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**RESEARCH IN
HEALTH EDUCATION**

**Report
of a WHO Scientific Group**

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Geneva, 10-16 December 1968

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RESEARCH IN HEALTH EDUCATION

Report of a WHO Scientific Group

A WHO Scientific Group on Research in Health Education met in Geneva from 10 to 16 December 1968. The meeting was opened by Dr J. Karefa-Smart, Assistant Director-General, who welcomed the participants on behalf of the Director-General.

1. INTRODUCTION

In both the developed and developing nations throughout the world, there has been a noticeable recent increase in emphasis on the importance of the educational approach in the prevention and control of disease and in medical care. One of the primary reasons for this increased interest in the educational approach is the recognition that many of the factors related to the cause and continuation of illness and the maintenance and improvement of health are essentially matters of human behaviour.

Health education problems are numerous and diverse. They arise in relation to many aspects of health and medical care programmes, at many points between health promotion and rehabilitation. This report deals with ways of increasing and strengthening research into such problems and with steps to improve the preparation of workers to design and conduct research on them, facilitate communication between researchers and practitioners, and achieve a greater application of research findings in health education practice.

2. GENERAL CONSIDERATIONS

2.1 The nature and objectives of health education

The term "health education" has a number of meanings, of which two are of special significance in the context of this report. In its broadest interpretation, health education concerns all those experiences of an individual, group, or community that influence beliefs, attitudes, and behaviour with respect to health, as well as the processes and efforts of producing change when this is necessary for optimal health. This all-inclusive concept of health education recognizes that many experiences, both positive and negative, have an impact on what an individual, group, or community thinks, feels, and does about health ; and it does not restrict health education

to those situations in which health activities are planned or formal. In the more limited meaning, health education usually means the planned or formal efforts to stimulate and provide experiences at times, in ways, and through situations leading to the development of the health knowledge, attitudes, and behaviour that are most conducive to the attainment of individual, group, or community health. This more limited meaning is the one with which most of this report is concerned.

Health education, as a major approach to obtaining the participation of people in bringing about enduring changes in personal and community health behaviour, is not separate from but woven completely into the fabric of health programmes, the objective of which it helps to achieve. It is first of all an intrinsic part of the responsibilities of many professional and auxiliary workers in health and related fields. Such workers have numerous opportunities for education in connexion with the services they render, and the relationships they form with people provide a strong base for health education. Health education is a crucial aspect of clinic and hospital services and of services rendered in home visits, schools, industries, housing projects, and the like.

Second, health education is often a service in itself, directed toward the total community or toward particular populations, wherein opportunities are opened up for people to participate in learning about their health problems and the solutions to them and about ways of assuming responsibility for preventing or controlling them in full awareness of social support for their action.

Third, health education is also fundamental in many of the processes carried on within an organization that are necessary to the development and implementation of a programme—planning; teamwork; co-ordination of workers' efforts and of section or departmental thinking and efforts; administration; training; supervision; consultation; and evaluation. Each developmental and implementation process can be discussed from several theoretical positions. Here each is viewed as implicitly an educational process, especially planning, teamwork, co-ordination, training, supervision, and consultation.

In contributing to programme effectiveness, each process may involve changes in the type and manner of the work of the staff and in turn in understandings and beliefs as well as in attitudes. While such changes could probably be effected by administrative order and requirement, the educational approach will foster more readily accepted, longer-lasting changes because they are self-imposed. Training, of course, is essentially education, and a sound educational approach to the planning of training programmes will aid in the achievement of the changes desired in the knowledge, attitudes, and behaviour of trainees.

Fourth, health organizations must work with other organizations in order that the various organizational contributions together form an

integrated programme. The processes that enable an organization to carry out its part of a joint programme become the processes by which the contributions of the various organizations are established and integrated.

Finally, when programme effectiveness depends upon the use of health services, a certain relationship with the people using them is necessary. Then the relationships with other organizations must be extended to include representatives of the "consumers", i.e. those using the services created by the programme.

While the manifest objective of health education is change in individual or community health behaviour or reinforcement of existing health behaviour, there is a further underlying objective, one that is perhaps more long-term and even more basic. This is the development in people of: (1) a sense of responsibility for their own health and for that of the community, and (2) the ability to participate in community life in a constructive and purposeful way. The possibility of such responsible participation being carried over into other spheres of life is great. Health education thus helps to promote on the one hand a sense of individual identity, dignity, and responsibility and on the other hand community solidarity and responsibility.

2.2 Relationship between professional knowledge and research

2.2.1 Professional knowledge in health education

An organized systematic body of knowledge is essential to effective professional practice and is one mark of a profession. Although the profession of health education is of recent date, efforts have been under way since its institution to organize a sound body of knowledge and to identify those areas in which the existing principles and concepts are insufficient to guide practice. The need for well-formulated theories and research is urgent.

In organizing its basis of knowledge, the profession of health education looks to relevant developed and developing disciplines for guiding principles and concepts, for applicable theories and research findings. Since health education as a process centres on people, on changing health behaviour, and on the creation of educational situations that foster change, the sources logically drawn upon to form the professional body of knowledge were the sciences related to human behaviour and relevant fields. For example, knowledge from general education was used, as was that from adult education and social work. Concepts, methods, and data from the disciplines of social psychology, sociology, and social anthropology were also widely applied in health education during its evolution as a specialty.

Although in its early stages any profession borrows knowledge selectively from relevant fields, the point is soon reached when it must order its knowledge around the phenomena with which its practice is concerned.

For health education, the knowledge needs to be organized in the light of the process of education as it applies in health programmes.

It is not enough for a profession to select in a discriminating way from knowledge in other fields and then to systematize that knowledge. Taking this as a starting-point, a profession must then establish its own concepts and principles and conduct research to augment and refine its own body of knowledge. The profession of health education has increasingly expanded its basis of knowledge, continuing to select what is meaningful from cognate fields. But it is also now going beyond this and acquiring information from health education practice, analysing it for patterns and stimulating health education and social science researchers to conduct research in areas of knowledge as yet incompletely explored.

