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The purpose of this study was to develop a valid scale to measure attitudes toward the prevention of birth defects and toward those who have birth defects. The situation-response measurement technique, which consists of a situation and five behavior responses for each item, was used in this study. A preliminary judges' study was used to improve the scale items and to give the writer an opportunity to become familiar with the statistical techniques to be used. In the preliminary study, thirty items were given to a panel of five judges. These judges were instructed to evaluate the importance of each item in the attitude scale and to weight the desirability of the responses for each item on a five to one scale. The judges were encouraged to make comments and suggestions concerning any aspect of the scale items. The rank-difference (ρ) method of correlation was used to determine the degree to which the five judges agreed with each other in weighting the responses. An average item coefficient of correlation was computed by averaging the five judges' intercorrelations for each item. The lowest intercorrelation was .05 and the highest was 1.0. The criteria used to determine which items would be sent to a final panel of judges were: (1) the average item coefficient of correlation must be .700 or better, (2) three of the five judges must consider the item either desirable or essential, and (3) the five responses for each item must include three different rankings with at least one rank below 3 and one rank above 3. The application of the criteria,

consideration of the preliminary judges' comments, and the revision of items made it possible to send forty-four items to a final panel of five judges. Each of the final judges has worked with children who are handicapped as a result of birth defects and with families of birth defective children. The judges were instructed to evaluate the importance of each item in the attitude scale and to weight the desirability of the responses for each item on a five to one scale. The rank-difference (ρ) method of correlation was used to determine the degree to which the five judges agreed with each other in weighting the responses. An average item coefficient was then computed by averaging the five judges' intercorrelations for each item. The criteria used in determining which items would be included on the final attitude scale were: (1) the average item coefficient of correlation must be .850 or better, (2) four of the five judges must consider the item either desirable or essential, (3) the five responses for each item must include three different rankings, with at least one rank below 3 and one rank above 3. Thirty items remained after applying these criteria.

A validity of .920 on the final attitude scale was found by averaging the item coefficients of correlation for the thirty items. To determine the reliability using the test-retest method, the scale was administered to thirty freshman and sophomore college women at The University of North Carolina at Greensboro. The reliability of the scale was .807.

A reliable and valid attitude scale was developed to measure the attitudes of college freshman and sophomore women toward the prevention of birth defects and toward those who have birth defects.

CONSTRUCTION OF A SITUATION-RESPONSE SCALE TO MEASURE
THE ATTITUDES OF FRESHMAN AND SOPHOMORE COLLEGE
WOMEN TOWARD BIRTH DEFECTS

by

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TABLE OF CONTENTS

	Page
LIST OF TABLES.	vii
Chapter	
I. INTRODUCTION.	1
II. STATEMENT OF THE PROBLEM.	6
DEFINITION OF TERMS	6
LIMITATIONS OF THE STUDY.	7
III. REVIEW OF LITERATURE.	8
NATURE OF ATTITUDES	8
Definitions of Attitude	8
Development of Attitudes.	12
Relation of Attitudes to Values	13
Influence of Knowledge on Attitudes	14
Relation of Attitudes to Behavior	15
ATTITUDE MEASUREMENT.	16
Techniques of Measurement	16
Studies Related in Method	19
Studies Related to Birth Defects.	20
IV. PROCEDURE	28
DEVELOPMENT OF THE SCALE.	28
Selection of a Measurement Technique.	28
Selection of Areas.	29
Development of Items.	30
Preliminary Judging of Thirty Items	31
Correlation of Preliminary Judges' Weightings	32
Ranking of Responses.	32
Criteria for Items to Be Included on Final Judges' Form.	32
Selection of Final Judges	33
Preparation of Scale Items for Final Judges	34
Weighting the Responses: Final Study	35
Correlation of Final Judges' Weightings	35

Chapter	Page
Ranking of Responses.	36
Selection of Items for the Final Attitude Scale.	36
ADMINISTRATION OF ATTITUDE SCALE.	36
Selection of Students	36
Arrangements for First and Second Administration of Attitude Scale.	37
First and Second Administration of the Attitude Scale.	37
Scoring of the Attitude Scale	38
TREATMENT OF DATA	38
Validity of the Attitude Scale.	38
Reliability of the Attitude Scale	38
V. FINDINGS.	39
ANALYSIS OF DATA FOR PRELIMINARY STUDY.	40
Average Intercorrelations of Response Weightings	40
Evaluation of Items	41
Average Item Correlation.	42
Range of Intercorrelation	42
Weighting and Ranking of Responses.	44
Summary of Revisions of Items	45
Validity of Preliminary Form.	45
ANALYSIS OF DATA FOR THE FINAL STUDY.	45
Average Intercorrelations of Response Weightings for Forty-Four Items	45
Evaluation of Items	46
Average Item Correlation.	47
Range of Intercorrelations.	50
Weighting and Ranking of Responses.	50
Summary of Item Elimination	51
Average Intercorrelations for Thirty Final Items	51
Validity of the Final Attitude Scale.	52
Reliability of the Final Attitude Scale	52
VI. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.	54
SUMMARY	54
CONCLUSIONS	56
RECOMMENDATIONS	56

