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TESTING THE APPLICABILITY OF DATA CLASSIFICATION AND SYNTHESIS TECHNIQUES FOR USE IN PLANNING AND EVALUATING HEALTH PROMOTION PROGRAMS

By

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ABSTRACT

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DATA CLASSIFICATION AND SYNTHESIS TECHNIQUES
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The purpose of this study was to test the applicability of data classification and synthesis techniques for use in planning and evaluating Health Promotion programs.

Six specific research questions were developed related to the purpose of the study. A subset of one identified Health Promotion priority areas was selected as the focus for the study: community nutrition education programs for non-patient, non-institutionalized adults in the U.S. A sample of 46 studies was selected from journals published in the U.S. from 1960 through 1980. A review of existing classification instruments revealed that none met the needs of this study so an instrument was developed. Studies were analyzed using the instrument which classified them according to program and evaluation content categories; the studies were also scored according to quality criteria. The studies were then screened for appropriate inclusion in selected data synthesis procedures.

The assumption and data requirements for each of four data synthesis techniques were specified and the sample of studies was examined in light of these. It was found that no two studies in the sample satisfied the assumptions and data requirements of the synthesis techniques. In order to synthesize outcomes several similar studies must exist and at this time studies of evaluation of outcomes of community nutrition

education programs vary greatly by type of program, target population and outcome variable. Therefore, data synthesis techniques were not appropriate for the studies which represent the focus of this project.

The usefulness of the Classification Instrument developed for this project combined with the identified limitations of the selected data synthesis techniques led this researcher to further develop the classification approach into a Health Promotion Classification Manual. The Manual is an attempt to develop a methodology for classifying, according to multiple categories, the content, methods and quality and results of Health Promotion so that this data can be systematically retrieved and used in developing health promotion programs based upon existing evaluation research findings. The Manual can also help to further the understanding of Health Promotion as a multi-strategy, multi-focus and interdisciplinary entity.

Two general guidelines that have emerged from this dissertation can be summarized as follows: first, relevant past program experience should be systematically reviewed by Health Promotion professionals in order to more efficiently plan both their programs and the evaluation of those programs; and secondly, whatever designs are identified in the literature will have to be tailor made to some extent to accomodate the resources of each particular program.

Data classification and appropriately conducted data synthesis of evaluation research findings are promising initatives that have potential for enhancing the success of Health Promotion Programs in increasing positive health behavior among Americans.

For Amechi and Akosa

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CHAPTER 1

Introduction to the Study

> There is nothing more different to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things.
>
> Machiavelli

Purpose of the Study

The purpose of this study is to develop and test a method for systematic and analytic review, and classification of existing public health-prevention, and related literature which, when used with appropriate data synthesis techniques, can be useful to health planners in building upon the "best" of what is known from past research to work towards achieving the national priorities of Health Promotion.

Although the proposed study is primarily concerned with analysis of the quality of the evaluations in this literature and how these evaluations can contribute to new programs and policies for Health Promotion, it must also concern itself with the content and quality of program strategies in order to assess the appropriateness of evaluation designs, methods, results and conclusions. As prevention programs proliferate, policy makers, health planners, health insurance carriers, practitioners and consumers are asking: (1) are existing programs effective? and specifically, (2) what are the most effective strategies that have been and are being conducted, and what results do they offer for further development of Health Promotion strategies and policies?

Background

The most readily accessible and broadly representative source of information concerning previous program experiences are printed journals. Given today's technology of both printed and computerized Indexes and abstracts, journal articles concerning a particular topic can usually be identified easily. The limitations of this present technology are several: 1) the appropriateness of the article to the problem of interest must be determined by review of the article, since titles may be misleading, and because Index and Abstract categories are usually broader than a problem or area of interest for which the literature search was conducted; 2) the Indexes and abstracts usually do not necessarily include all relevant references on a subject or problem; 3) access to the original articles may not be possible because of limited library facilities available to a practitioner, and 4) all articles are reported equally, with no evaluation of or reference to the quality of each study.

Wellness goals for Health Promotion for the year 1990 or before were identified in the 1979 Surgeon General's Report entitled Healthy People. It is the assumption of this project that in order for the field of Health Promotion to achieve these goals, successful methods must be rapidly implemented and be focused at multiple targets using a wide variety of activities. Turner (1975) has stated that to advance a given state of the art, a two pronged approach is necessary:

(1) identification of the schemata or conceptual characteristics of an entity, and

(2) identification of instances of its success and non success, that is, an understanding of what has been done and its consequences. Implicit in understanding the success of a program is

the need to understand the quality of the measurement of its success.

Defining Health Promotion

Duane Block, in a 1980 address to the American College of Preventive Medicine, entitled Health Promotion: Prospects for the Future, described health promotion as "an idea whose time has come." He goes on to state:

> Hardly a day passes without seeing an article related to health education, health promotion, disease prevention, or life style change in the public press or in numerous lay periodicals. Professional journals regularly carry articles... which fit under the rubric of health promotion. The federal government has issued several recent publications.... Many business organizations have initiated various types of programs that are viewed as health promotion in an effort to reduce health care costs, improve health of their employees, or other wise have a favorable effect on the enterprise.
>
> Numerous professional conferences are being held on the subject of health promotion and disease prevention....
>
> These are but a few of the examples that...illustrate the wide-ranging interest in health promotion at this time and the importance which the health professions and the general public ascribe to the activities and programs that are grouped under the rubric of health promotion.

Despite the frequent use of the term health promotion there has been ambiguity and speculation voiced concerning its meaning.

The first recognized definition of health promotion was provided during the 1976 U.S. National Conference on Preventive Medicine:

> All health promotion involves...in balanced proportion, all the means or strategies of promotion: research, education for the health professions, public health, environmental protection, occupational health, consumer health education, health care (diagnosis and treatment of illness and disability), and health economics (organization and financing).

Unfortunately, that definition is no more concrete than the highly criticized World Health Organization's definition of health, which can be summarized as "total well being," and therefore, lacks a meaningful basis by which it can be operationalized.

The American Hospital Association House of Delegates, in August of 1979, defined health promotion as:

> ...the process of fostering awareness, influencing attitudes, and identifying alternatives so that individuals can make informed choices and change their behavior in order to achieve an optimal level of physical and mental health and improve their physical and social environment....
>
> The goal of health promotion is to encourage and aid each individual to take greater responsibility for his or her own health, not to coerce anyone into adopting specific health practices. The objective is to set an atmosphere conducive to positive health, to provide information to support it, and to offer education about how to change negative practices into positive ones.

Lauzon (1977) stated that despite the fact that most health professionals seem "comfortable with the substance and implications of health promotion," there still is a lack of clarity about what health promotion means and can be. Lauzon goes on to state that, "Unfortunately there are indications that the rhetoric surrounding health promotion is nothing more than a semantic game, a form of wizardry in which health education activities of yesterday are transformed into the health promotion programs of tomorrow."

But Lauzon (1977), Divore and Krueter (1980), and Block (1980) all recognized that health education is but one of the methods that will contribute to health promotion.

The U.S. Department of Health and Human Service (1980) reinforce this motion in their definition that:

> "Health Promotion refers to any combination of health education and related organizational, political and economic interventions designed to facilitate behavioral and environmental adaptations that will improve or protect health." (p. 7)

Lauzon (1977) has gone beyond defining Health Promotion. He has developed an "Epidemiological Approach to Health Promotion," which identifies selected health promotion activities and their targets according to host, agent and environment spheres.

According to the model, the host variables (defined as low risk individuals, average risk individuals and excess risk individuals) can be influenced through the Health Promotion activities of instruction, education, persuasion, behavior modification, proselytizing, screening and advertising. The agen variables (defined as alcohol, automation, automobiles, food, health services, illicit drugs, and tobacco) can be impacted upon by the Health Promotion strategies of marketing, product modification, engineering, substitutes, regulation, and legislation. The final component, environment variables (defined as physical, social-cultural, economic and mass media) can be impacted upon by physical influence, social-cultural influence, economic influence, and media influence.

Lauzon (1977) explains that "the epidemiological model enables health professionals to acquire an econogical or systems perspective for various problems. Such a perspective facilitates the identification of potential courses of action which may be useful in moderating or eliminating health risks. The dynamic relationships among the three components must be recognized in order to conduct risk reduction programs in an effective and efficient manner and to evaluate them appropriately." (p.)

Lauzon's (1977) model is the most definitive to date for moving health promotion from an ideal to tangible program components. It helps to identify goals, objectives, and activities, which aid in identifying specific previous efforts from various disciplines which can contribute to a comprehensive health promotion strategy.

In discussing the need for his model, Lauzon quotes T. S. Kuhn, who stated that:

> In the absence of a paradigm or some candidate for a paradigm all the facts that could possibly pertain to the development of a given science are likely to seem equally relevant.

This project is an attempt to test out data classification and synthesis techniques which will be useful in sorting out previous relevant research consistent with the Lauzon paradigm.

Need for the Study

To illustrate the need for this project, the following scenario is offered.

Assume that you are the person responsible for developing a Health Promotion program for adults. You want to develop the best program possible.

> You are committed to Health Promotion, which has been well described by Divore and Krueter (1980) as:
>
> > The process of advocating health in order to enhance the probability that personal (individual, family and community), private (professional and business), and public (federal, state and local government) support of positive health practice will become a societal norm. The process of advocating health may be conducted by a variety of modalities, including but not limited, health education.
>
> You understand the extend of need for program delivery if the wellness-goals (as identified by the 1979 Surgeon General) are to be achieved by 1990. (See Figure 1.1 for identification of the priority area.)

Preventive Health Services

1. High blood pressure control
2. Family planning
3. Pregnancy and infant health
4. Immunization
5. Sexually transmitted diseases

Health Protection

6. Toxic agent control
7. Occupational safety and health
8. Accident prevention and injury control
9. Fluoridation and dental health
10. Surveillance and control of infectious diseases

Health Promotion

11. Smoking and health
12. Misuse of alcohol and drugs
13. Nutrition
14. Physical fitness and exercise
15. Control of stress and violent behavior

Figure 1.1 Fifteen priority areas for "promoting health/preventing diseases"

Note: Promoting Health/Preventing Disease: Objectives for the Nation, U.S. Department of Health and Human Services, Public Health Service, Fall 1980, 74.

You agree with Turner for the need to understand the conceptual characteristics of a field; and that questions concerning appropriate research foundations for Health Promotion programs are contingent upon a determination of the parameters of the field of Health Promotion.

You recognize as Lauzon (1977) has stated that "Effective health promotion programs for the future must be founded upon sound principles which recognize the multiplicative dynamics of health behavior." and you accept the "Epidemiologic Approach to Health Promotion" proposed by Lauzon as an appropriate schemata for this field. (See Table 1.1 for a diagram of the Model.)

You recognize that in addition to the Lauzon model identification of target groups and activities, you can further contribute to development of successful Health Promotion programs for your target gruop (adults) by incorporating into your planning the information concerning adult learning theories and research findings. Because almost all host (or adult-targeted) Health Promotion strategies can be considered as non formal education, you also want to incorporate into your planning, experience from the fields of non-formal education.

Because the literature concerning Health Promotion and realted fields is so inclusive, you are faced with the enormous task of pulling together the most successful strategies from many thematic and program fields.

You are not a researcher, but rather a practitioner, and you do not have vast technical research skills.

The person in this senario will in all liklihood find that she/he is severely handicapped in meeting her/his responsibilities for developing Health Promotion programs. In fact, without a systematic approach for analysis, classification and synthesis, she/he will probably find reported results from the literature to be equivocal. Consequently, the usefulness of the review in program planning efforts will be limited. Just as a model or schema is required to understand the components and

Table 1.1

A Health Promotion Model

Epidemiological Concept	Targets	Selected Health Promotion Activities
Host	Low-risk individuals Average-risk individuals Excess-risk individuals	Instruction Education Persuasion Behavior Modification Proselytizing Screening Advertising
Agent	Alcohol Automation Automobile Food Health Services Illicit drugs Licit drugs Tobacco	Marketing Product Modification Engineering Substitutes Regulation Legislation
Environment	Physical Social-cultural Economic Mass media	Physical influence Social-cultural influence Economic influence Media influence

Note: From "An Epidemiological Approach to Health Promotion" by R. Lauzon, Canadian Journal of Public Health, August 1977, 68, and reprinted by Bureau of Health Education Focal Points, U.S. PHEW, Public Health Service, Center for Disease Control, Atlanta, Georgia, May 1979.

conceptual characteristics of Health Promotion, so too there is a need for a method by which previously conducted research about each component can be extracted, analyzed, classified and synthesized to contribute "to a data bank" to further clarification of the Health Promotion knowledge base.

Despite the temptation, there is not a need to develop all new methods and techniques of Health Promotion, but rather there is a need to creatively combine in a new. coordinated way the most effective strategies that have been used for eliciting positive health behavior. New methods will then only be developed as needed to supplement existing ones to create a coordinated societal strategy for promoting norms of positive health behavior.

Identifying those successful strategies may seem to be a straightforward task, but considering the volume of studies for each of the host, agent, and environment variables and their broadly identified health promotion target activities and research from related fields, combined with the variable quality of studies, the task is great.

A method which could assist in analysis and classfication of existing relevant literature, according to content, and quality may prove useful in advancing the knowledge base of health promotion programs. The method would not only provide useful information for planners, it could identify comparable studies upon which data synthesis techniques could be performed. Supporters of data synthesis claim that the techniques can yield valuable data for program planning.

Pillemer and Light (1980) have described data synthesis as "the science of discovering what we know" . They define it as "formal procedures for combining the results from several empirical studies".

They assert that all too often literature reviews on a certain question of inquiry are unsystematic. Using such unsystematic methods, two researchers reviewing literature to answer the same question--is a specific program effective?--may well come to different conclusions. In order to enable unbiased and scientific conclusions to be drawn from existing literature about program effectiveness on a specific problem or subject, Pillemer and Light suggested the need for data synthesis.

With the increased emphasis on Health Promotion, along with the budgetary constraints being placed on all health and human service programs, it seems that the time has come for a systematic evaluation, description and synthesis of "what we know" about the efectiveness of prevention programs that are aimed at improving health behavior, so that health promotion programs can have a firm basis on the best of relevant program and research experiences.

Scope and Focus

Because a review of all prevention literature is beyond the scope of this or any single study, one sub area of the Health Promotion priority areas identified earlier was selected in order to test the classification and synthesis methods for this study. The specific area selected was community nutrition programs for non-patient, non-institutionalized adults in the United States. The categories of potential prevention/promotion measures for improved nutritional status by 1990, as identified by the U.S. Public Health Service in Fall of 1980 are:

1. Educational and information measures
2. Service measures
3. Technologic measures
4. Legislative and regulatory measures
5. Economic measures

(The specific nutrition objectives for 1990 or earlier in the U.S. are presented in Appendix A.)

The category of interventions, which are the focus of this project, are educational, and information measures. Figure 1.2 displays a listing of specific education and information interventions for Health Promotion. (See Figure 1.2.)

The time frame for programs under review was 1960-1980, primarily because, as has been identified by Flaherty and Morrell, few program evaluations were reported prior to 1960.

1. Increasing awareness of ideal weight ranges and safe weight reduction and weight control strategies based on energy balance concepts.

2. Increasing awareness of the science base regarding relationships between diet and heart disease, blood pressure, certain cancers, diabetes, dental care, and other conditions.

3. Providing information and behavior skills to select and prepare more healthful diets.

4. Development more effective means of communicating nutrition information to people in different age and ethnic groups.

5. Providing nutrition information and education about healthy food choices in the home (via the media), in schools, at the worksite by and to health care providers, at the point of purchase, as a part of government food service programs (such as Project Head Start, school lunch, and WIC Programs) and by appropriate advertising.

6. Providing appropriate information on the advantages and techniques of breast feeding and when appropriate, alternatives, particularly for low income women.

Figure1.2 Education and information measures for promoting health/ preventing disease

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Note: Promoting Health/Preventing Disease: Objectives for the Nation, U.S. Department of Health and Human Services, Public Health Service, Fall 1980, 74.

Research Questions

The specific research questions addressed in this study are:

1. What is the state of the art of program deliviery and evaluation of community nutrition education for non-institutionalized, non-patient adults, in the United States?
2. Are any of the existing literature review or meta-evaluation (secondary evaluation) methods or instruments appropriate for classification and assessment of public health studies for the purpose of planning programs and evaluation methodologies, and for screening study data for appropriate inclusion in data synthesis.
3. If not, can such an instrument be developed in a format that can be easily understood by, and useful to, those who plan, administer and evaluate Health Promotion programs?
4. Are the selected data synthesis techniques appropriate for use with a sample of Health Promotion programs?
5. Does the type of evaluation design affect the usefulness of the evaluation findings--that is, do any systematic evaluation efforts, despite level of experimentation (i.e., pre experimental, quasi-experimental or true experimental) generally yield useful results?
6. Is there a minimum set of guidelines that can be suggested (based upon this dissertation research) for use in planning and evaluating Health Promotion programs?

Objectives:

1. Identification of as complete as possible the set of community nutrition education studies from 1960-1980 for non-patient adult populations in the United States, as reported in U.S. journals.
2. Development of a comprehensive classification instrument for determining the content, results, and quality of program strategies and evaluation designs and methods of each study, and to identify information needed in order to determine which data synthesis techniques is appropriate for each study.
3. Systematic review and classification of the set of studies using the classification instrument.
4. Testing the usefulness of the selected data synthesis techniques by synthesis of a subset of studies of true experimental, quasiexperimental and preexperimental designs using each of the selected synthesis techniques.
5. Analysis of comparability of information derived from synthesis of each of the three sets of studies (true, quasi, and preexperimental designed studies).
6. Analysis of the usefulness of the classification system and revision, as needed.
7. Based upon results of analysis of the articles, determination of whether there are guidelines by which Health Promotion programs can be planned and evaluated.

Methodology

The research involved secondary analysis of published literature in U.S. journals concerning evaluation of community nutrition education for adult non-patient populations in the U.S.

Through a process of reviewing literature on evaluation research, program evaluation generally and program evaluation literature in prevention, medical care, education, health education, and nutrition education, a classification instrument would be developed by which the data for this study would be analyzed. In this way, the variables, strategies, and methods addressed in the nutrition education studies would be compared with those identified by authoritative sources.

The nutrition evaluation studies would be analyzed, classified, and evaluated using the Classification Instrument. A score reflecting the overall content and quality of each study would be assigned. The studies would then be classified into preexperimental, quasiexperimental, and true experimental design categories. The studies in each category would be sorted according to synthesis techniques appropriate for the type of variables and statistical analysis performed. It was anticipated that synthesis techniques would be conducted on appropriate groups of studies, within the experimental design categories and synthesis results compared across experimental design categories to study the effects of quality or type of initial data on synthesis results.

Based upon this pilot study using the classification instrument combined with the synthesis techniques, the procedures would be combined to form a resource manual that could be a useful tool for

those who plan, administer, and evaluate Health Promotion programs. A set of guidelines will also be developed for use in planning and evaluating Health Promotion programs.

Overview of the Study

In Chapter Two a review of literature which contributed to development of the Classification Instrument will be presented as well as descriptions of selected data synthesis techniques.

In Chapter Three, the data set, along with the instrument and the procedures for data analysis, both classification and synthesis, will be discussed.

In Chapter Four, results of the classification and synthesis will be presented.

Chapter Five will contain a summary of the study, conclusions drawn from interpretation of the data, recommended guidelines for planning and evaluation of Health Promotion programs as suggested by the study, suggestions for further research concerning the use of classification and synthesis techniques and their potential contributions to the development of Health Promotion programs. Reflection concerning policy needs and influences concerning realization of a national strategy for Health Promotion will be discussed.

Limitations of the Study

The study will be limited to an examination of selected published reports of community nutrition education programs for non-patient adults in the United States that appeared in U.S. journals from 1960-1980.

Although similarities may exist between community nutrition education and health education, and prevention generally, it is not possible to draw conclusions about the general practice of health education or prevention programs from this study. The topic of nutrition education program for adults was selected to "pilot test" the classification/screening method and synthesis techniques, and was not meant to appear representative of other thematic prevention programs.

Significance of the Study

The significance of the proposed study is that the methods tested will provide information concerning the appropriateness of data classification and synthesis techniques to those who plan, conduct, and evaluate Health Promotion programs, in helping them in building upon the best of what is known from a variety of fields and thematic programs. The study should contribute to building the knowledge base for Health Promotion.