The profession is now faced with the urgent need to develop, both by analysis of its practice and by research, a more precise conceptual basis for health education. A first step, now being undertaken, is the examination of existing knowledge to test its direct applicability to health education practice and to discover gaps in knowledge in a systematic fashion. The need for research is evident, and research must be intensified to assure the success of educational efforts in health programmes. In any professional field the need for research is a pressing one, since new problems for which knowledge is inadequate arise almost daily. This is especially true for the health and health-related professions, which are faced constantly with complex and ever-changing situations.

The emphasis placed upon research here is not to suggest that research is completely lacking, for there is considerable evidence to the contrary. Nevertheless, the study of reported research indicates a need to improve its quality and also to encourage research that is more than tangentially related to the health education components of health programmes.

2.2.2 *Codification of professional knowledge*

It is suggested that health education analysis will be aided by codifying knowledge on the subject. In fact, codification could serve several purposes simultaneously: it would reveal gaps in knowledge and research needs and assist in the refinement of theory; it would relate research findings to concepts and to the concerns of the profession; and it would guide practitioners in coping with field problems.

The first broad heading under which codification of health education knowledge could be carried out is *the educational approach and process*.

Health education is an approach which helps people to become aware of health problems in relation to themselves; to see the need to deal with a given problem; to judge whether the necessary health action fits in with their motives, aspirations, goals, and values; to consider possible courses of action and select the course acceptable to them; to commit themselves

to this course (such as seeking early diagnosis, adding certain foods to the diet, or maintaining uninterrupted chemotherapy); and to adopt the necessary behaviour and maintain it as long as is needed.

When the educational approach is used, people of their own choice may accept, adopt, and maintain a new health practice or not, the decision being self-imposed. The resulting action, behaviour, or practice is meaningful to them, is integrated into their life pattern. This indicates that *behaviour*, and more particularly health behaviour, is a second heading under which knowledge in health education can be organized.

Since public health is concerned in the main with community health, *community* is the third heading under which knowledge can be organized. These three main headings cover the theoretical domain of health education. Obviously, a number of more specific concepts need to be subsumed under each heading.

The task of systematizing a body of professional knowledge, assessing its adequacy, and identifying research needs is not a small one and it is a continuing process. However, the effort will prove to be extremely profitable. Theoretically speaking, there is a constant interchange between practice, professional knowledge, and research, so that the effort would build up a continuing three-way relationship.

3. EDUCATIONAL PROBLEMS REQUIRING RESEARCH

3.1 Illustrations from health and medical care

The breadth of health education and its essential place in many processes and programme activities suggest that problems of education arising in health and medical care programmes—the substance of health education research—are of many types. The Group considered it unrealistic to attempt a delineation of all or even most of such problems, or to try to set firm priorities for research. Nevertheless, to give perspective to discussion of research on educational problems, it seemed helpful to set out some educational problems in health and medical care programmes without any intention of classifying them, to state them precisely in research terms, to specify an appropriate research approach, and to indicate theories that might elucidate them. The following will serve as examples.

(1) In the period before they come under medical care, to whom do people turn in seeking informal advice after they become aware of symptoms? How does the advice-seeking pattern vary with type of symptoms, disease perceived, nature and extent of medical care services available, previous experiences with medical care, cultural patterns, social class, age, sex, and other variables?

(2) How do people in a given culture perceive prevalent health problems that require early medical attention? How are different perceptions associated with the early seeking of medical care or with delayed action? What variations exist among selected cultural groups?

(3) How do variations in perceived severity of symptoms relate to self-medication or to the seeking of advice from health experts, family, friends, and others?

(4) What educational methods are most effective in building up family acceptance and understanding of a patient's health problem, of possible changes needed in his family or work roles or in his future life regimen, and of the supporting role of family members? What setting and situation are most appropriate for education? Which health or other workers can act most effectively as family educators?

(5) How effectively is the time of child-bearing and child-rearing used for the education of parents about relevant health measures such as nutrition or family planning? At what point in time is the education most effective, who is the best educator, and what methods of education are most suitable? How effective is the prenatal period for education about family planning as compared with the post-partum period and the days directly after delivery?

(6) What is the relative influence of family groups as opposed to peer groups in encouraging or discouraging smoking behaviour in children and teenagers?

(7) What is the effectiveness of a planned referral or follow-up system as compared with placing reliance on the patient's initiative in taking action on recommended medical care? How does the latter vary with the health problem involved, the stage of disease, the patient's perception of the problem and of the medical care services, and social class?

(8) What are the barriers to effective communication between physicians and patients? What educational methods are effective in reducing these barriers?

(9) What can be done to minimize the effects of the social distance that sometimes exists between health workers and those they are attempting to educate?

(10) What is the effectiveness in health education of traditional sources of information and contacts as compared with professional sources and contact with health workers?

(11) What psychosocial and cultural factors differentiate low-parity couples who accept family planning from couples who do not? What are the implications for educational efforts?

(12) What is the role of the husband in the decision to accept family planning? When is education most effective with the husband? What methods and situations are most effective in building up his understanding, acceptance, and support of his wife's acceptance of family planning? What differences exist between selected cultures with respect to the male rôle?

(13) How do a health worker's attitudes toward a disease affect a patient's attitudes and anxiety? What influence does a health worker with negative or mixed feelings on a health problem have on a patient's attitudes towards and action on it?

(14) What is the relationship between the personal and cultural value orientations of health workers and their effectiveness in educating different population groups in preventive health behaviour?

(15) What is the relative effectiveness of various health workers and of specialized health education personnel in the education of people in different health programmes?

(16) What is the comparative effectiveness of selected educational methods in teaching staff and volunteers to assume and carry out their educational responsibilities reliably?