Chapter	Page
SELECTED BIBLIOGRAPHY.	57
APPENDIXES	66
APPENDIX A Preliminary and Final Judges.	67
APPENDIX B Correspondence.	70
APPENDIX C Instructions for Judges	73
APPENDIX D Attitude Scale Items.	78
APPENDIX E Directions for Students	96
APPENDIX F Preliminary Study Raw Data.	98
APPENDIX G Final Study Raw Data.	104

LIST OF TABLES

Table	Page
I. Average Intercorrelations of Judges on Twenty-Six Items in Preliminary Study.	40
II. Range of Intercorrelations and Average Coefficients of Correlation of Four Judges for Twenty-Six Items in Preliminary Study.	43
III. Average Intercorrelations of Judges on Forty-Four Items in Final Study.	46
IV. Range of Intercorrelations and Average Coefficients of Correlation of Five Judges for Forty-Four Items in Final Study	48
V. Average Intercorrelations of Five Judges on Final Thirty Items.	52
VI. Item Evaluations and Coefficients of Intercorrelation of Five Judges' Response Weightings in Preliminary Study	99
VII. Item Evaluation and Coefficients of Inter- correlation of Four Judges' Response Weightings in Preliminary Study.	101
VIII. Total of Response Weightings, Average of Response Weightings and Response Rankings of Four Judges in Preliminary Study.	102
IX. Item Evaluations and Coefficients of Inter- correlation of Five Judges' Response Weightings in Final Study	105
X. Total of Response Weightings, Average of Response Weightings and Response Rankings of Five Judges in Final Study	107

CHAPTER I

INTRODUCTION

Every year in the United States, birth defects destroy 500,000 babies before they are born. Another 250,000 babies - or one in every fourteen - are born each year with defects. This means that one American family in ten has a defective child. More children are hospitalized for birth defects than for all infectious diseases combined (Lipton, 1969a, 1969c; Sherman, 1967).

A study of world history shows that people on all continents have kept records depicting anomalies in human beings and animals. Over 5,000 years ago Egyptian sculptures, paintings, and mummies showed abnormalities such as dwarfism, cleft palate and clubfoot. Prehistoric Peruvian pottery recorded cleft lip and congenital arm amputations (Lipton, 1969b). Ancient Romans thought the sight of a dwarf was an ill omen; dwarfs were thought to be branded by God. Kings often used physically and mentally defective people as comic figures for entertainment (Tietze-Conrat, 1957). Lipton (1969b) also stated that ancient Babylonian priests were excellent observers and recorders of children of unusual appearance. It is remarkable that most of the anomalies recorded do not appear to be mythical or impossible. In fact, almost all of the malformations are listed in today's publications on congenital anomalies.

Through the generations, factual information turned into incredibly exaggerated tales and fables. Cyclopean people with one eye in their foreheads, two headed dieties with many arms, beings with wings, sirens with fishlike tails, and many other mythical monstrosities had a basis in fact. "This historical detail demonstrates that objective and precise observations and records can be converted into unfounded superstitions which persist to this very day" (Lipton, 1969b:580). As late as 1683, bisexual children were executed, and women giving birth to deformed children were burned alive. Pregnant women still visit the Louvre in Paris, hoping to improve the physical features of their child by viewing beautiful art. And people still believe that God's punishment and the devil's influence are the causes of birth defects (Lipton, 1969b).

Lipton (1969a, 1969c) and Sherman (1967) reported that in recent years scientific study has resulted in much medical knowledge of the causes of birth defects and the possible preventive measures available to help insure the birth of healthy babies. But scientific knowledge alone cannot prevent birth defects or the suffering endured by a birth defective child and his family. The prevention of birth defects depends on prospective parents who are accurately informed about the causes of abnormalities in infants and who are willing to take the precautions known to be effective in preventing these abnormalities.

