RESEARCH IN REHABILITATION COUNSELING

RESEARCH IN REHABILITATION COUNSELING

A Guide to Design, Methodology, and Utilization

By

JAMES L. BELLINI

Syracuse University
Department of Counseling and Human Services
Syracuse, New York

and

PHILLIP D. RUMRILL, Jr.

Kent State University
Department of Educational Foundations and Special Services
Kent, Ohio

Charles C Thomas
PUBLISHER • LTD.
SPRINGFIELD • ILLINOIS • U.S.A.

Published and Distributed Throughout the World by

CHARLES C THOMAS • PUBLISHER, LTD.
2600 South First Street
Springfield, Illinois 62794-9265

ISBN 0-398-06993-X (cloth)
ISBN 0-398-06994-8 (paper)

Library of Congress Catalog Card Number: 99-37751

With THOMAS BOOKS *careful attention is given to all details of manufacturing and design. It is the Publisher's desire to present books that are satisfactory as to their physical qualities and artistic possibilities and appropriate for their particular use.* THOMAS BOOKS *will be true to those laws of quality that assure a good name and good will.*

Printed in the United States of America
CR-R-3

Library of Congress Cataloging-in-Publication Data

Bellini, James L.
Research in rehabilitation counseling : a guide to design, methodology, and utilization / by James L. Bellini and Phillip D. Rumrill, Jr.
p. cm.
Includes bibliographical references and index.
ISBN 0-398-06993-X (cloth). -- ISBN 0-398-06994-8 (pbk.)
1. Rehabilitation counseling--Research. I. Rumrill, Phillip D. II. Title.
HV1568.B45 1999
362.4'0486--dc21 99-37751
CIP

For Diana, Jessica and Vanessa
JLB

For Nathan, Beverly, Phillip Sr., and Shirley
PDR

PREFACE

This book was written as a primary text for master's level students and practitioners concerning the role of research in contemporary rehabilitation counseling. Our intent was to provide a comprehensive overview of the philosophical, ethical, methodological, and analytic fundamentals of social science research–as well as to specify aspects of rehabilitation research that distinguish it from scientific inquiry in other helping professions. Foremost among these distinctions are the clientele of people with disabilities and their role as valued partners in the research enterprise; the historical, philosophical, and legislative bases of rehabilitation counseling; and research utilization strategies.

The book is divided into ten chapters. Chapter 1 establishes the theoretical underpinnings of social scientific inquiry; provides a foundation in the philosophical, epistemological, and methodological considerations related to the design and execution of rehabilitation research, and discusses the broad purposes of research in rehabilitation counseling. Chapter 2 addresses issues that are preparatory to designing and evaluating rehabilitation research, such as sources of research ideas, translating research ideas into research hypotheses, identifying variables, and sampling issues. Chapter 3 discusses key measurement and statistical concepts used in the quantitative research tradition, including reliability and validity of measurement instruments, the purposes of descriptive and inferential statistics in analyzing numeric data, and selected methods of statistical analysis. Chapter 4 reviews ethical issues and guidelines for the design, implementation, and reporting of rehabilitation research. Chapter 5 addresses key criteria for evaluating the quality of rehabilitation research, drawing valid inferences from results, and generalizing findings from the research sample to the target population.

Chapters 6, 7, and 8 review the wide range of different quantitative, qualitative, and integrative approaches to doing rehabilitation research, and they provide examples of these from the rehabilitation literature. Chapter 6 addresses intervention/stimulus, relationship, and descriptive studies in the quantitative paradigm. Chapter 7 discusses qualitative methods of rehabilitation research. Chapter 8 examines and categorizes a variety of synthetic literature reviews according to their purposes. Chapter 9 presents a published research article section by section, annotates the components and composi-

tion of a research report, and provides a protocol that students and practitioners can use to evaluate the technical soundness and scientific merits of published research articles. The concluding chapter of this text addresses future trends in rehabilitation counseling research as they apply to a variety of stakeholders (e.g., counselors, administrators, policymakers, educators, researchers, people with disabilities, consumer advocates).

Because this book was written as an introductory text for graduate students in rehabilitation counseling, we focus much of the information contained herein on the role of readers as "professional consumers" of rehabilitation research. In so doing, we not only introduce the reader to the fundamentals of research design, we also serve the purpose of introduction to the professional literature in our field. This book provides the "basics" that one would need to begin conducting a research investigation, but we would encourage that person to supplement this book with coursework in statistics and advanced research design before initiating an independent empirical study.