(17) How effective in specific areas of health education is the regular classroom teacher who has had some preparation in health teaching in comparison with health specialists such as physicians and school nurses?

(18) Where can a technical health education service be most effectively placed in a health agency to facilitate its contribution to the planning and development of the health education components of various health programmes?

3.2 Recurrent health education problems

While the above questions illustrate some specific health education problems, it can be seen that similar problems may arise in various other health programmes. Some problems are recurrent. However, whether the solution is unique to a particular programme or is more universally applicable is a matter for research. A given health problem may vary greatly, as may other factors that do not remain constant from situation to situation and group to group. Should research reveal regularities, some general principles would evolve, considerably augmenting the body of general knowledge in health education.

3.3 The need for health education research

Although only a few illustrations have been presented of the many educational problems arising in practice, they suggest the broad range of

problems and their complexity. How does a professional worker solve such problems when he encounters them? Obviously by examining and applying the principles and concepts that guide his particular professional practice; this assumes adequate professional preparation and an understanding in depth of the body of professional knowledge. When the available knowledge is inadequate for a problem or situation, a professional worker may look to cognate fields for clues. Also, by skilful use of an analytic approach, he may develop postulates that enable him to cope with particular problems on the basis of a considered estimate of the possibilities. At the same time, a professionally responsible worker notes the dilemma and calls for research on problems for which present knowledge is insufficient.

While it is important to advance research into educational problems arising in specific health programmes, there is need at the same time to foster comparative research that spans the whole category of health programmes, situations, and cultures. This is of particular importance in the field of health education since it cuts across programmes, but even more because health education needs to build up a more extensive and better organized body of professional knowledge as a guide to its practice. If findings from well-designed research in one programme or situation are similar to those derived from replication of the research in other situations, general principles can be established. The Group noted however, that insufficient current research effort is directly focused upon specific, priority educational problems such as those listed above.

The need for health education research—as was shown by the replies to a WHO questionnaire—is recognized by ministries of health and by schools of public health and equivalent institutions throughout the world. While practically all the organizations replying listed educational problems requiring research and stressed the need to develop research, only a few well developed research training programmes were reported.

4. RESEARCH IN HEALTH EDUCATION

4.1 Focus of health education research

The primary focus of research in health education is usually the solution of problems in practice; therefore it is of the type designated as applied research. Less frequently, it is of the basic type.

A difference in objectives and focus is often used to contrast basic and applied research, basic research being regarded as intellectually and theoretically oriented, applied as practically oriented. It may be an oversimplification to draw this difference, for while a given research effort may clearly have either a theoretical or a practical objective, another may combine both objectives. Moreover, an investigation that starts with a manifestly

practical objective may contribute results that are later seen to have theoretical value as well, or *vice versa*.

4.2 A tentative conceptual model for organizing health education research

Each educational problem arising in health programmes is of a complex nature ; even brief analysis of any such problem reveals its many facets and the interrelatedness of problems. Any attempt to develop discrete categories of educational problems in health programmes may therefore appear to be an academic exercise. However, if a conceptual framework is first developed, the objectives and processes, problems and research efforts of health education can be viewed in terms of the framework and a system of classifying problems and research be suggested.

Some attempts have been made to divide research on health educational problems into categories. In 1961 WHO, while recognizing the difficulty of such classification, grouped studies under the following headings : studies of programmes in action ; studies of people's knowledge, attitudes, culture, and behaviour ; studies of educational methods and communication media ; evaluation studies ; theoretical research models ; studies of health workers and their role in health education ; and reviews of research applicable to health education.

For this Group, WHO prepared an up-to-date review of the literature on research in health education. This review organizes the material under six main functional headings : what people know, believe, and do about health ; psychosocial and cultural factors related to health education practice ; communication methods and materials ; the patient's education ; programme planning and evaluation ; and school health education.

Still other classifications are possible. The one described here, which evolves from a conception of health education and does not begin with a study of published research, is offered as an illustration, not as a standard or as the most appropriate model. Subsequent paragraphs will develop very tentatively a conceptual framework that offers one approach to setting needed types of research in perspective and relating them to each other. This is not an effort to give priority to structure and order, but rather to view health education problems and research in their entirety and in terms of the totality of health education as a process within the context of various health and related programmes. Research guided by reference to a broad model, as compared with studies carried out as single entities, will achieve a more cohesive quality and contribute in a more substantial manner to the solution of problems and to professional knowledge.

In developing a conceptual framework, the Group recognized that it is necessary to look at the objectives of health education, as described in section 2.1. If those objectives are kept in mind, health education research, in spite of differing emphasis from study to study, can be viewed as

concerned primarily with behaviour and practices but also with the process of behavioural change, the nature of the educational approach to such change, and educational methods and aids.

Taking into account what is known about human behaviour and the process of change, health education research considers not only the forces within the individual but also those outside that interact with them and have an impact on his behaviour. Thus, in one view, research in health education can be considered in a social systems approach wherein the individual with his beliefs, attitudes, values, needs and motives, and aspirations constitutes the central system. Around the individual are many social systems which may enter into a dynamic relationship with his inner forces and which may be diagrammed as concentric circles around the individual. An example is that of informal, face-to-face groups such as family, kin, and friends. Another system would include larger, more formal groups; another the community; another the health and medical care system—the providers of health facilities and services, including health education.

Characteristic of each social system is the interaction of elements, persons, or organizations within that system; but there is, additionally, continuing interaction between systems. In a health programme, for example, several elements in the health care system may be activated in an attempt to communicate with and influence the most inner system in the model—the individual. This in turn brings into activity the salient beliefs, attitudes, values, motives, and aspirations of the individual. Further, the individual may activate various systems as he seeks advice, guidance, or support. At the same time, elements in the various systems may be activated as messages from the health system impinge upon or filter through them. There is thus a totality of dynamic interaction.

