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**COURSE TITLE: RESEARCH METHODS IN NURSING**

**ASSIGNMENT: DATA COLLECTION METHODS**

**QUESTION 1 AND 2**

1. Quantitative data collection methods with revelant examples
2. Qualitative data collection methods with revelant examples

**ANSWERS**

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic method that enables one to answer research questions, test hypotheses, and evaluate outcomes. The data collection component of research is common to all fields of study. While methods vary by discipline, the emphasis on ensuring accurate and honest collection remains the same. The goal for all data collection is to capture quality evidence that then translates to rich data analysis and allows the building of a convincing and credible answer to questions that have been posed. Regardless of the field of study or preference for defining data (quantitative, qualitative), accurate data collection is essential to maintaining the integrity of research. Both the selection of appropriate data collection instruments (existing, modified, or newly developed) and clearly delineated instructions for their correct use reduce the likelihood of errors occurring. Data collection is one of the most important stages in conducting a research. You can have the best research design in the world but if you cannot collect the required data you will be not be able to complete your project. Data collection needs thorough planning, hard work, patience, perseverance and more to be able to complete the task successfully. Data collection starts with determining what kind of data required followed by the selection of a sample from a certain population. After that, you need to use a certain instrument to collect the data from the selected sample

**QUALITATIVE DATA COLLECTION METHODS**

Qualitative Data: Qualitative data are mostly non-numerical and usually descriptive or nominal in nature. This means the data collected are in the form of words and sentences. Often (not always), such data captures feelings, emotions, or subjective perceptions of something.

Qualitative approaches aim to address the how and why of a program and tend to use unstructured methods of data collection to fully explore the topic. Qualitative questions are open-ended.

Qualitative methods include focus groups, group discussions and interviews. Qualitative approaches are good for further exploring the effects and unintended consequences of a program. They are, however, expensive and time consuming to implement.

Additionally the findings cannot be generalized to participants outside of the program and are only indicative of the group involved. Qualitative data collection methods play an important role in impact evaluation by providing information useful to understand the processes behind observed results and assess changes in people’s perceptions of their well-being. They tend to be open-ended and have less structured protocols (i.e., researchers may change the data collection strategy by adding, refining, or dropping techniques or informants); they rely more heavily on interactive interviews; respondents may be interviewed several times to follow up on a particular issue, clarify concepts or check the reliability of data; they use triangulation to increase the credibility of their findings (i.e., researchers rely on multiple data collection methods to check the authenticity of their results).

Generally their findings are not generalizable to any specific population, rather each case study produces a single piece of evidence that can be used to seek general patterns among different studies of the same issue. Regardless of the kinds of data involved, data collection in a qualitative study takes a great deal of time. The researcher needs to record any potentially useful data thoroughly, accurately, and systematically, using field notes, sketches, audiotapes, photographs and other suitable means. The data collection methods must observe the ethical principles of research. The qualitative methods most commonly used in evaluation can be classified in three broad categories –

* In-depth interview
* Observation methods
* Document review.

**DATA COLLECTION**

Qualitative research methods

There are three commonly used qualitative data collection methods: ethnographic, theory grounded, and phenomenological others may include narratology, storytelling, transcript poetry, biographical narrative interviews, classical ethnography, state or governmental studies, research and service demonstrations, focus groups, case studies, participant observation, qualitative review of statistics in order to predict future happenings, or shadowing, surveys (including telephone surveys and consumer satisfaction surveys), among many others. Qualitative methods are used in various methodological approaches, such as action research which has sociological basis, or actor-network theory.

* Ethnography comes from anthropology, the study of human societies and cultures. Ethnography seeks to understand how people live their lives. Through this method, researchers veer away from the specific and practical questions that traditional market researchers use and instead observe the participants in a nondirected way. This approach is intended to reveal behaviors from a subject’s perspective rather than from the view of the researchers. Ethnography helps fill in the blanks when a participant may not be able to articulate their desires or the reasons for their decisions or behaviors. Instead of, or in addition to, asking why a participant acts a certain way, researchers use observation to understand the why behind these desires, decisions, or behaviors.
* Grounded theory arose when sociological researchers sought to provide a level of legitimacy to qualitative research — to ground it in reality rather than assumptions. Before this method, qualitative data analysis was actually done before any quantitative data was collected, so it was disconnected from the collection and analysis process.

Qualitative methods of data collection generally include:

* Life Histories- biographies
* Ethnography/Case studies
* Participant Observation- lives and takes part
* Non-Participant observation
* Focus Group Discussion
* Group Interviews
* In-depth Interviews
* Semi-Structured Interviews

**In-depth Interviews**

* Key Informant interview

**Observations**

* Participant observation
* Checklist
* Mapping

**Interviewing**

1. One-to-One Interviews: One of the most commonly used data collection instrument for qualitative research, mainly because of its personal approach. The interviewer or the researcher collects data directly from the interviewee on a one-to-one basis. The interview may be informal and unstructured – conversational. The questions asked are mostly open-ended questions, spontaneous, with the interviewer letting the flow of the interview dictate the next questions to be asked.

* Interviewing is an art and the skills develop over time
* The process must be pleasant and interesting to both the interviewer and the respondent
* The manner of the interview influence’s the respondents response
* Approach each interview with energy and enthusiasm

**Focus group discussions**

Focus groups: This is done in a group discussion setting. The group is limited to 6-10 people and a moderator is assigned to moderate the ongoing discussion.