James L. Bellini
Phillip D. Rumrill

ACKNOWLEDGMENTS

We would like to express our sincere gratitude to the people who made this project possible and successful. We begin by thanking our faculty mentors at the University of Arkansas–Dr. Jason Andrew, Dr. Brian Bolton, Dr. Daniel Cook, Dr. Reed Greenwood, Dr. Richard Roessler, and Dr. Kay Schriner. We also thank our colleagues around the United States who have collaborated with us on research projects, including Ms. Patricia Brown, Dr. Brian Cook, Dr. Lynn Koch, Ms. Jill Longden, Dr. James Mullins, Dr. Jeanne Neath, and Ms. Cheryl Reed. Special thanks go to Drs. Lynn Koch and Connie McReynolds of Kent State University for contributing an excellent chapter on qualitative research, to Ms. Jennifer Snyder of Kent State University for her invaluable editorial and clerical assistance, and to Dr. James Webb of Kent State University for his expert contributions to the chapter on quantitative designs. Finally, we extend many thanks to Mr. Michael Payne Thomas of Charles C Thomas Publisher, LTD for the opportunity to write this text. It is our hope that this will represent the first in a long series of successful collaborative ventures.

This book represents an evenly distributed, collaborative effort by the authors. Senior authorship is shared, and the authors ordered alphabetically.

CONTENTS

RESEARCH IN REHABILITATION COUNSELING

Chapter 1

INTRODUCTION TO REHABILITATION COUNSELING RESEARCH

INTRODUCTION

Rehabilitation counselors are professionals who "assist individuals with disabilities in adapting to the environment, assist environments in accommodating the needs of individuals, and work toward full participation of individuals with disabilities in all aspects of society, especially in work" (Szymanski, 1985, p. 3). Rehabilitation counseling research is directed toward understanding the impact of disability on the social functioning of individuals, families, and groups, and identifying effective practices that facilitate the successful accommodation of individuals with disabilities in their chosen environments. The fundamental aim of rehabilitation counseling research is to improve the lives of persons with disabilities by facilitating the achievement of their vocational and independent living goals (Bolton, 1979). A large number of interrelated lines of inquiry have been pursued over the past four decades of rehabilitation counseling research, including (but not limited to) understanding the impact of disability on social functioning, understanding the characteristics of consumers of rehabilitation services (persons with disabilities) and their service needs; understanding the roles, functions, and professional practices of rehabilitation counselors; identifying consumer, counselor, and service provider characteristics that are associated with particular social and vocational outcomes; evaluating the impact of federal policy initiatives in the lives of individuals with disabilities; and evaluating the effectiveness of rehabilitation counseling interventions.

SCIENCE AND REHABILITATION COUNSELING RESEARCH

Science is not a set of definitive results; rather, it is a way of understanding the world around us. In other words, the purpose of science is to establish knowledge (Kazdin, 1998).

Research methods are the techniques that are used to establish scientific knowledge. Within the domain of research methods, the concept of research design refers to the specific plans or arrangements that are used to examine questions of interest. Thus, the terms research methods and research design both focus on the specific decisions, options, and practices that characterize research (Kazdin, 1998). The quality of the methodology and research design of a given investigation forms the essential basis for the strength of the knowledge claims or conclusions that researchers may derive from the research findings. Understanding the strengths and limitations of particular research methods and research designs permits consumers (readers) of research manuscripts to evaluate the quality of the research and the warrant for the knowledge claim given the findings that are reported.

Two broad and distinct categories of rehabilitation research methods are qualitative and quantitative approaches. Qualitative methods are based in a subjective, phenomenological approach to knowledge, and are typically directed to the discovery of how individuals ascribe meaning to phenomena, investigation of previously unexplored phenomena, or examination of complex social phenomena (Hagner & Helm, 1994; Szymanski, 1993). Historically, qualitative research methods have their roots in anthropology and sociology, and may include ethnographic studies, participant observation, case studies, or discourse analysis. Qualitative research methods have a long history of application in disability issues, and have been particularly valuable in providing in-depth understanding of the lived experience of disability. Moreover, these methods are becoming more prevalent in rehabilitation counseling research. Recent examples of the application of qualitative methods in rehabilitation research include an examination of how individuals with traumatic brain injury construct their sense of self following injury (Nochi, 1998), career development issues for Hispanic individuals involved in vocational rehabilitation (Trevino & Szymanski, 1996), and strategies of exemplary rehabilitation counselors that facilitate successful rehabilitation outcomes for persons with the most severe disabilities (Mullins, Roessler, Schriner, Brown, & Bellini, 1997).