There is no intention here to omit mention of physical factors relevant to behaviour, for action cannot take place in the absence of necessary facilities in the home, school, or community, or when existing health and related facilities are not available because of unacceptability or barriers created by time or place. The inclusion of a health care social system brings the providers of services and facilities into the field. Nevertheless, the several interacting social systems impinging upon the individual and interacting in turn with his inner forces must be viewed against his physical background, thus giving the model a three-dimensional form.

4.2.1 *Suggested areas of health education research*

Given such a conceptual framework, the various kinds of health education research and a way of loosely grouping or classifying problems and research become apparent. Some of the main categories of research are suggested below, but are not intended to be all-inclusive:

1. Identification and studies of the people to be educated—their beliefs, attitudes, motives, values, aspirations, and established practices and the effects of these on health status and health problems.

2. Studies of the relationship between people's health behaviour and their knowledge, beliefs, attitudes, values, motives, aspirations, and goals.

3. Studies, with reference to various health practices, of the differences in the composition of the decision-making unit, e.g., marriage partners, the family unit, and peer groups.

4. Studies of social factors related to the adoption of different health practices, e.g., the role of: (a) the family, (b) specific reference groups, (c) professional and auxiliary workers, (d) marginal and non-medical practitioners, (e) the community, and (f) others.

5. Studies of advice-seeking patterns of people with respect to matters of health, e.g., to whom do people go for health advice and guidance? what do people do to protect, maintain, or restore their health?

6. Studies of health personnel engaged in education and the influence on people of the health worker's beliefs, attitudes, motives, aspirations, and values.

7. Studies of the influence on people of educational communications, programmes, workers, and services (role, type of worker, type of organization or agency.)

8. Studies of the comparative effectiveness of various educational methods; of the communication process; of channels and media of communication; and of the relative effectiveness of each of these as components of programmes in general public health, specific school health, or various education and training programmes.

9. Studies of the process of natural diffusion of health practices among people and professional groups, i.e., the spreading of influence on health practices in a group or community.

10. Studies of the planning, organization, and administration of health education services as an integral part of overall health programmes at various administrative levels.

It is recognized that the research tools, instruments, and methods utilized in the studies suggested should preferably be designed and pre-tested in such a way that replication studies would yield comparable results.

The Group considered that there is no best conceptual model as such, and that no one model can be adopted generally. Individual research workers will have their own conceptions about and ways of organizing the work, as will research groups and grantors of funds. Furthermore, no one model can possibly be either inclusive enough or detailed enough to provide

an adequate conceptual position from which individual studies or a series of planned, integrated studies can be evolved.

A series of integrated models would need to be created to describe, in a broad frame of reference, the dynamics of health education as a process and to present, in a more specific manner, particular aspects of the process. A research group, guided by such models, could conduct individual investigations into selected, delineated parts of the process but view them in the context of a more comprehensive whole. Thus each study would be seen as partial, placed in a wider perspective, and related to other studies. In other words, a particular phenomenon within the educational domain could be singled out for study in depth, the findings then being examined in the light of the conceptual background and concurrent pertinent research. A wide perspective could thus be achieved. Continuity in depth could be developed by focusing on a delimited problem, applying tentative and inconclusive findings and using questions that emerge from the analysis of initial studies to formulate more intensive studies. It should be stressed that, while a complex of models to guide research is suggested as one possible means of achieving an important exploration of professional knowledge and of problems in practice, it is not intended that such models should dictate the research to be done or restrict research efforts.

4.3 Problems in health education research

It is not within the purpose of this report to discuss health education research problems comprehensively or in full depth. The Group considered, however, that it would be useful to select some specific problems requiring attention, while recognizing that research in health education is of relatively recent origin and is limited in quantity. Some of the problems discussed are not unique to health education research. They are, in the main, common to all research related to human behaviour and carried out in action settings. They derive both from the nature of the problems requiring research and from the kinds of research appropriate to them.

4.3.1 Insufficient research on educational problems in health programmes

Perhaps the most general and yet the most significant problem is the lack of adequate research directly concerned with health education in various circumstances in health programmes. Some such research is being developed in the work of some universities concerned with public health and health education, a few government bureaux of health education with a research section or interest in research, some privately supported groups, and an increasing number of practitioners who have urged short-term studies as part of programme development. Even a brief analysis of health education research completed over the last 25 years reveals a trend away from investigations of unsophisticated design towards research

dealing more especially with health behaviour, behavioural change, and the dynamics of educational situations. Notwithstanding the progress made, the profession does not yet have a sufficiently substantial body of health education research.

The profession has also drawn effectively upon applied research in collateral fields. The Group recognized the importance to health education of numerous studies conducted by social scientists and acknowledged the contribution of social scientists who have conducted research on health education problems. In addition, health education has utilized research from general education—research that will be increased by the current and future work of UNESCO, the International Bureau of Education, the International Institute for Educational Planning, etc. Some of the research carried out in community development programmes also falls within the range of interests of health education, as does that conducted by such institutions as the United Nations Research Institute for Social Development. But the need for research directly related to educational problems in health programmes remains.

It will of course help to continue stimulating workers in associated disciplines to carry out applied research and more specifically health education research. But each discipline will necessarily develop research within its own frame of reference. If the needs of health education research are to be met, research workers within the profession of health education need training so as to complement and supplement the efforts of related disciplines and to initiate research.

4.3.2 *Problems in the design and conduct of research*

High-quality research depends on a sound conceptual framework and adequate design. Well-formulated research questions are essential, as is a clear definition of the concepts involved, the phenomena to be measured, and the methods and criteria of measurement. Unfortunately, in much health education research (as also in social science research) that which is to be measured is too often not clearly defined, and measurement procedures frequently lack precision. This statement is not intended entirely as criticism for, particularly with respect to measurement, it simply reflects a state of affairs in this kind of research wherein the variables of interest are not easy to measure and measurement procedures not yet refined. In comparison with the natural sciences, health education has had relatively brief research experience.