Those who will, and do plan, conduct, and evaluate Health Promotion programs out in the field often lack the skills, time or resources to search out from among the great numbers of studies (which vary greatly in quality and breadth), those studies which have conducted successful interventions which also have used appropriate, valid, and reliable evaluation methods. For those who lack analytical skills, the study will provide:

1. tested methods for extrapolating data, methods, and strategies, and classifying and synthesizing these;
2. a recommended set of program planning and evaluation guidelines.

The needs of those practitioners who lack time to thoroughly review the breadth of literature relevant to Health Promotion can be addressed in a number of ways from this study:

1. Those concerned with community nutrition education will have identified for them:
   a. The content of existing studies of non-institutionalized, non-patient populations in the United States for the past 20 years;
   b. The quality of existing studies;
   c. An aggregation and synthesis of evaluation findings.
2. Those concerned with other thematic areas of Health Promotion may be able to influence policy makers to commission future studies to further develop techniques to classify, analyze, aggregate, and synthesize a broader body of previously conducted research relevant to Health Promotion, so that Health Promotion strategies can include, be limited to, and based upon, "the best of what we know" about prevention program strategies and their evaluations.

The fifteen National Health Promotion priority areas identified in the 1979 Surgeon General's report are those for which substantial improvements in health status can be achieved by changes in behavior of individuals at risk for each problem area. Specific health status and disease prevention goals for each area have been identified and can be achieved if specific unhealthy behaviors are changed. These are wellness goals; the strategies for achieving the wellness goals will require multiple strategies and interdisciplinary, coordinated planning

and programs. These will require some restructuring in the practice of preventive services to facilitate interdisciplinary coordination, and to enable consumers and patients to learn, participate, and take initiative in a new way in promoting, improving, and sustaining their wellness.

Health Promotion programs can most efficiently and effectively be planned and implemented if the most successful strategies from various disciplines can be brought together, built upon, and targeted on a problem area. In other words, by looking back at relevant, successful program experiences, and refining and applying these to specific Health Promotion goals, the methods developed and tested in this study should contribute to the knowledge base of Health Promotion theory and practice by providing tested methods for identifying and organizing successful program experiences.

Summary

In this chapter, the need for conducting this study, as well as the purpose, have been stated. The methodology to be used has been described, and the scope and overview of the study have been identified. The limitations have been cited and significance of the project has been proposed. In Chapter Two, a review of literature which contributed to development of the Classification Instrument will be presented as well as descriptions of selected data synthesis techniques.

CHAPTER II

REVIEW OF RELATED LITERATURE

> "...experimentation occurs in an intellectual environment marked by diverse, competing and non-comparable theoretical traditions. Consequently there is only weak guidance for inquiry: it is difficult to decide when treatments have been either implemented or successful, for there are no solid theoretical or emperical anchors for measure of either."
>
> David K. Cohen

In order to consider the applicability and adequacy of classification and synthesis techniques as tools for planning Health Promotion program strategies and evaluation methods, it is necessary to review existing classification and synthesis techniques, and theoretical bases for comprehensive program evaluation. As suggested in Chapter I, no classification system was found to be appropriate for this study, so this chapter will also include a review of literature which contributed to development of the Classification Instrument for this study.

The Chapter is presented in two sections: (1) Literature concerning the selected data synthesis techniques, and their data requirements and (2) Literature related to development of the Classification Instrument.

Data Synthesis Techniques

The two basic purposes of data synthesis, as described by Pillemer and Light(1980) are to provide a systematic technique, with explicit "combinatorial strategies" for: (1) focusing on research findings in order to "...provide the systematic information a researcher needs to design more powerful future investigations," and (2) "...rendering scientific research useful to public policy." The authors discuss the fact that

complex policy questions require more than narrative discussion of several selected research studies relevant to the question; rather they require a synthesis of results of comparable studies in order to elucidate the setting by treatment interactions and effects. "...This can lead to guidelines about where and how to implement a particular program, improving the chances of its success."

Pillemer and Light identify four benefits of data synthesis which are generalizable across content areas, these are:

(1) increasing power;

(2) obtaining a precise estimate of the size of an effect;

(3) describing the form of a relationship; and

(4) harnessing the benefits of contradictions.

Four categories of data synthesis techniques will be described.

(1) Conducting a combined significance test

Several conceptually similar techniques that have been identified for conducting a combined significance test are summarized by Rosenthal (1978) and include weighted z scores; adding z scores and dividing by the square root of the number of studies combined; adding t scores; adding logs; and by adding probabilities. The purpose of these techniques is to draw an overall "grand" conclusion from results of several comparable independent studies by combining the separate significance tests to address the common null hypothesis which is: both groups have the same population mean. In order to use a combined significance test technique, the several studies to be compared must be independent of one another, compare two treatments which are similar across studies and in which the group differences in each study were statistically treated. The major advantages of this category of data synthesis techniques are: the limited

information required (the sample size, value for the test statistic and exact probability); simple computations; and the only formal assumption being that the studies being combined should have tested the same directional hypothesis.

> A strength of the combined significance tests is that they generally accomplish the goal of increasing power...In general, techniques for conducting a combined significance test are most helpful when the separate studies can be considered independent and essentially random samples estimating a single 'true' difference between populations, so that variation among study outcomes is attributable to chance. In this case, when the treatments are in fact differentially effective, an overall comparison will often detect this difference because it increases the effective sample size used in the test (Pillemer and Light, 1980).

(2) Computing an Average Effect Size

Glass (1977) is the major proponent for the synthesis technique of computing an average effect size, a technique which Pillemer and Light (1980) describe as a "useful descriptive statistic"; they go on to comment:

> When comparing a treatment to a control, a common definition is simply the difference between the two groups' average standard deviation...There are several elaborations on this basic idea, some of which incorporate the treatment group's standard deviation, and others are based on the idea of changes over time...Effect size averaging has few formal assumptions and relatively low informational requirements. Using this procedure requires only that we know the group means and the control group standard deviation...
>
> Estimating an average effect size is most clearly valuable when a group of study outcomes seem neatly, perhaps normally, distributed around the mean. In this case an average gives a useful single summary of results.

(3) Investigating Interactions

Unlike the two above described techniques which try to gain further insight into a research question by combining similar effects, several

techniques instead look for variations and how to explain these. Lesser (1974) identified the policy needs for this type of synthesis across studies and states "Summative evaluations must go beyond assessing simple overall effects...('Does it work?') and attempt to answer these more meaningful questions ('For whom and under what conditions does it work?')" (Pillemer and Light, 1980). Glass (1977) developed a method of studying variations in outcome using regression analysis and Rosenthal (1978) has developed a procedure for this purpose called the "blocking technique" which uses a combined ANOVA, with studies regarded as the blocking variable.

(4) Comparing Similarly Labeled Treatments: the Cluster Approach.

One criterion for obtaining results of data synthesis is that combined variables actually are the same. One method for determining difference or sameness in treatment variables has been identified by Light and Smith (1971) as the cluster approach - a method which analyzes subgroups within treatment groups. They identified a set of "hurdles" or criteria of comparability against which they measure subgroups. "While the cluster approach does not by itself supply the reason for differences among subgroups, it provides a signal that an atypical program exists... It requires an analyst to recognize that seemingly similar groups may in fact be different." A limitation in use of this technique is the detailed information required about treatment groups and subjects. This technique is usually most useful when combined with one of the above described methods, because it only examines comparability of treatment groups and not treatment effect, i.e., effect size, or significance.

The authors note that no one data synthesis procedure is always best and that which technique(s) to use depends on the question a researcher is asking, as well as the particular data contained in the studies

being reviewed. A thorough review of the quality and comparability of designs and studies will help to determine the method of data synthesis most appropriate to a given set of studies.

Pillemer and Light argue that "Synthesis deals with urgent issues, and the answers it can provide would be useful to many constituencies." It cannot only enhance research in a specific area and improve program planning for greater program success, it can also be a useful technique for studying characteristics of studies and their outcomes across fields. On the latter point they comment:

> One can ask whether there are general rules pertaining to the relationship between study characteristics and outcomes across areas. For instance do observational studies tend to demonstrate larger or smaller effects than randomized experiments... It (data synthesis) enables us to explore whether knowledge in various content areas converges over time...Generating some empirical data about convergence in research findings would not only inform philosophical inquiry, it would suggest which approaches are likely ultimately to be more productive.

However, caution must be taken when using data synthesis methods so that the results are valid. Light and Smith (1971) identified several costs to incorrectly combining studies; weakened inferences,overlooked inferences and wrong inferences - each which gives a biased view of actual program effects. To get the least biased combined measures of effect from a synthesis of several evaluation studies, it is important to have confidence in the quality of data available. Whenever a researcher reviews literature on a topic or problem it should be evident that not all evaluation results have equal validity because of the quality of design and procedures used to measure program effect. Eysenck, a critic of data synthesis, (also referred to as meta-evaluation) refers to the process as Mega-Silliness in great measure because of the differing quality of

data which is synthesized. In a critique of an article published by Smith and Glass in 1971, Eysenck stated:

> It is noted that 'subjectivity of the outcome measure' has much the highest correlation with effect size; this alone would invalidate all the complex statistics (presented in the article)...A mass of reports - good, bad and indifferent - are fed into the computer in the hope that people will cease caring about the quality of the material on which the conclusions are based.

Using the classic approach of Campbell and Stanley (1966) to examine each study's design for threats to internal and external validity is one very useful method of determining the likely errors and types of error inherent in the study's results.

Another concern in data synthesis is that of combination of variables. Studies must be thoroughly reviewed to determine if variables are operationalized in the same way.

Evaluation results may also not be comparable if the time frame in which effects were measured varies considerably (long term versus short term studies).

The more error that can be eliminated from studies before data synthesis is performed the higher the chances that the synthesis will yield the most valid results about program effects. It is possible that two studies conducted by using equally rigorous designs and methods, the same variables, time frame and for the same purpose, may yield different results. George (1979), Light and Smith (1971) and Pillemer and Light identify the effect that situational factors can have on the results of similar, even identical studies which must be considered and identified in the synthesis to help determine under what conditions a program will be effective or most effective.

Pillemer and Light report that

> Glass (1976) has suggested that 'apprehending the meaning of the collected research on educational

> problems has become a technical problem.' (and they add) ...conceptual issues are no less important. For example, is a synthesis approached with the assumption that a program tried in many places has the same effects everywhere, or rather that it may have consistently different effects in different settings? This analysis of data within a single study involves both technical and conceptual issues; the same is true for data from several studies. In fact conceptual issues in dealing with groups of studies are likely to be ever more critical since conclusions may be generalized to a broad field of study rather than to a more narrowly defined program or single data source...Our conclusion is that a major growth area for both research and policy for the next few years will be systematically developing a science of discovering what we know.

Analyses for this study are not limited to data synthesis technique for two reasons:

> (1) Information about program effects are but one type of evaluation data needed for program planning. Studies concerning the context in which programs have taken place, the structural arrangement that support the program, the process or interventions of the program and its cost effectiveness impact are all relevant factors in program planning. Previously conducted studies have much more to offer the planning process than only as contributors to synthetic estimates of effect. A method for classifying. assessing and aggregating studies concerning context, structure, process and impact is also needed.
>
> (2) Further analysis is also necessary before the synthesis part of this study can be conducted. Studies must be thoroughly reviewed to ensure the quality, compatibility and comparability of programs, evaluation designs and methods (Pillemer and Light, 1980).

Development of the Classification Instrument

A. Contribution of public health evaluation theory to the development classification/screening instrument--classification of variables:

In 1966 Donabedian published what has now become the classic theoretical conceptualization of medical care (and now many related areas of health care) evaluation. Donabedian maintains that evaluation of only outcomes of medical care (then the model practice) was insufficient for understanding all of the variables that can and do affect the quality of medical care.

Donabedian identified the need to evaluate structure and process variables as well, and when possible using explicit rather than implicit criteria for all variables, including outcome. Structure variables refer to all resources that support a program including but not limited to staff, physical arrangements in which a service is provided, and fiscal and administrative arrangements; process variables are all of the procedures and interactions a provider performs in actually delivering the medical care. (Outcomes were identified as standard morbidity and mortality rates.)

Since Donabedian developed the structure-process-outcome theory of medical care evaluation, it has become the basis for all medical care services; medical audits and peer review, and has formed the basis of the Professional Standards Review Organizations (PSRO's) established by the Social Security Amendment of 1972 for review of basic medical services to Medicaid recipients and now for review of hospital based care to all populations.

The Donabedian theory has been expanded in use to professional groups such as nurses, social workers, Occupational therapists and physical therapists in their quality review programs. It has also been made more specific by works such as that by Freeborn and Greenlick (1973) which explicitly identifies evaluation questions for each category of variables for ambulatory care. Other researchers have expanded the theory to include impact variables. Green (1979) states that "...the most succinct statement of the standard of acceptability against which to evaluate impact is cost effectiveness." The process, structure, outcome theory is also used in educational evaluation, particularly through the contributions of Stufflebeam (1967) and Longest (1975) who in addition to Britan (1978) and others add the category of context variables. Britan describes contextual evaluation

variables as those

> "...which holistically examine particular program operations...The first step in contextual evaluation is a description of what actually happens in program treatment. Analysis then considers why such treatment occurs and how it relates to formal rules, informal goals, varying participant understandings, external pressures and multiple program results. Finally, variation in program results are linked to variations in the treatment process and provide a basis for future program improvements."

Britan quotes Foster (1969) as providing a theoretical and methodological foundation for evaluation of context; Foster generally studied evaluation of social change. "To understand such change, Foster argues, one must consider the nature of both innovating organizations and target groups as well as the setting in which they interact...Contextual evaluation uses multiple methods and data sources to gain a holistic perspective on program activities."

The categories of variables reported in each evaluation study to be reviewed will be classified as Process, Structure, Outcome, Impact or Context, individually or by some combination of some or all categories.

For the purpose of this study, the following definitions have been adapted from Freeborn and Greenlick(1973), Longest (1975) and Green (1977).

Structure: the properties of the available resources that are used by a Health Promotion Program, and the manner in which these resource requirements are organized.

Process: the activities of those who conduct Health Promotion Programs; program operation, process and procedures.

Outcome: the intended and unintended effects or consequences of the program; it also focuses on how well program objectives have been met.

Impact: narrowly defined as cost effectiveness and policy related variables.

Context: the nature of the social structure and how it relates to the program being conducted.

B. Contribution to development of the Classification Instrument format from general program evaluation theory:

The purpose for which an evaluation is conducted as well as the time perspective under which it is conducted effect the comparability of results. A study which has as its purpose comprehensive evaluation of a program, will include both formative and summative evaluation as well as short term and long term effects. Most published studies, however, present summative, short term results.

Formative evaluation, as Worthen and Sanders (1973) put it "serves to improve the product." It is ongoing during a program, and an integral part of good management. It contributes to the "formation" or running of a program consistent with its objectives and needs, and its purpose as Stufflebeam (1970) put it is "not to prove, but to improve" a program's effectiveness.

Summative is a term credited to Scriven (1972) which refers to evaluation at the conclusion of a program against predetermined goals, and has as its purpose judgement of the effectiveness or worth of a program.

The dichotomy of long term versus short term program effects also is important to consider when comparing studies because as Green (1977) puts it

> "Most of the benefits of health education are time-dependent. These raise problems of behavioral change that must be taken into account in assessing program effectiveness and benefits. Most of these have to do with the timing of measurement of outcomes following the educational inputs. Some effects of health education are immediate and temporary, others are slower in developing but longer lasting.

C. Contribution of Research Theory to the Classification Instrument

The design and methodology part of the classification screening format is based on that developed by Bertram and Brooks-Bertram (1977), and Green and Figa-Talamanca (1974) which are both in part based on the classical work of Campbell and Stanley:

In Experimental and Quasi-Experimental Designs for Research (1966), Campbell and Stanley identified three types of designs:

1) pre-experimental designs, which are the least scientific in their design, drawing no comparisons, or comparisions from one time to another on only one group of subjects;
2) quasi-experimental designs, which are attempts to use scientific methods of inquiry using non-equivalent comparison groups, because the use of a true experimental design (which utilizes control group) is not possible; and
3) true experimental designs, which are scientific experiments using random assignment of subjects, to experimental and control groups.

Specific type of designs that have been identified by Campbell and Stanley are:

1) Pre-experimental designs
   - The One-Shot Case Study
   - The One-Group Pretest-Posttest Design
   - The Static-Group Comparison
2) Quasi-experimental designs
   - The Time Series Experiment
   - The Equivalent Time - Samples Design
   - The Equivalent Materials Design
   - The Nonequivalent Control Group Design

- The Counterbalanced Designs
- The Separate-Sample Pretest-Posttest Design
- The Separate-Sample Pretest-Posttest Control Group Design
- The Multiple Time Series Design
- The Recurrent Institutional Cycle Design
- The Regression-Discontinuity Analysis

3) True experimental design

- The Pretest-Posttest Control Group Design
- The Solomon Four-Group Design
- The Posttest-Only Control Group Designs
- Factorial Designs

Knowledge of the type of design used enables a researcher to form a series of questions about the quality of the study in relation to the threats to internal and external validity inherent in the design.

Factors which Campbell and Stanley have identified as being threats to internal validity are:

1. History, the specific events occurring between the first and second measurement in addition to the experimental variable.
2. Maturation, processes within the respondents operating as a function of the passage of time per se (not specific to the particular events), including growing older, growing hungrier, growing more tired, and the like.
3. Testing, the effects of taking a test upon the scores of a second testing.
4. Instrumentation, in which changes in the calibration of a measuring instrument or changes in the observers or scorers used may produce changes in the obtained measurements.
5. Statistical regression, operating where groups have been selected on the basis of their extreme scores.

6. Biases resulting in different selection of respondents for the comparison groups.

7. Experimental mortality, or differential loss of respondents for the comparison groups.

8. Selection - maturation interaction, etc., which in certain of the multiple-group quasi-experimental designs...might be mistaken for, the effect of the experimental variable.

Sources of external validity are:

9. The reactive or interaction effect of testing in which a pretest might increase or decrease the respondent's sensitivity or responsiveness to the experimental variable and thus make the results obtained for a pretested population unrepresentative of the effects of the experimental variable for the unpretested universe from which the experimental respondents were selected.

10. The interaction effects of selection biases and the experimental variable.

11. Reactive effects of experimental arrangements, which would preclude generalization...

12. Multiple-treatment inferences, likely to occur whenever multiple treatments are applied to the same respondents, because the effects of prior treatments are not usually erasable.

D. Contribution of Existing Classifications or Review Methods to development the Classification Instrument:

In 1976 Sanders and Nafziger published a monograph in which they presented "A Checklist for Judging the Adequacy of Evaluation Designs." The monograph describes the development of the checklist, based on three sets of criteria:

(a) those derived from "Guidelines for Evaluation Designs"

(b) those derived from "Essays about Evaluation Qaulity," and

(c) those derived from "Checklists that Guide the Application of Standards to Evaluation Designs."

The two Guidelines for Evaluation Designs they considered were those of Stoke (1969) and Worthen and Sanders (1973).

Stoke's work was a suggested format for final (education) evaluation reports, and contained the following five sections:

Section I - Objectives of the Evaluation
- A. Audiences to be served by the evaluation
- B. Decisions about the program, anticipated
- C. Rationale, biases of evaluators

Section II - Specifications of the Program
- A. Educational philosophy behind the program
- B. Subject matter
- C. Learning objectives, staff aims
- D. Instructional procedures, tactics, media
- E. Students
- F. Instructional and community setting
- G. Standards, bases for judging quality

Section III - Program outcomes
- A. Opportunities, experiences provided
- B. Student gains and losses
- C. Side effects and bonuses
- D. Costs of all kinds

Section IV - Relationships and Indicators
- A. Congruences, real and intended
- B. Contingencies, causes and effects
- C. Trend lines, indicators, comparisons

Section V - Judgements of Worth
- A. Value of outcomes
- B. Relevance of objectives to needs
- C. Usefulness of evaluation information gathered.

Worthen and Sanders have identified a similar format that is general and probably applicable to all types of program evaluations. It also consists of five sections:

I. Rationale (Why is this evaluation being done?)

II. Objectives of the Evaluation Study
- A. What will be the product(s) of the evaluation study?
- B. What audiences will be served by the evaluation study?

