveen is to be commended on her efforts to define, operationalize, and construct a measure of patient's wellness. To establish a measure of wellness is not an easy matter, but is a task that many of us have tried to undertake with little success. The definition of health that has been provided by World Health Organization is: "Health is a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity." And I add to that: nor just the absence of complications. In her efforts to construct an objective tool, she used symptomatology and test results filed in patients' charts. The definition of wellness became "absence of complication." Needless to say, such a definition is too narrow—it would have been more appropriate to name the dependent variable in terms of the physical complications and in the meantime to attempt to develop a more meaningful and objective tool of wellness, one based on man as a bio-psycho-social being rather than just a biophysical being. Even if we just look at physical wellness, it is quite different from the mere absence of medical complications. Without these modifications, we find that the hypothesis "the higher the degree of cooperation in the triad, the higher the patient's level of physical wellness" should read as follows: "the higher the degree of cooperation in the triad, the lower the number of medical complications as experienced by the patient and as diagnosed by the specialist."

Total Activity

Total activity was defined in the study as the "time patients spend working and doing things which are a source of satisfaction or pleasure" (4:146). The operational definition was "the average of the total number of hours spent in work and leisure activities for the two weeks preceding the interview." Patients were to recall for the previous 14 days the number of hours spent in work, home leisure, and outside leisure. The tool constructed was critically evaluated by a sociologist, dialysis doctor, and nurse, and after modification it was subjected to independent evaluations by two sociologists. Each of the individuals involved in this evaluation process entered with his own orientation and biases, and there was no built-in

mechanism to counteract those biases. Again, no procedure or criteria for reliability and validity were established. Furthermore, it would seem that the amount of time spent in work and leisure is not an adequate measure. Both the quality and quantity of work and leisure should have been assessed by the tool.

Both nursing and sociology are very much lacking in well-constructed and validated tools. A number of tools to measure the independent variable and dependent variables were developed for the present study that could be used by both sociologists and nurses once proper validation has been achieved. It is hoped that these tools will be available for other researchers.

Interviewing

The interviews were all conducted by the investigator in the home of the client; they lasted from 3.5 to 8 hours. Tape recordings were used for only two of the interviews. For another group of interviews, all the data were recorded verbatim during the interview. For still another group of interviews, records were made by relying upon the investigator's memory as she completed some of the scales while parking a few blocks away immediately after the interview (4:118). I would suggest that a more rigorous and consistent mode of data collection be used for all subjects, instead of the three modes that were presented in this study. Such variability in data collection methods between subjects must increase the unaccounted error.

There is a danger in having the investigator personally responsible for conducting all the interviews and collecting the data. The inclusion of other research assistants is not without its disadvantages, to say nothing of the cost it incurs. Yet, when an exploratory study is conducted with an open-ended set of questions guided by a definite framework, there is an inherent danger that the researcher may continue probing until the subjects emit an anticipated or desired answer. In fact, is it not possible that within a span of three to eight hours subjects became contaminated by professional judgements?

Findings of the Study and Implications for Future Research

Dr. MacElveen is very wise to state that any positive correlations in the triad between the independent variable of cooperation and patient outcome variables should be considered as a beginning for further investigation. I believe that the concept of cooperation in the triad is valid and sound sociologically, and it could have great implications in clinical nursing research.

Spearman's correlations were used for the analysis of data. The independent variable was operationalized in terms of three interdependent and mutually inclusive variables. Would an analysis of co-variance be another

statistical method for identification of the variables that have the highest significance in the variation of the dependent variables? I would like Dr. MacElveen to explain why she did not use the analysis of co-variance for data exploration.

The percent of home dialysis triad members mentioning triad common goals is as follows: for goals related to good health, 90.5 percent, for goals related to adherence to regimen, 81 percent, and for goals related to family roles, 52.4 percent. Congruency drops drastically for other goals. Though it is beyond the scope of the study, could the investigator expound on why, in such a life-or-death situation, there was congruency only on two of the identified goals?

All the goals identified for the major independent variables have been positive in nature. It is of interest to note that there was not one negative goal mentioned. Could this be the function of the tool, the technique, or does the word *goal* in and of itself indicate to the interviewer that he is only to mention positive goals? Is it not conceivable that subjects have considered negative goals but refrained from mentioning them?

One of the most exciting outcomes of Dr. MacElveen's research is the clear implications it gives us for further clinical nursing research. In her presentation she stated: "It is not implied here that cooperation in home dialysis patient triads is the cause of positive patient outcomes."

The causality between cooperation and positive patient outcomes has been neither established nor claimed. The next logical investigation should determine what, if any, causal relationship exists between cooperation and positive patient outcomes. For example, it would be interesting to determine whether, by experimentally increasing cooperation, it is possible also to increase positive patient outcome.

Part of such research would be devoted to the development of techniques to increase cooperation. One way in which this might be attempted is through selective reinforcement of shared goals and means, and reinforcement of those behaviors which encompass trust, for example, willingness to help. If it were found that increased cooperation in home dialysis patient triads does result in increased positive patient outcomes, this would indicate to the members of the health team a definite direction in which to guide needed interventions. If no causal relationship were determined between cooperation and positive outcome, one might then manipulate other variables, for example, the quality and quantity of work and leisure involvement of the patients, in order to determine whether these are causally related to positive patient outcomes.

Dr. MacElveen's research has definite implications for the understanding of group cooperation and competition in sociology. While there are several theories that deal with groups, most of them have been tested in experimental groups with psychology students as subjects. The sociological propositions generated by the theory have been very spuriously tested empirically. The development of the criterion measure of cooperation is a very worthwhile task and should benefit others who are interested in triads.

Conclusions

One purpose of this critique was to point up some aspects of the investigation which could have been more carefully designed or controlled, in order that the same or similar problems could be avoided by other researchers in the future. It was also my intent to identify some areas of strength for purposes of future replication. Moreover, it was my objective to outline future lines of investigation. I think I have accomplished these purposes.

Dr. MacElveen's study has stimulated my thinking in terms of my own research. I have no doubt that it will generate many more ideas in clinical nursing research which will help delineate and increase a body of knowledge in nursing.

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