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Using quantitative and qualitative approaches in knowledge production*

UTILIZANDO AS ABORDAGENS QUANTITATIVA E QUALITATIVA NA PRODUÇÃO DO CONHECIMENTO

UTILIZANDO LOS ABORDAJES CUANTITATIVO Y CUALITATIVO EN LA PRODUCCIÓN DEL CONOCIMIENTO

Odaléa Maria Brüggemann¹, Mary Ângela Parpinelli²

ABSTRACT

The debate over the differences between quantitative and qualitative methods is frequent, holding favorable and opposite positions concerning their integration. Outlining a research that contemplates both approaches generates doubts and restlessness about how to use them without damaging the methods' rigor, specificity, as well as the methodological and reflective sophistication of each. The purpose is to report and discuss using the quantitative (randomized controlled clinical trial) and the qualitative approach to analyze and understand the practice of including a companion chosen by the woman during her labor and childbirth, performing the role of support provider. Using both methods allowed for approximating the multiple facets involved in this practice and evaluating both the explicative dimension and the comprehension, since it could be performed with complementary views.

KEY WORDS

Randomized controlled trials.
Qualitative research.
Humanizing delivery.

RESUMO

O debate sobre as diferenças entre os métodos quantitativo e qualitativo é frequente, havendo posições favoráveis e contrárias acerca da sua integração. Delinear uma pesquisa que contemple as duas abordagens gera dúvidas e inquietações sobre como utilizá-las sem *ferir* o rigor dos métodos, a especificidade, a sofisticação metodológica e reflexiva de cada uma delas. O objetivo é relatar e discutir a utilização da abordagem quantitativa (ensaio clínico controlado randomizado) e qualitativa para avaliar e compreender a inserção do acompanhante de escolha da mulher durante o trabalho de parto/parto, desempenhando o papel de provedor de apoio. A utilização das duas abordagens possibilitou aproximar as múltiplas facetas envolvidas nessa prática e avaliá-la tanto na dimensão explicativa quanto na compreensiva, uma vez que pôde ser realizada com *olhares* complementares.

DESCRIPTORES

Ensaio clínico controlado aleatório.
Pesquisa qualitativa.
Parto humanizado.

RESUMEN

El debate sobre las diferencias entre los métodos cuantitativo y cualitativo es frecuente, existiendo posiciones favorables y contrarias respecto a su integración. Delinear una investigación que contemple los dos abordajes genera dudas e inquietudes en relación a cómo utilizarlos sin *herir* el rigor de los métodos, la especificidad, la sofisticación metodológica y reflexiva de cada uno de ellos. El objetivo es relatar y discutir la utilización del abordaje cuantitativo (ensayo clínico controlado randomizado) y cualitativo, para evaluar y comprender la inserción del acompañante elegido por la mujer durante el trabajo de parto y el parto, desempeñando el papel de proveedor de apoyo. La utilización de los dos abordajes hizo posible la aproximación de las múltiples facetas involucradas en esta práctica, así como evaluarlas tanto en la dimensión explicativa como en la comprensiva, debido a que puede ser realizada con *visiones* complementarias.

DESCRIPTORES

Ensayos clínicos controlados aleatorios.
Investigación cualitativa.
Parto humanizado.

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INTRODUCTION

In Brazil, in the 1980s, discussions over the use of qualitative and quantitative methods started to arise. So far, research had been produced with a positive focus. From that time on, studies on other methodological approaches (dialectic and phenomenological) were performed. The main criticism over quantitative methodologies points them as positivist, committed to a conservative view of society and incapable of providing a dynamic knowledge of reality. As for qualitative research, criticism holds the lack of scientific appropriateness and adequacy only for exploratory studies, limited to personal report presentations⁽¹⁾.

In the healthcare sector, quantitative studies are generally subjected to epidemiology canons, and the qualitative studies to the social sciences canons; however, they are supported by the theoretical charts of reference subjects for the construction of the scope of each approach⁽²⁾.

When choosing the approach – quantitative or qualitative, more important than *naming* the method is knowing about its usage and adequacy to the intended study object. Moreover, the precise use, with strict scientific accuracy and ensuring the type of analysis that can be built⁽²⁾ by the method are indispensable. It is also necessary to consider who will produce knowledge and to whom it will serve⁽¹⁾.