III. Description of the Program Being Evaluated
- A. Philosophy behind the program
- B. Content of the program
- C. Objectives of the program, implicit and explicit
- D. Program procedures (e.g., strategies, media)
- E. Students
- F. Community (federal, state, local) and instructional context of program

IV. Evaluation Design
- A. Constraints on evaluation design
- B. General organizational plan (or model for program evaluation)
- C. Evaluation questions
- D. Information required to answer the questions
- E. Sources of information; methods for collecting information

F. Data collection schedule
G. Techniques for analysis of collected infomation
H. Standards; bases for judging quality
I. Reporting procedures
J. Proposed budget

V. Description of Final Report
A. Outline of report(s) to be produced by evaluator
B. Usefulness of the product of the study
C. Conscious biases of evaluator that may be inadvertently injected into the final report

The essays about evaluation quality that were reviewed including Stufflebeam, et al's 1971 work on evaluation standards, and Worthen 1973 "A Look at the Mosaic of Educational Evaluation and Accountability."

Stufflebeam, et al's standards contain 11 factors, which are:

1. Internal validity
2. External validity
3. Reliability
4. Objectivity
5. Relevance
6. Importance
7. Scope
8. Credibility
9. Timeliness
10. Pervasiveness, and
11. Efficiency

Worthen's similar set of standards also contains 11 factors:

1. Conceptual Clarity
2. Characterization of Program
3. Recognition and Representation of Legitimate Audiences
4. Sensitivity to Political Problems in Evaluation
5. Specification of Information Needs and Sources
6. Comprehensiveness/Inclusiveness
7. Technical Adequacy
8. Consideration of Program Costs
9. Explicit Standards/Criteria
10. Judgements and/or Recommendations
11. reports Tailored to Audiences.

Four checklists were reviewed, and Sanders and Nafziger state: "Each existing checklist seems unique in form, content, and purpose; nevertheless, many share common characteristics. Generally, checklists for judging evaluation designs include considerations of the scientific or technical adequacy of the evaluation, the practicality and cost efficiency of the

design, the usefulness of the data to be collected, and the responsiveness of the design to legal and ethical issues."

The checklist developed by Stoke in 1970 considers five major areas and several sub-areas. The five major factors considered are: (1) the evaluation itself; (2) specific information about the program being evaluated; (3) program outcomes; (4) relationships and indicators; and (5) the worth of the overall program.

A checklist developed by Bracht in 1973 identifies questions for six categories: (1) communication; (2) importance of the evaluation; (3) design for making judgements; (4) design for obtaining descriptive data; (5) reports; and (6) concerns.

An administrative checklist developed by Stufflebeam in 1974 contains six components which questions the adequacy of evaluation design as well as contextual and process information. The six factors reviewed are: (1) conceptualization of the evaluation; (2) socio-political factors; (3) contractual/legal arrangements; (4) the technical design; (5) the management plan; and (6) moral/ethical utility considerations.

A checklist by Smith and Murry (1974) is a compilation from other checklists and assess the adequacy of three major areas and several sub-areas of evaluation design. The three major areas are: (1) content descriptions; (2) evaluation activities/results; and (3) document characteristics.

Sanders and Nafziger considered previously mentioned work, in creating their checklist, but developed a check list which has as its uniqueness, the purpose of not only assessing the adequacy of an evaluation design, but also facilitating communication between an evaluator and relevant parties. The authors note that:

> It is very important to remember that an evaluation design is a vehicle for communication between an evaluator and those whose role calls for reviewing the evaluation plan. The checklist helps organize that communication. In cases where an evaluation is conducted by a contractor, the design becomes a contract between the evaluator and the client. In such cases the checklist assists a client in judging adequacy of the design, and provides a basis for a client in judging adequacy of the design, and provides a basis for giving feedback to the evaluator. If the evaluator is involved in the program being evaluated, the guidelines provide a basis for the evaluator and his or her colleagues to check the design."

The Sanders and Nafziger Checklist contains four general criteria sections, each with specific questions that assess whether a specific criterion was met. The sections are:

I. Criteria concerning the adequacy of evaluation planning.

II. Criteria concerning the adequacy of the collection of and process of information,

III. Criteria concerning the adequacy of the presentation and reporting of information, and

IV. General criteria (ethical considerations and protocol).

Issac and Michael in 1974 published a checklist by Wandt, a "Form for the Evaluation of an Article," consisting of 25 items concerning the clarity of statements and appropriateness of procedures described. Each item can be rated in a checklist format, on one of four criteria:

(1) Completely incompetent

(2) Poor

(3) Moderate

(4) Excellent.

Each of the checklists, standards sets, and guidelines that have been briefly reviewed helped to identify important factors to include in a Classification Instrument, but none of those reviewed was appropriate to the needs of this study because each was intended for review based upon

lengthy reports, documentation and interaction with program and evaluation staff. Most required more information than is generally available from a journal article and the focus of many was very decision oriented in relation to the context of specific programs.

The review of existing checklists helped to identify more clearly the purpose of the Instrument - to assess and classify the content and quality of intervention strategies, evaluation methods and results in order to identify comparable and compatible studies for data synthesis of programs' effects (outcomes) and to aggregate program experience concerning other important levels of program planning and evaluation (i.e. structure, process, context and impact.)

Summary

For this Chapter, a literature review was combined with a description of the theoretical basis of the Classification Instrument and data synthesis techniques.

In Chapter III the Classification Instrument and data set will be described and the data analysis procedures (both classification and synthesis) will be discussed.

CHAPTER III

PROCEDURES

In this chapter, a description will be given of the way in which the classification instrument and data synthesis techniques were planned for application to the data. The sources of data, and data set will be described, as will be the methods of data collection. The procedures for analyzing and presenting the data are also described.

Development of the Classification Instrument

No existing instrument which satisfied the requirements of this study could be identified, so a Classification Instrument was developed based upon the literature review of other similar instruments, meta evaluation criteria and guidelines, public health evaluation theory, educational evaluation theory, general program evaluation theory, and research theory as described in the previous chapter. It was pretested and changes were made to refine and improve it.

The Instrument assesses both the content and quality of program experience and was developed for use with journal articles and final project reports. (This specification is identified because several existing instruments assessed contextual aspects of program evaluation that almost never are reported in journal articles.) The instrument content of each study by specifying the:

objectives of the program
target population
intervention strategies used
objectives of the evaluation
type of evaluation
specific variables measured
methods of assessment
evaluation design
methods of data analysis

time frame for evaluation of effects (long term vs. short term)
direction and significance of results

The instrument assesses the quality of each study by scoring the following variables as to their adequacy:

literature review
evaluation questions
hypotheses
independent variables
dependent variables
instrument pretest
instrument reliability and validity
sampling size and procedures
evaluation design
statistical analysis
interpretation and results

Each variable (as identified above) was scored and then an overall score was assigned to each study by adding each item's score. The possible scores were assigned from least to most desirable. Each of the items was scored as follows:

0 not present
1 present inadequate or poor
2 present adequate
3 present excellent

The instrument is presented in Appendix B.

One or more of the data synthesis techniques described in the previous chapter will be used. One of the purposes for analysis and classification of the literature is to identify which data synthesis technique for each study is appropriate by determining the purpose, procedures and data and design limitations and quality. Because each described technique is based upon different underlying assumptions and data requirements the exact data synthesis techniques to be used could only be determined after the classification phase of the Study was completed.

Pilot Study

A pilot study was conducted on studies covering the five year period of 1975-1979. The general topic of evaluation of non-patient health

Education programs was selected for the pilot study; a total of 151 studies were identified using a manual search of Index Medicus. The headings searched were: Health, Health Education, Preventive Medicine, and Public Health Surveys. About 15% of the articles were in journals to which the MSU library system does not subscribe (and therefore those articles were not reviewed for the pilot study); about 10% of the 151 articles were from British or Canadian Journals, and about 10% had misleading titles. About 20% more articles were added to the list from references found when 50 selected articles (about one third of the original list) were reviewed and from review of selected journals in which several articles were identified via the Index Medicus search.

Scope of the Data

From this experience, several decision rules were made concerning the identification of data for this study. Because of the breadth of literature encountered in the one sub area of health promotion/prevention activities reviewed for five years (namely non patient health education) it was decided that the topic (by which the Classification Instrument and Data Synthesis techniques would be tested out) for this study must be more limited. Limitations were placed by topic, target population and country. Community nutrition education studies for adult non-patient non-institutionalized populations in the U.S. as reported in American Journals were selected for testing out the combined Classification and Synthesis "System".

The rationale for selecting evaluation studies of community nutrition education was threefold:

(1) it represents an area in which there has been multi-disciplinary program approaches, -a program history which can contribute richly to the multi-disciplinary program requirements of Health Promotion programs;

(2) evaluation of community nutrition education programs have been reported less often than evaluation of other priority health promotion/ prevention areas, (like alcoholism, drug abuse and hypertension etc.) and there a comprehensive review of nutrition education program literature for non-patient adults over the past 20 years is within the scope of this study.

(3) nutrition education programs represent one of the 15 priority areas of Health Promotion/Prevention as identified by the U.S. Department of Health and Human Services, 1980, and (4) some of the principle assumptions identified upon which improved nutritional objectives are based include the need for improved dissemination and growth of current research efforts to improve the scientific base with respect to diet and disease, and the need for identification of effective measures of nutrition education. This study could, in small part, contribute to both needs.

The rationale for selecting adult populations is that that group is most appropriate for study by an adult educator. Non patient populations were selected to further narrow the body of studies so that a comprehensive review of one subset of Promotion/Prevention priority area could be reviewed. It was assumed that such a comprehensive review was necessary to adequately test the developed "system".

The reason 1960-1980 time period was selected was because of trend in program evaluation over that period. Thaherty and Morrell (1978) reviewed the history of the field of program evaluation and identified that although there were several early developments in program evaluation in a number of areas in the late 1940's and early 1950's, the field of program evaluation didn't begin to develop rapidly until the 1960's. They report that this development was due to a combination of four causes:

> ...greater requirement for accountability in publicly funded programs, increasing interest among social scientists in social relevance, and increasing scarcity of resources for the traditional social sciences, and an expansion in the social science methodologies appropriate for research in applied settings. Obviously none of these causes operated independently, and some probably played a more important role than others.

A review of evalution of public health, health education and nutrition education programs indicates that they conform to the general trends identified above.

Source of Data

The decision rules developed concerning identification of evaluation literature for this study were:

1) only studies from U.S. journals concerning programs in the U.S. would be included;
2) studies would be limited to those which concern evaluation of nutrition education programs for non patient adults;
3) only studies from 1960-1980 would be included
4) Index Medicus was the first source used to identify studies. Each of the following headings were searched manually:

   Health
   Health Education
   Nutrition
   Nutrition Education
   Nutrition Survey
   Preventive Medicine
   Public Health Administration

5) Nutritional Review Abstracts were searched under the topic Nutrition Education.
6) The following bibliographies were also used in the data search:

   Otterness, Eleanor G. Bibliography on Evaluation in Health Education. Group Health Plan Inc. 2500 Como Ave., St. Paul MN. Prepared for September 12, 1980 Third Annual

Meeting, Minnesota Chapter, Society for Public Health Education at the University of Minnesota Arboretum, Chaska, Minnesota. Theme: "Evaluation Implications and Applications for Health Educators."

Owen, Anita Yavochek: Community Nutrition in Preventive Health Care Services: A Critical Review of the Literature. Health Planning Biographic Series #7, USDHEW Public Health Service, Health Resources Administration, May 1978.

Wilson, Christine and Knox, Sharron. "Methods and Kinds of Nutrition Education (1961-72): A Selected Annotated Bibliography" Journal of Nutrition Education Vol 5, No. 1 Supplement 2, Jan. - March 1973.

7) The references from each article reviewed were cross checked against the Index Medicus derived list and added if not already there.

8) Journals which were cited more than once per year in the search were reviewed for additional titles that appeared to concern the topic of study and many articles were reviewed to determine if they were appropriate to this study.

The Data Set

A set of 111 studies were identified as potentially meeting the criteria for inclusion in the study. Each was reviewed for appropriateness and only those which described a community nutrition education program, its intervention strategies and some statement about evaluation were included in the data set. Appendix C contains a listing of the original potential data set and disposition of each regarding inclusion in the study. Forty-six articles make up the data set for the study - each being identified as a single subject.

Procedures for Data Analysis

The data were classified through use of the Classification Instrument. Each article on the list was analyzed separately concerning its content, quality and whether it met any of the criteria for any of the selected data synthesis techniques. Then, the studies were grouped according to experimental design, quality categories within those designs (i.e. ranking according to overall score), and then assigned to appropriate data synthesis technique. Appropriate data synthesis was then done, results of the Classificaton and Synthesis were then compared by experimental groups and quality sub groups.

Summary

In Chapter III, an explanation has been provided for the procedures used to analyze the data. The sources of data were identified, and a description was given about the ways in which the data were collected and studied. The classification Instrument and Data Set are presented.

In Chapter IV, results of the Classification and synthesis will be presented.

CHAPTER IV
Results

Published studies of one type of the Health Promotion program, nutrition education for non-patient non-institutionalized adults, were analyzed using a classification instrument which assessed the content and quality of the studies as well as their ability to meet data synthesis requirements.

The data resulting from the analysis is presented in three parts: the content of the studies, their quality, and their appropriateness for use in data synthesis.

Data Relating to the Content of the Studies

A total of 46 studies were analyzed. The content of each study was classified by the following factors:

study number

author and year

purpose of the program

target population

educational approach used

length of program

setting

instructor

sponsor

type of evaluation

method of evaluation

categories of evaluation variables, and

results

Data concerning each factor will be presented.

Table 4.1 displays the year of publication by the Journal in which each study was published. The trend identified by Haherty and Morrell (1978) is somewhat evidenced, by few studies existing in the early 1960's, and a large increase in number of studies per year by 1969. The continued "growth trend" identified by Haherty and Morrell however, has not manifested itself, with the number of studies falling off from their peaks in 1969 and 1972 to only two in 1980. See Table 4.1.

Table 4.2 presents a frequency distribution of categories of program purposes. The type of purpose most frequently reported can be categorized as general nutrition education; 19 studies (41.30%) were in this category. Two other categories were high, with programs to improve nutrition behavior being reported 12 times (26.09%) and programs to improve nutrition knowledge, behavior, and or attitudes reported in nine studies (19.57%). Programs conducted to study cost effectiveness of specific programs as well as programs to learn more about program participants and instructors were each reported two times (4.35% each); programs to improve nutrition knowledge and programs to assess the relative functioning of different methods of instruction were each reported one time (2.17% each). See Table 4.2.

Programs ranged in length from one encounter only to repeated encounters over 14 years, while the longest duration of evaluation data collection was for three years.

The most common setting for the educational programs were individual consumer homes, followed by community centers and super markets. The most frequent sponsor of the programs was the Cooperative Extension Service for 22 (47.83%) of the studies; a variety of other sponsors

Table 4.1

Year of Publication by Journal in which Studies were Published

Journal	Year Published																	
	1961	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
J. American Dietetic Assoc.	1	1	1	1		1			1			1			1		2	10
J. Home Economics		1	1			1		2			1							6
Ext. Service Rev.			1		1	1			1									4
What's New in Home Economics				1														1
Nutrition News						2	2		2	2								8
J. Nutrition Ed.						2	1	1	1		1		2	3				11
Hospitals									1									1
American Journal Public Health											1					1		2
J. of Extension												2						2
J. Community Health														1				1
	1	2	3	2	1	7	3	3	6	2	3	3	2	4	1	1	2	46

Table 4.2

Frequency Distribution of Categories
of Program Purpose
n = 46

Categories of Program Purpose	Frequency #	%
General nutrition education	19	41.30
Improve nutrition behavior	12	26.09
Improve nutrition knowledge & behavior and/or attitudes	9	19.57
Cost effectiveness analysis	2	4.35
Understand more about program participants and instructors	2	4.35
Improve nutrition knowledge	1	2.17
Assess relative functioning of different methods of instruction	1	2.17
	46	100.00

were reported between one to three times each. These were: multiple agency sponsorship ; the National Diet and Heart Study; the Dairy Council; the National Heart, Lung and Blood Institute; Social Service agencies; Universities; supermarkets, hospitals; and the Center for Disease Control.

Table 4.3 presents a cross tabulation of profession of instructor by target group. The most frequently reported instructors were para professional nutrition education aides, 18 studies (40.00%); the second most frequently reported were nutritionists and home economists, each identified in five separate studies (11.11%) each. Instruction via the media was reported in four studies (8.89%); and teams of professionals and paraprofessionals accounted for another four (8.89%) of the instructors. Dieticians were reported in three studies (6.67%) and self instruction was reported in two studies (4.44%). In four studies the instructors were referred to in general terms and their profession could not be identified. Health educators were reported in only one study and only as part of a team. Considering target group, low income was the most frequently identified group, being reported in 25 articles (55.56%). The general public was mentioned with next highest frequency, 10 studies (22.22%), followed by senior citizens and supermarket shoppers each being reported in three separate studies (6.67% each). Middle age men, police officers, employees of the National Institute of Health, and Cooperative Extension Service invited homemakers each were reported one time (2.22% each). The only definitive trend concerning target group and instructor is between low income homemakers and paraprofessional aides. All paraprofessional aides taught low income homemakers, and of all the studies reporting on low income homemakers, in 72% of these, the homemakers were instructed by paraprofessional aides. See Table 3.

Table 4.3

Cross Tabulation of Profession of Instructor by Target Group

n = 45[1]

Profession of Instructor	Low income homemakers	General Public	Senior Citizens	Target Group: Supermarket Shoppers	Middle Age Men	Police Officers	NIH[2] Employees	CES (3) Invited Homemakers	
Para professional aides	18 72.00 100.00 40.00								18 4.00
Nutritionists		1 4.00 20.00 2.22	1 33.33 20.00 2.22	2 66.67 40.00 4.44	1 100.00 20.00 2.22				5 11.11
Home Economists	2 8.00 40.00 4.44	1 4.00 20.00 2.22	1 33.33 20.00 2.22	1 33.33 20.00 2.22					5 11.11
Media	1 4.00 25.00 2.22		1 33.33 25.00 2.22				1 100.00 25.00 2.22	1 100.00 25.00 2.22	4 8.89
Teams	3 12.00 75.00 6.67	1 4.00 25.00 2.22							4 8.89
Dieticians		3 12.00 100.00 6.67							3 6.67
Self Instruction		2 8.00 100.00 4.44							2 4.44
Unspecified	1 4.00 25.00 2.22	2 8.00 50.00 4.44				1 100.00 25.00 2.22			4 8.89
	25 55.56	10 22.22	3 6.67	3 6.67	1 2.22	1 2.22	1 2.22	1 2.22	45 100

Key = Frequency
Column %
Row %
% of Total

(1) n=45 because some studies of structure and process had no instructional program and therefore no instructor. Other articles reported more than one instructor, but not working as a team, therefore the sample size does not equal 46 as expected.
(2) NIH is the National Institute of Health
(3) CES is the Cooperative Extension Service
(4) Total does not add up to exactly 100.00% because of rounding.

Concerning the evaluations that were conducted, 16 (34.78%) were summative with the majority formative: 30 studies (65.22%). (This is in part a reflection of the many developmental studies that were conducted prior to and early into development of the Expanded Food and Nutrition Program (EFNEP) of the Cooperative Extension Service, which began eleven years ago).

Evaluation results were categorized according to category of variables assessed, methods of assessment and direction of reported changes. Table 4 presents a summary of the frequency distribution of the studies by the variable categories of structure, process, outcome and impact. (No studies concerning context variables were present in the sample.) Of the total of 46 studies in the sample, one (2.22%) assessed structural variables; three (6.67%) process variables; 43 (93%) outcome variables, and three (6.67%) impact variables. (Percents do not add up to 100% because some studies identified more than one category of variable.)

Table 4.4

Categories of Variables Assessed by Study Number
n = 46

Structure	Process	Outcome	Impact
25	16	1-15	12
	18	17-19	15
	20	21-24	43
1	3	43	3
2.18%	6.52	93.48	6.52

Number do not add up to n=46 because some studies included more than one category of variables. 46 is the base figure for the table, therefore the percentages do not add up to 100%.

