EXPERIENCE REPORT / RELATO DE EXPERIÊNCIA

"Talking table" as a data integration strategy in mixed methods research

"Tabela falante" como estratégia de integração de dados em uma pesquisa de métodos mistos

"Tabla parlante" como estrategia de integración de datos en una investigación de métodos mixtos

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ABSTRACT

Objective: to report the use of a talking table as a data analysis and integration strategy in a mixed approach study. **Method**: this is a report on the use of a methodological strategy for data integration and analysis in mixed methods research. Data from an analytical longitudinal study that followed 151 preterm infants in the first year of life are presented. The study addressed aspects of the health conditions of this population and integrated quantitative data, collected through an instrument to assess health conditions and qualitative data from a semi-structured interview. **Results**: data integration in mixed studies is a methodological requirement that requires researchers to use strategies that enable and facilitate this analytical process. A talking table, through the visual integration of quantitative data expressed in tables and their analytical convergences and divergences with qualitative statements, favors integrated reading and interpretation. **Conclusion and implications for practice**: a talking table is considered an analytical tool for quantitative and qualitative data integration, which contribute to developing meta-inferences in mixed methods research.

Descriptors: Methods; Data Analysis; Qualitative Research; Quantitative Research.

RESUMO

Objetivo: relatar a utilização da tabela falante como estratégia de integração e análise de dados em estudo de abordagem mista. **Método**: trata-se de um relato de utilização de uma estratégia metodológica de integração e análise dos dados em pesquisa de método misto. São apresentados dados de um estudo longitudinal analítico, que acompanhou 151 lactentes prematuros no primeiro ano de vida. O estudo abordou aspectos das condições de saúde dessa população e integrou dados quantitativos, coletados por meio de instrumento de avaliação de condições de saúde e dados qualitativos oriundos de entrevista semiestruturada. **Resultados**: a integração dos dados em estudos mistos é uma exigência metodológica que requer dos pesquisadores a utilização de estratégias que possibilitem e facilitem esse processo analítico. A tabela falante, por meio da integração visual dos dados quantitativos expressos em tabelas e suas convergências e divergências analíticas com os enunciados qualitativos, favorece a leitura e interpretação integrada. **Conclusão e implicações para a prática**: considera-se a tabela falante uma ferramenta analítica de integração de dados quantitativos e qualitativos que contribui na formulação de metainferências em pesquisas com métodos mistos.

Descritores: Métodos; Análise de Dados; Pesquisa Qualitativa; Pesquisa Quantitativa.

RESUMEN

Objetivo: relatar el uso de la mesa parlante como estrategia de análisis e integración de datos en un estudio de enfoque mixto. **Método**: este es un informe sobre el uso de una estrategia metodológica para la integración y el análisis de datos en la investigación de método mixto. Se presentan los datos de un estudio longitudinal analítico que siguió a 151 bebés prematuros en el primer año de vida. Nuestro estudio abordó aspectos de las condiciones de salud de esta población e integró datos cuantitativos, recolectados a través de un instrumento para evaluar las condiciones de salud y datos cualitativos de una entrevista semiestructurada. **Resultados**: la integración de datos en estudios mixtos es un requisito metodológico que obliga a los investigadores a utilizar estrategias que habiliten y faciliten este proceso analítico. La mesa parlante, a través de la integración visual de datos cuantitativos expresados en tablas y sus convergencias y divergencias analíticas con enunciados cualitativos, favorece la lectura e interpretación integradas. **Conclusión e implicaciones para la práctica**: la mesa de diálogo es considerada como una herramienta analítica para la integración de datos cuantitativos y cualitativos que contribuyen a la formulación de meta-inferencias en investigaciones con métodos mixtos.

Descriptores: Métodos; Análisis de Datos; Investigación cualitativa; Investigación Cuantitativa.

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INTRODUCTION

Studies with a mixed approach are based on the assumption that numerical properties and intrinsic qualities are attributes of all phenomena. Thus, depending on the theoretical definitions and the research problems, there is a need to identify and describe a phenomenon that would hardly be answered in its entirety with the use of only one of the research approaches, quantitative or qualitative.[1]

The use of mixed methods is a growing trend that offers researchers an alternative in addressing complex health problems currently faced by nursing. Understanding different methods and their combinations facilitates the conduct of research to meet nursing practice that is complex and has clinical, epidemiological, cultural and social facets.[2] However, there is a scarcity of mixed methods research published in international and national journals and when published, they present limitations in the detail given to the methodological approach and the underlying theoretical explanations.[3]

The combination of methods is considered a challenge in scientific practice, as it represents two modalities of investigation with delimited theoretical fields and, by many, considered antagonistic. However, the same author still argues that "quantitative and qualitative studies, when done together, promote a more elaborate and complete construction of reality, giving rise to the development of theories and new techniques."[4:76]

