

Congressional Breakfast Briefing

EXTENDING ADVANCES IN CARDIOVASCULAR RISK FACTOR MANAGEMENT TO SPECIAL POPULATIONS

September 16, 1998

Overview

The FRIENDS of the NINR held the third and final breakfast briefing this year on *Extending Advances in Cardiovascular Risk Factor Management to Special Populations*.

FRIENDS, an independent, non-profit membership organization, supports the NINR by promoting public awareness of the role of nursing research in advancing health care practice in the United States. Those attending the FRIENDS Congressional Breakfast Briefings include legislators, Congressional staff, nurse researchers and administrators, and members of public and private organizations having a special interest in the topics.

Senator Arlen Specter (R-PA) and Congresswoman Constance Morella (R-MD) cosponsored the breakfast. Colleen Conway-Welch, PhD, RN, FAAN, President of FRIENDS and Dean of Vanderbilt University School of Nursing, welcomed attendees and expressed thanks for the corporate support of Pfizer Inc. Women's Health.

Patricia A. Grady, PhD, RN, FAAN, Director of the NINR, provided opening remarks. After stating that research on health promotion and disease prevention are important areas of science for NINR, she indicated that these activities are key to saving lives of those with cardiovascular disease (CVD), which has long been the leading cause of death in the United States. Interventions being developed and tested help decrease health-damaging behaviors, such as sedentary lifestyles, obesity, tobacco use, alcohol and drug abuse, and unhealthy diets -- in order to prevent the onset of new illnesses and reduce hospitalizations.

Dr. Grady pointed out that an estimated quarter of the Nation's population lives with some form of CVD. The disease is progressive in nature, and the risks for its development can start in early childhood. The habits children form about what they eat and how much they exercise, for example, can influence the appearance of the disease and its course for the rest of their lives. Changing lifelong habits and adopting new behaviors is difficult, especially for older people even those who have had surgery or been hospitalized for other reasons. Dr. Grady concluded her remarks by introducing the two speakers, Dr. Joanne Harrell and Dr. Mary Naylor, both NINR grantees at the forefront of nursing research on CVD.

The Research

Cardiovascular Health in Children and Youth
Joanne S. Harrell, PhD, RN, FAAN
Professor of Nursing
University of North Carolina at Chapel Hill

Dr. Harrell explained that the Cardiovascular Health in Children and Youth Study, known as the CHIC Study, has two major goals. The first is to determine the development and prevalence of risk factors in youth that lead to future CVD. The second is to test interventions to reduce these risk factors and improve heart health for young people.

She indicated that since being funded by NINR, beginning in 1990, the CHIC Study has succeeded in collecting data on almost 4,000 school children and adolescents in North Carolina from ages 8 through 16. The risk factors being monitored are serum cholesterol, blood pressure, obesity, cardiovascular fitness, and certain behaviors, such as tobacco use, eating habits and physical activity. The 45 schools in her study are located in 15 counties across the entire State, including both rural and urban areas.

Dr. Harrell then described risk factors seen in the control group of children those who have not received a special intervention. The developmental curves for total cholesterol showed a typical drop in cholesterol in early puberty, with a subsequent rise toward a level that, without intervention, will be sustained in adulthood. There was also an alarming increase in obesity as the children matured. Both the body mass index chart and the skinfolds chart showed rapid increases in children who were already the fattest. Aerobic power was found to decrease as weight and body fat increased.

In the first phase of Dr. Harrell's study, CHIC 1, two interventions were tested in elementary school children, and both had a knowledge/attitude component and a physical activity component. Eighteen schools were randomly assigned to one of the interventions or to a control group. The goal was to compare the effectiveness of the interventions for children at risk for CVD. The children participated either in a large classroom-wide program with their peers or a small program providing more individualized attention. Both programs lasted eight weeks.

Findings indicated that the cholesterol level dropped more in the group receiving the classroom-based intervention than in the small groups. Body fat as determined by skin folds dropped in both groups, aerobic power increased in both groups, and diastolic blood pressure did not rise as much in both groups as in the control group.

Dr. Harrell concluded that both interventions were able to improve some of the risk factors for future CVD. The large group-classroom based intervention, however, was less expensive than the small group intervention, easier to implement, and provided benefits to all children, not just to a subset. The interventions were also found to be more effective with rural youth.

In discussing CHIC II, which builds on knowledge gained from the earlier study, Dr. Harrell focused on the classroom-based, large group program. This program tested three eight-week interventions in rural middle school students in grades 6 through 8. The interventions involved either a knowledge/attitude program, a physical activity program, or both, as compared to controls who received the usual health and physical education curricula.

While each study intervention worked well the physical education component lowered blood pressure levels and the health education component improved cholesterol levels. The combination of the two had the greatest favorable impact on cholesterol, blood pressure, body fat and aerobic fitness.