It is not significant to simply discuss on the research methods, rather one should also explain the researcher's position facing social, political and philosophical issues of the reality to be researched. In any chosen methodological approach, the researcher should not let his/her intentions and views of the world about the researched object become known. The adoption of a research approach is not justified due to lack of knowledge about another. Low familiarity with statistics should not determine the researcher's option for a qualitative method. Researchers and professors do not need to know statistics in-depth; they need to know the logical basis of its procedures and the meaning of its measurements and tests⁽¹⁾.

Quantitative and qualitative approaches are necessary, but quite often insufficient to fully comprise the reality observed. Under these circumstances, they should be used as complementaries. Under the methodological point of view, there are no contradictions, as well as no continuity between the two investigation models. Under the epistemological point of view, neither approaches is more scientific than the other; they are simply different in nature. The relation between the quantitative (objectiveness) and qualitative (subjectiveness) approaches may not be seen as oppositional or contrary; in the same way, they are not reduced to a *continuum*. Both approaches allow social

relations to be analyzed within their different aspects: the quantitative research may generate issues to be further studied in a qualitative mode, and vice-versa⁽³⁾.

In the health research field, contributions from the interaction between both approaches result mainly from the differences between their methods. They both translate, in their own manner, articulations between the unique, the individual and the collective, present in the health-disease⁽²⁾ process.

The distinct models of articulation that seek to qualify mechanisms by which integration between quantitative and qualitative method occurs are denominated as: predominance of one of the poles (one of the approaches is preliminary to the other, prioritizing one of them;) approach overlapping (none is predominant, and they are used independently;) and the dialogical model (there is the integration of both approaches.) In any of the articulation models, understanding the conceptual-theoretical differences is necessary so as not to lose specificity and the reflexive and methodological sophistication of each approach⁽²⁾.

The combination of the qualitative and quantitative methods produces a methodological triangulation that, in a relation of complementary opposites, seeks the approximation of positivism and understanding. Therefore, triangulation is a research strategy that contributes to improve knowledge about a certain theme, reach the intended objectives, observe and understand the studied reality⁽⁴⁾.

Based on these theoretical aspects, we consider that triangulation, due to its quantitative and qualitative approaches, generates doubts and restlessness to researchers about how to use it without damaging the methodological strict accuracy, specificity and richness of both. Therefore, we intend to report and discuss the use of both approaches to evaluate and understand the aspects related to the insertion of a companion chosen by the pregnant woman during labor and childbirth, playing the role of a support provider.

SHARING THE EXPERIENCE

The insertion of a companion chosen by the pregnant woman during labor and childbirth was the research focus of this doctorate research developed for the Obstetrics Graduate Program at Faculty of Medical Sciences (FCM) of State University of Campinas (UNICAMP) resulting the thesis: *Support to a woman during childbirth by a companion of her choice: quantitative and qualitative approach*⁽⁵⁾.

Next, we provide a context view of the research steps and the approach imbrications for knowledge production.

Methodological choice fundamentals

The need to use both approaches arose when we identified the absence of controlled studies that might have evaluated the effects of support to pregnant women during childbirth, provided by a companion of her own choice, regarding her satisfaction and maternal, perinatal and breastfeeding results. This fact was found through research on the MEDLINE, LILACS, PubMed, SciELO and Isi Web of Science databases, between the years of 1980 and 2004, using the following keywords: *suporte/apoio* (support), *acompanhante* (companionship or companion), *doula*, *trabalho de parto* (labor), *parto* (childbirth or delivery). In this research, randomized clinical tests, meta-analyses and systematic reviews were located, which evaluated the support given by professionals and laywomen, either trained or not. Only observational and qualitative studies about the evaluation of the support provided by chosen companions to women during childbirth⁽⁶⁾ were found.

In addition, the lack of studies about the perception of healthcare professionals on providing care in the presence of a companion, with no previous preparation for the practice, was identified. About this item, qualitative studies were found in maternities where the practice was performed since the implementation of the service or after a process of change⁽⁷⁻⁹⁾. Moreover, the scientific production about the companion's perception, regarding the experience of providing support, was only focused on the companion's life experience or as the newborn's father⁽⁹⁻¹²⁾.