Quantitative research design features the numeric expression of information for purposes of summarization, classification, analysis, and generalization. Thus, quantitative methods involves the measurement of variables of interest and the use of statistical analyses to identify relationships among variables. With roots in nineteenth century philosophy of science and statistical methods largely borrowed from the physical sciences, the goal of quantitative research is the development of objective knowledge about nature and human nature. Contemporary quantitative researchers in the social sciences, like their colleagues who use qualitative methods, recognize that human experience is fundamentally subjective and that our knowledge about reali-

ty is embedded in particular social and cultural contexts. However, quantitative researchers also assume that causal relationships exist outside the human mind, that humans are capable of discerning these causal connections among events in the world (albeit imperfectly), and that agreement among persons about the nature of these causal relationships forms the basis for the development of an objective knowledge of nature and human nature (Cook & Campbell, 1979; Manicas & Secord, 1983; Strong, 1991). A more accurate term for the nature of this "objective" knowledge that highlights the subjective but public quality of consensus about what is "known" is inter-subjective agreement, or agreement among members of the community of scientists and practitioners in a given field of study.

Quantitative research methods are widely used in rehabilitation research, and include surveys, true experiments, quasi-experimental research in field settings, and expost facto ("after the fact") designs. Quantitative research is important in evaluating the effectiveness of rehabilitation interventions, programs, and policies relative to the goals of rehabilitation; describing the characteristics of programs and program participants; needs assessment; and theory testing. One of the key advantages of quantitative research is that vast amounts of data from large numbers of people can be aggregated, analyzed, and summarized to provide program participants, administrators, policymakers, and other interested parties with key information about questions of interest.

Recent examples of the use of quantitative research in rehabilitation counseling include the evaluation of a rehabilitation intervention for persons with multiple sclerosis (Rumrill, Roessler, & Denny, 1997); an investigation of the diagnostic factors related to the eligibility decisions of rehabilitation counselors in a state vocational rehabilitation agency (Bellini, Bolton, & Neath, 1996); and a study of employers' and service providers' perspectives regarding the provision of natural supports in the workplace (Trach, Beatty, & Shelden, 1998).

Although quantitative and qualitative methods have different historical roots, philosophical assumptions, approaches to discovering knowledge, techniques for ensuring researcher neutrality regarding the content of the research, and ways of evaluating the validity of knowledge claims, no research method is more valid than the other. Rather, each method is appropriate for answering certain types of questions and less appropriate for answering other questions. The choice of research methodology is largely a function of the nature of the phenomena we wish to understand and the type of research questions posed. Nor should qualitative and quantitative approaches be perceived as mutually exclusive. Rather, qualitative and quantitative methods can be effectively combined in a single study (or a series of studies) to enhance the validity of the knowledge gained (Cook,

1985; Cook & Campbell, 1979; Szymanski, 1993). Cook and Campbell (1979) maintained that "field experimentation (i.e., quantitative studies in community settings) should always include qualitative research to describe and illuminate the context and conditions under which research is conducted" (p. 93).

SCIENCE AND KNOWLEDGE CLAIMS

Knowledge comes from many sources, and the quality of the source of knowledge often determines whether the knowledge will be accepted. To gain an appreciation for the efficacy of knowledge claims based on scientific methods, it is useful to compare the scientific approach to establishing knowledge to other common approaches. The framework discussed below follows Krathwohl (1993), and includes knowledge gained from personal observation and experience, intuition, tradition, and authority.

Personal Observation and Experience

Personal observation and experience is the source of knowledge that we trust most. "I'll believe it when I see it" is an expression of this universal knowledge standard. Moreover, it is appears to be an essential characteristic of human beings to seek order or patterns in their experience. To perceive a pattern means that we have already formed an idea of "what comes next." Thus, the ability to perceive patterns in our observations and experiences allows us to predict and possibly to control what happens to us, thereby changing the outcome from what might have been.

So, personal experience, and particularly those experiences that can be organized into patterns, is a vital source of knowledge. In fact, it is the raw stuff of science, for the personal experience of the scientist is often the catalyst for research questions that the scientist may pursue. The personal experience of the scientist may also be the primary data for the investigation, particularly in qualitative methods such as participant observation and ethnographic research.