In the one study concerning structure, the specific variables investigated were socio-demographic characteristics of Expanded Food and Nutrition Education Program Aides and homemakers (clients). Table 5 presents this finding by study number.

Table 4.5

Specification and Frequency Distribution of Structural Variables by Study Number

Structural Variables	Frequency	Reference
Socio-demographic characteristics of EFNEP* Aides and homemakers	1	25

* Expanded Food & Nutrition Education Program

Table 6 identified the process variables that were assessed by study number. All three evaluated multiple educational approaches and techniques.

Table 4.6

Specification and Frequency Distribution of Process Variables by Study Number

Process Variables	Frequency	Reference
Educational approaches/ techniques	3	16, 18, 20

Table 7 presents a frequency distribution of outcome variables investigated by study number. The outcome variables were divided into three groupings: intermediate outcomes, direct outcomes and side effects.

Intermediate outcomes are those which can enable a change in knowledge, attitudes, values and beliefs or behavior, but in themselves do not represent a change. A goal of a project may be "to increase knowledge about nutritious foods" in a supermarket and the only measure of the program may be the number of people who stop at an information booth for handouts concerning facts about nutritious foods. Receiving handouts in no way can be used as a proxy for a change in nutrition knowledge or behavior, but it may predispose such change. It therefore is considered an intermediate outcome. Sixteen intermediate outcomes were reported in 13 separate studies. Receipt of follow up mail from consumers was the most frequent intermediate outcome, (five studies); four studies reported the number of people stopping at a display and/or taking handouts; four studies also reported other general feedback; two reported use of service and one study reported the increase in number of listeners to a radio program. Forty-seven direct outcomes were reported in 32 different studies. Direct outcomes were defined as knowledge, attitudes, values, beliefs and behaviors that did or were expected to change as a result of the intervention strategy. The most frequently reported outcome was change in behavior (27 studies); followed by no change in outcome (six studies); positive change in attitudes (five studies); no change in behavior (four studies); participant satisfaction (three studies) and improved clinical tests (two studies) and positive change in knowledge (one study).

Two studies investigated side effects, which were identified as outcomes not directly related to knowledge, behavior, attitudes or clinical studies concerning nutrition. Each of the side effects was reported once, in separate studies, and are: improved personal habits and attitude and community related behaviors.

Table 4.7

Specification and Frequency Distribution
of Outcome Variables by Study Number
n = 43

Outcome Variables	Frequency	Study Number
Intermediate:		
-No. of people shopping at a display and/or taking handouts	4	1,3,5,6,8
-Use of a service	2	7,42
-No. of listeners to a radio program	1	15
-Receipt of follow-up mail from consumers	5	29,39,5,7,41
-Other general feedback	4	2,6,7,17
Direct Outcomes:		
-No change in knowledge	2	10,11
-Positive change in knowledge	5	11,24,30,36,40
-No change in behavior	4	10,11,12,33
-Positive change in behavior	28	3,4,8,9,11,12, 13,14,18,19,21, 22,23,24,27,28, 30,32,33,34,36, 37,41,43,44,45, 46,40
-Positive change in attitude	4	8,37,38,40
-Participant Satisfaction	3	31,40,42
-Improved Clinical tests	2	23,34
Side Effects:		
-Improved personal habit and attitude	1	37
-Community related behaviors	1	33

Table 8 presents specific impact variables by frequency and study number. Three studies assessed impact variables: cost-effectiveness was investigated in two studies and policy changes were assessed by one study.

Table 4.8

Specification and Frequency Distribution of Impact Variables by Study Number
n = 3

Impact Variables	Frequency	Study Number
Cost effectiveness	2	12, 43
Policy Change	1	15

The techniques used in collecting evaluation results were analyzed by frequency of being reported, outcome variables and their results . Findings are presented in Tables 9 - 11. Table 9 presents techniques for assessing behavior and results. Six methods were used in assessing behavior. The most frequently reported assessment method were survey interviews, reported in 11 studies or 39.39% of studies assessing behavior. Informal reports were the second most frequently reported method for assessing behavior; eight studies (28.57%) used this method followed by six (21.43%) reporting record review, five (17.86%) self-administered questionnaires, four (14.29%) observation and three (10.71%) informal comments by participants. All but one study claimed some positive nutrition-related behavior changes.

Table 10 reports the techniques that were used to assess knowledge and their results. The method most frequently used to assess knowledge

Table 4.9

Techniques for Assessing Behavior Results
n = 28

Data Sources	Frequency		Number Claiming Some positive Behavior Change
	#	%	
Survey	11	39.29	10
Self-Administered Questionnaire	5	17.86	5
Observation	4	14.29	4
Record Review	6	21.43	6
Informal comments by participants	3	10.71	3
Informal reports	8	28.57	8
Totals	*37		*36

Adapted from Bertram and Brooks-Bertran (1977)

*Total exceeds n because more than one technique used in some studies. Percentages were based on 28 and therefore do not add up to 100%

outcomes were self administered questionnaires, reported in three studies (50%). Survey interviews were reported in two studies (33.33%) and record review was reported once (16.67%). All but one study claimed an increase in knowledge as an outcome of their intervention.

Table 4.10

Techniques for Assessing Knowledge and Results
n = 6

Technique	Frequency of Studies #	%	Number Claiming Increased Knowledge
Survey Interview	2	33.33	1
Self-Administered Questionnaire	3	50.00	3
Record Review	1	16.67	1
Totals	6		5

Adapted from Bertram and Brooks-Bertram (1977)

Table 11 displays the techniques used to assess attitudes (including satisfaction and their results. Of the four methods reported, the methods most frequently used to assess attitudes were self-administered questionnaires, and record reviews each reported in two studies. Survey interviews and informal reports were each used once. All of these studies reported positive attitudes.

Table 4.11

Techniques for Assessing Attitudes,
Including Satisfaction
n = 6

Technique	Number of Studies	Number Claiming Positive Attitude (including satisfaction)
Survey interview	1	1
Self administered questionnaire	2	2
Informal reports	1	1
Record Review	2	2
	6	6

Appendix D contains a detailed summary of the content of each study by study number, author and year of publication, program purpose, target population, educational approach used, length of program, program setting, instructor, sponsor, type of evaluation, and results.

Data Relating to the Quality of the Studies

The quality of studies was assessed by assigning a score to each study based upon whether or not several criteria factors were presented adequately and clearly. A score of one indicated that the factor was present but limited, inadequate or unclear; a score of two indicated that the factor was adequate and clear and a score of three indicated excellence. The factors which were scored were:

Evaluation Design:
- Type of design
- Purpose
- Evaluation questions
- Hypothesis
- Whether limitations of the design were discussed;

Measurement Instrument
- Instrument
- Pretest
- Reliability of Instrument
- Validity of Instrument
- Whether limitations in the instrument were discussed;

Statistical Analysis
- Descriptive Statistics
- Inferential Statistics
- Level of significance
- Whether limitations of the statistical analysis were discussed

Sampling
- Sample size
- Sample description
- Population description
- Sampling methods
- Response rate
- Whether limitation of the sampling method were discussed,

and

Literature Review.

An adequate and clear study had the possibility of obtaining a score of 46. Table 12 presents a frequency distribution of the scores assigned to the sample. The scores ranged from one to 32, with a mean of 10.09, modes of one and six, and median of nine. See Table 12.

Appendix E presents the summary listing of each study by each criterion category, criteria score and overall score. Table 13 displays each criterion category by range of scores and mean score. In the evaluation design category, the scores ranged from one to eight with a mean score of 2.67; the Measurement Instrument category had a mean of 1.48 and range of scores from zero to ten; the category of Statistical Analyses had a range of zero to ten and mean of 2.17; the Sampling category had a mean of 2.87 and range of one to ten, and the Literature Review category had a range of zero to two and mean of .87.

Table 4.12

Frequency Distribution of Quality of Study Scores

Scores	Frequency
1	6
3	5
4	6
5	1
6	2
7	2
9	3
10	2
11	3
12	2
13	1
15	2
16	2
17	1
18	2
20	2
21	1
22	1
24	1
32	1
	46

$\overline{X}$ = 9.28 m = 1, 4 M = 9

Table 4.13

Quality of Studies Criterion Categories by Ranges
in scores and Mean Score
n = 46

Criterion Category	Range in scores	$\bar{x}$
Evaluation Design	1 - 8	2.67
Measurement Instrument	0 - 10	1.48
Statistical Analysis	0 - 10	2.17
Sampling	0 - 10	2.87
Literature Review	0 - 2	.87

In order to elucidate why such a range in scores exist, the scores were analyzed by type of evaluation design. Table 14 presents a grouping of scores by type of evaluation design. Seven studies were conducted using a quasi-experimental design and 38 using a pre-experimental design. Only one true experimental design was reported. The mean, modeand median for the quasi-experimental groups were respectively: 8.68, 1 and 4, and 6; and the scores ranged from 1-32. The range of scores for the quasi-experimental designs were 11-22 with a mean of 16.38 and median of 16. No mode is reported, because each score occurred only once.

Table 4.14

Mean, Mode & Median & Range scores
by Type of Evaluation Design
n = 46

Type of Design	n	$\bar{x}$	m	M	Range
Pre experimental	38	8.68	1,4	6	1-32
Quasi-experimental	7	17.14		17	13-22
True experimental	1	10			

Because the range of scores overlapped and quality differences still not clear, the pre experimental scores were again

divided between those which used only case histories or informal reporting to those which used some type of systematic pre-experimental design, such as post test only, or one group pre and post test. Table 15 displays results of this analysis along with previously reported data from the quasi-experimental group, which is designated as Group C. Group B represents those pre-experimental studies using a systematic pre-experimental design; Group A is made up of the pre-experimental studies which did not use a systematic design.

The range of scores for the 25 Group A are 1-15, with a mean of 5.04, modes of one and four and median of four; the range of scores for the 13 Group B scores is three through thirty-two, with a mean of 15.69, modes of 10, 16, and 18 and median of 16. Group C consists of seven studies with mean of 17.14, Median of 17 and score ranges from 13-22,

By this breakdown, the extreme cases seem to be mostly in Group A, and Groups B (the systematic pre-experimental) and Group C (the quasi-experimental) designs yield very similar results.

Table 4.15

Mean, Mode & Median & Range of Scores
by Evaluation Design Groups
n = 46

Design Group	n	$\bar{x}$	m	M	Range
Group A	25	5.04	1,4	4	1-15
Group B	13	15.69	10,16,18	16	3-32
Group C	7	17.14		17	13-22

Data Relating to Synthesis of Outcomes

Each of the 43 studies of program outcome were analyzed with regard to the requirements for each data synthesis technique. Each

technique's assumptions and data requirements will be summarized along with appropriate use with this sample of studies.

The Cluster Approach (Light & Smith, 1971).

The cluster approach has the following requirements:

1. Access to original data of each study
2. Review of quality of studies. "The studies accepted for further analysis would be only those which meet the following three standards:
   a) All subjects in the study must have been selected from a known and precisely definable population.
   b) A study's dependent variable and those independent variables which are measured must be measured in the same way as, or in a way subject to a conversion into, those employed in the rest of the studies.
   c) Overall, the instrumention and quality of the experimental work must be generally comparable to that in all the rest of the studies."
3. Examples of appropriate research questions using the Cluster method.
   a) Of the specific approaches being analyzed, which offers the greatest improvement in (specific primary dependent outcome variable)?
   b) Is the relationship between pre and posttest score identical in all clusters?
   c) Are the variations in the differences between (two subsets of subjects, i.e. men-women; young-old) on a criterion variable from cluster to cluster associated with the type of program?

No published report provided access to original data and therefore this technique was inappropriatefor use with this set of studies.

Investigating Interactions - The Blocking Technique (Rosenthal, 1978).

The requirements for this technique are:

1. The procedure is appropriate for studies that compare the same two programs, but not necessarily on similar groups of subjects.
2. Data requirements for each study:
   a) mean
   b) sample size
   c) standard deviation
3. Moderate computational difficulty:

   "The 'blocking technique' involves comparing the outcomes by casting the results into an overall analysis of variance ANOVA, with studies regarded as a blocking variable...mean squares can be constructed and a two-way ANOVA (treatments by studies) can be performed...Studying the main effects of treatments from the ANOVA provide an average measure of their differential effectiveness" Pillimer & Light (1980) p.

Since no two studies compared the same two programs, the Blocking Technique was not appropriate for use on any of this set of studies.

Conducting a Combined Significance Test (Rosenthal, 1978).

The requirements of this technique are:

1. Computational simplicity:

   "Example for combining z scores "If two groups are compared in each study, there is a z score associated with each reported p value. The z's are added across studies, and their sum is divided by the square root of the number of studies that are combined. The probability value associated with the resulting overall score provides the level of significance for the combined statistical test." Pillimer & Light (1971) p.

2. No review of quality of potentially combined studies is recommended.
3. Requirements: for each study the following data is necessary
   a) sample size
   b) value of the test statistic (+, z, or F)
4. Studies must have tested the same directional hypothesis.
5. Example of an appropriate research question using the combined significance test method: What grand conclusion can be drawn concerning the comparability of two treatments?
6. Preferred conditions:
   a) the separate studies are independent, and
   b) random smaples were used in estimating group differences.

No studies used a z or F test statistic, but six studies reported the t test statistic. Of those, five reported a sample size, and only one of those specified a hypothesis. The Combined Significance Test is also not applicable to any groupings of the studies.

Computing an Average Effect Size (Glass, 1977).

The requirements for this technique are:

1. Low informational requirements:
   a) group means and
   b) control group standard deviations
2. Few formal assumptions
   a) "Mean scores should be used to characterize a data set only after studying the destribution of the data, to determine if the mean is in fact a good descriptor."
   b) "...when the distribution of outcomes is unusual, procedures that focus on variation may prove more useful."
   c) same type programs must be compared.

3. Example of an appropriate research question using the average effect size method:

On the average, is the specific broad type of program beneficial?

Four studies reported means and standard deviations. Only one study reported means and standard deviations for a comparison group, and the means and standard deviations were all for different variables: in one study mean caloric intake, cholesteral levels, weight and saturated and polyunsaturated fats levels were reported. In another study, mean scores on pre and post nutrition workshop test scores were reported. Another reported mean food energy, protein, calcium, Vitamin A and Thiamin levels of diets, and the final study reporting means concerned weight loss.

The Average Effect Size technique was also found not to be applicable to any combination of the studies in the sample.

Summary

In Chapter IV the sample of studies was analyzed using a classification instrument, which assessed content, quality and appropriateness for use in data synthesis. The most commonly reported purposes for the programs were general nutrition education, programs to improve nutrition knoweldge, behavior and/or attitudes. The most often reported instructors were paraprofessional aides and the target group most frequently identified were low income homemakers. Most of the studies evaluated outcomes of their programs, although many of these were for formative rather than summative purposes. Most studies of outcome reported positive outcomes.

Concerning the quality of studies, a wide range of quality was identified in evaluation design, measurement instruments, sampling,

statistical analysis and literature review. No true experimental designs were reported. The majority of studies were pre experimental and about 17% were quasi experimental studies. Two patterns emerged from the analysis: the studies reporting quasi experimental designs when considered as a group, reported the highest overall mean score, when compared to pre experimental studies which used systematic evaluation designs (which had an overall mean score almost as high as the quasi experimental group); pre experimental studies which did not use systematic evaluation designs had the lowest overall mean score, much below the comparative group means.

The studies were each reviewed according to the requirements for each of the selected data synthesis techniques and no studies were identified that satisfied the requirement for any of the synthesis techniques.

In Chapter V, a summary will be given, and each of the research questions for this project will be discussed and answered in light of the findings. Recommendations and conclusions along with further research needs will be presented.

CHAPTER V

Summary, Conclusions, Recommended Guidelines, Suggestions for Further Study and Reflections

> "Program evaluation is frequently thought of as a dry, arid, and fruitless endeavor extolled in theory, but ignored in practices. Under conditions of limited resources and limited requirements, the application of program evaluation is more than an opportunity - it is a necessity. Rather than a wasteland, it is one of the last main frontiers in public administration. Al Loeb.

In this chapter, a summary of the study, conclusions drawn from interpretations of the data, recommended guidelines for planning and evaluation of Health Promotion programs as suggested by the study are presented along with suggestions for further research concerning the use of classification and synthesis techniques and their potential contributions to the development of Health Promotion programs. Reflections concerning policy needs and influences concerning realization of national Health Promotion goals are discussed.

The purpose of this study was to test the applicability of data classification and synthesis techniques for use in planning and evaluating Health Promotion programs.

Specific research questions were developed related to the purpose of the study. A subset of one of the 15 identified Health Promotion priority areas was selected as the focus for the study: community nutrition education programs for non-patient, non-institutionalized adults in the U.S. A sample of studies for analysis was selected from journals

published in the U.S from 1960 through 1980. Studies were analyzed using an instrument which classified them according to program and evaluation content categories; the studies were also scored according to quality criteria. The studies were then screened for appropriate inclusion in selected data synthesis procedures.

Conclusions

In presenting the conclusions, reference will be made to the questions posed in the statement of purpose for the study.

1. What is the state of the art of program delivery and evaluation of community nutrition education for non-institutionalized, non-patient adults in the United States?

The state of the art is well identified by the results described in the previous chapter. Most studies were formative, most used pre experimental designs, and most reported positive changes in behavior. When examined from a quality of evaluation design standpoint, the studies for the most part lack scientific rigor, but from a descriptive programmatic sense, they are useful in developing a basis for understanding the methods that have been used to improve nutrition knowledge, behavior and attitudes and their results. It is readily apparent from the studies that nutrition education has been considered more of a service for low income people than as a Health Promotion strategy for the general public, and that the public health community has demonstrated less leadership for community nutrition education programs than other involved fields.

2. Are any of the existing meta-evaluation (secondary evaluation) methods or instruments appropriate for classification and assessment of public health studies for the purpose of planning programs and evaluation methodologies and screening for study data appropriate for inclusion in data synthesis?

Meta-evaluation techniques, checklists and review instruments developed by Bracht (1973) Bertram and Brooks Bertram (1976), Green and Figa-Talamanca (1974), Smith and Murry (1974), Sanders and Nafziger (1976), Stoke (1969, 1970), Stufflebeam (1971, 1974), Wandt (1974), Worthen (1973) and Worthen and Sanders (1973) were reviewed and none of them was able to classify both the content and quality of studies along the parameters of interest of this study. Many of the reviewed methods were intended for review based upon lengthy reports, documentation, and interaction with program evaluation staff. Most required more information than is generally available from a journal article and the focus of many were very decision oriented in relation to the context of specific programs. None examined all variables of content and quality as required for this study and none screened studies according to the assumptions and requirements of data synthesis techniques.

3. If existing methods or instruments are not appropriate, can an instrument be developed in a format than can be easily understood by, and useful to, those who plan, administer and evaluate Health Promotion programs?

Each of the checklists, standards sets, and guidelines that were reviewed and found to be inappropriate or incomplete helped to identify important factors that were included in a Classification Instrument, tailor made for this study. The review of instruments, checklists and guidelines helped to identify more clearly the purpose of the Instrument - to assess and classify the content and quality of intervention strategies, evaluation methods and results in order to identify comparable and compatible studies for data synthesis of programs' effects (outcomes) and to aggregate program experience concerning other important levels of program planning and evaluation (i.e. structure, process and impact). The developed Classification Instrument was useful for the

purpose of this study, but the usefulness to those who plan, evaluate and administer Health Promotion programs seemed limited in the format used for this study because no definitions or instructions were provided. Further development of the Classification Instrument will be discussed later in this chapter.

4. Are the selected data synthesis techniques appropriate for use with the samples of Health Promotion programs?

The assumptions and data requirements for each of the four data synthesis techniques were specified and the sample of studies was examined in light of these. It was found that no two studies in the sample satisfied the assumptions and data requirements of the synthesis techniques. Each technique's assumptions and data requirements will be summarized along with appropriate use with this sample of studies.

The Cluster Approach (Light & Smith, 1971)

The cluster approach has the following requirements:

1. Access to original data of each study
2. Review of quality of studies. "The studies accepted for further analysis would be only those which meet the following three standards:
   a) All subjects in the study must have been selected from a known and precisely definable population.
   b) A study's dependent variable and those independent variables which are measured must be measured in the same way as, or in a way subject to a conversion into, those employed in the rest of the studies.
   c) Overall, the instrumentation and quality of the experimental work must be generally comparable to that in all the rest of the studies."