One difficulty in health education research arises because behaviour cannot always be assessed indirectly, is often not directly observable, or may be open to observation but changed in the process. Behaviour may sometimes be measured indirectly and reliably, as through clinic or other such records. However, records are not always dependable; for example,

in many situations, addresses and names are incorrect or incomplete and records may sometimes be falsified.

Often behaviour is private or is not carried out in a setting where it can be recorded. This is the case with nutrition practices, with chemoprophylaxis, with the following of a regimen involving diet or exercise, and the like. While such behaviour is observable, observation is not an adequate means of assessment, for it may alter the behaviour. In research on training also, although the behaviour that training is intended to affect is usually observable, it is difficult to measure normal everyday performance, for trainees may be aware of and influenced by the presence of observers.

Behaviour that cannot be measured by indirect means or observation is often assessed through verbal reports, which present obvious problems, frequently compounded because much research is of a retrospective type. Accuracy is particularly a problem when measurement depends upon the reports of respondents, for the reports depend on memory, which may be influenced not only by natural forgetting but also by distortion resulting from defensive attitudes or the influence of subsequent action and knowledge. Increasing attempts are being made to use a prospective approach, but this also presents difficulties of a different kind.

That the behaviour which educational programmes are designed to affect is often not immediate, particularly in purely preventive action, constitutes a vexing problem in research. Research design, of course, could include arrangements for assessing future action, determining, for example, from a group of prospective mothers participating in an educational programme the proportion who actually seek prenatal care in the first trimester. However, the follow-up of individuals in itself is usually difficult. Unanticipated and uncontrolled variables that may intervene between education and the seeking of prenatal care and influence the behaviour to be measured are another serious problem.

Some of the above comments are especially applicable to before-and-after research, which is frequently conducted in health education since change is a major objective. Measurement presents a complex problem here, as do good design and discerning analysis, particularly when the research is carried out in an action setting. One problem may be that the research becomes of such magnitude and duration that it is unmanageable, or interest in it may be reduced. Research workers in health education must be aware of these possibilities in their planning. A special difficulty arises when the panel method is used—in which respondents are interviewed again—for pre-planning must take into account such factors as population mobility and the effects of “before” on “after” measurements. Growing experience with before-and-after studies and in particular with panel studies will benefit health education research.

Many of these points are particularly applicable to research conducted in an action setting, where the collection of data may affect professional

practitioners or individuals whose behaviour or attitudes are being measured. When research involves the collection of data directly from respondents or through direct observation, the human effects require careful evaluation. Anxiety, negative feelings, and the like may be aroused in users of clinics and other services or in community leaders, for example, depending upon such factors as the research topic, the data collection methods, or the nature of the interaction between research worker and respondent. Where undesirable effects are possible, consideration must be given to alternative methods of collecting the necessary data and a decision reached regarding the ultimate value of the research as compared with the negative human impact produced by it.

The involvement of practitioners concerned with a problem is clearly helpful in making an action situation available for research and in centring research on practical matters, and it undoubtedly increases the possibility of applying the findings. Nevertheless, careful thought must be given to the effects of such involvement on the research, since practitioners engaged in solving a professional problem may reject or distort findings unless they develop objectivity. Logic and experience indicate that collaboration should be the minimum needed for obtaining co-operation and for fostering application of the findings. Research workers conducting studies in an action setting must, in sum, be cautious about the collaborative process, in the light of the necessity for adhering to the standards of scientific inquiry.

Although action research presents numerous methodological problems, it is often impossible to conduct health education research outside the natural setting, as in the study of selected dynamic aspects of a clinic situation. Further, reproducing an educational problem in a contrived setting may lead to oversimplification and artificiality, which reduce the applicability of the findings. The laboratory removes many factors actually or potentially influencing the phenomenon under study, and respondents may be restricted unnaturally in their responses and influenced by their role as research subjects. The use of a laboratory setting also often leads to choice of respondents who do not really resemble those among whom the phenomenon being studied exists. In spite of all this, the possibility of laboratory studies should not be ignored, for they are appropriate for the investigation of some specific problems.

To regard the difficulties of action research as insurmountable does not aid progress. Research in life settings is essential for the development of many professions. Efforts to improve action research will enrich and improve the methodology. Applied research in itself still constitutes a frontier area. Action research may require giving up some degree of scientific rigour, but the nature and extent to which it does so must be clearly understood.

The Group noted that the necessity of dealing with multiple interacting variables in many kinds of research, including action research, has led to the

development of new analytic procedures that rely chiefly on the use of electronic computers. Although such technological innovations do permit the researcher to undertake more complex studies, they do not differentiate between data collected from well-designed and from poorly-designed research. Nor should they be an excuse for the wide-scale collection and analysis of trivial, redundant, or irrelevant data.

Problems in comparative research have not been explicitly discussed. They include all of the problems mentioned above and more, for this is a young research area. Indeed, if research in one setting is not well designed and executed, replication in other settings is of no avail. Yet comparative research is urgently needed if the basis of knowledge of health education is to be extended. Comparative research calls for co-ordination in the planning and conduct of studies, teamwork, clear agreement on terminology and nomenclature, sampling, and measurement procedures. Since similar studies are carried out independently, communication among research workers is highly essential, whether they are carried out within a country or within a larger area; some agreement, guidance, and a mechanism for keeping the various studies co-ordinated are required.

4.3.3 *Responsibility for advancement of research in health education*

Continuous effort to achieve good design and sound measurement procedures is obviously essential to progress, and research groups and individual research workers must strive for higher standards. Related to this and also to the relatively sparse amount of health education research is the need to prepare a greater number of qualified research workers in health education. In addition, there needs to be more sharing of research experience among investigators and between research workers and practitioners. Professional organizations concerned with health education can assist in raising standards, aiding communication, achieving greater agreement on terminology and nomenclature, and advancing programmes to prepare research workers. Research centres (see 6.1) could also aid in the improvement and extension of research and might particularly aid in comparative research.