However, we have all learned from experience that sometimes our sense impressions are inaccurate. Also, knowledge claims based on experience are naturally limited to those things we personally experience and, sadly, our lives are too short and the opportunities for wide-ranging experience may be limited or carry a heavy cost.

Intuition

Knowledge claims based on intuition are those propositions that are so obviously true as to be self-evident. In many instances we infer these propositions from the world around us. For example, for many centuries in Europe, it was a self-evident "fact" that the sun revolves around the earth. To verify the proposition for oneself required only that one observed that the sun appears to move across the sky and the earth remains stationary under one's feet. Other "self-evident" propositions widely held in various cultures pertain to gender differences, racial differences, differences among persons of different classes, etc. These examples highlight the fact that what is self-evident may turn out to be grossly untrue and unfair. The difficulty with self-evident propositions inheres in how to distinguish those that are true from those that are not true. There is no easy way to do this without deferring to some other approach to knowledge.

Tradition

Knowledge claims based on tradition are facts that are transmitted from generation to generation within families and cultures. It is a particularly important source of knowledge in less technologically developed cultures, and becomes a less reliable source of knowledge in cultures that are experiencing rapid change. Facts based on tradition often are rooted in the world view of the given culture, and accepting the "fact" often means accepting the general world view in which the fact is embedded. Also, traditional knowledge, particularly of the religious variety, often tends to be transmitted by authorities, and acceptance of the tradition is linked to acceptance of the authority. In every case, "knowing" based on traditional knowledge relies on making a personal judgment to accept the tradition.

Authority

Given that individuals have limited personal experience; self-evident facts are often proved wrong and the most valuable lessons are unlikely to be self-evident; and tradition is a foundation for, but also a limitation on, the development of knowledge; we are most likely to believe something is true if a respected authority tells us it is true. Authorities may range from arbitrary to dogmatic to reasoned. In most cases, we are more likely to accept and have confidence in an authority's pronouncement if it agrees with reason and if previous assertions were proved true. Thus, it is the reputation of the authority, or in the case of reasoning authorities, the logical force of their argu-

ments, which forms the basis for the knowledge claim. The history of science (and culture in general) is filled with examples of authorities of all kinds (arbitrary, dogmatic, and reasoning) who blocked the advancement of knowledge.

The reasoning authority is likely to be more authoritative to other reasoning individuals because she is more apt to be open to what she does and does not know, more willing to reveal the weaknesses in the given case in question, and more likely to give a balanced presentation of pros and cons. In other words, the integrity of the reasoning authority makes it less likely that essential information is being hidden that might affect the judgment of the authority or others who depend on her.

How Scientific Knowledge Differs from Other Sources of Knowledge

Although science, throughout most of the nineteenth and twentieth centuries, has been conceived as the paragon of human knowledge, scientific knowledge is fundamentally rooted in a social process of consensus building (Harre, 1986; Krathwohl, 1993; Phillips, 1987). That is, different groups of scientists may independently review the same area of research and reach diametrically opposed conclusions about the "truth" that is demonstrated. For example, a few years ago a group of scientists from the National Academy of Sciences reviewed a number of studies about the effect of low-level electromagnetic fields (generated from electrical power lines, household appliances, etc.) on the incidence of childhood diseases. These experts concluded that there was no conclusive evidence of a measurable effect of electromagnetic fields on incidence of childhood disease. More recently, a different group of scientists (also sponsored by the National Academy of Sciences) reviewed the same set of studies and came to a different conclusion: Electromagnetic fields do have a small, but measurable effect on incidence of childhood diseases. It is likely that newspaper reports such as these do not contribute to a positive impression of the validity of the conclusions derived from science. Rather, diametrically opposed conclusions from different groups of experts are likely to result in the discrediting of experts and expert knowledge in the eyes of the general public. Moreover, disagreements among scientists about the meaning or interpretation of research findings may give rise in the general public to the judgment that the methods of science are incapable of providing definitive answers to important social questions (Cook, 1985). Science, once sanctified as the one true approach to developing and verifying knowledge, is seen as more like politics, with partisan rhetoric, special interests, and no clear measure of veracity. As Cronbach (1988) noted, "scientific argument and political argument differ in degree rather than in kind, science hav-