A public that understands the needs and abilities of people with birth defects is also important. Shears and Jensema (1969) stated that finding acceptance is one of the major problems for

disabled people. Too often they feel cut off from society and forced into a subculture of their own. Families with birth defective children and the society of which they are a part must be educated in order that they may understand the problems and needs of these children. Many communities have developed educational programs which utilize various media including radio, television, magazines, newspapers and pamphlets to help students, teachers, parents, and the general public to understand birth defects (Lipton, 1969a).

Public school and college education curriculum planners are beginning to recognize the need for programs which provide information to young adults on the causes, prevention, and understanding of birth defects. Lipton (1969a) believed the most effective approach for prevention of birth defects and acceptance of those with birth defects is through a school health education program.

How can community agencies and school educators determine if the information they present has a favorable effect on peoples' attitudes and behaviors? Shears and Jensema (1969) stated that if we can determine certain characteristics which influence the acceptance or rejection of anomalous individuals, then, perhaps, methods could be developed to minimize the negative perceptions toward these individuals. In reply to a letter from this writer in which this thesis was outlined, Mr. Julian Stein, Consultant for Programs for the Handicapped for the American Association for Health, Physical Education, and Recreation said:

The approach you outlined sounds quite interesting and attacks a very important area--that of changing attitudes (must find the attitudes first and then develop strategies to influence them) about individuals with birth defects. The entire area of attitudes toward handicaps, regardless of their cause is one in need of much work (Stein, 1970).

A review of the literature indicated that there were no instruments available to measure attitudes toward birth defects. The writer believes that the construction of an attitude scale will make it possible to determine attitudes toward birth defects. Hopefully, educators and community agencies could then develop effective methods to favorably influence the public's attitude toward the prevention of birth defects and toward individuals with birth defects.

For many years health educators exposed students to health knowledge and assumed that this knowledge would lead to the development of desirable attitudes, which, in turn, would result in beneficial health behavior. Greenberg (1970) believed that the development of desirable attitudes is very important in health education; cognitive learning, for its own sake, has very limited importance in health education. As an example, he said:

Knowledge of statistics that relate to lung cancer and the smoking of cigarettes is not much value in and of itself. However, when one forms the attitude, based upon statistics, that smoking is hazardous to one's health and then proceeds to stop smoking, the knowledge then has become significant. In evaluating health education programs, the use of tests of cognitive learnings should be given minor consideration. The change to healthier practices based upon 'healthy' attitudes is the ultimate objective of health education and the basis upon which the program should be evaluated (Greenberg, 1970:293).

Edwards, as cited by Mayshark, stated that:

Knowledges, attitudes and habits have been the basis of our health principles for many years. To regard proper health attitudes as an essential objective of health instruction, and then not to adequately evaluate them, seems an essential waste of time and energy for the teacher and curriculum constructor. It is high time we stop talking theoretically about the value of health attitudes and try to be practical and measure them objectively (Mayshark, 1958:309).

A survey of the completed research in evaluation of health instruction showed that attitudes have "tended to escape precise description and definitive study" (Mayshark and Richardson, 1963:73). Due to the many adequate methods available to test knowledge, there is little difficulty in finding a rather extensive list of health knowledge tests (Mayshark, 1956). "Reliable, objective, and valid tests in the area of attitude testing are lacking in the field of health and safety education" (Myers, 1958:321). In the years 1927-1957, only three tests, which measure health attitudes, were constructed and standardized. Only twelve of the available knowledge tests contained a few items specific for health habits and/or attitudes (Mayshark, 1958). Mayshark believed the emphasis on knowledge testing has been unjustified. He stated that "a valid attitude scale in two equivalent forms would tell more about the progress of a particular health class, and the effectiveness of that teacher, than would the corresponding knowledge test" (Mayshark, 1958:310). The lack of tests for attitude measurement emphasized the need for more research in this area of health education.

CHAPTER II

STATEMENT OF THE PROBLEM

The purpose of this study was to develop a valid scale to measure attitudes toward the prevention of birth defects and toward those who have birth defects. To establish reliability the scale was administered to thirty freshman and sophomore college women at The University of North Carolina at Greensboro.

The sub-problems included: (1) selecting a technique to accurately measure attitudes, (2) developing scale items and responses, (3) establishing the validity of the scale, and (4) determining the reliability of the scale.