Lack of adequate funds has not been mentioned as a problem, but anyone concerned with health education research is well aware of its existence. By comparison with research in the natural sciences, social research has limited financial support; this is particularly true of research in health education.

4.3.4 *Problems of communication*

There is little value in encouraging research in health education if the results are not used in professional practice. The profession, the individual practitioner, and the research worker must each assume some measure of responsibility for the dissemination of research findings.

The practitioner must be aware of pertinent research and be able to interpret and evaluate it, draw the implications for his practice, and apply the findings. An inquiring mind and a progressive attitude are needed. A practitioner who lives at the growing edge of his profession constantly evaluates what is new because of his concern both with self-improvement and with the advancement of his professional contribution in teamwork with others.

The profession, to increase the effectiveness of practice, must provide leadership. This it could do by the publication of research reports and the provision of continuing education for practitioners through conferences, workshops, and seminars.

It is not suggested that research findings are not now being applied in practice or that the responsibilities mentioned are not being assumed. However, it must be acknowledged that current efforts are inadequate. Educational problems that health workers, including health education specialists, encounter in practice and experiences that suggest research are not documented in sufficient quantity. Research workers in health education are as yet all too few and their research publications are limited in number. A few research workers in associated disciplines have carried out investigations on health education problems, but they publish in journals of particular interest to their colleagues.

At both national and international level practitioners and research workers need to be encouraged to publish, and to do so in journals that reach professional workers involved in health education. An assessment of existing journals of health education is needed with regard both to their distribution and to the adequacy of their number. Journals produced in one country are usually not widely distributed in others; international agencies and international non-governmental and professional organizations could certainly aid in increasing the distribution of relevant literature. But publication of research in itself is not enough. Discussions of the findings involving both practitioners and research workers should be fostered by local, national, and international organizations interested in health education within the broad context of health and related programmes.

Putting research findings into practice requires not only that the findings be made known through publication or verbal presentation but also that they be understood. Problems of communication are common. Some result from the inadequacies and distortions of translation from one language into another, while others are inherent in the esoteric vocabularies of professional disciplines. Even members of different specialties within disciplines may have difficulty in understanding one another's language, so that dissemination of findings among research workers themselves is not always possible. The Group suggested that the preparation of manuals or glossaries of widely used terms concerned with health education research might be helpful.

5. THE PREPARATION OF RESEARCH WORKERS IN HEALTH EDUCATION

5.1 Manpower problems

As in other research areas, there is a widespread shortage of manpower qualified to participate in educational research focused on health problems and health care programmes. Not only have an insufficient number of practitioners in health education gone on to advanced studies preparing them to plan and conduct research, but the number of centres offering such preparation is also acutely inadequate. Interest in research on educational problems encountered in health programmes is steadily on the increase. This is reflected in the increasing number and sophistication of articles published in the professional literature, the growing number of professional health education workers inquiring about research training, and the expansion of interest in research in professional organizations. To promote this interest, research training at different levels needs to be encouraged.

While research in health education needs to be carried out by persons familiar with health education practice and also well prepared in research, other disciplines can very appropriately contribute, so their interest must be stimulated. Social scientists stand out as a group that has clearly contributed research of substantive and methodological significance related to health education practice. They naturally have in the main not concentrated on health behaviour, the process of change, or the educational approach to behavioural change in health, though a few social scientists brought into contact with health services have carried out applied research dealing with educational problems of health programmes. It would help considerably to advance further research and to alleviate the manpower crisis if more social scientists engaged in health education research.

Professions have in time developed research workers, and the profession of health education should develop its own. Obviously research contributed by related disciplines is of considerable value; but such research is usually not focused directly on the main problems in health education. This may be because the practitioner does not communicate problems clearly, or because the research worker has insufficient background in health and health education to grasp the problem or has broader interests leading him to alter the research focus.

5.2 Research preparation in professional education programmes

The Group noted widespread support for the view that the health education practitioner should carry out postgraduate study in an acceptable institution with specialization in health education leading to the degree of

master of public health or its equivalent. Postgraduate courses are generally held in schools of public health, or in departments of social and preventive medicine in medical schools. They have increasingly incorporated basic instruction on research principles and methods into the curricula, with a view to fostering interest in future applications of scientific methods in health programmes and health education practice. As participants in these multidisciplinary postgraduate courses, health education specialists are now being exposed to a scientific approach in relation to their sphere of practice and research. They need in addition to be prepared in the use of methods of collecting objective data, and in the analysis of such data.

5.3 Postgraduate research preparation

Although there are several postgraduate training programmes in health education throughout the world, only a few are designed to prepare research specialists in health education, despite the expressed interest in health education research and the desire to increase the quantity and the quality of research focused directly on educational problems in health programmes. Even though the demand for additional research manpower is patent, the creation of new training centres may be seriously handicapped by the lack of the necessary qualified faculty, facilities, and funds and by the pressure to meet the demand for health education practitioners required for governmental and non-governmental health programmes.

A priority in establishing a research training programme is the formulation of criteria for the recruitment and selection of qualified students. In addition to possessing the requisite intellectual ability needed to pursue advanced studies in the special field of health education research, the student should have a major interest in research rather than in practice; an analytic and probing mind; ability to conceptualize and to deal with abstractions; and self-discipline to cope with problems in depth.

Another major priority is the establishment of criteria for the selection of members of the staff. They should preferably be prepared in all aspects of their specialty, have experience in the development and conduct of research, and be engaged in research projects and in advancing their fundamental knowledge and basic skills.

No attempt will be made to describe the content of a curriculum for research training in health education. Each institution will organize its own curriculum. However, it is stressed here that research preparation is advanced study at the doctoral level and presupposes postgraduate education at the master's level. Experience suggests that not less than two years of study will be required after the master's degree to prepare students adequately in the theory and skills needed for them to function as capable research workers.

