THIRD EDITION

POPULATION-BASED
NURSING

Concepts and Competencies
for Advanced Practice

2020 AJN BOOK OF THE YEAR AWARDS 2ND PLACE

ANN L. CUPP CURLEY

EDITOR

POPULATION-BASED NURSING

Ann L. Cupp Curley, PhD, RN, recently retired from her position as the Nurse Research Specialist at Capital Health in Trenton, New Jersey, where she was responsible for promoting and guiding the development of nursing research and evidence-based practice. She has an extensive background in nursing education at the undergraduate, graduate, and doctoral levels, and more than 10 years' experience in community and public health nursing. Dr. Curley has been principal or co-principal investigator of many research projects and continues to serve as an advisor on DNP project committees and a research consultant. She received a BSN from Boston College, an MSN in community health/clinical nurse specialist track from the University of Pennsylvania, and a PhD in urban planning and policy development from Rutgers, The State University of New Jersey. Dr. Curley has received many honors, including the Nurse.com Nursing Spectrum Excellence Award for Education and Mentorship.

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Third Edition

Ann L. Cupp Curley, PhD, RN
Editor

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In Memory of Patty Vitale

Good friends are hard to find . . . and impossible to forget.
—Anonymous

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CONTRIBUTORS

Barbara A. Benjamin, EdD, RN, Adjunct Faculty, University of North Carolina, Chapel Hill

Irina McKeehan Campbell, PhD, MPH, Professor, Department of Health Sciences, School of Health and Human Services, National University, La Jolla, California

Ann L. Cupp Curley, PhD, RN, Research Consultant, Falmouth, Massachusetts

Janna L. Dieckmann, PhD, RN, Clinical Associate Professor, School of Nursing, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

Alyssa Erikson, PhD, MSN, RN, Associate Professor and Chair, Department of Nursing, California State University Monterey Bay, Seaside, California

Eileen M. Horton, MSN, MSM, RN, NEA-BC, Senior Vice President, Hospital Adminstration and Chief Quality Officer (retired), Capital Health, Trenton, New Jersey

Lucille A. Joel, APN, EdD, FAAN, Distinguished Professor, Rutgers University School of Nursing, Newark, New Jersey

Vera Kunte, DNP, APN, Nurse Research Specialist, Capital Health, Trenton, New Jersey

Barbara A. Niedz, PhD, RN, CPHQ, Assistant Professor, Rutgers University, School of Nursing, Newark, New Jersey

Sonda M. Oppewal, PhD, RN, Professor, School of Nursing, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

Laura P. Rossi, RN, PhD, Assistant Professor, Simmons University, College of Natural, Health and Behavioral Sciences, School of Nursing; Program Manager, Quality and Patient Safety, Department of Orthopaedic Surgery, Massachusetts General Hospital, Boston, Massachusetts

Patty A. Vitale[†], MD, MPH, FAAP

[†]Deceased

FOREWORD

"What's past is prologue," wrote William Shakespeare in *The Tempest*. Why read *Population-Based Nursing: Concepts and Competencies for Advanced Practice*? In this book, the third edition, there is a lot more to know and learn. If the first two decades of the 21st century have taught us anything it is that what we know as *healthcare* is changing at warp speed. And, as the anniversary of Florence Nightingale's 200th birthday looms large, Shakespeare's words echo in our ears and remind us of needed changes in the practice of the profession of nursing. We inherently know that what has happened in the past sets the scene for the really important morphs yet to be identified and implemented. Those changes will determine nursing's viability in the ever changing national and global health marketplace.

While as in the first and second editions successful strategies that nurses have used to improve population outcomes are paramount, the readers will discover new information in the third edition on how to identify healthcare needs at the population level and how to improve overall population outcomes. *Voila*. Not only that, but introduction of the most common study designs and successful program implementation strategies will lead you to correct design selection, successful implementation and most importantly overall success. Problem solved!

The third edition charts a path toward understanding how to successfully integrate new knowledge into practice. This, as experience teaches us, is no small task. Chapter 6 actually describes how technology can be used to truly enhance population-based nursing and describes the role and importance of APRNs in using data to make decisions that lead to new levels of program development and evaluation. While Clara Barton and Florence Nightingale did not have AI they understood that statistics are needed to measure outcomes. Chapter 8 identifies ways and means to evaluate population outcomes and systems changes. These concepts and roles are explored within the competencies of the APRN. The healthcare marketplace is extremely competitive, and executives and managers are like radar screens looking to identify opportunities to distinguish and validate their organizations. This book helps the new APRN identify the ways and means to achieve such validation.