Mixed methods research has been strengthening as it emerges as a third and new paradigm in scientific research, which enables more precise and/or more complete interpretations of the researched phenomena. In nursing, this approach has been growing as the objects of study, in this scientific scenario, are imbued with a greater density of information and meanings, which requires integrative approaches.[5]

The mixed approach definition should not come from the researchers' personal choice, but should represent in depth and understanding the research problems and objects studied, which emanate from the requirement and lead to methodological integration. To contextualize the study reported here, the reality of the object required quantifying and characterizing situations (chronic and acute health conditions), as well as to identify and understand how Health Care Networks work, based on the assumption of chronic and acute health demands of moderate and late preterm newborns in the first year of life. The need to use qualitative techniques after using quantitative approaches aimed to identify the subjective aspects of social reality, which is established between the two approaches, in this case, contemplating the fullness of the adopted framework.[4]

In the interpretation and analysis of mixed studies, some strategies facilitate the integration process. Integrating is a requirement of this method and requires the researcher to be accurate about the object, presenting it through quantitative and qualitative data. Designing and executing an integrative strategy is intrinsically a proactive process that involves more than bringing together qualitative and quantitative components at different stages of the study, as it challenges mixed methods researchers to recognize integration as active and reflective relationship building that encompasses the entire research process, involving a variety of relationships and interrelationships.[6]

Integration models in analysis range from discussing results, generated separately from different components or phases of a study, by synthesizing data from these different components, to combining data sources or converting data types, to build a combined set of results. While different integration models are appropriate for different research settings and purposes, an overly careful approach to integration can lead to invalid or weakened conclusions, as it does not consider all available information together.[7]

Joint exhibitions are innovative and useful frameworks for discussing and demonstrating integrative analysis in mixed methods research. For instance, researchers can use this typology to inform and articulate their analytical approach during the design, implementation, and reporting phases, to clearly convey how an integrated approach to data merger took place.[8] However, no nursing review has explored the use of articulate views in nursing or health research. From this perspective, it is necessary to include tools or analytical possibilities that facilitate the integration of data, regardless of the form of integration, connection or merger or when this happens in the study. There is also a literal justification that there is a need for improvement in the joint presentation of data - results - and not just in the syntheses or analytical inferences.[9,10]

After the authors were faced with the absence of methodological strategies described for integration, through graphic representation or joint displays, the need arose to articulate and propose an analytical strategy. Thus, based on the experience in conducting the study, using the talking table strategy for integration in the incorporation phase and presentation of the results of mixed methods research, the objective was to report the use of a talking table as a strategy for data integration and analysis in a mixed approach study.

METHOD

This is a report on the experience of using an analytical strategy to integrate quantitative and qualitative data in mixed methods studies. The use of mixed technique and approach, which started from the object studied, was carried out through a convergent parallel strategy. According to Creswell,[11] it is characterized when quantitative and qualitative data are collected simultaneously independently and, in the end, are approximated in the first conclusions and findings. It does not necessarily require a dominant approach, as it makes isolated interpretations of the two methods and, subsequently, analyzes/discusses associated results.[11] This interpretation can be carried out as the object of the study and/or the adopted referential allow a look from a quantitative and qualitative point of view.

The study that originated this experience report adopted as a methodological proposal an analytical longitudinal study, in the quantitative stage, since it made it possible to monitor preterm infants in the first year of life, as well as to describe the incidence

and characterize health conditions, relating obstetric, neonatal and socioeconomic factors in the development of health conditions. In the qualitative stage, a descriptive and exploratory study was developed. Therefore, based on the qualitative approach, it was possible to describe the care networks for premature infants, based on family caregivers' perception in describing the Health Care Network.

For contextualization and better description of the methodological experience used, it should be noted that the study scenario was a municipality in the central region of the state of Rio Grande do Sul. Participants were selected according to the selection criteria in a large university hospital, a reference for the central region of the state. A total of 151 premature infants, born between May 2016 and May 2017, and followed up until May 2018 participated in the study.

Quantitative data were collected through the newborn's (NB) medical record, as well as through telephone contact, with the use of instruments about the children's health conditions, under a quarterly monitoring regime. Qualitative data were produced through semi-structured interviews with 15 families, selected as a convenience sample, with the aim of discussing the Health Care Network, experienced through infants' health conditions in the first year of life.

In the context of mixed methods research, the analytical step is one of the most important and challenging in this process. When faced with analytical challenges regarding the need for data integration and their presentation, the need and possibility of the graphic/visual presentation of this integration arose. Idealizing and connecting speech bubbles with tabulated findings, based solely on qualitative [statements and language tools] and quantitative [table] strategies, allowed creating figures that best express the proposed evidence.