No research training programme can be adequate unless it takes place within an environment of multidisciplinary research. Students must see themselves as part of a continuing developmental research situation in which the staff and the students are actively involved. A sterile environment obviously can neither stimulate learning nor offer meaningful experiences.

Other needs in research training are facilities such as an adequate library, classroom, and personal work space and the basic research tools and equipment. There is a need in all countries for funds for research in health education. Fellowship funds are especially needed to assist postgraduate students.

The switch of a practitioner to research may constitute a problem. In the conduct of research, he must lay aside his attitudes as a practitioner in order to maintain the objectivity essential to research. Some individuals may not be able to effect this change of attitudes. Educational programmes must take the problem into account.

Interest in the development of postgraduate research training programmes in health education has been manifested in several regions of the world and requests have been made for information from institutions where such programmes exist.

International organizations, such as WHO, might assist by convening interdisciplinary regional and inter-regional meetings on research training in health education in order that experiences can be shared and problems and mutual assistance considered. International organizations could also provide consultants, on request, to developing research centres to guide them during their early growth. Consultants should be well prepared in health education research and research training; they may be part of the organizations' permanent staff or employed as short-term consultants for specific assignments.

In addition, international multilateral agencies and countries offering bilateral aid might support co-operation between universities to create a continuing relationship between an institution experienced in research training in health education and one less so. The relationship would be mutually profitable and permit exchange of ideas, staff, and students. It could also foster the planning and conduct of much-needed comparative research.

The assistance of international agencies is needed to provide fellowships to prepare research workers, especially for teaching personnel in developing postgraduate training centres. Their assistance would also be important in helping to sponsor the exchange of faculty members and scholars engaged in research.

If a worldwide network of health education research centres were established progressively with well-qualified and experienced research personnel, individuals and agencies in the countries and the region concerned could

be offered consultation in research training as well as assistance in the design and conduct of research.

Qualified research workers are a *sine qua non* for the advancement of research in all its dimensions and the need for such workers is particularly urgent in the field of health education. Merely to deplore the lack of adequate manpower resources accomplishes nothing. Only when the profession assumes responsibility for suggesting and taking action will progress occur.

5.4 Continuing education

The term "continuing education" as used here includes short-term special courses and longer refresher study programmes all offered subsequent to the basic professional preparation. The need for such programmes is particularly acute for health education practitioners, because of the eclectic nature of their discipline and the rapid increase in the amount of knowledge on it. Practitioners, especially those without recent preparation, are requesting a wide range of opportunities for continuing education and are increasingly aware of the need for research knowledge and skills.

Although professional organizations, governments, and universities are responding to these demands, only a limited number are satisfied with what is at present available. As intensified effort is needed to expand continuing education programmes, focused not only on the needs of special groups but also on problems of multidisciplinary concern, since many health education problems require multidisciplinary analyses and solutions.

6. RECOMMENDATIONS

The Group considered that the advancement and strengthening of health education research in countries and in the world are essential to the further development of knowledge and practice in health education, so that health education can make its optimal contribution to health programmes. Research on educational problems in health programmes is at present insufficient both in quality and quantity. This is in part due to the shortage of personnel for conducting such research and in part to the shortage of educational facilities for preparing research workers. The Group recognized the complex nature of health education research. Health workers everywhere, however, face innumerable and diverse problems essentially relating to education and to health, which must be investigated on a well planned interdisciplinary basis. Research on educational problems in health programmes could be assisted greatly by leadership and encouragement from international organizations.

Many recommendations are implicit in what has been said in this report. However, attention is drawn particularly to the following specific recommendations.

6.1 Development of research centres

There is at present a vital need for the promotion of systematized research specifically directed toward educational problems within the context of various health programmes. Such research would be best fostered by the establishment of centres for health education research, particularly in association with schools of public health or equivalent institutions having established postgraduate programmes in health education and affording prospects and resources for interdisciplinary studies and research. In some circumstances, the research centres may be developed by national health or other competent organizations responsible for health education. The development of such research centres will depend on the availability of suitably qualified personnel.

6.2 Development of programmes to prepare research workers

6.2.1 The present scarcity of educational centres for preparing research workers suggests that priority needs to be given to the establishment of additional postgraduate programmes. Research preparation should include the actual involvement of trainees in research; training centres should therefore preferably be engaged in continuing research.

6.2.2 Consideration should be given :

(a) to the organization of technical meetings that would aid in the development of research training centres and foster the exchange of ideas among centres ; and

(b) to the provision of such long-term and/or short-term consultant assistance as may be desired by the responsible authorities.

6.2.3 There is a vital need for fellowships for students preparing to be research workers or faculty members in postgraduate training institutions. Postgraduate fellowships for one year are not adequate for such preparation, therefore consideration should be given to fellowships for periods longer than one year, particularly for study at the doctoral level.

6.3 Provision of funds

The funds available for research in health education do not match the relative importance of and need for the work. The importance of health education research in the general context of health developments and problems needs careful consideration so that a better allocation of resources can be made. Consideration should be given to ways and means of promoting research through : (a) grants to individual investigators, (b) the initiation of collaborative research, (c) the promotion of field research teams, and (d) the provision of advisers to assist interested governments and institutions in planning for the development or expansion of research activities.

6.4 Promotion of comparative research

The promotion of comparative research is essential to the improvement of health education and the extension of a systematized body of professional knowledge. Consideration should be given to the stimulation of research planning involving collaboration among research workers from various disciplines and in different situations and of comparative research in contrasting cultures, groups, or programmes.

6.5 Communication

6.5.1 Communication among research workers and between research workers and practitioners in health education is inadequate. Even the present relatively limited amount of health education research knowledge is not communicated widely. Some research is published only after long delays and some is never published. The sharing of publications between the several associated disciplines and practitioners and researchers in health education is minimal.