Nurses need to be part of the highest level of care management and policy decision making in partnership with healthcare policy brokers and healthcare policy makers. In Chapter 10, the emphasis is placed on identifying community needs and assessment of resources. Chapter 11 rounds up by providing specific strategies for program implementation coupled with methods to empower the community to advocate for themselves. In the final chapter global health and cultural issue for population-based

nursing theory and practice open one's eyes to recent patterns in international interdisciplinary collaborations including the latest global health competencies. A primer for all practitioners whatever the setting.

This edition targets all of the important aspects in population-based care for the most trusted and recognized of all healthcare professions. Nursing remains, and should remain, a practice centered and caring profession, but current times mandate that nurses discover new and effective strategies for promoting health and providing care. This book gives nurses everything from A to Z describing the role of the APRN in the accreditation process to zeroing in how to eliminate health disparities. By looking back to the lessons and wisdom of the past and opening our minds to the new vistas and parameters of populations and the potential impact of a population-based approach to care it charts the ways and means toward the future. . ., which is now. The past is prologue.

These are nursing's new **Tools of the Trade**.

Patricia A. Polansky, RN, MS
Director, Program Development and Implementation
Center to Champion Nursing in America
RWJF/AARP
Washington, DC

PREFACE

My good friend, colleague, and co-editor Patty Vitale died shortly after we completed the planning for this, the third edition of our book. Patty had enormous energy and zest. Both figuratively and literally she danced her way through life. The joy that she exuded on the dance floor was a reflection of the joy that she had for living. She was dedicated to making the world a better place for children through her work as a pediatrician and an educator. This book is part of the enduring legacy that she left behind.

The original inspiration for this book grew out of our experience while co-teaching an epidemiology course for students enrolled in a doctorate in nursing practice (DNP) program. We found it difficult to find a textbook that addressed the course objectives and was relevant to nursing practice. We decided a population-based nursing textbook, targeted for use as a primary course textbook in a DNP program or as a supplement to other course materials in a graduate community health nursing program, would be of great benefit and value to students enrolled in these programs. This book is the result of that vision. The chapters address the essential areas of content for a DNP program as recommended by the American Association of Colleges of Nursing (AACN), with a focus on the AACN core competencies for population-based nursing. The primary audience for this text is nursing students enrolled in either a DNP program or a graduate community health nursing program. Each chapter includes discussion questions to help students use and apply their newly acquired skills from each chapter.

In this book, the third edition, our goals were to not only update the content of the existing chapters, but also add a chapter on accreditation of population-based programs. We were fortunate that a nurse with extensive experience in accreditation (Eileen Horton) agreed to write the chapter for us. In order to make it easier for readers to enhance their knowledge of the information that is covered in the book, we also decided to add a relevant list of Internet resources to each chapter.

Several events covering a wide range of issues in the healthcare field have occurred over the past few years. These include the attempts by the Trump administration to dismantle the Affordable Care Act and efforts by the 116th Congress to expand the role of public programs in healthcare. Bills being introduced in the House range in scope from broad proposals to create a new national health insurance program for all residents (often referred to as "Medicare for All") to more incremental approaches that would offer a public plan option in addition to current sources of coverage. It appears that the 2020 elections may well turn into a referendum on healthcare and how it should be paid for. States and local governments are increasingly turning to

legislation in an attempt to quell outbreaks of measles. As of April 2019, officials at the Centers for Disease Control and Prevention (CDC) had confirmed 695 measles cases across 22 states for the current year, a record high since the disease was thought to have been eliminated in the United States in 2000. According to a UNICEF report, among high-income nations, the United States had the most children who went unvaccinated between 2010 and 2017 (CDC, 2019). There is increasing concern over the usage of electronic cigarettes and hookahs by children. There is also increasing interest in the use of social media to address population health. This edition addresses these as well as other current issues in population-based nursing.