The graphic constructions used in the tables presented were established by inserting shapes into text editor packages (Microsoft Word) and programs that make images available for free for this purpose. The use of speech bubbles converges with the possibility of the visual and the linguistic within writing and its reference within the tabled numerical expression. The construction took place manually, using formats/design freely available for this purpose.

It is reinforced that the resulting visual strategy favors the authors to issue analytical comments based on the link or divergence of the quantitative and qualitative data presented. The analytical comments of the integration must be described below the graphic strategy, presented by the authors. It is noteworthy that the integrative analytical strategy by the talking table contributed to the researcher, when making his analytical comments and syntheses, and to the reader, who better visualizes the convergences and divergences between quantitative and qualitative data.

RESULTS AND DISCUSSION

The results and contextualization/graphic visualization of the integration between the data reinforce the need for data contextualization, coherence or divergence between the evidence found, with the quantitative and qualitative analysis integrated. Graphically, it is possible to observe integration, as the example presented in Figure 1, through a talking table.

From the integrated analysis of Figure 1, through a talking table, it is possible to perceive that there is no coherence between the reference/transfers of late preterm NBs within the care network after hospital discharge. According to quantitative data, almost 100% were referred at hospital discharge to some health service; nonetheless, when parents' speeches were analyzed, it was noticed that the referral was fragile, as there was no effective reference. Another example of integration is shown in Figure 2, with the convergence between quantitative and qualitative data.
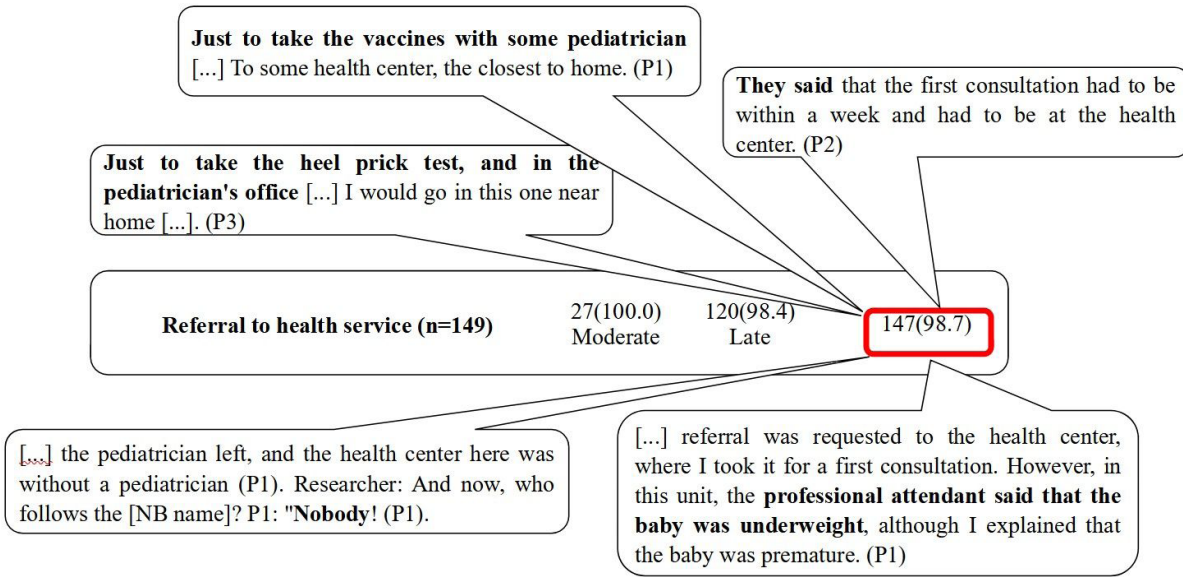

Figure 1. Talking table as an integration strategy in mixed methods research. Santa Maria, RS, Brazil, 2018.

3rd month of life		Moderate	Late	Total	p
AA	n(%)	17(85.0)	92(86.8)	109(86.5)	0.531
CC	n(%)	8(38.1)	18(17.1)	26(20.6)	0.03
Drug dependence	n(%)	3(14.3)	12(11.4)	15(11.9)	0.715
Dependence on health services		5(23.8)	11(10.5)	16(12.7)	0.094
FL	n(%)	2(9.5)	3(2.9)	5(4.0)	0.194
6th month of life		**Moderate**	**Late**	**Total**	**p**
AA	n(%)	16(80.0)	73(75.3)	89(76.1)	0.448
CC	n(%)	5(25.0)	10(10.3)	15(12.8)	0.096
Drug dependence	n(%)	2(10)	9(9.3)	11(9.4)	0.625
Dependence on health services	n(%)	4(20.0)	6(6.2)	10(8.5)	0.048
FL	n(%)	3(15.0)	0	3(2.6)	0.005

"She needs to go to the health center and to the [reference hospital] for a long time, still in the follow-up, the most important thing is to monitor her development a lot, if there will be no sequel, now that the fear of gaining weight or not is over, we fight to see if everything grows right." […] (P5)

Figure 2. Talking table of chronic and acute health conditions in groups of moderate and late preterm infants. Santa Maria, RS, Brazil, 2018.