In the end, we did not locate any studies that might have evaluated, in a single maternity, the behavioral intervention – support provided by chosen companions by the woman in labor –, under every involved actor's point of view (woman in labor, healthcare professionals and companion.)

Considering the complexity involving the insertion of a companion in healthcare institutions, a research objective that required differentiated approaches to bring the involved parties closer together was constituted. Therefore, the quantitative approach - a randomized controlled clinical trial - was used to evaluate the effects of this behavioral intervention about the satisfaction of the woman in labor, maternal, perinatal, and breastfeeding results; and the qualitative approach to understand the experience in the point of view of the healthcare professionals and of the people chosen as support providers by the women in labor.

THE TRAJECTORY TAKEN

The research was developed at the obstetric center at the maternity of the UNICAMP hospital complex, located in the Metropolitan Region of Campinas/SP, where the presence of a companion was not part of the care routine. The protocol was approved by the Ethics Committee of FCM/UNICAMP and authorized by the Clinical Board of Directors of the institution (Report no. 211/2003). Procedures have

strictly respected the National Health Council Resolution no. 196/96 about research involving human beings, where every subject in the research signed a consent form.

In the research project, the methodological stages of the quantitative and qualitative approaches were explained, since we understand that neither prevailed in this articulation. There was an overlap, with results produced separately⁽²⁾.

Therefore, to calculate the sample size, distinct criteria were adopted by each approach. In the quantitative, the sample was calculated to detect a 15.1% percentage difference in the satisfaction of women in the intervention group relating the received care while labor and childbirth. This calculation was based on a clinical trial, which presented this percentage difference between groups with support and groups with no support during labor, regarding the satisfaction of the women in labor with the care received by the nurse⁽¹³⁾. The total size of the sample was 212 women, randomly distributed in the intervention group (with companion) and control group (no companion.) The women in labor were selected at the time of admission at the maternity, according to the inclusion criteria, through a check-list. The companions chosen by the women in labor of the intervention group were contacted at the moment of admission or by telephone. Every one of them received verbal and written instructions regarding the emotional and physical support activities (standing beside her, holding her hand, encouraging, calming her down, helping with deambulation, applying massages, etc.,) and about the norms and routines of the service.

The independent variable was: having the companion during the labor and childbirth moments, and the main dependent variables evaluated were: the women's satisfaction and those related to labor, childbirth, newborn and breastfeeding events in the first 12 hours after labor.

The quantitative data collection was performed from February of 2004 to March of 2005, from the notes in the medical records of patients and with an interview in the first 12-24 hours after labor, using a standard form. The data were entered into the EPI INFO 2002 software and the statistical analysis was done with the SAS 8.2 software. The general score was calculated and compared with the Likert⁽¹⁴⁾ scale. For the continuous variables, the average, the median, and the difference between groups were calculated with Student's t test and Wilcoxon's Test; for the category variables, the Chi-Square test or Fisher's Exact test were used. For the main dependent variables, risk reasons and trust intervals at 95% were estimated. The assumed significance level was 5%. The approach by treatment intention⁽¹⁴⁾ was chosen.

For the qualitative approach, the sample was intended and determined by data saturation, that is, no more deponents were interviewed when the interview contexts became repetitive⁽¹⁵⁾. Data collection was initiated in October/2004 – when approximately 75% of data collection of the quantitative approach was already done – and concluded in March/

2005. Interviews were performed and recorded with eleven healthcare professionals (three nurses, four doctors and four nursing assistants). The professionals had cared for three or more women in labor from the intervention group (with companion). Interviews were also performed with sixteen companions, who supported women during labor and childbirth (eight partners, three mothers, three aunts, one sister-in-law and one mother-in-law,) using a thematic guide for professionals and another for companions.

A technique for discourse thematic analysis was used to analyze the interviews, according to the Collective Subject Speech (CSS). The Central Ideas (CI) and the Key Expressions (KE) were identified, from which the CSS was built, constituting a synthesis, using the first person singular of corresponding KE and each CI⁽¹⁶⁾. In order to organize the preceding information from the interviews, we used the *Ethnograph V 5.0*⁽¹⁷⁾ software.

The preliminary results went through an external validation process⁽¹⁵⁾, that is, the CI and the provisory CSS were shared and discussed with other researchers, sharing the same research directions in charge of analyzing and/or supporting objections about the analysis of findings and the interpretations performed. Starting from these considerations, the corresponding CI and the CSS were modified, adjusted or maintained.