As in the first and second editions, this textbook includes successful strategies that nurses have used to improve population outcomes and reinforces high-level application of activities that require the synthesis and integration of information learned. The goal is to provide readers with information that will help them to identify healthcare needs at the population level and improve population outcomes. In particular, Chapter 1, Introduction to Population-Based Nursing, introduces the concept of population-based nursing and discusses examples of successful approaches and interventions to improve population health. In this edition we use the title "advanced practice registered nurse" (APRN). APRN is the title used in *The Consensus Model for APRN Regulation, Licensure, Accreditation, Certification and Education* (APRN Consensus Workgroup & National Council of State Boards of Nursing APRN Advisory Committee, 2008). This document is the product of the APRN Consensus Work Group and the National Council of State Boards of Nursing (NCSBN).

In order to design, implement, and evaluate interventions that improve the health of populations and aggregates, APRNs need to be able to identify and target outcome measures. Chapter 2, Identifying Outcomes in Population-Based Nursing, explains how to define, categorize, and identify population outcomes using specific examples from practice settings. The identification of outcomes or key health indicators is an essential first step in planning effective interventions and is a requirement for evaluation. The chapter includes a discussion of nurse-sensitive indicators, Healthy People 2020, Healthy People 2030, national health objectives, and health disparities. Emphasis is on the identification of healthcare disparities and approaches that can be used to eliminate or mitigate them. APRNs can advocate needed change at local, regional, state, or national levels by identifying areas for improvement in practice, by comparing evidence needed for effective practice, and by better understanding health disparities. APRNs have an important collaborative role with professionals from other disciplines and community members to work toward eliminating health disparities.

Epidemiology is the basic science of prevention (Gordis, 2014). Evidence-based practice, as it relates to population-based nursing, combines clinical practice and public health through the use of population health sciences in clinical practice (Heller & Page, 2002). Programs or interventions that are designed by APRNs should be evaluated and assessed for their effectiveness and ability to change or improve outcomes. This is true at an individual or population level. Data from these programs should be collected systematically and in such a manner that can be replicated in future programs. Data collection

must be organized and analyzed using clearly defined outcomes developed early in the planning process. Best practice requires that data are not just collected; data must also be analyzed, interpreted correctly, and, if significant, put into practice. Understanding how to interpret and report data accurately is critical as it sets up the foundation for evidence-based practice. With that said, it is important to understand the basics of how to measure disease or outcomes, how to present these measures, and to know what types of measures are needed to analyze a project or intervention.

Chapter 3, Epidemiological Methods and Measurements in Population-Based Nursing Practice: Part I, describes the natural history of disease and concepts that are integral to the prevention and recognition (e.g., screening) of disease. Basic concepts that are necessary to understand how to measure disease, and design studies that are used in population-based research, are discussed. Disease measures, such as incidence, prevalence, and mortality rates, are covered, and their relevance to practice is discussed. This chapter also includes information on primary, secondary, and tertiary prevention, and the concept of causality is introduced. A section on survival and prognosis is included. This material broadens the knowledge of readers with information necessary for advanced practice and interpretation of survival data. The basics of data analysis, including the calculation of relative risk, attributable risk, and odds ratio, are presented with examples of how to use these measures. Study design selection is an important part of the planning process for implementing a program. A portion of Chapter 3, Epidemiological Methods and Measurements in Population-Based Nursing Practice: Part I, is dedicated to introducing the most common study designs, because correct design selection is an essential part of sound methodology, successful program implementation, and overall success.

In order for APRNs to lead the field of evidence-based practice, it is critical that they possess skills in analytic methods to identify population trends and evaluate outcomes and systems of care (American Association of Colleges of Nursing [AACN], 2006). They need to carry out studies with strong methodology and be cognizant of factors that can affect study results. Identification and early recognition of factors that can affect the results or outcomes of a study, such as systematic errors (e.g., bias), should be acknowledged because they cannot always be prevented. In Chapter 4, Epidemiological Methods and Measurements in Population-Based Nursing Practice: Part II, the APRN is introduced to the elements of bias with a comprehensive discussion of the complexities of data collection and the fundamentals of developing a database. More in-depth discussion of study designs is covered, as well as a comprehensive review of ways to report on randomized and nonrandomized studies. Critical components of data analysis are discussed, including causality, confounding, and interaction.

