

INOVAÇÃO EM PESQUISA NA ENFERMAGEM PSIQUIÁTRICA: COLETA DE DADOS INFORMATIZADA

INNOVATION IN PSYCHIATRIC NURSING RESEARCH: COMPUTERIZED DATA COLLECTION

INNOVACIÓN EN INVESTIGACIÓN EN LA ENFERMERÍA PSIQUIÁTRICA: COLECCIÓN DE DATOS INFORMATIZADA

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RESUMO

O enfermeiro pode transformar e modernizar as práticas assistenciais em saúde mental a partir da pesquisa científica. **Objetivo:** Apresentar uma reflexão sobre a utilização de coleta de dados informatizada na área da enfermagem. **Método:** Trata-se de um artigo de reflexão que versa sobre a coleta de dados informatizada, realizada por enfermeiros. As reflexões decorrem da vivência dos pesquisadores no desenvolvimento e utilização de um aplicativo para coleta de dados informatizada em dispositivo móvel (*tablet*). **Resultados:** A utilização de aplicativos para coleta de dados permite aos enfermeiros superarem dificuldades inerentes às pesquisas de campo como por exemplo, a ansiedade do participante. Recursos que podem ser inseridos nos aplicativos: 1) validação de campos (evita respostas em branco ou registro de mais de uma resposta); 2) lógica de ramificação (torna as entrevistas mais breves ao omitir variáveis que não se aplicam); 3) calculadora (evita erros) e 4) tabulação automática (evita erros de digitação). A coleta informatizada permite ao enfermeiro analisar os dados imediatamente após as entrevistas, agilizando sua publicação. **Conclusão:** A transição da coleta de dados em formulários impressos para os questionários informatizados precisa respeitar os princípios científicos, com responsabilidade, de modo que traga reais contribuições para a pesquisa e para o cuidado de enfermagem.

Descritores: Coleta de dados; *Software*; Pesquisa em enfermagem.

ABSTRACT

Based on scientific research, nurses can transform and modernize care practices in mental health. **Objective:** To present a reflection on the use of computerized data collection in the nursing area. **Method:** This is a reflection article about the computerized data collection performed by nurses. The reflections arise from the experience of the researchers in the development and use of an application for computerized data collection in a mobile device (*tablet*). **Results:** The use of applications for data collection allows nurses to overcome difficulties related to field research such as participant anxiety. Features that can be inserted into the applications: 1) field validation (avoids blank responses or registration of more than one response); 2) branching logic (makes interviews shorter by omitting variables that do not apply); 3) calculator (avoids errors) and 4) automatic tabulation (avoids typing errors). The computerized collection allows the nurse to analyze the data immediately after the interviews, speeding up the publication. **Conclusion:** The transition from data collection in printed forms to computerized questionnaires needs to respect scientific principles, with responsibility, in order to bring real contributions to research and nursing care.

Descriptors: Data collection; *Software*; Nursing research.

RESUMEN

El enfermero puede transformar y modernizar las prácticas asistenciales en salud mental, a partir de la investigación científica. **Objetivo:** Presentar una reflexión sobre la utilización de la recolección de datos informatizada en el área de la enfermería. **Método:** Se trata de un artículo de reflexión que versa sobre la recolección de datos informatizada, realizada por enfermeros. Las reflexiones provienen de la vivencia de los investigadores en el desarrollo y utilización de una aplicación para recolección de datos informatizada en dispositivo móvil (*tablet*). **Resultados:** La utilización de aplicaciones para la recolección de datos permite a los enfermeros superar dificultades inherentes a las investigaciones de campo como la ansiedad del participante. Recursos que se pueden añadir en las aplicaciones: 1) validación de campos (evita respuestas en blanco o registro de más de una respuesta); 2) lógica de ramificación (hace que las entrevistas más breves al omitir variables que no se aplican); 3) calculadora (evita errores) y 4) tabulación automática (evita errores de escritura). La recolección informatizada permite al enfermero analizar los datos inmediatamente después de las entrevistas, agilizando su publicación. **Conclusión:** La transición de la recolección de datos en formularios impresos para los cuestionarios informatizados precisa respetar los principios científicos, con responsabilidad, de modo que traiga reales contribuciones para la investigación y para el cuidado de enfermería.

Descritores: Recolección de datos; Programas informáticos; Investigación en enfermería.

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Como citar este artigo:

Oliveira RM, Furegato ARF. Inovação em Pesquisa na Enfermagem Psiquiátrica: Coleta de Dados Informatizada. de Enfermagem do Centro Oeste Mineiro.2018;8:e2583. [Access _____]; Available in: _____. DOI: <http://dx.doi.org/10.19175/recom.v8i0.2583>

INTRODUCTION

Nursing is a profession that allows acting in different areas of knowledge. This is accomplished through the possibility of insertion of nurses in three different fields: care, teaching and scientific research⁽¹⁾.