3. Examples of appppropriate research questions using the Cluster method.

   a) Of the specific approaches being analyzed, which offers the greatest improvement in (specific primary dependent outcome variable)?

   b) Is the relationship between pre and posttest score identical in all clusters?

   c) Are the variations in the differences between (two subset of subjects, i.e. men-women; young-old) on a criterion variable from cluster to cluster associated with the type of program?

No published report provided access to original data and therefore this technique was inappropriate for use with this set of studies.

Investigating Interactions - The Blocking Technique (Rosenthal, 1978).

The requirements for this technique are:

1. The procedure is appropriate for studies that compare the same two programs, but not necessarily on similar groups of subjects.
2. Data requirements for each study:
   a) mean
   b) sample size
   c) standard deviation
3. Moderate computational difficulty:

   "The 'blocking technique' involves comparing the outcomes by casting the results into an overall analysis of variance ANOVA, with studies regarded as a blocking variable...mean squares can be constructed and a two-way ANOVA (treatments by studies) can be performed...Studying the main effects of treatments from the ANOVA provide an average measure of their differential effectiveness" Phillimer & Light (1980) p.

Since no two studies compared the same two programs, the Blocking Technique was not appropriate for use on any of this set of studies.

Conducting a Combined Significance Test (Rosenthal, 1978).

The requirements of this technique are:

1. Computational simplicity:

   "Example for combining z scores "If two groups are compared in each study, there is a z score associated with each reported p value. The z's are added across studies, and their sum is divided by the square root of the number of studies that are combined. The probability value associated with the resulting overall score provides the level of significance for the combined statistical test." Pillimer and Light (1971) p.

2. No review of quality of potentially combined studies is recommended.
3. Requirements: for each study the following data is necessary
   a) sample size
   b) value of the test statistic (+, z, of F)
4. Studies must have tested the same directional hypothesis.
5. Example of an appropriate research question using the combined significance test method: What grand conclusion can be drawn concerning the comparability of two treatments?
6. Preferred conditions:
   a) the separate studies are independent, and
   b) random samples were used in estimating group differences.

No studies used a z or F test statistic, but six studies reported the t test statistic. Of those, five reported a sample size, and only one of those specified a hypothesis. The Combined Significance Test is also not applicable to any groupings of the studies.

Computing an Average Effect Size (Glass, 1977).

The requirements for this technique are:

1. Low informational requirements:
   a) group means and
   b) control group standard deviations
2. Few formal assumptions
   a) "Mean scores should be used to characterize a data set only after studying the distribution of the data, to determine if the mean is in fact a good descriptor."
   b) "...when the distribution of outcomes is unusual, procedures that focus on variation may prove more useful."
   c) same type programs must be compared.
3. Example of an appropriate research question using the average effect size method:
   On the average, is the (specific broad type) of program beneficial?

Four studies reported means and standard deviations. Only one study reported means and standard deviations for a comparison group, and the means and standard deviations were all for different variables: in one study mean caloric intake, cholesteral levels, weight and saturated and polyunsaturated fats levels were reported. In another study, mean scores on pre and post nutrition workshop test scores were reported. Another reported mean food energy, protein, calcium, Vitamin A and Thiamin levels of diets, and the final study reporting means concerned weight loss.

The Average Effect Size technique was also found not to be applicable to any combination of the studies in the sample.

In order to synthesize outcomes several similar studies must exist and at this time studies of evaluation of outcomes of community nutrition education programs vary greatly by type of program, target population and outcome variable. Therefore, at this time, data synthesis techniques are not appropriate for the studies which represent the focus of this project.

Because of the scope and focus of this project, limitations must be placed on the generalizability of this conclusion. Data synthesis techniques, although not found appropriate for these selected studies, may be appropriate for use with other types of Health Promotion programs. Testing the applicability of the selected data synthesis techniques for this project, however, has led this researcher to view data synthesis techniques more cautiously than before having worked with them. A surface familiarity with the techniqeus from the writings of their creators and proponents had raised the expectations of this researcher that the techniques could prove to be very useful secondary data analysis techniques.

After going beyond surface familiarity and examining the underlying assumptions and requirements of the techniques, this researcher takes a very conservative viewpoint and suggests that their use be very cautiously considered. The two points that raise the most concern to this researcher are: the lack of review of and concern for the quality of studies that contribute data for the synthesis and the questionable mix of data concerning diverse outcomes.

If data from poorly conducted studies are used together with data from well designed and conducted studies to form synthetic estimates of program effects, the accuracy of those estimates surely seems questionable. This issue has been the focus of debate between Glass, Smith, Light and Pillimer who support data synthesis and critics such as Esyneck.

The second point, the mixing of scores from different kinds of outcome variables has also been debated. The proponents of the synthesis methods view the diversity as a favorable factor which can only further the understanding of program effects; the critics disagree. Again, the experience gained from this project led this researcher to join the side of the critics. Use of diverse measures seems to be inappropriate - an example of comparison of apples and oranges. Upon careful review, the authors have not provided to this researcher's satisfaction, a rationale for their position, and an attempt to implement their suggested use of diverse outcome measures for this study seems conceptually impossible.

5. Does the type of evaluation design effect the usefulness of the evaluation findings -- that is, do any systematic evaluation efforts, despite level of experimentation (i.e.. pre-experimental, quasi-experimental or thru experimental) generally yield useful results?

As reported in Chapter V, when the quality of studies scores were broken down by groupings of quasi-experimental, pre-experimental using a systematic design and pre-experimental using an unsystematic design, the quality scores for the quasi experimental group and systematic pre-experimental group were quite similar, with the unsystematic pre-experimental group having very dissimilar, lower scores. These findings seem to suggest that systematic evaluation efforts, despite level of experimentation, do yield useful results. Although there is a trend throughout the program evaluation field to try to make evaluations more "controlled" (i.e. encourage random assignment and other true experimental approaches), this researcher takes the view that given the limited state of the art in the in the documentation of various strategies and their effects (in the narrow field under study in this project) there is also a need to encourage systematic program evaluation at all levels.

If the goals of Health Promotion are to be achieved in their short time frame, rapid trials of new methods and materials will need to occur. For these newer untested and small scale studies, systematic pre-experimental designs could yield useful results. For programs that have been more fully developed and for which more evaluation resources are available, quasi and true experimental methods would be the preferred methods because of the fewer threats to internal and external validity they face as well as the stronger inferences that can be drawn from them.

6. Is there a minimum set of guidelines that can be suggested (based upon this research) for use in planning and evaluating Health Promotion programs?

Two general minimum guidelines have emerged from this study and are:

(1) "don't reinvent the wheel" - a great deal of research and program data currently exists upon which further program experimentation and development can be built. Programs should spend more time

and make investments in learning from the experiences of others and integrating these into their planning than now currently exists. (2) fit the evaluation and the program to the resources and milleu of each specific program.

Each of the two general guidelines will be discussed.

The first guideline - discovering and building upon what is known, brings this discussion back to research question three which concerned the feasibility of a Classification Instrument for assessing the content, results and quality of studies. The usefulness of the Classification Instrument developed for this project combined with the identified limitations of the selected data synthesis techniques lead this researcher to further develop the classification idea to a form which suggests to have potential as a tool for planning Health Promotion Programs and their appropriate evaluations as well as helping to further the understanding of Health Promotion as a multi-strategy, multi-focus and interdisciplinary entity.

While abstracting the sample of studies for this project using the Classification Instrument it became readily apparent that the Instrument was providing data that was dynamic in form. Data synthesis techniques yield only figures and (aside from the previously discussed questionable estimates represented by the figures) those figures represent program effects based on a given set of studies, that can be combined in only one way. As more studies become available, the figures have to be recalculated. Data synthesis techniques are static, one dimensional techniques.

Systematic classification of studies, however, could provide a dynamic, multi-dimensional data system. Once a study is classified according to numerous categories those can be combined in many ways with other

studies many times over.

As new studies are added to a classification system, the previously stored studies could interact with the new data in an additive way, since the classification method does not synthesize by reducing each study to a numerical component of a statistical technique, but rather would aggregate studies according to multiple classification categories.

To further develop the ideas about data classification, discussions were held with health promotion, evaluation research and computer specialists. Further literature was reviewed and a decision was made to develop a "Classification Manual for Planning Health Promotion Programs and Evaluations." The manual was styled after the Patient Classification Manual (1972) edited by Jones and a result of team research efforts from faculty of four Universities including the M.S.U. College of Human Medicine.

Having previously participated in research using the Patient Classification Manual, this researcher viewed the style of the Manual to be appropriate for the purpose and prospective audience of a Health Promotion Classification System. The manual is attached in Appendix F..

The Health Promotion Classification Manual is an attempt to develop a methodology for classifying, according to multiple categories, the content, methods and quality and results of studies of Health Promotion/ Risk Reduction so that this data can be retrieved and used in developing health promotion programs based upon existing evaluation research findings. The Manual offers program planners, administrators, evaluators and practioners a standardized, and inexpensive methodology for organizing and retrieving information on programs via a variety of multiple categories. That is, if the planner of a smoking cessation program wishes to review program experience to aid in developing

her/his program, this could be done using the Manual in a number of ways:

1. by review of literature in the thematic area (smoking cessation);
2. by review of various program strategies that have been used with the intended target audience, from a variety of thematic areas; or
3. by review of evaluation designs that have been used from a variety of thematic areas and/or program strategies.

Each type of review could be quickly and easily accessed using the Manual.

The Manual is not an annotated bibliography; it does not contain summaries of studies from various thematic areas. Instead, it provides a framework -- a system -- for coding the content, methods, results and quality of programs (from journal articles, final reports, etc.). The Manual could enable practitioners to extract, code and make available for organized and easy access, information from studies that Health Promotion specialists routinely read in professional journals. No statistical ability is required by the Manual user. The Manual could be used via computer retrieval, or hand sorted using McBee data cards or standard index cards. Like any retrieval system, it will only be able to "give out" data from that which has been fed in. The more studies classified and stored, the more useful this multiple category retreival system will be. Recause the Manual defines and uses standard terminology, a large "data bank" could be established through a cooperative effort of several programs sharing coded studies that they classify as a result of ongoing literature reading and review.

In order to test out the clarity and potential usefulness of the Manual, it was submitted for review to three health professionals active

in Health Promotion programs. Each reviewer was mailed a letter of request and explanation and a questionnaire (which appear in Appendix G) along with a copy of the Manual. Two of the reviewers have M.P.H. degrees, one being an administrator and the other a program planner. The other has a B.A. degree and 20 years experience as a health educator. Each reviewer provided positive indications that a Classification Manual and system could be very useful to the Health Promotion field and only minor changes were suggested for clarifying the manual. Two reviewers suggested that the work involved in building up the data bank may be problematic for some users, considering time and other constraints on programs. One reviewer suggested that the "system" might most usefully be implemented in a university research setting. This researcher is encouraged by the response of the reviewers, and believes that it is the most significant outcome of this study.

To illustrate the usefulness of the Manual, it seems useful at this point to return to the scenario presented in Chapter One.

Assume that you are the person responsible for developing a Health Promotion program for adults. You want to develop the best program possible.

> You are committed to Health Promotion, which has been well described by Divore and Krueter (1980) as:
>
> > The process of advocating health in order to enhance the probability that personal (individual, family and community), private (professional and business), and public (federal, state and local government) support of positive health practice will become a societal norm. The process of advocating health may be conducted by a variety of modalities, including but not limited, health education.
>
> You understand the extent of need for program delivery if the wellness-goals (as identified by the 1979 Surgeon General) are to be achieved by 1990. (See Figure 1 for identification of the priority area.)

You agree with Turner for the need to understand the conceptual characteristics of a field; and that questions concerning appropriate research foundations for Health Promotion programs are contingent upon a determination of the parameters of the field of Health Promotion.

You recognize as Lauzon (1977) has stated that "Effective health promotion programs for the future must be founded upon sound principles which recognize the multiplicative dynamics of health behavior." and you accept the "Epidemiologic Approach to Health Promotion" proposed by Lauzon as an appropriate schemata for this field.

You recognize that in addition to the Lauzon model identification of target groups and activities, you can further contribute to development of successful Health Promotion programs for your target group (adults) by incorporating into your planning the information concerning adult learning theories and research findings. Because almost all host (or adult-targeted) Health Promotion strategies can be considered as non formal education, you also want to incorporate into your planning, experience from the fields of non-formal education.

Because the literature concerning Health Promotion and related fields is so inclusive, you are faced with the enormous task of pulling together the most successful strategies from many thematic and program fields.

You are not a researcher, but rather a practitioner, and you do not have vast technical research skills.

The person in this senario will in all liklihood find that she/he is severely handicapped in meeting her/his responsibilities for developing Health Promotion programs. In fact, without a systematic approach for analysis, classification and synthesis, she/he will probably find reported results from the literature to be equivocal. Consequently, the usefulness of the review in program planning efforts will be limited. Just asa model or schema is required to understand the components and conceptual characteristics of Health Promotion, so too there is a need for a method by which previously conducted research about each component

can be extracted, analyzed, classified and synthesized to contribute "to a data bank" to further clarification of the Health Promotion knowledge base.

It may be unrealistic to expect that the person in the scenario could collect, classify and set up a data bank system, but the person could certainly make use of such a system if it were available at a Health Systems Agency or regional University or a National Clearing House. If theses options were not made available a person might have to capability to set up a cooperative data bank with other similar programs using selected classification variables from the manual. A minimum basic data set could be agreed upon by the group and studies could be classified by only these variables.

Using all or parts of the manual to classify previous evaluation studies by their content, methods, quality and results by whatever means and on limited or large scale seems to be an option that would improve the state of the art.

As further research beyond this dissertation plans are underway to make minor revisions to the manual according to reviewer suggestions and to try to obtain sponsorship for further development of the manual, namely: to conduct an inter-rater reliability test, and to build up a minimum data bank and to test the usefulness in selected Health Promotion programs, and to test out alternative sponsorship for a cooperative "data bank" which could result from use of the Manual. It may be that the most efficient way to encourage use of the proposed system would be through "data banks" accessible through "Regional Health Eeucation Centers" which are sponsored in part by Health Systems Agencies (HSA's) throughout the country.

The second general guideline for Health Promotion practitioners that emerges from this dissertation concerns fitting the evaluation design to the resources and milleu of the program.

One of the studies in the sample for this project was written by the respected researcher Virginia Li Wang (1977). For this particular study Wang used a post test only design and as a rationale (almost an apology) for this design, she stated: "In the real world of programs, evaluation may have to accept certain limitations if it is to take place at all (p. 109). Many of the studies in the sample could not have been conducted if higher level experimental standards had been imposed upon them, Since the findings of most of these studies are useful, program planners and evaluators must be cautious to never to fail to conduct a systematic evaluation because a true experiment is not possible. They should be equally as cautious, however, never to try to conduct a design that exceeds their resources, conditions or abilities.

The following more specific guidelines are based in part upon gleanings from this project combined with program evaluation experience of this researcher, and are based on the belief that the key elements to a successful program evaluation are negotiated planning, communication, documentation and utilization.

a) Careful planning by an interdisciplinary team about design is necessary. A design must be negotiated. The most rigorous design that can be carried out by available staff, staff abilities and resources should be agreed upon. A true experimental design with planned high level statistical analysis does not provide useful data if it is not correctly carried out. A design should be explicitly spelled out and agreed upon only if it can actually be implemented. A lower level design may be more useful to a program given its resources.

b) Continuous communication among members of the interdisciplinary planning team must be maintained. The evaluator,

administrator and planner and practitioners must continue to be informed about the progression of the evaluation.

c) The process of the evaluation should be documented by all involved parties in order to document any deviations from the original design, as "red flags" for emerging problems and to provide a record for replication of the design.

d) If the above three points are achieved, they will hopefully enable utilization of results. If evaluation results are not used then they are meaningless.

The two general guidelines that have been discussed as emerging from this dissertation can be summarized as follows: first, relevant past program experience should be reviewed by Health Promotion professionals in order to plan more efficiently both their programs and the evaluation of those programs; and secondly, whatever is found in the literature will have to be tailor made to some extent to accomodate each particular program.

Suggestions for Further Study

Further testing of data synthesis techniques is suggested to determine if they can be useful in the development of thematic areas of Health Promotion other than that selected for this study. Another area for further study suggested by this project is comparative analysis of the usefulness of results of data synthesis techniques as compared with results of other methods of aggregating findings, such as the Classification Manual.

Further study concerning the Classification Manual is also indicated, and as previously stated, the specific research needs are: a study of interrater reliability of the Manual; development of a small "data

bank" resulting from the Manual; pilot testing the usefulness of the "data bank" by selected programs; and testing out the Manual system in alternative settings, such as individual agencies and Regional Health Education Resource Centers.

Reflections

This dissertation research could not have been conducted without a conviction by the researcher that Health Promotion is possible and necessary for the nation's health. It is believed that the 1990 Health Promotion goals are realistic given appropriate leadership and support from health professionals all over the country and from the federal government. And there in lies the threat to the forward movement of Health Promotion.

The national strategy and goals for health promotion were developed under the Carter Administration. In 1979, in an article entitled "Nutrition in the Humphrey Tradition" Bray gave "...an authoritative attention and emphasis at DHEW." (p. 116) These included a national Nutrition Coordinating Committee, new national leadership for nutrition education, including development of an inventory of nutrition education materials programs, mandated improved FDA and nutrition labeling, increased national nutritional status monitoring, review of dietary guidelines and a commitment to improve international nutrition. Bray concluded his paper by commenting

> "We would welcome your help now and in the future as we attempt to make our programs in nutrition education and information more effective, more available, and more responsive to the needs of the American people. Nutrition in the Humphrey tradition is alive and well in DHEW." (p. 121)

Unfortunately, the Humphrey tradition is not alive and well in the Reagan Administration and the Health Promotion goals for 1990 may now be

an anathema Even without considering the change to conservative political leadership, the movement towards Health Promotion -- promoting healthy lifestyles -- has faced difficulty in the United States. A comparison with Norway highlights the source of some of these difficulties.

In 1975 Norway developed plans for a comprehensive national food and nutritional policy. Winikoff (1977) has compared the Norwegian approach to that of the U.S. She has stated that the Norwegian proposal merits being called a "milestone" because

> "...of its comprehensive nature and because, although advocacy of a nutritional policy has a long history, the development of such a policy by government is relatively rare. In fact, in relation to the United States' efforts in this same area, there are at least three reasons why this document is remarkable:
> 1. The goals of the proposed nutrition and food policy are based on scientific understandings of nutrition/health relationships. Real numbers, based on nutritional knowledge, are the foundation of the proposal. This is a document which does not rely only on humanitarianism, morality, or pious hopes for the future.
> 2. The stated goals themselves are desired end points against which policy must be measured. These goals take primacy over the institutional or functional arrangements of government structure designed to deal with nutrition.
> 3. The national government takes itself seriously as an institution for setting overall policy directions. The government's responsibility is first to the wellbeing of its own citizens, and as far as possible, in congruence with the aspirations and needs of other citizens of the world." (p. 552)

Winikoff concludes her discussion by a comparison of Norway and the United States:

> "...the nutritional goals of the two nations are not so different and neither are the problems of diet. Norway has taken the first step in doing what the United States has often said it would like to do: attend to the nutritional and health needs of its citizens in congruence with international, national, and regional development goals, in a rational, organized and well

> structured way. The United States, with more concerted attention to the problem, could also follow along this general path. The struggle might be harder, but the rewards might be greater. At least, let us not say "It can't happen here" until we have tried." (p. 557)

Since Winikoff made these statements the U.S. national Health Promotion Strategy has been defined and goals established. Informed individuals can now not challenge the link between life style and health status and risks. The challenges are whether recognition of the relationships and federal support in combination will be strong enough forces to lead to lifestyle changes.