Care of High Risk Elders

Dr. Mary Naylor
Associate Dean and Director of Undergraduate Studies
University of Pennsylvania School of Nursing

Dr. Naylor's interest in advancing affordable health care for vulnerable older people through scientific research was stimulated by her work in the mid-1980s on the staff of the U.S. Senate Special Committee on Aging, which addressed the issues related to the health care of Medicare beneficiaries. After leaving the Committee, she began her research working with a multidisciplinary team of nurse and physician academicians, health care economists, and biostatisticians.

Before highlighting her research findings over the past decade, Dr. Naylor provided information on heart failure, a major public health problem, which primarily affects older adults. This chronic cardiovascular condition affects more than one million Medicare beneficiaries, who have the poorest prognosis (a five-year mortality rate of 50 percent) and the highest hospitalization rate of all adult patient groups.

According to the Agency for Health Care Policy and Research, the estimated annual inpatient expenditures are in excess of \$8 billion, with out of hospital care at approximately \$3 billion. The impact on the lives of patients and their families is profound, characterized by a downward trajectory of multiple disabling symptoms that severely limit independence. Although there is no cure, available data indicate that up to one-half of hospitalizations for heart failure are preventable. Patients need help changing certain risky behaviors that contribute to poor health and, together with their caregivers, managing their symptoms, in order to improve the quality of their lives and prevent rehospitalizations.

Dr. Naylor's multidisciplinary research team is testing a transitional care model that has been highly successful in other patient groups, including pregnant women with diabetes and women with hysterectomies. The model involves comprehensive discharge planning that includes determining the patient's care needs after hospital discharge, and follow-up in the residence delivered by a master's prepared advanced practice nurse (APN). The APN who prepares the patient for discharge also provides the home follow-up. The nurse expert is available to the patient via telephone every day. This transitional care model is in sharp contrast to current practice.

Dr. Naylor has tested the model in older patients in two completed randomized clinical studies, and a third is in progress.

The first study involved older patients hospitalized with selected cardiac conditions. The intervention included hospital discharge planning and telephone contact with patients through two weeks post discharge. Data were collected for three months post-discharge. At the six-week point, data showed the average cost of total health care services for medical patients was reduced by 62%; readmissions to the hospital were reduced by 61%; and the number of inpatient days once readmitted were reduced by 70%. Beyond the mid-point, the positive benefits began to decline.

The second study involved high risk older adults hospitalized with common cardiac conditions requiring medical or surgical treatment. The intervention included home visits up to four weeks post discharge. Data were collected for a six-month period, and the findings indicated that the more intensive intervention enhanced the transitional care model's beneficial effects. There were fewer readmissions, the time between discharge and readmission was lengthened, and health care costs were reduced significantly, compared to controls. For example, Medicare reimbursements for all health services were almost \$600,000 lower for the 177 Medicare beneficiaries receiving the intervention.

The third, ongoing study, begun in 1996, applies the model to older people hospitalized with heart failure, since this group of patients experienced only short-term benefits in Dr. Naylor's earlier studies. This intervention, which targets both management of heart failure and enhanced general health behaviors, extends three months after the initial hospital discharge. Patient and cost outcomes are being measured for one year post hospital discharge.

Dr. Naylor found that home visits alone do not explain the positive benefits of the transitional care model. To use the second study as an example, one in two patients who received home care from visiting nurses following hospital discharge was rehospitalized during a six-month period, compared to one in five who received care from APNs.

The Challenges

Cardiovascular disease, with its distinction as the nation's number one killer, is also a disease where the incidence rate can be significantly reduced by changes in lifestyle, and where symptoms can be managed effectively to prolong quality of life. Much is known about CVD and its causes, but important challenges remain.

- What are the best ways to encourage permanent, effective changes in lifestyle to promote health?
- And how can optimum care for CVD patients be provided to preserve their functional status and independence without incurring prohibitive health care costs?
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Of particular concern is that chronic CVD is exacting a tremendous toll on the lives of older Americans and their families and on society in terms of health care resource consumption. Since the number of older Americans is expected to double in the next few decades, it is essential that research on CVD and its risk factors across the age span be recognized as a high national priority.

Prevention

Now that it is known that childhood risky behaviors can be forerunners for CVD, interventions, such as those tested by Dr. Harrell, must continue to be validated and integrated into everyday living. Governmental policy makers, along with school systems, parents, and the children themselves, must be accepting of the importance of healthy behaviors and must work together to bring about the adoption of these behaviors as their way of life.

Greater knowledge is needed about the disparities in cardiovascular health, and why some populations are more vulnerable to CVD than others. What are the physical and psychosocial elements that lead to these differences, and how can successful interventions be identified and implemented?

Longitudinal studies must continue to be conducted to verify that healthy habits, encouraged by interventions stemming from nursing research, last from childhood to adulthood, and that the incidence of CVD is reduced.

Symptom Management

CVD, in particular heart failure, can produce radical changes in older people's lives. What are realistic expectations for improvement of the condition and of quality of life? More needs to be known about how to reduce disability and rehospitalizations, and how to enable people to live as normal lives as possible.

Appropriate quality of life measures are needed for older people with CVD in order to set directions for intervention focuses and evaluate their effectiveness.

The right mix of health care providers and services needs further study from the perspectives of quality of care and cost effectiveness.