Although assistance, teaching and research are distinct fields of action, they are complementary. Assistance and research come from a two-way process: from the office (in reference to the research) to the bedside and from the bed to the office⁽²⁾.

Since research provides nursing professionals with a new "knowledge", capable of transforming the care routine, the participation of nurses in scientific research is fundamental for the transformation and modernization of care practices. Thus, it is believed that the acquisition of knowledge, based on scientific evidence, can contribute to better quality in nursing care⁽³⁾.

The relationship between nursing and scientific research is ancient. There are indications that it was initiated with Florence Nightingale in the Crimean War, when obtaining information with rigorous documentation allowed better planning of the actions, which resulted in a reduction in the mortality rate of wounded soldiers⁽³⁾.

Although the influence of scientific research on care practice is undeniable, it is currently questionable which studies are reliable. This concern is urgent because of the pressure exerted by funding agencies to increase the number of publications. In view of the above, it is difficult for nursing professionals, involved in care and without sufficient knowledge of scientific methods, to differentiate scientific research from electronic waste.

This becomes more worrisome when realizing the innumerable possibilities of biases that can be incorporated in research - bias of the sampling operations; loss bias; prevalence bias; bias of the observer; bias of diagnostic suspicion; bias of the data collection instrument; memory bias; information processing bias, among others⁽⁴⁻⁵⁾.

According to the Federal Nursing Council, one of the duties of nurses in the field of scientific research is to reproduce the results with reliability⁽¹⁾. To do this, the nurse must carry out its scientific activities with methodological rigor, based on technical and scientific knowledge.

The prevention of bias (systematic errors) in the study design stage is crucial for ensuring

the external validity and credibility of scientific research results⁽⁴⁻⁵⁾. Thus, the quality of the research should not only be evaluated at the end, but should be the object of concern during the different stages. Therefore, quality is not an end product, but part of a long process, by which nurses take responsibility from conception to dissemination of results⁽⁶⁾.

This perspective justifies the present reflection, which is about an innovative tool for nursing research: computerized data collection.

Computerized data collection is a modern resource for obtaining information, in line with current technological advances. It is a methodological resource with the ability to prevent the distortion of results that result from errors in the recording and calculation of subjects' responses (information processing bias), besides reducing costs with printed forms and data transposition time.

The present article is based on the following guiding question: can computerized data collection help the nurse in the development of scientific research?

The objective of this article is to present a reflection about the contribution of computerized data collection in scientific researches of the nursing area.

METHOD

The reflections contained in this article are derived from the experience of the researchers in the development and use of an application for computerized data collection in a mobile device (*tablet*)⁽⁷⁾.

The application, called *TabacoQuest*, was developed to collect data from a survey that aims to compare the prevalence and epidemiological profile of tobacco use in the psychiatric population and the general population. The proposal to develop the application arose from the concern with the high number of variables contained in the questionnaires used to collect data, which could discourage people from participating in the study⁽⁷⁾.

In the construction of the application, seven instruments were inserted to collect the data: a questionnaire to identify the participants, prepared by the researchers, as well as six scales validated by other authors. The instruments included questions of multiple choice and Likert type, totaling 168 variables. The relevance of the use of the seven instruments was assessed by four judges. The ethical principles were respected

(Brazil/CONEP Platform in CAAE 21101113.3.0000.5393, Research Ethics Committee of the Ribeirão Preto College of Nursing - EERP/USP 308/2013).

In the preliminary testing of the application, 20 fictitious subjects were created on printed forms. When they were registered in the digital questionnaire, the answers of the fictitious subjects were checked and any programming errors were identified and corrected. After correction, the responses of the fictitious subjects were recorded in the application for the second time, and no new programming errors were identified.

Using this data collection instrument, a cross-sectional descriptive-analytical study was carried out with three population groups from a city in the state of São Paulo: P1 - mental disorder patients from the mental health outpatient clinic (ASM), P2 - patients with mental disorders from the acute care units of the psychiatric hospital (HP) and P3 - general population of a Basic Health Unit (UBS). The probabilistic sample consisted of 378 participants, 126 in each service⁽⁸⁾.

RESULTS AND DISCUSSION

It is believed that the use of applications for data collection allows nurses to overcome difficulties inherent in field research such as the participant's anxiety about being interviewed. During the interviews with the mobile device, when transferring its attention to the digital questionnaire, the interviewee obtains a new way of dealing with the tension inherent to this situation.

By conducting interviews on mobile devices, the attention of the participants is directed to the digital questionnaires which are developed with a user-friendly and interactive interface in order to increase the attention and interest of the interviewee. In view of the above, the digital questionnaire acts as a visual stimulus to which the focus of the interview is directed. As a result, the excess of sensoriality of the interviewee's mind (eg, fear and anxiety) is alleviated⁽⁹⁾.