> And so the question remains: What are the prospects for the future in health promotion? It seems that health promotion is indeed an idea whose time has come. The time is right, the soil is fertile. But there are large unmet needs. Solutions must be found to existing manpower needs. There must be an expanded prevention knowledge base, including improved data collection and cost-benefit analyses. Research priorities must shift to provide increased emphasis on disease prevention research. Professional schools must place increased emphasis on teaching disease prevention. Financial incentives must be utilized to accomplish necessary preventionoreinted projects and programs. The federal government must provide leadership and coordination. The private sector must participate in a meaningful manner in the initiation and implementation of health promotion programs. Linkages must be established that will enhance the success of health promotion programs in all sectors of society.
>
> Despite these and other unmet needs, in my opinion the prospects for the future will be bright if those of us who are preventive medicine practitioners take the lead in identifying and implementing initiatives that will meet these needs. Certainly it will not be easy. As Machiavelli, that sage observer of humanity, once said, "There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things"
>
> Duane Block, 1980 (p.12)

Data classification and cautiously conducted data synthesis of evaluation research findings are promising initiatives that have potential for enhancing the success of health promotion programs in increasing positive health behavior among Americans.

APPENDIX A

APPENDIX A

Specific Nutrition Objectives for 1990 or earlier in the U.S.

Improved Health Stutus:

1. Improvement in nutrition may yield reduced rates of infant mortality, cardiovascular disease, dental carries and possibly some cancers.

2. Reduction by 50% of pregnant women with iron deficiency anemia.

3. Elimination of growth retardation of infants and children caused by inadequate diets.

Reduced Risk Factors:

1. The prevalence of significant overweight among adults should be decreased to 10% of men and 17% of women, without nutritional impairment.

2. 50% of the overweight population should have adopted weight loss regimens, combining an appropriate balance of diet and physical activity.

3. The mean serum cholesterol level of adults aged 18 - 74 should be at or below 200 mg/dl.

4. The mean serum cholesterol level in children aged 1 to 14 should be at or below 15 mg/dl.

5. The average daily sodium ingestion by adults should be reduced from 1 to 4 grams.

6. The proportion of women who breastfeed their babies at hospital discharge should be increased to 75% and to 35% at six months of age.

Increased Public/Professional Awareness:

1. The proportion of the population which is able to identify the principal dietary factors known or strongly suspected to be related to disease should exceed 75% for each of the following diseases: heart disease, high blood pressure, dental carries and cancer.

APPENDIX A (continued)

2. 70% of adults should be able to identify the major foods which are: low in fat content, low in sodium content, high in calories, good sources of fiber.

3. 90% of adults should understand that to lose weight people must either consume foods that contain fewer calories or increase physical activity--or both.

Improved Services/Protection:

1. The labels of all packaged foods should contain useful calorie and nutrient information to enable consumers to select diets that promote and protect good health. Similar information should be displayed where nonpackaged foods are obtained or purchased.

2. Sodium levels in processed food should be reduced by 20% from present levels.

3. The proportion of employees and school cafeteria managers who are aware of, and actively promote USDA/DHHS dietary guidelines should be greater than 50%.

4. All states should include nutrition education as part of required comprehensive school health education at elementary and secondary levels.

5. Virtually all routine health contacts with health professionals should include some element of nutrition education and nutrition counseling.

Improved Surveillance/Evaluation System:

1. A comprehensive National nutrition status monitoring system should have the capability for detecting nutritional problems in special population groups, as well as for obtaining baseline data for decisions on National nutrition policies.

Note: Promoting Health/Preventing Disease: Objectives for the Nation, U.S. Department of Health and Human Services, Public Health Service, Fall 1980, 75-76.

APPENDIX B

APPENDIX B

Categories a: _____ b: _____ Abstract No._____

Overall Score: _____

SCREENING/CLASSIFICATION INSTRUMENT

Authors:

Title:

Journal:

Purpose of Program :

Target Population:

Educational Approach Used:

Sub-Scores

(___) Literature Review: _____ Number of References Cited: _____

(___) Purpose of Evaluation: _____ Formative _____ Summative
Comments:

(___) Evaluation Questions: _____ Yes _____ No Hypotheses: _____ Yes _____ No

( ) Variables: Independent: ( )

(___) Measurement:

Dependent:						
Categories of variables	Dependent variables	Method(s) of Assessment	Instrument(s)	Reported Instrument		
				Pretest	Reliability	Validity
	( )	( )	( )	( )	( )	( )

Appropriateness of Instruments:(___) Quality of Instruments:(___)

(___) Evaluation Design:

	Specific Design	Design Limitations Discussed:	
___ Pre-experimental:	_____	___ Yes ___ No	( ) Subscores
___ Quasi-experimental:	_____	___ Yes ___ No	( )
___ True-experimental:	_____	___ Yes ___ No	( )

Appropriateness of Design:(___) Quality of Design:(___)

(___) Sampling:

Discussed in article:	Yes	No	Specifics:	Subscores
Sample size:	___	___	_____	( )
Sample description:	___	___	_____	( )
Population description	___	___	_____	( )
Sampling Method:	___	___	_____	( )
Response Rate:				( )

Appropriateness of Sampling Method:(___) Quality of Sampling Method:(___)

(___) Statistical Analysis:

Inferential Statistics:___ Yes ___ No Descriptive Statis.:___ Yes ___ No
Test(s) Performed: _____
Level(s) of Significance: _____ _____ Not Specified
Limitation(s) of method(s) of analysis discussed: ___ Yes ___ No ( )
Appropriateness of Sataistical Analysis:(__)
Quality of Statistical Analysis:(___)

Overall Reported Results:

(___) Effects:

Short Term				Long Term			
Variables	Direction Effects	Type Measurement	Interval	Variables	Direction Effects	Type Measurement	Interval

_____ Not Applicable

APPENDIX C

APPENDIX C

Bibliography of Potential Data Set and Disposition Relative to Inclusion in Study and Reasons for Non-Inclusion

	Potential Subject Listing (Articles)	Disposition & Reason
1	Abbey, D. E. and Godge, H. F. Nutrition Ideas in the supermarket. Journal of Nutrition Education, 8(3):129-130, July-Sept. 1976.	In study
2	Armstrong, J. Nutrition awareness in the supermarket. Nutrition News 35:2 (6) 1972.	
	Barton, A. F.I.T. for action in nutrition. Nutrition News 36:3 (1) 1973.	N/A Program description only
3	Bell, M. Reaching Mexican-American homemakers. Nutrition News 32:4 (14) 1969.	In study
	Benzley, J. Selling nutrition in Salt Lake City. Journal of Home Economics, 64 (6): 28-29, 1972.	N/A Subjects children
	Boylon, B. Volunteers and education = better health. Nutrition News 35:11 (2) 1972.	N/A Program description only
4	Bradsher, M.S., Extension education and food programs = better living. Extension Service Review, 37 (7): 6-7, 1966.	In study
5	Brent, C. TV commercials can teach nutrition. Journal of Home Economics, (21-23) March 1974.	In study
6	Bufton, K.R., "Ask Kathy": an experiment in nutrition education. Extension Service Review, 40 (6): 12-13, 1969.	In study
7	Burtis, A. Nutrition education in the supermarket. Nutrition News, 33:4 (16) 1970.	In study

	Carruth, B.R. and Force, S.B., Cartoon approach to nutrition education. Journal of Nutrition Education, 3: 57-59, 1971.	N/A Subjects high school students
	Chamberlain, V.M., Oops! We'd better go shopping. What's New in Home Economics, 33 (8): 83-85, 1969.	N/A Subjects high school students
8	Cobb, J.L. Traveling nutrition clinic. Nutrition News, 33:3 (13) 1970.	In study
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	Cordaro, J.B., A curriculum for the nutrition programmer. American Journal of Clinical Nutrition, 24:1352-3, November 1971.	N/A Professional education
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	Echols, I.J., Comparative group approaches. Journal of American Dietetic Assoc., 59:460-65, 1971.	N/A Theoretical
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	Gross, L.P. Can we influence behavior to promote good nutrition? Bulletin of New York Academy of Medicine, 47:613-23, June 1971.	N/A Essay
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	Harden, M. and Lamb, M.W., Bioassay - tool for conceptual learning. Journal of Nutritional Education, 1(4):13-15, 1970.	N/A Subject University students Animal research
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	Hughes, M. Nutrition education, Can it work? Health Values, 2(3):119-123, May/June 1978.	N/A Discussion only
19	Huiatt, A. and Hockin, B.L. Nutrition programs for senior citizens. Journal of Home Economics, 63:683-4, 1971.	In study
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	Johnson, O.C. Nutrition education - what is the goal? Nutrition Review, 23:353-56, 1965.	N/A Professional education
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	Kragt, D. Volunteers in nutrition education, Journal of Nutrition Education, 2:110-111, 1971.	N/A Subjects children
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APPENDIX D

Appendix D

Study No.	Author Year	Purpose of Program	Target Population	Educational Approach Used	Length of Program	Setting	Instruction	Sponsor	Type of Evaluation	Method of Evaluation	Results
1	Abbey & George (1976)	To assess relative effectiveness of attracting people to ed. booth	Food shoppers - 1 store	Ed booth, personal interaction & AV	1 month (1 shot)	Supermarket	Nutr.	NI	Summative	Observation - -No. of people stopping -No. of handouts taken	Highest % of people stopped to take handout when AV equip. but no person in booth
2	Armstrong (1972)	- Nutrition awareness - Planning, shopping for & preparing nutritious meals & appropriate caloric intake	Food shoppers - 1 chain of stores	Media Ads, Instore Ads, Brochures, community group mtgs, in store booth	2 years, 4 weeks each year	Supermarket chain stores	Nutr.	Supermarket chain	Summative	Unsolicited consumer feed-	"Consumers appreciation"
3	Bell (1969)	"Teaching foods & nutrition"	Low income Mexican American homemakers with children	Group instruction (classes)	NI	NI	EFNEP aides	CES	Formative	Survey pre & post test	"42% declared that they had learned something that caused them to face their family differently
4	Bradsher (1966)	To teach "better nutrition & food service using donated food & food stamps."	Families use; donated food & food stamps	Classes, brochures, ed. displays, recipes, radio broadcasts & home visits	NI	Various	Nutri. aides	CES & OEO	Summative	Informal consumer feedback & records (change in # of families on food stamps & requests for food commodities	Increased use of donated foods
5	Brent (1974)	Bring nutrition education to "elusive audience"	Low education, urban & rural low income minorities	Television Public Service Announcements	NI	Homes & anywhere TV's watched	N/A	CES	Summative	Requests for "food guides"	"TV can be a two-way communication medium"

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Study No.	Author Year	Purpose of Program	Target Population	Educational Approach Used	Length of Program	Setting	Instruction	Sponsor	Type of Evaluation	Method of Evaluation	Results
6	Bufton (1969)	Provide general nutrition information	Low income urban food shoppers	Info. booth, bulletins with recipes & nutrition information	6 weeks (1 shot)	Inner city Supermarkets	Extension home economist	CES	Formative	Informal customer feedback & use of resources	Positive public response, Useful information input for planning new consumer info. services
7	Burtis (1970)	Provide general nutrition information	Co-op food shoppers	Ed. desk, demonstrations in test kitchens, tours, community talks, newsletter, flyers	Ongoing for 14 years	Co-op supermarket	Home economist	Co-op supermarket	Formative	Letters from suggestion box, informal personal comments & extent of use of services	considered a worthwhile financial investment by store operators
8	Cobb (1970)	Inform resistents about availability of food stamp program & "nutrition counseling...supplementary objective"	Low income families	Team presentations via display tables, brochures, leaflets & personal interaction	NI (one shot)	Central locations in housing projects	Home economist & dietician or nutritionist & Ag representative	DSS & Dept. of Agric. (FNS)	Formative	Informal reports Records use of food stamps	increase interest in food stamp participation increase food stamp participation
9	Cook (1969)	Nutrition education & "working on problems not directly related to food & nutrition	Homemakers of hard to reach, low income families with children	one to one instruction, group meetings using demonstrations, handouts, exhibits	NI	Homes & community meeting places	EFNEP aides	CES	Formative	Informal reports of homemakers food bills, collection & use of commodity food & supermarket reports of some food purchase	Homemakers reporting smaller food bills, more collection & use of food commodity purchase, more of selected nutritous foods
10	Fitzgibbon & Garcia (1977)	Nutrition ed. "...to encourage older people to improve the nutrient quality of their diets thru appro. food sources	Independently living senior citizens	TV public service announcements	6 weeks	Homes & anywhere TV watched	N/A	University	Summative	Pre & post interviews (including 24 hr. food recall	Elderly reported fair recall of PSA's but no effect on knowledge & no measureable effect on eating behavior

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Study No.	Author Year	Purpose of Program	Target Population	Educational Approach Used	Length of Program	Setting	Instruction	Sponsor	Type of Evaluation	Method of Evaluation	Results
11	Gassie & Jones (1972)	Improve nutrition knowledge, & behavior	Low income homemakers with children	Individual one to one education w/ demonstrations & practice by learners	8 weeks	Homes	EFNEP Aides	CES	Formative	Pre & post test interviews	Some positive changes in knowledge & behavior mixed results
12	Green, Wang & Ephross (1974)	"What is the point of "diminishing returns in cost effectiveness of home visits as an ed. method."	How income homemakers with children	Individual one to one education w/ demonstration & practice by learners	3 years	Homes	EFNEP aides	CES	Summative	Pre & post test surveys	"...the input of the aide on homemakers improvement diminishes after 1st yr of contact, continuing home visits w/ same homemakers in 3rd yr are of minimal value"
13	Groves (1972)	-learn to eat good food for better health -know more about community agencies & how to use them -satisfaction by participants	Low income people	Displaying demonstrations, food sale & samples	1 day	Community center	Various agencies professionals EFNED aides & homemaker volunteers	CES & 12 other agencies	Summative	Informal reports	Increases in use of supplemental food program & other agency services
14	Gustafson (1969)	Nutritious food buying & use of food stamps	Low income families	Demonstrations	NI	Homes	Trained homemakers	Inter-agency Nutrition Ed. committee	Formative	Informal reports	Reported increase in use of some foods, helped to develop EFNEP
15	Henderson (1973)	To provide "scientifically sound nutrition advice to meet the health needs of the public."	General public	Radio public service announcements	6 months	Anywhere there's a radio	Dietician via recording	Dietetic Assoc.	Formative	Informal -gen	Listener response increasing, Impact on station - an offensive food fad program is off the air

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Study No.	Author Year	Purpose of Program	Target Population	Educational Approach Used	Length of Program	Setting	Instruction	Sponsor	Type of Evaluation	Method of Evaluation	Results
16	Herrick (1970)	Alter diets in accordance with the principles of a low saturated fat, low cholesteral diet	General public	4 methods 1) self instruction booklets 2) 1 & group classes 2) 1 & 2 & behavior training techniques	1 year per session (on going)	NI	Dietician	Nat'l Heart & Blood Vessel Research & Demonstration Center	Formative	Pre & Post test questionnaire	Mixed concepts & program reorganized based on findings
17	Hinkle (1966)	-combat food & misinformation with facts -increase awareness & understanding of foods & nutrition -encourage continuing ed.	General public	Exhibit	ongoing	Museum	Self-instruction	Dietetic Assoc.	Formative	Informal unsolicited consumer comments	"unsolicited comments would serve to indicate the realization of goals
18	Holmes (1972)	-Provide ed. about nutrition, food buying & preparation (economically - regard cooking & eating as worth while activities	Independently living Senior Citizens	Multiple: -lectures -fliers, -committee -menu -planning -discussion	ongoing	Community center	Nutritionist	Community center	Formative	Informal comments & observations & pre & post test interviews	Eating habits improved as did "Character of their total diet", most success methous process oriented - not lecture for elderly groups
19	Huiatt (1971)	Improve nutrition by "involvement in a co-ordinated program of nutrition, sociability & activities	Senior Citizens	Informal discussions recipes, food samples & demonstrations	3 years	Community	Home economist	Inter-agency sponsorship	Formative	Informal comments by participants	positive reactions -anecdotal remarks

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Study No.	Author Year	Purpose of Program	Target Population	Educational Approach Used	Length of Program	Setting	Instruction	Sponsor	Type of Evaluation	Method of Evaluation	Results
20	Jansen (1977)	Provide nutrition ed using a nutrient approach (a meal evaluation system)	General public divided by those with high school ed & those with high school ed	3 variations of slide tape programs & use of a Food Guide & nutrition planner device (workshop)	2 workshops	University centers	Home economist	CES	Formative	Self-administered questionnaire	A more complicated concept to teach than food groups, but possible w/ less than a high school ed.
21	Kelly (1979)	Provide nutrition ed, weight control & related health ed as secondary goal	Officers of urban police dept.	Group lectures, optional assignments & handouts	12 weeks	Hospital lecture hall	"Appropriate health professional	Police Dept.	Summative	Pre, post & 1 yr. post self-recorded measures, & post test survey	Wt. loss, reported benefits of diet & nutrition info & health ed. info.
22	Larson, Massoth & Chase (1974)	"...improving the nutritional status of the target pop. through nutrition ed. & increased enroll. in food assistance programs..."	Low income Mexican Am. farm workers homemakers	One to one instruction & demonstrations & tasting parties	2 summers	Home & supermarkets	Nutrition Aide	Migrant Nutrition Ed. Program	Summative	Informal observations & reports	More produce buying "...subjective evaluation suggests other methods met with some success."
23	Maccoby, Farquar, Wood & Alexander (1977)	To increase participants knowledge of risk factors for cardiovascular disease	Adults 35-59	Multiple -Multi media risk reduction programs -behavior mod intensive instruction & multi media	2 years	3 communities TV, radio newspaper columns & ads & community centers	Health professionals	University	Summative	Survey of Knowledge & behavior at pre & 2 post tests & clinical tests	"...mass media risk-reduction programs ...can help people to learn how to learn how to change their behavior so as to reduce their risk of cardio vascular disease... intensive instruction to supplement the mass media proved to be especially successful."