In order to provide care at an advanced level, nurses must incorporate the concepts and competencies of advanced practice into their daily practice. This requires that APRNs acquire the knowledge, tools, and resources to know when and how to integrate them into practice. In Chapter 5, Applying Evidence at the Population Level, the APRN learns how to integrate and synthesize information in order to design interventions that are based on evidence to improve population outcomes. Nurses require several skills to become practitioners of evidence-based care. In this chapter, they learn

how to identify clinical problems, recognize patient safety issues, compose clinical questions that provide a clear direction for study, conduct a search of the literature, appraise and synthesize the available evidence, and successfully integrate new knowledge into practice.

Information technologies are transforming the way that information is learned and shared. Online communities provide a place for people to support each other and share information. Online databases contain knowledge that can be assessed for information on populations and aggregates, and many websites provide up-to-date information on health and healthcare. Chapter 6, Using Information Technology to Improve Population Outcomes, describes how technology can be used to enhance population-based nursing. It identifies websites that are available and how to evaluate them for quality. It also describes potential ways that technology can be used to improve population outcomes and how to incorporate technology into the development of new and creative interventions. APRNs use data to make decisions that lead to program development, implementation, and evaluation. In Chapter 7, Concepts in Program Design and Development, the APRN learns how to design new programs using organizational theory. Nursing care delivery models that address organizational structure, process, and outcomes are described.

Oversight responsibilities for clinical outcomes at the population level are a critical part of advanced practice nursing. The purpose of Chapter 8, Evaluation of Practice at the Population Level, is to identify ways and means to evaluate population outcomes and systems changes, as well as to address issues of effectiveness and efficiency and trends in care delivery across the continuum. Strategies to monitor healthcare quality are addressed, as are factors that lead to success. These concepts are explored within the role and competencies of the APRN.

The healthcare marketplace is extremely competitive. Administrators are constantly on the look out to identify opportunities to differentiate and validate their organization. Achieving accreditation helps to validate programs and organizations in the context of national and professional standards. Developing programs and working toward program accreditation requires competence in each of the DNP essentials. Chapter 9, The Role of Accreditation in Validating Population-Based Practice/Programs, describes the role of the APRN in the accreditation process.

In order for APRNs to make decisions at the community level, APRNs who work in the community need to be part of the higher level of care management and policy-making and decision-making, in partnership with the community-based consortium of healthcare policy makers. Chapter 10, Building Relationships and Engaging Communities Through Collaboration, describes the tools for successful community collaboration and project development. Emphasis is placed on identifying community needs and assessment of their resources. Specific examples are given to guide APRNs in developing their own community projects.

Chapter 11, Challenges in Program Implementation, identifies barriers to change within communities and the importance of developing and sustaining community partnerships. Specific strategies for program implementation are discussed, as well as the

methods to empower the community to advocate for themselves. Specific examples are given in order to guide APRNs in executing a project that has community acceptance and sustainability.

Finally, Chapter 12, Implications of Global Health in Population-Based Nursing, explores the implications of global health for the APRN. Theories of global health, population health, and public/community health are differentiated and compared, to further the understanding of how environmental conditions (e.g., poverty, housing, access to care) affect the health status of individuals and groups. Recent patterns in international interdisciplinary collaborations are reviewed, including the global health competencies developed by the Association of Schools of Public Health (ASPH) and the AACN.

Qualified instructors may obtain access to an instructor's manual for this title by contacting *textbook@springerpub.com.*

Ann L. Cupp Curley

REFERENCES

American Association of Colleges of Nursing. (2006). *The essentials of doctoral education for advanced practice nursing.* Retrieved from http://www.aacn.nche.edu/DNP/pdf/Essentials.pdf

APRN Consensus Workgroup & National Council of State Boards of Nursing APRN Advisory Committee. (2008). *The consensus model for APRN regulation, licensure, accreditation, certification and education.* Retrieved from http://www.aacn.nche.edu/education-resources/APRNReport.pdf

Centers for Disease Control and Prevention. (2019). *CDC media statement: Measles cases in the U.S. are highest since measles was eliminated in 2000.* Retrieved from https://www.cdc.gov/media/releases/2019/s0424-highest-measles-cases-since-elimination.html

Gordis, L. (2014). Epidemiology (5th ed.). Canada: Elsevier Saunders.

Heller, R., & Page, J. (2002). A population perspective to evidence based medicine: "Evidence for population health." *Journal of Epidemiology & Community Health*, *56*(1), 45–47. doi:10.1136/jech.56.1.45