Figure 3. Talking table of the intensity of acute injuries and age of infants born moderately and late preterm. Santa Maria, RS, Brazil, 2018.

Under the analysis of Figure 2, it is highlighted that the talking table presents coherence and reinforces the need and dependence on health services of late and moderate preterm infants after hospital discharge, with a higher frequency, when compared to full-term babies. There is a convergence between the different data presented, reinforced by the speech expressed in the speech bubble. Another convergence is presented in Figure 3, given the frequency and intensity of health problems, according to the baby's chronological age in the first year of life.

Under analysis of Figure 3, a talking table allows expressing and converging that, the younger the infant's age, the more intense are the episodes of colic, vomiting and breathing difficulties; however, as they approach the first year of life, the most intense aggravations are bronchitis and skin allergies. This graphic presentation allows reinforcing the family's perception, consolidated by the data numerical presentation.

The "Talking Table" strategy allows its use within the four integration mechanisms proposed by the adopted framework.[11] The four main integration mechanisms should be highlighted: connection, construction, merger and incorporation.

Connection typically refers to those experiences in which the data collected will guide and guide the data collection of the complementary approach, widely used in explanatory sequential research, which usually starts with the quantitative stage and connects statistical information to define qualitative collection strategies, being able to guide the interviews, instruments and

even participant selection.[11] In this strategy, the table can be implemented at the end as an integration of connected data, later.

*C*onstruction is a strategy in which the integration of qualitative data guides the construction of subsequent quantitative instruments. It is understood that there is integration as the ends of the collections are connected, even if the integration is less expressive, when compared to studies with merger and incorporation.[11] It is suggested that, for a *constructive* proposal, the use of a "talking table" happens a posteriori as in *connection*.

Merging is a type of data integration that occurs convergently at all stages of research, ranging from collection to analysis, discussion and interpretation of results. Merging requires constant comparisons and reflections between the data. In the merger process, there are some joint display strategies that present the results/findings in an integrated way.[11] It should be noted that these strategies are often illustrative aspects that require interpretation by the authors. Merger is understood as a process that demands intense authorial abstraction and advanced interpretive capacity.[5] In *incorporation*, integration takes place in large projects, where data are grouped by connection, construction and/or merger within the different stages of the study. For *merger* and *incorporation* proposals, the analytical strategy may take place to guide the sequence in data collection and/or presentation and final data integration.

Many mixed methods researchers report difficulties in bringing quantitative and qualitative data together and integrating a synthesis that links the analyzes and interpretations of the two approaches. This is reflected in the publication of separate results for different components of a study, a problem that is compounded by the publication limitations of journals.[12] Combining during data collection and analysis, before drawing conclusions, recognizes the diversity of not easily classified approaches that can be taken to investigate a problem, the benefits of having different but mutually informative types of data, and the scope for new ways to explore an experience or problem.[13]

Among all these methods, joint views are commonly used for mixed analysis at data analysis, interpretation, and reporting levels, and serve as an efficient and structured analysis framework.[8] Joint views are in diagram, table, graph, and matrix form, but must be clear and comprehensive to provide insights into both qualitative and quantitative data, consistent with the design and approach of the integration.

Mixed studies, still under an integration incorporation process, most of them, at the end, present clear qualitative data with themes, categories and citations of participants and quantitative data on frequency, percentages and other descriptive statistics. Furthermore, they present weaknesses in the integrated interpretation, with the presentation of only the synthesis and/or integrated conclusion, weakening the integrated presentation of results.[9]

CONCLUSIONS AND IMPLICATIONS FOR PRACTICE

A talking table is considered an analytical possibility for the integration of quantitative and qualitative data that contribute to formulating evidence in studies with mixed methods. With this strategy, a better visualization of data integration was obtained, which facilitated the interpretation for the researcher and the understanding of the merger with readers. It is recommended that new functionalities can be improved and created in existing table and text editing software, or even the future possibility of creating new analysis software, with a tool for integration in mixed studies.

It is suggested to use a talking table for mixed methods research, so that the design tools used can qualify and clarify the integrative syntheses proposed by studies to their analyzed objects. It is worth mentioning the development of other researches with mixed methods in nursing, as they are often complex study phenomena that require not only a numerical approach, but also a reading of a social and cultural nature.

AUTHOR'S CONTRIBUTIONS

Study design. Leonardo Bigolin Jantsch, Eliane Tatsch Neves.
Data collection. Leonardo Bigolin Jantsch, Eliane Tatsch Neves.
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