Comparing quantitative and qualitative studies research paper sample

Health & Medicine, Diabetes

Abstract

This paper examines two studies, one quantitative and one qualitative, in order to identify the types of information obtained in each type of research. In Cheung et al.'s article " Quantitative Assessment of Early Diabetic Retinopathy Using Fractal Analysis" (2009), a quantitative research design is used to determine the links between retinal fractal dimension analysis and retinopathy in type 1 diabetes patients. Meanwhile, in In Nurmi and Steiber-Roger's " Parenting Children Living With Type 1 Diabetes: A Qualitative Study," the researchers used a case study qualitative research design to discuss the sense of meaning parents receive when parenting diabetic children. The paper concludes that, while quantitative research data provides more concrete information, qualitative research data still offers valuable information that cannot be determined through statistical analysis.

Determining the value of qualitative studies as compared to quantitative ones is an issue that has seen much debate – many feel that qualitative research does not provide as much workable value to researchers, as it tends to be imprecise and difficult to replicate in other scenarios. In this paper, a quantitative and qualitative research design is critiqued according to their respective templates, to determine their own sense of rigor based on their own standards, as well as comparing the value of each type of research. While quantitative research data provides more concrete information, qualitative research data still offers valuable information that cannot be determined through statistical analysis.

In Cheung et al.'s article " Quantitative Assessment of Early Diabetic Retinopathy Using Fractal Analysis" (2009), a quantitative research design is

used to determine the “ relationship between retinal fractal dimension and retinopathy in young individuals with type 1 diabetes” (p. 106). The goal was to determine whether or not the use of fractal analysis would allow researchers to predict diabetes-related microvascular damage. Seven-field stereoscopic retinal photographs were taken of the eyes of 729 patients who had type 1 diabetes, and the Airlie House classification was used to grade the retinopathy of these photographs. A computer program analyzed the fractal dimensions of the photographs as well in order to determine the relationship between these two factors. Data was gathered through this fractal analysis, and logistic regression was used to figure out the odds ratio (OR) for retinopathy related to fractal dimension variation (p. 107).

In Nurmi and Steiber-Roger’s “ Parenting Children Living With Type 1 Diabetes: A Qualitative Study,” the researchers used a case study qualitative research design to discuss the “ parent’s sense of meaning in relation to the parenting of a child with type 1 diabetes” (p. 530). In essence, interviews were conducted with 13 parents who had type-1 diabetes positive children; their thoughts were gathered in open-ended interviews that allowed for the parents to speak their minds without being guided by strict question and answer sessions. Audiovisual elements (like video and recording) were gathered, as were documents and observational finding, though interviews comprised the primary source of data.

Both of these studies show the distinctions between quantitative and qualitative data, respectively. In the case of the former case, quantitative data involves strictly measurable numbers and figures that can be statistically verified and mean something concrete. When performing a

quantitative study, one wants to acquire information that can be easily replicated and verified in another setting – the finding are much more objective. Quantitative data involves facts, figures, ratios, and points of comparison along specific metrics. Qualitative data, on the other hand, is much more subjective; finding are not able to be measured along the same criteria as others, and thus the information is less specific. When performing a qualitative study, a researcher is trying to get a feel for general responses to programs without having to work with statistical analysis or concrete comparisons; they simply want to gain impressions and opinions without gathering measurable facts.

There are advantages and disadvantages to both quantitative and qualitative types of research. For instance, Cheung et al. (2009) used a quantitative method because they wanted to determine whether or not fractal analysis was an accurate method of analyzing retinopathy photographs to predict diabetes-related microvascular damage. Quantitiative methods, therefore, had to be used, since the researched topic required an objective measure of accuracy – using qualitative methods on that would not work. Quantitative research designs are fantastic for knowing definitively the value of something, especially as compared to something else, as statistical analysis allows the researcher to support these claims. However, it is much more difficult to quantitatively identify subjective questions, like people's preferences or experiences unless you provide very specific measurement platforms.

Qualitative data, on the other hand, permits researchers to measure and evaluate things that cannot be quantified in numbers, such as words,

pictures and objects. In the case of Nurmi and Steiber-Roger (2012), the criteria being measured are parents' experiences with diabetic children. Since this question is so widespread and open-ended, there are no specific criteria to quantitatively measure, and so data is merely collected and shared, with no more than organizational analysis of rough trends to be found. For example, their findings include parents' meaning for parenting children involved " being like everyone else and protecting the children" (p. 530). These are extremely subjective and vague conclusions, but are nonetheless found as trends in parents of diabetic children; there was no quantitative analysis performed in the discovering of this finding. While this allows for freer discussion of trends, it also limits the conclusive nature of qualitative findings: it allows the researcher to color their own experiences and interpretation onto the data, whereas quantitative data uses strict numbers.

There are those who would say that qualitative research is not real science, as it does not measure itself by objective metrics. However, qualitative data can provide what quantitative data cannot, which is the ability to measure things that cannot be measured numerically. When gauging the opinions of people on a subject, one cannot plug in a limited number of options for subjects to fill out – qualitative data provides the means for the subjects to provide accurate answers that are not numerical. This is perfect when measuring things with no real metric; quantitative data is the more objectively trustworthy type, due to the ability to test its veracity through statistical analysis; however, qualitative data provides the means to express

more abstract and subjective findings, which are just as valuable in the field of scientific research.

References

Cantrell, M. A. (July-August 2011). Demystifying the research process: understanding a
descriptive comparative research design. Pediatric Nursing 37(4), 188-189.

Cheung, N, Donague, K. C., Liew, G, Rogers, S. L., Wang, J. J., Lim, S. W., Jenkins, A. J., Hsu,
W., Lee, M. L., & Wong, T. Y. (2009). Quantitative assessment of early diabetes retinopathy using fractal analysis. Diabetes Care 32: 106-110.

Nurmi, M. A. & Stieber-Roger, K. (2012). Parenting children living with type 1 diabetes: a
qualitative study. The Diabetes Educator 38: 530.