The diversity of resources that can be added to the application depends on the research needs and creativity of the nurse. As an example, in addition to the friendly interface in *TabacoQuest*, the following functions were included: 1) field validation (purpose: to avoid blank responses or registration of more than one response for single response variables); 2)

branching logic (purpose: to make the interviews shorter and less tiresome by omitting the variables that do not apply to a given interviewee); 3) calculator (purpose: to avoid calculation errors, increasing the precision of the answers) and 4) automatic tabulation (purpose: to avoid typing errors - information processing bias - and to optimize the researcher's time)⁽⁷⁾.

One limitation that could arise with computerized data collection is the loss of subjects due to possible internet downtime during interviews, since many free applications are dependent on the internet to function. The nurse, as a researcher, should foresee these problems in the planning stage of the study in order to avoid bias in the research. Faced with this awareness, the *TabacoQuest* was developed so that it can operate regardless of internet (offline).

Unlike *TabacoQuest*, Chinese researchers reported that the main challenge of their computerized collection was Internet signal instability (Wi-fi)⁽¹⁰⁾.

Although the benefits of computerized data collection are numerous, the transition from data collection on printed forms to computerized questionnaires cannot occur indiscriminately. It needs to happen with technical and scientific rigor, so that the credibility of the research results is not questioned. Therefore, it is advisable that the digital questionnaire is tested several times before its use.

The development of an application for data collection constitutes a laborious process, demanding attention and a sense of responsibility of the researcher. However, the benefits of computerized data collection outweigh the difficulties.

In addition to the benefits of data quality and security (absence of typing errors, blank responses, registration of more than one alternative), the computerized data collection allows the nurse to analyse the data (from the total or partial sample) immediately after the interviews, since responses are recorded in the database simultaneously to their registration on the mobile device screen. This contributes to the agility of scientific publications.

One benefit of computerized collection is the ease of interaction with respondents and the increased interest of people in participating in the study. Data collection with *TabacoQuest*, for example, resulted in people being more willing to be included in the study. Throughout the data

collection, many participants approached the interviewer spontaneously, enquiring whether they could participate. This was reflected in the low frequency of refusals of the study subjects (refusals = 16, total of respondents = 378)⁽⁷⁾.

In addition, data collection with *TabacoQuest* allowed for greater interaction with subjects during interviews as they were encouraged at times to record the response by tapping the interactive screen of the mobile device. Although it may seem like a trivial procedure, it was relevant for data collection, since the sample consisted of psychiatric patients, who may present with difficulty in concentration and motivation to persist in the activities.

In view of the foregoing, the advantages of *TabacoQuest* can be summarized as follows: higher quality of data, immediate availability of the database for analysis and motivation of people to participate in the study.

Greater agility in data processing and increased quality of data obtained were also identified in a study comparing traditional methods and new data collection technologies in research on eating habits⁽¹¹⁾.

Greater motivation and involvement of respondents to participate in the survey were also identified in studies conducted with mobile devices in Switzerland and the United States⁽¹²⁻¹⁴⁾.

Although computerized data collection may benefit both interviewees and researchers, the researcher must be alert to avoid introducing new biases in scientific research.

Despite the benefits, the computerized data collection does not detract from the surveys performed in printed forms. It only introduces, in the field of scientific research, a new resource capable of optimizing researchers' time, increasing the quality of respondents' answers (making interviews less tiring), and reducing human errors (incorrect record of responses, error in calculations, among others).

Another aspect that should be considered is the need for computer knowledge for the development of the application. Although it is expected that nurses will acquire this type of knowledge during their professional training, the content is taught in an introductory way, which allows them to perform basic functions. To do so, collaborations with exact sciences professionals (computer scientists), will make the application not only innovative and attractive to the subject, but, above all, reliable.

Because it is an innovative research tool, it is likely that in the near future many researchers will introduce it into their research projects. Therefore, it is important that nurses become interested in this resource, seeking to improve their skills in application development along with professionals specialized in the field.

FINAL CONSIDERATIONS

The use of technology in nursing research represents an advance for the publications in the area. In addition to the higher quality of the data and the immediate availability of the database for scientific analysis, the involvement and motivation of the people to participate in the study are highlighted.

The partnership with computer professionals has been productive and was essential in the construction of the *TabacoQuest* application.

The transition from data collection procedures to printed forms for computerized collection needs to respect scientific principles with responsibility so as to bring real contributions to research and nursing care.

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Note: This article is part of the Doctoral Thesis "Prevalence and epidemiological profile of tobacco use in the psychiatric population of the secondary and tertiary levels of care compared to the general population of the primary health care network", defended at Ribeirão Preto College of Nursing, University of São Paulo, 2017. Funding agency: CAPES (social demand grant of the Psychiatric Nursing Program of EERP-USP).

Received in: 25/10/2017

Approved in: 17/10/2018

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