The following steps would aid the process of communicating information about research developments :

(1) the establishment of a worldwide network of centres to maintain and distribute up-to-date collections of research reports in categories relevant to health education practice ;

(2) the regular publication of review monographs by professional associations, universities, governments etc. ;

(3) the translation of reports into several languages ;

(4) the fostering of programmes for the exchange of research workers ;
and

(5) The promotion of meetings, symposia, and seminars to bring together research workers from various parts of the world, on both a disciplinary and an interdisciplinary basis.

6.5.2 Workers in related disciplines will continue to make substantial research contributions to health education, and the value of their research will generally be enhanced if studies are developed with the health education component more explicitly recognized. This interest of associated disciplines in health education problems should be maintained or increased, in view of the urgent need for more research and because of the advantages that accrue from keeping the research area open to other disciplines while at the same time building up the number of health education research workers. Communication between related disciplines and health education practitioners and research workers should therefore be increased, as, for example, by joint conferences and better distribution of health education publications.

6.5.3 In view of the desirability of comparative research, consideration should be given to the possibility of a review of existing terminology to determine whether a standard nomenclature is possible and what further steps are needed. It is recognized that the diversity of the disciplines involved and the increase in health education research may limit the possibility or desirability of establishing definitions for many terms.

6.5.4 In view of progress in computer technology and the increasing amount of knowledge in health education and cognate fields, consideration should be given to the employment of information storage and retrieval techniques to help ensure that health education needs are taken into account.

6.6 Research preparation for practitioners

Involvement of health education practitioners in research is recommended as a means both of promoting more research and of furthering understanding between research workers and practitioners. The post-graduate preparation of health education specialists and related workers should therefore be designed to acquaint them with research in ways that will develop their appreciation of it, make them aware of research problems, and familiarize them with research findings. Further, programmes designed to prepare administrators and others should create awareness of the health education practitioner's role in research so that support will be given to them.

6.7 Future technical meetings

Other technical meetings in the future might consider special aspects of health education research. This would permit more detailed exploration of selected aspects of problems associated with the advancement of research and aid in bringing about agreement, where desirable, in some areas. The meetings might consider: (a) the establishment of priorities in health education research, (b) research methodology, in particular problems associated with comparative research in health education, and (c) the preparation of research workers in health education.

Annex

WHO AND RESEARCH IN HEALTH EDUCATION

WHO has had a long-standing interest in research. A WHO Expert Committee on Health Education of the Public (1954) specified the need to give attention to "implementing carefully planned field studies, research, and experimental programmes in this field", and stated that, "to date, comparatively few studies and field experiments have been carried out, and the methods and procedures used have therefore been based on experiences in other fields".¹

A particular responsibility of WHO is noted in the 1958 report of WHO Expert Committee on Training of Health Personnel in Health Education of the Public, where it was proposed that studies on a world scale be conducted to determine the nature of preparation in health education offered to physicians and nurses and also to health education specialists.² This Committee proposed in addition that WHO explore, in co-operation with other appropriate bodies, the prospects of compiling, publishing, and disseminating technical information on research pertaining to training and on research methods being used in health education.

The Technical Discussions held in connexion with the Twelfth World Health Assembly in 1959 were devoted to health education. These discussions focused in part on research, and indicated the need for trained research workers and for funds, and the interest of countries in educational research and its development. Typical problems for research were listed in seven categories. The importance of research in the improvement of public health programmes was underlined.

Research was again mentioned in a 1960 joint WHO/UNESCO report on teacher preparation in health education, in which reference was made to co-operative studies of the health education aspects of teacher training; local pilot projects in school health and teacher training; and studies of methods of adapting health education to children's needs and interests and of the effectiveness of health teaching.³

In 1962, WHO convened an inter-regional conference on the post-graduate preparation of health workers in health education. In the report, the research needed is set out, and emphasis is placed on the importance of the systematic distribution of the findings to teaching personnel, as well as on the need for first-level research training as an aspect of the post-

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1954, No. 89, p. 33.

² *Wld Hlth Org. techn. Rep. Ser.*, 1958, No. 156, pp. 35-36.

³ *Wld Hlth Org. techn. Rep. Ser.*, 1960, No. 193, pp. 17-18.

graduate preparation of specialists.¹ The report draws attention to the scarcity of qualified research workers in health education, the inadequacy of methods of research and evaluation, the need for financial support for research, and the lack of appreciation of the value of research in relation to its cost. It also stresses the importance of research training opportunities for health education specialists, of co-ordinating research within and between countries, and of conducting additional research related to training.

In 1967, a WHO Expert Committee on Planning and Evaluation of Health Education Services specified research as one of the functions of a national health education service and, to a lesser degree, of services at intermediate administrative levels.² It stressed the relationship between research and the improvement of practice and the importance of conducting research.

WHO's concern with health education research is seen in many other reports and activities. There are many references to the need for such research in reports of WHO expert committees, made not only by health education specialists but also by specialists in health administration, nursing, medical care, environmental health, maternal and child health, malaria eradication, mental health, tuberculosis control, nutrition, occupational health, and others. In 1961, a consultant was employed to survey the field of research, and this resulted in a brief annotated bibliography and suggestions for research.

As a follow-up of this work and in connexion with the Fifth International Conference on Health Education held in 1962, WHO co-operated in a more comprehensive compilation of published research related to health education practice. Published by the Society of Public Health Educators, this has been used widely.³ In 1966, WHO encouraged and in part supported an up-dating of the 1963 volume, and the resulting six volumes, published by the Society during 1967 and 1968 with the co-operation of WHO, are a significant and substantial contribution to health education and reveal a considerable growth in research.⁴

¹ *Wld Hlth Org. techn. Rep. Ser.*, 1964, No. 278, pp. 38-40.

² *Wld Hlth Org. techn. Rep. Ser.*, 1969, No. 409.

³ SOPHE Research Committee (1963) *Research related to health education practice*, New York, Society of Public Health Educators, Inc.

⁴ *Hlth Educ. Monogr.*, 1967, 1968, No. 23-27.