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Study No.	Author Year	Purpose of Program	Target Population	Educational Approach Used	Length of Program	Setting	Instruction	Sponsor	Type of Evaluation	Method of Evaluation	Results
24	Medvid (1966)	-To improve meal planning and determine homemaker acceptance of short televised nutrition programs	CES invited homemakers	Short nutrition information TV programs	NI	Anywhere a TV	N/A	CES	Formative	Self-administered pre & post tests	Significant increase in nutrition knowledge improved meal planning
25	Mortvedt (1975)	To determine how similar to homemakers EFNEP aids should be	Low income homemakers & EFNEP aides	N/A	N/A	N/A	N/A	CES	Formative	Survey (1 time)	Confirm need to recruit EFNEP aides who are similar in income & social participation to homemakers & have pos. self attitudes
26	Murphy (1980)	Improve nutrition knowledge & behavior	Low income "disadvantaged hard to reach homemakers	Individualized one to one instruction	6 mo - 2 years	Homes	EFNEP aides	CES	Formative	Observation questionnaires	"trend towards improved performance of nutrition, related practices"
27	Napier (1968)	Improve nutrition knowledge, food buying & preparation of surplus commodities	Low income homemakers	Small group instruction & demonstration	NI	Homes	Nutrition aides	CES	Summative	Informal reports	Improved use of commodity foods & nutritious food buying & preparation
28	Oliver (1967)	"Develop & test methods & materials for reaching & teaching young homemakers" nutrition education	Low income, young homemakers in rural areas	Individual & group sessions, demonstrations	3 years ongoing	Homes	Nutrition Aides	CES	Formative	Aide "log" reports	40% improved food buying practices 44% improved food preparation skills 42% improved family eating habits. making better use of donated foods many home management improvements

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Study No.	Author Year	Purpose of Program	Target Population	Educational Approach Used	Length of Program	Setting	Instruction	Sponsor	Type of Evaluation	Method of Evaluation	Results
29	Perry (1972)	"Create a climate of aroused public concern" about nutrition	General public	a) Exhibits, slides, interaction w/ many health & nutrition professionals, Food games & b) Dial-a-dietician	a) one day	Hospital	Various health & dietician professionals	Hospital	Formative	Self-questionnaire mailed to participants	Requests for more information
						Phone	Dietician	Hospital	Formative	N/I	b)Reports of benefit to community (7 specifies)
					b) on going						
30	Podell (1975)	To improve nutrition knowledge attitudes & behavior to reduce risk to chronic disease	General public	Public seminar (speakers & pamphlets	3 sessions	Hospital	Expert guest speakers	Hospital Auxilary	Summative	Pre & Post self-administered questionnaires	Useful approach w/ well informed & motivated audience
31	Prichard and Hall (1971)	Identify attitude of EFNEP clients and aides	EFNEP aides & Homemakers	N/A	N/A	N/A	N/A	CES	Formative	Questionnaire	Both Aide & homemakers benefited from program
32	Prouix (1972)	"To provide an Outreach Ed. Program for families found to have nutrition problems	Low income Migrant farm worker, homemakers	Group sessions presentations demonstrating involvement of participants	NI	Outreach mobile van or homes	Team, a nutritionist, a health ed., 2 community health workers	CDC	Formative	Informal reports	Improved food habits
33	Ramsey and Cloyd (1975)	To identify side effects "Food-related behaviors & community related behavior"	Low income homemakers	Indiv. one to one instruction & group classes	1 year	Homes & group settings	EFNEP aides	CES	Formative	Interviews	"Of 7 desired consequences, 6 were substantiated..." overall, results indicated no change
34	Remmel, Casey, McGandy	Nutrition ed to lower serum cholesteral	Healthy middle age men (wifes encouraged to accompany)	Individual dietary counseling	6 months	Clinic	Nutritionist	Nat'l Diet Heart Study	Summative	Interviews & clinical studies 24 hr. food recall	"Dietary change is acceptable to group of healthy mid.-aged men who receive proper nutritional information

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Study No.	Author Year	Purpose of Program	Target Population	Educational Approach Used	Length of Program	Setting	Instruction	Sponsor	Type of Evaluation	Method of Evaluation	Results
35	Schild (1970)	Nutrition ed on "stretching their dollars & choosing the right foods to improve family living."	Low income families	Display, AV handouts	1 hour - 1 week	Travelling bus (mobile ed unit)	"specially trained personnel"	CES	Formative	Informal # of people visting bus & its displays	In 6 mo. 10,000 people visited the bus
36	Shefchik (1973)	"...to upgrade diets"	Low income homemakers	Individual or small group interaction	NI	Housing development homes	EFNEP	CES	Formative	Program Assistant's records	Increased food knowledge & improved food consumption practices.
37	Spindler, Jacobson & Russell (1969)	"...to help educate the poor to improve their diets through the use of aides"	Low income homemakers	Individual or small group instruction	NI	Homes	Nutrition Aides	CES	Formative	Program Assistant's records	Improved self-concept, growing of aides, improved attitudes about ed. participating in food stamp program practical food buying
38	Spindler (1967)	Nutrition information & meal planning ed. (also ed. for child care, housekeeping, other home ec. skills)	Low education low income homemakers	Indiv. one to one instruction	ongoing	Homes & groups	Home economic aides	CES	Formative	Aide logs	Positive changes for aides & homemakers
39	Stare, Meyers & McCann (1961)	To deliver basic concepts of nutrition to the average citizen	General public (newspaper readers)	Syndicated nutrition ed columns	ongoing (1 year)	Self instructional	N/A	University	Formative	Unsolicited letters	Many letters for requests for info program being carried by 35 newspapers
40	Sullivan (1976)	Test a nutri. ed. prog. that gan be used w/ aides & home. to increase nutri. know. & imp. behavior	Low income homemakers & Paraprofessional aides	Workshops	5-7 hours	NI	Aide & nutritionist	Dairy Counsel	Formative	Questionnaires 24 hr food recall	Effective in increasing nutrition knowledge & improving food intake satisfaction by Aide & homemakers reported

Appendix D1

Study No.	Author Year	Purpose of Program	Target Population	Educational Approach Used	Length of Program	Setting	Instruction	Sponsor	Type of Evaluation	Method of Evaluation	Results
41	Ugelow (1965)	Nutrition ed for meal plan., shopping & preparation of low cost dishes	Low income	Group classes & demonstration & participation	4 weeks	Kitchen in Dept. Public Asst. Office	Para-professional aides	Dept. of Public Assistance	Formative	Informal reports	Homemakers shopped more wisely, meals included nutritious food requests
42	Wagner, Huyck & Hinkle (1965)	Nutrition info. via dial a dietician	General public	one to one answers to questions via telephone	NI	Anywhere a phone	Nutritionists	Multiple	Summative	Frequency & content of calls, user satisfaction	"The service is viewed by clients as a readily accessible & valuable resource for nutritional information
43	Wang (1977)	Improve nutritional status & compare aide-effectiveness for FAP & EFNEP	Disadvantaged homemakers with young	one to one & groups	2 years	Homes	EFNEP & FAP Aides	CES	Summative	Questionnaire concerning nutritional practices, 24 hr food recall	Both programs are about as effective in improving nutritional status
44	Wang & Ephross (1971)	"...to influence homemakers to change & improve family nutritional practices."	Hard to reach urban & rural low income homemakers	-Home visits -group meetings, -demonstrations, -tours, -exhibits -newsletters & releases -radio & TV	ongoing	Homes & group mtg. places including supermarkets	EFNEP Aides	CES	Formative	Interviews w/ clients, self-administered questionnaires by aides 24 hr. food recall	"As a result of the program, there has been a substantial upgrading of nutritional intake for the homemakers & their families
45	Zanelli (1969)	Nutrition & family living ed.	Low income homemakers	Groups - AV, Cooking, demonstrations by instructor & participant	ongoing	Local church	Home economist	Inter-agency support	Formative	Dietary survey Informal group observations	Majority providing adequate diets participants feel they have benefited from this project
46	Zifferblatt (1980)	"...to encourage (cafeteria) customers to select lower calorie food during lunch" To dev. nutritious yet low cal. eating	NIH Employees	"Food for thought" Game (media based w/ prizes)	8 weeks	Cafeteria	N/A	Nat'l Heart & Blood Institute	Summative	Observation of food purchases	"People can learn while they eat" average # of calories per person/ day decreased

NI = No Information
CES = Cooperative Extension Service
DSS = Dept. of Social Service
FSN = Food & Nutrition Service
CDC = Center for Disease Control
OEO = Office of Economic Opportunity

APPENDIX E

Appendix E

Study No.	Author/Year	Evaluation Design: Pre	Quasi	True	Purpose	Evaluation Q.	Hypothesis	Limitation Dis.	Measurement Instrument: Instrument	Pretest	Reliability	Validity	Limitations Dis.	Statistical Analysis: x and s.d.	Other des. stat.	t, z, or F	Other infer stats	Level of sig.	Limitations Disc.	Sampling: Sample size	Sample descrip.	Pop. descript.	Sample Methods	Response rate	Sampling Limit.	Lit. Review: Present	# of ref.	Score per study
1	Abbey & George (1976)	1			2										1													4
2	Armstrong (1972)	1																										1
3	Bell (1969)	2			2										2					2/1,000	2			0				10
4	Bradsher (1966)	1													1					2/2,000	0							4
5	Brent (1974)	1			1										1					2/5,000	2	2		0	2/3			11
6	Bufton (1969)	1																										1
7	Burtis (1970)	1																										1
8	Cobb (1970)	1			2										1													4
9	Cook (1969)	1																										1

Study No.	Author/Year	Pre	Quasi	True	Purpose	Eval.	Hypo.	Limit. Disc.	Instru.	Pretest Reliabil.	Validity	Limit. Disc.	x & s.d.	Oth. des. stat.	t, z, or F	Oth. inf. stat.	Level of sig.	Limit. Disc.	Sample size	Sample des.	Pop. des.	Sample Meth.	Response rate	Samp. Limit.	Present # of ref.	Score per stu.
10	Fitzgibbon & Garcia (1977)	2			2	0	0	0	3			0	2	2	2 t		2 .01 .05	2	2/65	2	0	1	0	0	2/21	24
11	Gassie & Jones (1972)		2			2			1					1		2 x2	2 .01 .05	0	2/240	1	0				2/4	15
12	Green, et. al. (1974)		2		2	2	2		1										2/93	2		2			2/4	17
13	Groves (1972)	1																	2/400	1					0/0	4
14	Gustafson (1969)	1							2					1		1 ?	2 .01		2/156 70						0/0	9
15	Henderson (1973)	1																							0/0	1
16	Herrick (1970)			3					1				1						2/1,000	1					2/13	10
17	Hinkle (1966)	1																	2/18						0/0	3
18	Holmes (1972)	2					2		1										2/150						2/2	-9

Study No.	Author/Year	Pre	Quasi	True	Purpose	Eval.	Hypo.	Limit. Disc.	Instru.	Pretest	Reliabil.	Validity	Limit. Disc.	x & s.d.	Other des. stat.	t, z, or F	Other Infer. stat.	Level of sig.	Limit. Disc.	Sample size	Sample des.	Pop. des.	Sample Meth.	Response rate	Samp. Limit.	Present / # of ref.	Score. per stu.
19	Huitt (1971)	1																		2/1,000						0/0	3
20	Jansen (1977)	2			2				2						2					2/27	2		2			2/25	16
21	Kelly (1979)	2							1					2	1					2/78	1					2/3	11
22	Larson et. al (1974)	1																			1					2/6	4
23	Macoby, et. al (1977)		2						2						2	2/t		2/.05		2/2,961	2	2	2	2	0	2/12	22
24	Medvid (1966)	2				2			2							2/t		2/.01	1	2/38	2		2				16
25	Mortvedt (1975)	2				2													2	19/69	2		2				10
26	Murphy (1980)	2			2				2	2	2	2	2				2/x^2	2/.01 .03 .05	2	2/1,516	2	2	2	2		2/6	32
27	Napier (1968)	1																		2/227							3

Study No.	Author/Year	Pre	Quasi	True	Purpose	Eval.	Hypo.	Limit. Disc.	Instru.	Pretest	Reliabil.	Validity	Limit. Disc.	x & s.d.	Other des. stat.	t, z, or F	Other Infer. stat.	Level of sig.	Limit. Disc.	Sample size	Sample des.	Pop. des.	Sample Meth.	Response rate	Samp. Limit.	Present	# of ref.	Score per stu.
28	Oliver (1967)	1			2										2					2/ 508								7
29	Perry (1972)	1							1											2/ 700	2		1	2				9
30	Podell (1975)	2			2	2			2						2		2/ x^2	2/ .01 .02		2/ 147						2/ 3		18
31	Prichard & Hall (1971)	2			2				2						2					2/ 14/ 150	2		2	2		2/ 1		18
32	Prouix (1972)	2							1																			3
33	Ramsey & Cloyd (1975)		2		2				2						2					2/ 100	2		1					13
34	Remmel, et. al (1969)		2						2					2	2	2/ t		2/ .001 .01 .10		2/ 170	2		1	2		2/ 12		21
35	Schild (1970)	1													2					2/ 10,000	1							6

Study No.	Author/Year	Pre	Quasi	True	Purpose	Eval.	Hypo.	Limit. Disc.	Instru.	Pretest	Reliabil.	Validity	Limit. Disc.	x & s.d.	Other des. stat.	t, z, or F	Other Infer. stat.	Level of sig.	Limit. Disc.	Sample size	Sample des.	Pop. des.	Sample Meth.	Response rate	Samp. Limit.	Present	# of ref.	Score per stu.
36	Shefcik (1973)	1																			2	1						4
37	Spindler, et. al (1969)	1							1						2					2/121.2	2	2				2/3		12
38	Spindler (1967)	1							1											2/200	2							6
39	Stare (1961)	1			2										2					2/1200						0		7
40	Sullivan (1976)	2			2				3					2	2					25/19	2					2/4		17
41	Ugelow (1965)	1																		7/1						0		1
42	Wagner et. al (1965)	2				2	2			2		2			2		2 x2	2/.01 .05 .10		2/2705						2/11		20
43	Wang (1977)		2			2	2		2						2	2/t		2/.01 .05 .10		2/1043	2					2/13		20
44	Wang & Ephross (1971)	1			2	2			2						2					2/119	2					2/1		15

Study No.	Author/Year	Purpose: Pre	Purpose: Quasi	Purpose: True	Purpose: Eval.	Purpose: Hypo.	Purpose: Limit. Disc.	Instru.: Instru.	Instru.: Pretest	Instru.: Reliabil.	Instru.: Validity	Instru.: Limit. Disc.	Other des. stat.: x & s.d.	Other des. stat.: Other des. stat.	Other Infer. stat.: t, z, or F	Other Infer. stat.: Other Infer. stat.	Other Infer. stat.: Level of sig.	Other Infer. stat.: Limit. Disc.	Sample: Sample size	Sample: Sample des.	Sample: Pop. des.	Sample: Sample Meth.	Sample: Response rate	Sample: Samp. Limit.	Present: Present	Present: # of ref.	Present: Score per stu.
45	Zanelli (1969)	1						1											15	1					0		5
46	Zifferblatt (1980)		2		2			1							t	2	.001 .01 .05	2		1					2	22	12

CODES

blanks - not present

1 = present but limited or inadequate or unclear

2 = present and adequate and clear

3 = excellent

APPENDIX F

Classification Manual for

Studies of

Health Promotion Programs and Evaluation

Kathy Akpom, M.P.H.
August 1981

Table of Contents

APPENDIX F

CLASSIFICATION MANUAL FOR STUDIES OF HEALTH PROMOTION PROGRAMS AND EVALUATION

CHAPTER 1

Introduction

This manual is the result of the research of a dissertation which sought to apply data synthesis techniques to a subset of evaluation studies of health promotion programs. The synthesis techniques were developed in the fields of education and educational psychology and were not applicable for use with the subset of studies (nutrition education) upon which they were tested. Through review of literature on health promotion programs, evaluation-synthesis methods and secondary evaluation techniques, as well as discussion with health professionals, it seems that the need exists for a methodology for classifying according to multiple categories, the content, methodology, and quality of studies of health promotion/ risk reduction so that this data can be easily retrieved and used in developing health promotion programs based upon existing evaluation research findings.

The classification manual is an attempt to answer this need. It offers program planners, administrators, and evaluators a flexible and standardized methodology for organizing and retrieving information on programs via a variety of multiple categories. That is, if a program planner wishes to review literature to plan a smoking cessation program, this could be done in a number of ways:

1. by review of literature in the thematic area (smoking cessation);

2. by review of various program strategies that have been used with your intended target audience, from a variety of areas; or

3. by review of evaluation designs that have been used from a variety of thematic and/or program strategies.

Each type of review could be quickly and easily accessed using the manual.

The manual is not an annotated bibliography; it does not contain summaries of studies from various thematic areas. Instead, it provides a framework--a system--for coding the content, methodology and quality of program reports (journal articles, final reports, etc.). The classification enables quick and efficient retrieval of information. It is a tool to enable practioners to extract, code, and make available for organized and easy access, information from studies that we all read routinely in professional journals. No statistical ability is required. The manual can be used with a computer retrieval system or a hand-sort method using index cards, and therefore, can be accommodated by any size budget. Like any retrieval system, it will only be able to "give out" data from that which has been fed in. The more studies classified and stored, the more useful the multiple category retrieval system will be. Because the classification manual defines and uses standard terminology, a large "data bank" can be established through a cooperative effort of several programs sharing coded studies that they have classified as a result of on-going literature review.

CHAPTER 2

Classification of Studies

As stated in the Patient Classification Manual[1], "A fundamental requirement of any classification is a linguistic base that is well defined, clearly understood and systematically used." In this chapter, definitions will be provided for terminology to be used in the classification of studies.

There are five major sections into which the classification has been divided and the importance of each in the classification of health promotion studies is briefly discussed. Terms used in the classification are defined by section and specific classification items are presented as well as suggested numeric codes for computer or hand-sort use.

A. Identifying Information[2]

Items in this section are:

1. Program or project
2. Classifier
3. Study number
4. Thematic area of study

1. Program or project

This item identifies the program or project conducting the classification.

Categories	Suggested Codes
Individual programs or projects.....	Identification numbers assigned to individual programs or projects

It is important to be able to identify the program or project if classification is needed. It is anticipated that an efficient way for programs to build up a large "data bank" of classified studies will be through sharing (exchanging) coded studies. To enable clarification, if needed, each program participating in the exchange will have a unique identification included in each coded study.

2. Classifier[3].

This item identifies the person completing the study classification.

Categories	Codes
Individual classifiers.....	Identification numbers assigned to individual classifiers.

It is important to be able to identify the individual within a program or project who classified an individual study in case questions arise concerning classification.

3. Study number[4].

This item identifies the individual study by a number unique to the study.

Categories	Codes
Individual studies.....	Unique numbers assigned to each study

Each study that is classified by each program or project will be assigned a number unique to that study for the purposes of:

(a) distinguishing one coded study from another, and
(b) linking the coded information so that the original article or report can be consulted for more indepth review. All studies will be referenced according to the APA method.

4. Thematic area.

This item refers to the specific health/risk behaviors that is the concern of a study.

Categories	Codes
Preventive health services:	
High blood pressure control.....	0
Family planning	1
Pregnancy and infant health.....	2
Immunization	3
Sexually transmitted diseases.....	4
Health Protection:	
Toxic agent control.....	5
Occupational Safety and health.....	6
Accident prevention and injury control..	7
Fluroidation and dental health.....	8
Surveillance and control of infectious diseases	9

Categories (continued)	Codes (continued)
Health promotion:	
Smoking and health	10
Misuse of alcohol and drugs	11
Nutrition	12
Physical fitness and exercise	13
Control of stress and violent behavior	14

The thematic categories are those identified in the U.S. Department of Health and Human Services, USPHS document, Promoting Health/Preventing Disease: Objectives for the Nation, USGPO Fall 1980.

B. Purpose and Strategies of the Program

Items in this section are:

1. Purpose of the program
2. Program strategies
3. Program design
4. Length of program
5. Instructors/providers
6. Target population
7. Setting
8. Sponsor(s)

These items are basic program descriptors that define the scope and program processes--necessary information for replicating the program. The information also provides data to determine, in Section III (1) if there is congruence between the evaluation of the program and its purpose and strategies.

1. Purpose of the program

The purpose of a program is the aim towards which intervention strategies are targeted. Program purpose can be implicit (not stated) or explicitly stated.

(a)

Categories	Codes
Explicit purpose	0
Implicit purpose	1
Unable to determine purpose	9

(b)

Categories	Codes
Needs assessment or survey	0
Program to stimulate interest	1
Program to increase knowledge	2

Categories (continued)	Codes (continued)
Program to introduce a new skill or reinforce a skill	3
Program to change altitudes, values and beliefs	4
Program to extinguish negative behavior	5
Program to introduce new positive behavior/or reinforce an existing positive behavior	6

2. Program strategies

This item refers to the general health promotion approaches used by the program to achieve their goals.

Categories	Codes (Multiple coding possible)
Host directed:	
Instruction	0
Education	1
Persuasion	2
Behavior Modification	3
Proselytizing	4
Screening	5
Advertising	6
Agent directed:	
Marketing	7
Product modification	8
Engineering	9
Substitutes	10
Regulation	11
Legislation	12
Environment directed:	
Physical influence	13
Social-cultural influence	14
Economic influence	15
Media influence	16
Not applicable	98
No information	99

The categories of strategies used for classification are those identified by Lauzon in his paper "An Epidemiological Approach to Health Promotion," Canadian Journal of Public Health Volume 68, July/August 1977. The following definitions are quotes from Lauzon's paper.

Host-oriented approaches:

"Instruction	Teaching of very specific information or skills.

Education	A logical and rational approach to information in which cognitive and affective objectives predominate.
Persuasion	Intensive messages intended to stimulate compliance to some target behavior. Often rely on fear-arousing appeals.
Behavior Modification	Altering of behavior by modeling and and selective reinforcement.
Proselytizing	Process of recruiting others to one's own beliefs.
Screening	Evaluation used to identify health risk factors. Such evaluation may stimulate awareness and personal relevance for some particular health threat.
Advertising	Any paid form of non-personal presentation and promotion of products, services, or ideas by an identified sponsor.
Counseling	Personal guidance of an individual using various techniques of the personal interview."

Agent-oriented approaches:

"Marketing	Discovering the wants of target audiences and the creating goods and services to satisfy them.
Product modification	Changes in existing products having a positive or negative effect on health behavior.
Engineering	Improvements in the design of structures, machines, products, systems, and processes.
Substitutes	Alternative choice of some product or behavior.
Regulatory controls	Authoritative rules governing certain details or procedures associated with availability of goods or services."

Environment-oriented approaches:

"Physical influences	Effect or change in the physical space; equipment or facilities inhibited or employed during work or leisure.
Socio-cultural influence	Effect or change in current or traditional social customs or
Economic influence	Effect or change in the economic factors which may facilitate or hinder the availability of some particular opportunity, product, service, or standard of living.
Media influence	Effect or change in the mass media."

3. Program design

This item refers to the specific educational/intervention activities undertaken by the program.