A FEW REFLECTIONS ABOUT THE EXPERIENCE

The use of both methodological approaches required an immersion, which favored the preservation of their characteristics and peculiarities. This process acknowledged difficult and easy aspects encountered by researchers when using both resources to evaluate and understand the different dimensions of the studied phenomenon.

For a controlled randomized clinical trial development, the theoretical search was intense, since the beginning of plans, especially about the essential elements of epidemiology in order to outline a clinical trial – a fact that results from our own knowledge limitations and the lack of familiarity with this methodological approach. Such theoretical deepening enabled the comprehension of the contribution of this study for the construction of knowledge in a more systematic way, especially in the Nursing area, where behavioral intervention evaluations are intended.

In the quantitative data collection phase, a constant presence in the healthcare field was necessary, in order to select each woman in labor as well as the companions of their choice for support. In this period, we observed that the obstetric professionals, potential research subjects, had already stated their opinion about the insertion of a companion, which would be later revealed by the qualitative approach.

Companions - support providers during labor and childbirth, had distinct performances, i.e., were fundamental

components of behavioral interventions for the clinical trial and research subjects in the qualitative approach, by making it possible to recognize the life experience through CI and CSS.

The experience of using both approaches made us reflect about the differences in each of them, especially in the collection and data analysis phases. The quantitative approach required a lengthy data collection period (12 months,) a period in which we did not have any control over its end, since it depended on the demand of eligible women in labor. The same did not occur with qualitative data, since the research subjects (professionals and companions) were part of the care scenario and the planned intervention.

The data analysis processing of quantitative data occurred in a shorter period, when compared to the qualitative approach. It is important to point out the support of a professional from the statistics field in the research planning phase and in the analysis of quantitative data, which contributed for its internal validation. In the qualitative approach, our experience with the method brought us higher autonomy.

We do not intend to discuss the research results. However, it is important to point out that the main finding of the controlled randomized clinical trial was the strong impact of the support given by the companion, chosen by the woman in labor, over her global satisfaction with the experience, both in labor and during delivery. This satisfaction was noticed by the healthcare professionals and companions, since they expressed it through CI and speeches that integrate the CSS.

This methodological triangulation, holding a research outline with quantitative and qualitative approaches, made the evaluation of the intervention performed possible both in the explained dimension and the comprehension of the phenomenon that it generated, since it may be performed under complementary *views*, in a partially-simultaneous, sequential format.

In the end, the evaluation of inserting a companion, chosen by the woman in labor, to provide support during labor and childbirth generated different feelings for the characters involved – women in labor, companions, healthcare professionals in charge of care and the researcher. The use of qualitative and quantitative approaches made it possible to simultaneously reveal and acquire further knowledge about the investigated phenomenon. It also generated a diversity of data that improved the knowledge of different aspects about the insertion of companions, needed for the planning and implementation of this essential practice.

TRACING FINAL CONSIDERATIONS

Using the quantitative and qualitative approaches was, at the same time, stimulating and challenging, since it required a continuous effort to preserve the characteristics

of each. The life experience during the trajectory, from the research outline to data analysis and the discussion of results, was fundamental to strengthen some theoretical aspects that guide the use of each methodology, whether individually or in an integrated way.

The performance of a behavioral intervention – in the randomized controlled clinical trial – not only generated a theoretical knowledge, but also contributed for their knowledge, in a practical dimension, as beneficial and satisfactory, by all the involved parties in the research. Therefore, it is important to reflect on the format in which the research was developed, and it may be a transformation strategy for the reality of care, since its results may consolidate or refute a given practice.

The reported experience in this study may stimulate the practice of randomized controlled clinical trials, combin-

ing them to a qualitative approach to evaluate interventions in the care context when the use of only one of them is not sufficient for the studied phenomenon.

It is also important to point out that the development of experimental studies is not usual in the nursing area. Observational studies, especially the descriptive, are performed most often. Therefore, it is important to increase the execution of experimental studies to evaluate health-care practices that are not possible through another methodological approach, which may contribute for the production of scientific evidence in the Nursing sector, and to strengthen the evidence-based practice movement in national nursing as a result, which is still incipient⁽¹⁸⁾.

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