Depending on the data which is sorted, the members of a group may have something in common. For example, a researcher conducting a study on track runners will choose athletes who are track runners or were track runners and have sufficient knowledge of the subject matter.

Focus Groups are appropriate when you want to:

* Explore the depth of opinions regarding an issue
* Understand differences in perspectives on an issue
* Understand what factors influence opinions or behavior
* Test reactions to actual or proposed services
* Design a large study or understand its results
* Capture opinions and perspectives of a service’s beneficiaries
* Learn about participants by observing their interactions

**Participant observation**

* Careful, systematic observation of social and cultural events and activities
* Followed by (systematic) recording of these observations

**Record keeping**:

This method makes use of the already existing reliable documents and similar sources of information as the data source. This data can be used in a new research. This is similar to going to a library. There one can go over books and other reference material to collect relevant data that can likely be used in the research.

**Process of observation**:

In this qualitative data collection method, the researcher immerses himself/ herself in the setting where his respondents are, and keeps a keen eye on the participants and takes down notes. This is known as the process of observation.

Besides taking notes, other documentation methods, such as video and audio recording, photography and similar methods can be used.

**Longitudinal studies:**

This data collection method is performed on the same data source repeatedly over an extended period of time. It is an observational research method that goes on for a few years and in some cases can go on for even decades. The goal of this data collection method is to find correlations through an empirical study of subjects with common traits.

**Case studies**:

In this method, data is gathered by in-depth analysis of case studies. The versatility of this method is demonstrated in how this method can be used to analyze both simple and complex subjects. The strength of this method is how judiciously it uses a combination of one or more qualitative data collection methods to draw inferences.

**For example,** think of a student reading a paragraph from a book during one of the class sessions. A teacher who is listening to the reading gives a feedback on how the child read that paragraph. If the teacher gives a feedback based on fluency, intonation, throw of words, clarity in pronunciation without giving a grade to the child, this is considered as an example of qualitative data.

It’s pretty easy to understand the difference between qualitative and quantitative data, qualitative data does not include numbers in its definition of traits whereas quantitative data is all about numbers.

QUANTITATIVE DATA COLLECTION METHOD

Quantitative Data: Quantitative data is numerical in nature and can be mathematically computed. Quantitative data measure uses different scales, which can be classified as nominal scale, ordinal scale, interval scale and ratio scale. Often (not always), such data includes measurements of something. Quantitative approaches address the ‘what’ of the program. They use a systematic standardized approach and employ methods such as surveys and ask questions. Quantitative approaches have the advantage that they are cheaper to implement, are standardized so comparisons can be easily made and the size of the effect can usually be measured. Quantitative approaches however are limited in their capacity for the investigation and explanation of similarities and unexpected differences. It is important to note that for peer-based programs quantitative data collection approaches often prove to be difficult to implement for agencies as lack of necessary resources to ensure rigorous implementation of surveys and frequently experienced low participation and loss to follow up rates are commonly experienced factors. The Quantitative data collection methods rely on random sampling and structured data collection instruments that fit diverse experiences into predetermined response categories. They produce results that are easy to summarize, compare, and generalize. If the intent is to generalize from the research participants to a larger population, the researcher will employ probability sampling to select participants. Typical quantitative data gathering strategies include –

**Experiments/clinical trials:** Observing and recording well-defined events (e.g., counting the number of patients waiting in emergency at specified times of the day).

**Obtaining relevant data from management information systems**: Administering surveys with closed-ended questions (e.g., face-to face and telephone interviews, questionnaires etc).

In quantitative research (survey research), **interviews:** are more structured than in Qualitative research. In a structured interview, the researcher asks a standard set of questions and nothing more. **Face** **-to -face interviews** have a distinct advantage of enabling the researcher to establish rapport with potential participants and therefore gain their cooperation. Personal one-on-one interviews may also be used for gathering quantitative data. In collecting quantitative data, the interview is more structured than when gathering qualitative data, comprised of a prepared set of standard questions.

These interviews can take the following forms:

•Face-to-face interviews: Much like when conducting interviews to gather qualitative data, this can also yield quantitative data when standard questions are asked.

(+) The face-to-face setup allows the researcher to make clarifications on any answer given by the interviewee.

(-) This can be quite a challenge when dealing with a large sample size or group of interviewees. If the plan is to interview everyone, it is bound to take a lot of time, not to mention a significant amount of money.

•Telephone and/or online, web-based interviews. Conducting interviews over the telephone is no longer a new concept. Rapidly rising to take the place of telephone interviews is the video interview via internet connection and web-based applications, such as Skype.

(+) The net for data collection may be cast wider, since there is no need to travel through distances to get the data. All it takes is to pick up the phone and dial a number, or connect to the internet and log on to Skype for a video call or video conference.

(-) Quality of the data may be questionable, especially in terms of impartiality. The net may be cast wide, but it will only be targeting a specific group of subjects: those with telephones and internet connections and are knowledgeable about using such technologies.

Computer-assisted interviews. This is called CAPI, or Computer-Assisted Personal Interviewing where, in a face-to-face interview, the data obtained from the interviewee will be entered directly into a database through the use of a computer.

**Paper-pencil-questionnaires:** can be sent to a large number of people and saves the researcher time and money. People are more truthful while responding to the questionnaires regarding controversial issues in particular due to the fact that their responses are anonymous.