	Categories	Codes (multiple codes acceptable)
(a)	General sessions	0
(b)	Small groups	
	Topical discussion groups	1
	Laboratory groups	2
	Special interest groups	3
	Problem solving groups	4
	Planning groups	5
	Instructional groups	6
	Inquiry groups	7
	Evaluation groups	8
	Skill practice groups	9
	Consultative groups	10
	Operational groups	11
	Learning teaching teams	12
	Dyads	13
	Triads	14
	Buzz groups	15
(c)	Individual consultation	16
(d)	Reading	17
(e)	Recreation or meditation	18
(f)	Preparatory activity	19
(g)	Other	20
	Not applicable	98
	No information	99

The descriptive terms and their definitions for this item are taken from Knowles' The Modern Practice of Adult Education Andragogy Versus Pedagogy, Association Press, New York, 1970, pp. 289-290, and represents fairly well accepted educational terms and definitions. Definitions for the category terms are as follows:

(a) General sesssions — Meetings of all participants as a whole, with a variety of patterns of platform presentations and audience participation.

(b) Small groups of various sizes and for a variety of purposes, including topical discussion:

Groups	Groups organized for the purpose of reacting to, testing the meaning of, or sharing ideas about informational inputs from readings or speakers on given topics.
Laboratory groups	Groups organized for the purpose of analyzing group behavior, experimenting with new behavior, and sharing feedback regarding the effects of various behaviors.
Special interest groups	Groups organized according to categories of interest of participants for the purpose of sharing experiences and exploring common concerns.
Problem-solving groups	Groups organized to develop solutions to procedural or substantive problems of concern to the total assembly.
Planning groups	Groups organized to develop plans for activities within the design for back-home application.
Instructional groups	Groups organized to receive instruction through the service of resource experts in specialized areas of knowledge, understanding, or skill (or behavior).
Inquiry groups	Groups organized to search out information and report their findings to the total assembly.

	Skill practice groups	Groups organized for the purpose of practicing specified categories of skills.
	Consultative groups	Groups organized for the purpose of giving consultative help to one another.
	Dyads	Two-person groups organized to share experiences, coach each other ...or help each other in any other way.
	Triads	Three-person groups organized for mutually helpful purposes.
	Buzz groups	Randomly organized groups that meet in a general assembly to pool problems, ideas, or reactions....
(c)	Individual consultation	Counseling or direct study in which the services of resource persons are made available to individual participants for personalized help.
(d)	Reading	The scheduling of special times (between meetings) for reading handouts (or self-instruction not accompanied by group-learning sessions).
(e)	Recreation or meditation	Periods of time set aside for socialization... or creative solitude.
(f)	Preparatory activity	Things that learners are invited to do before a learning activity starts, such as reading, self-analysis, data collection, etc.

4. Length of program

This item refers to length along three dimensions:

(a) Length of the intervention program (i.e., a 12-week CPR course)
(b) Interval of interventions (i.e., twice a week)
(c) Amount of time per intervention session (i.e., 30 minutes)

(a) Length of intervention program

Categories	Codes
1 time only	0
1 week or less	1
>1 week<1 month	2
1 month	3
2 - 3 months	4
4 - 6 months	5
7 - 9 months	6
10 - 12 months	7
2 years	8
3 years	9
>3 years	10
No information	99

(b) Interval of interventions

Categories	Codes
once/week	0
>once/week	1
twice a month	2
once a month	3
>once a month	4
quarterly	5
>quarterly≤semi-annually	6
other	7
No information	99

(c) Length per intervention session

Categories	Codes
≤30 minutes	0
>30≤60 minutes	1
>60 minutes	2
No information	99
Not applicable	98

5. Instructor/Provider

This item identifies the type of professional person(s) conducting or directing the intervention strategy.

Categories	Codes
Health educator	0
Physician	1
Nurse	2

Categories (continued)	Code (continued)
Nurse practitioner	3
Physician assistant	4
Occupational therapist	5
Physical therapist	6
Social worker	7
Paraprofessional	8
Other	9
Not applicable	98
No information	99

6. Target population

This item identifies the group of individuals to whom the intervention strategies or needs assessment was directed.

Categories	Codes (Multiple coding per case)
Children	0
Adolescents	1
Adults	2
Elderly	3
General public	4
Blacks	5
Whites	6
Hispanics	7
Other ethnic groups	8
Low income	9
Middle income	10
High income	11
Urban	12
Rural	13
American	14
Canadian	15
Third world	16
Other	17
No information	99

7. Setting

This item refers to the place where the interventions take place.

Categories	Codes
Community Center	0
Health facility	1
Individual home	2

Categories (continued)	Codes (continued)
Shopping center, supermarket, or other place-of-business	3
Television	4
Radio	5
Newspaper	6
Magazine	7
Other	8
Not applicable	98
No information	99

8. Sponsor(s)

This item refers to the agency(ies) or group(s) responsible for offering the intervention.

Categories	Codes (Multiple coding acceptable)
Hospital	0
Ambulatory care program (excluding HMO's)	1
HMO	2
Voluntary health organization (such as the American Cancer Society)	3
Social services agency	4
Community/consumer organization	5
Cooperative extension service	6
University or college	7
Other	8
No information	99

C. Evaluation

Items in this section are:

1. Evaluation design
2. Instruments
3. Sampling
4. Data analysis

This section describes aspects necessary to replicate an evaluation design as well as items that assess the adequacy or quality of the evaluation.

1. Evaluation design

This category of items refers to specification of the evaluation plan and consists of the following items:

(a) Purpose
(b) Evaluation questions
(c) Hypothesis
(d) Intended outcomes
(e) Variables
(f) Evaluation design
(g) Limitations of design

(a) Purpose

(1) Purpose-specification

This item refers to the broad category of purpose of the study.

Categories	Codes
Needs assessment	0
Assess change in knowledge	1
Assess change in skill	2
Assess change in attitudes, values, and beliefs	3
Assess change in behavior	4
Assess community impact	5
Assess cost benefit	6
Assess administrative performance	7
Assess quality in process of instruction/care	8
Other	9
No information	99

(2) Type of evaluation

This item identifies the reason the evaluation was conducted.

Categories	Codes
Formative	0
Summative	1
No information	99

Formative evaluation is conducted for program development and improvement. Summative evaluation measures program effectiveness.

(3) Congruence

This item refers to whether or not the purpose of the evaluation is congruent with the purpose of the program.

Categories	Codes
Incongruent	0
Uncertain	1
Congruent	2
Not applicable purpose(s) not known	98

An evaluation purpose is congruent if it assesses formative or summative evaluation relative to the intended outcomes of the program.

(b) Evaluation questions

This item identifies the presence and clarity of specific evaluation questions.

Categories	Codes
Evaluation questions not stated	0
Evaluation questions stated, but clarification needed	1
Evaluation questions clearly stated	2

(c) Hypothesis

This item identifies the presence and clarity of hypothesis.

Categories	Codes
Hypothesis not stated	0
Hypothesis stated, but clarification needed	1
Hypothesis clearly stated	2

(d) Outcomes

This item identifies whether or not the intended outcomes of the program (and its interventions) are clearly specified.

Categories	Codes
Outcomes not stated.....	0
Outcomes stated, but clarification needed.....	1
Outcomes clearly stated.....	2

(e) Variables

This item identifies the category of variables under study.

Categories	Codes
Structure.....	0
Process.....	1
Outcome.....	2
Impact.....	3
Context.....	4
Uncertain.....	5

(f) Evaluation design

(1) Description and appropriateness

This item identifies if the evaluation design was fully described and whether it seems appropriate for the study.

Categories	Codes
Evaluation design not described.....	0
Evaluation design described, but not adequately.....	1
Evaluation design adequately described, but seems inappropriate.....	2
Evaluation design adequately described, and uncertain about appropriateness.....	3
Evaluation design adequately described and seems appropriate for study.....	4

(2) Design

This item refers to the specific evaluation design of the study.

Categories	Codes
Preexperimental designs:	
One shot case study	10
Posttest only - 1 group	11
Quasiexperimental designs:	
One group pretest-post design	20
Non-randomized control group pretest-posttest	21
One group time series	22
Non-randomized control group posttest only	23
Other quasiexperimental designs	24
True experimental designs:	
Randomized pre-posttest design	30
Randomized solomon four group design	31
Randomized control group	32
Other true experimental design	33
No information	99

Most designs included above were those identified in Issac, S. & Michael, W.B. Handbook in Research and Evaluation for Education and the Behavioral Sciences, San Francisco, Robert K. Knapp, Publishers, 1974, 36-49, as being the most commonly used designs.

(g) Limitations of design

This item refers to whether or not any limitations in measurement of the particular design of a study were discussed.

Categories	Codes
Limitations not discussed	0
Limitations discussed, but require clarification	1
Limitations discussed adequately	2
Not applicable, no design discussed	99

2. Instruments

This category of items refers to specification about the quality and type of instruments used in data collection and contains the following items:

(a) Instrument
(b) Reliability-Pretest
(c) Data collection procedures
(d) Validity-Pretest
(e) Limitations
(f) Appropriateness

(a) Instrument

This item identifies the type of data collection instrument used in the study.

Categories	Codes
No instrument used--anecdotal reports only	0
Survey--personal interview without instrument	1
Survey--personal interview using instrument	2
Self-administered questionnaire	3
Observation instrument	4
Other	5
No information	99

(b) Reliability[6]-Pretest

This item refers to the replicability of data collection methods.

Categories	Codes
No report of instrument reliability provided	0
Instrument reliability reported, methods not described	1
Instrument reliability reported, and methods adequately described	2

(c) Data collection procedures[7]

This item concerns whether data collection procedures are clearly enough described to be followed by others.

Categories	Codes
Data collection procedures not reported	0

Categories (continued)	Codes (continued
Data collection procedures not adequately reported....	1
Data collection procedures adequately reported.....	2
Not applicable, anectdotal...	99

(d) Validity-Pretest

This item refers to the accuracy of the measurement instrument.

Categories	Codes
No report of instrument reliability provided.....	0
Instrument reliability reported, methods not described.....	1
Instrument reliability reported and methods adequately described.....	2

(e) Limitations

This item refers to whether or not any limitations in measurement using the particular instrument were discussed in the study.

Categories	Codes
Limitations not discussed.....	0
Limitations discussed.....	1

(f) Appropriations[8]

This item refers to whether or not the instruments appear appropriate to the evaluation questions and hypothesis.

Categories	Codes
Instruments seem inappropriate.....	0
Undecided.....	1
Instruments seem appropriate.....	2

3. Sampling

This category of items refers to specification about the quality and type of methods used in obtaining a study population, and contains the following items:

(a) Sample size
(b) Sample description
(c) Population description
(d) Sampling method-description
(e) Appropriateness of method

(a) Sample size

Categories	Codes
Sample size as reported in study	same
No information	999

(b) Sample description

Categories	Codes
Not discussed	0
Discussed, but not adequately	1
Adequately discussed	2

(c) Population description

Categories	Codes
Population not described	0
Population described, but not adequately	1
Population adequately described	2

(d) Sampling method-description

Categories	Codes
Sampling method not described	0
Described, needs clarification	1
Adequately described	2

(e) Appropriateness of sampling method

Categories	Codes
Appears inappropriate.....	0
Undecided.....	1
Appears appropriate.....	2

4. Data analysis

Items in this category are:

(a) Descriptive statistics-discussion
(b) Descriptive statistics-application
(c) Inferential-discussion
(d) Inferential-tests
(e) Inferential-application
(f) Significance level
(g) Limitations

(a) Descriptive statistics-discussion

Categories	Codes
Not discussed.....	0
Performed, inadequately discussed.....	1
Performed, and adequately discussed.....	2
Not applicable--none performed.....	98

(b) Descriptive statistics-application

Categories	Codes
Appears inappropriate.....	0
Undecided.....	1
Appears appropriate.....	2
Insufficient information.....	3
Not applicable.....	98

(c) Inferential-discussion

Categories	Codes
Appears inappropriate.....	0
Undecided.....	1
Appears appropriate.....	2

Categories (continued)	Codes (continued
Insufficient information.....	3
Not applicable.....	98

(d) Inferential-tests

Categories	Codes (Multiple Coding)
X^2.....	0
t-test or z-test.....	1
Anova.....	2
Ancova.....	3
Multiple regression.....	4
Facts Analysis.....	5
Other univariate statistic...	6
Other multivariate statistic.....	7
Not applicable.....	98
No information.....	99

(e) Inferential-application

Categories	Codes
Appears inappropriate.....	0
Undecided.....	1
Appears appropriate.....	2
Inadequate information.....	
Not applicable.....	98

(f) Significance level

Categories	Codes
.01	0
.05	1
Other.....	2
Not applicable.....	98
No information.....	99

(g) Limitations of statistical methods

Categories	Codes
Not discussed.....	0
Inadequately or incorrectly discussed.....	1

Categories (continued	Codes (continued)
Adequately discussed.....	2
Not applicable--not used.....	98

D. Results and Conclusions

Items included in this section are:

1. Results-presentation
2. Direction of results
3. Results-interval
4. Conclusion-presentation
5. Conclusions-substantiated
6. Generalizations

1. Results-presentation

This item refers to how clearly the results of the study were presented.

Categories	Codes
Not stated.....	0
Stated, needs clarification..	1
Stated clearly.....	2

2. Direction of Results[8]

This item identifies whether the reported results were positive or negative and if these reports are substantiated by evidence presented in data analysis.

Categories	Codes
Negative, but not substantiated by the evidence presented.....	0
Negative, and substantiated by the evidence presented.....	2
Positive, but not substantiated by the evidence presented.....	1
Positive, and substantiated by the evidence presented.....	3
Not applicable.....	98
No information.....	99

3. Results-interval

Categories	Codes
Short term	0
Long term	1
Not applicable	98
No information	99

4. Conclusions-presentation

This item refers to how clearly the results of the study were presented.

Categories	Codes
Not stated	0
Stated, needs clarification	1
Stated clearly	2

5. Conclusions-substantiated

Categories	Codes
Not substantiated by evidence presented	0
Undecided	1
Substantiated	2
Not applicable--no conclusions	98
No information	99

6. Generalizations[10]

Categories	Codes
Inappropriate--not confined to population from which sample was drawn	0
Undecided	1
Appropriate	2
Not applicable	98
No information	99

E. General Information

Items included in this section are:

1. Literature review
2. Clarity of report
3. Tone of report
4. Meta-evaluation score

1. Literature review

These items concern the appropriateness and extent of literature review presented (included) in the study.

(a) Literature review-quantity

Categories	Codes
Number of footnotes (references cited) in study	

(b) Literature review-appropriateness and adequacy

Categories	Codes
Literature review inadequately or inappropriately conducted.....	0
Still question relationship of previous research to the problem under study, adequate and appropriate.....	1
Not applicable--not literature review.....	98

2. Clarity of report[12]

Categories	Codes
Not clearly written.....	0
Clearly written.....	1

3. Tone of report[13]

This item refers to whether the report displays an unbiased, impartial scientific attitude.

Categories	Codes
Appears unbiased and impartial	2
Undecided	1
Appears biased and partial	0

4. Meta-evaluation[14] score

This item refers to the quality of the article or report as identified by considering the ratio of high to low codes for selected items applicable to a study (98 and 99's not included). (The foils were organized, where appropriate, with the least desirable alternatives being assigned the lowest codes and the most desirable, the highest codes, excluding 98 and 99). Example: a score of 3/1 or .33 would indicate that for every low score, the article received three high scores. Directions for calculating the score is provided as an estimate for comparative purposes among articles.

APPENDIX G

Kathy Akpom, M.P.H.
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August 27, 1981

Dear Health Promotion Specialist:

Thank you for agreeing to take the time from your busy schedule to review the attached paper. It is a classification manual for reports of health promotion programs, and is a result of my dissertation research. The manual is intended for use by people such as you who are developing and running health promotion/risk reduction programs and who want to apply to their programs "the best of what is known" about promoting positive health behavior.

Since very few health promotion programs can afford to conduct extensive research, some of our colleagues have identified the need for some kind of a method for sorting out the vast amount of program experience available from a variety of fields and types of projects that can be useful in planning and evaluating health promotion programs.

The attached classification manual is an attempt to answer that need. It offers program planners, administrators, and evaluators a standardized, simple, and inexpensive methodology for organizing and retrieving information on relevant programs via a variety of multiple categories. That is, when you are planning a program, you may wish to review literature concerning the thematic area of your program (such as smoking); the promotion strategies you plan to use (such as group counseling methods, from a variety of thematic areas); or evaluation designs that have been used from a variety of thematic areas and/or promotional strategies.

The attached manual is not an annotated bibliography; it does not contain summaries of studies from various thematic areas. Instead, it provides a framework--a system--for coding the content, methodology and quality of program reports (journal articles, final reports, etc.). The classification enables quick, efficient retrieval of information program planning and evaluation. The manual is a tool to enable practioners to extract, code, and make available for organized and easy access, information from studies that we all read routinely in professional journals. No statistical ability is required. The manual can be used with a computer retrieval

system, or a hand-sort method using index cards and, therefore, can be accommodated by any size budget (a computer coding form and a manual index card-coding form will be included in the final form of the manual). Like any retrieval system, it will only be able to "give out" data from that which you've "put in." The more studies classified and stored, the more useful the multiple category retrieval system will be. Because the classification manual defines and uses standard terminology, a large "data bank" can be established through a cooperative effort of several programs sharing coded studies they have classified as a result of literature reviews.

Since the classification manual is still in the pilot stage, I am requesting your assistance. Please read it over and consider how useful the classification system could be and what changes you would suggest to improve it. To facilitate your responses, a short questionnaire is attached. Please complete the questionnaire as well as any other comments you would like to make.

Because this manual is a result of my dissertation research, I will be including it and a summary of comments about it, in an appendix of the dissertation, and to meet my orals deadline, I need to have your comments back by September 10, 1981.

Thank you for your help. Attached is a self-addressed, stamped envelope for your convenience.

Sincerely,

Kathy Akpom

Kathy Akpom, M.P.H.

KA/aj

enclosure

P.S. Please do not reproduce the manual in the draft form. If you would like a copy of the final version, please indicate that on your questionnaire along with your name and address, and I will be happy to send you a copy after my orals.

Expert Opinion Questionnaire
for the
Health Promotion Programs'
Classification Manual

1. Are there any suggestions you have for making the directions to the manual more easily understood? _____yes _____no

   If yes, please specify.

2. Are there any items that should be added, changed or deleted from the manual? _____yes _____no

   If so, please specify the modifications you suggest and rationale for each, by manual section.

Section	Modifications	Rationale
A. Identifying Information		
B. Purposes and Strategies		
C. I. Evaluation Design		
II. Instruments		
III. Sampling		
IV. Data Analysis		

D. Results

E. General Information

3. Are there any categories of information that should be added to those covered in the manual? _____yes _____no

Please specify.

4. (a) Do you think that many of your colleagues feel the need for a classification system such as this? _____yes _____no

(b) If your answer to question 4 (a) is yes, then what types of positions do these colleagues have and in what type of programs do they work?

	Positions	Programs
(examples)	health educators	health department
	program evaluator	non-profit agency

(c) Do you feel the above identified persons are more likely to use the classification system by computer or hand-sort method?

_____computer method

_____hand-sort method

5. Do you personally feel your program planning and evaluation efforts would benefit from use of the manual? _____yes _____no

6. (a) If the manual were available do you think you would ever use it?

_____yes _____no

(b) If yes, by which method? _____ computer

_____ hand-sort

7. In order to generalize your comments, I would appreciate your answers to the following questions:

   (a) What is your professional position?

   (b) Which activity best describes your primary responsibility?

   _____ program planning

   _____ administration

   _____ program evaluation

   _____ community health education

   _____ other (please specify) _____

   (c) In what type of agency do you work?

   (d) Please identify your highest degree.

   _____ B.A.

   _____ M.P.H. or M.H.S.A.

   _____ Masters Degree other than above

   _____ Ph.D.

   _____ Other (please specify) _____

   (e) How many years have you been in your profession (not your current position)? _____years

   (f) Please identify the 1 or 2 journals upon which you rely most often for information related to planning and evaluating your programs.

8. Please make any other comments (on the reverse side of this page) that you feel would make the classification a more useful tool for planning, administering, and evaluating health promotion/risk reduction programs.

Thank you for your cooperation in completing this questionnaire

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