DEFINITION OF TERMS

1. Birth defect - The National Foundation of March of Dimes defined a birth defect as "A structural or metabolic disorder present at birth, whether genetically determined or as a result of environmental influences during embryonic or fetal life" (Lipton, 1969c:40). Defects sustained at birth are not included. Also, many birth defects are not detectable at birth and do not become evident until childhood or maturity.

2. Attitude - A relatively permanent and acquired organization of beliefs about an object or situation which predisposes one to respond in certain ways.

3. Situation-response - A situation was briefly described and five behavior responses were listed. The responses represent different degrees of attitudes toward the situation. The subject selected the response which best indicated what he would do if he were faced with the situation.

LIMITATIONS OF THE STUDY

1. All subjects were women students enrolled at The University of North Carolina at Greensboro.
2. All subjects were classified by The University of North Carolina at Greensboro as either freshmen or sophomores.
3. The number of subjects ($N = 30$) used to determine reliability of the scale was small.

CHAPTER III
REVIEW OF LITERATURE

It is the purpose of this review to present some of the research findings regarding: (1) the nature of attitudes: including definitions and the development of attitudes, and the influence of values, knowledge and behavior on attitudes, and (2) attitude measurement: including techniques of measurement, studies related in method, and studies related in topic.

NATURE OF ATTITUDES

Definitions of Attitude

Many authors have stated that the problem of attitude study is very complicated and confusing (Bain, 1928, 1930; Carlson, 1956; Droba, 1933; Pace, 1939; and Sherif and Cantril, 1945). As early as 1928, Bain wrote that there was much contradiction in attitude terminology and much unscientific usage of the term. He stated that although the term attitude is commonly used, it is a ". . . good example of an ill-defined, or underdefined, concept used in a loose, pseudo-scientific manner" (Bain, 1928:942). He believed that the principal aspects of the confusion lie in the lack of agreement between attitudes and opinions, attitudes and values, attitudes and habits, and attitudes and subjective states of consciousness. Pace (1939) wrote that the numerous volumes, which either stress the importance of attitudes and attitude

measurement or criticism. Existing studies and scales, indicate that attitude study is a great concern to many authors. Droba also stressed the existence of a "lack of uniformity of understanding and use of the term 'attitude' among the various writers" (Droba, 1933:444). He believed that writers do one of three things: (1) not give a definition, (2) give a tentative definition directly related to some research, or (3) elaborate on a theoretical definition.

A review of literature in the fields of social psychology, psychology, and educational research revealed numerous variations in the definition of attitude. Nelson (1939a) reported on the wide variety of meaning for the term attitude. After surveying thirty sources he listed twenty-three distinct characteristics used in various definitions. Symonds (1927) outlined seven different meanings of attitude as commonly used in literature. These seven definitions were: (1) great organic drives, (2) muscular adjustment, (3) generalized conduct, (4) neural set or readiness to make certain reactions, (5) the emotional concomitant of action, (6) the feeling concomitant of action, and (7) certain verbal responses indicating liking or disliking, acceptance or rejection. Droba grouped the definitions of attitude into four distinct categories: (1) "the 'organic-set' type" - attitudes are largely physical preparations for action; past experiences result in habits which are the basis for attitudes; (2) "general theories" - a vague, indefinite group of definitions which emphasize "a very general preparation to action;" (3) "behavior theory" - the "attitude is not

a state of preparation in the individual but the behavior itself;" and (4) "the 'mental-preparation' theories" - a readiness to act, in mental terms, rather than the behavior itself, is taken as a basis for attitudes (Droba, 1933:447-449).

Definitions have been used by various writers to emphasize "a state of readiness" as an essential element of attitudes. Sherif and Cantril supported the theory that nearly all definitions of attitude have one common feature: that the "attitude denotes a functional state of readiness" (Sherif and Cantril, 1945:300). In their opinions, attitudes are that part of the psychological make-up of an individual which causes him to act in a selective or characteristic way, rather than in a passive or neutral way. Taylor (1961) explained that readiness may show itself in such ways as overt action, verbal behavior, fantasy, and tension states. As another supporter of the "readiness theory," Faris stated that the term attitude "designates a certain proclivity, or bent, or bias or predisposition, an aptitude or inclination to a certain type of activity" (Faris, 1928:277).

Other writers de-emphasized the "state of readiness" theory and stressed the importance of past experience on attitude formation. Jordan and Proctor defined attitudes as "organized reactions of an individual toward something in his environment (object, person, process or idea) as a result of previous knowledge and/or experience" (Jordan and Proctor, 1969:433). Thurstone used attitude to "denote the sum total of a man's inclinations and feelings, prejudice or bias, preconceived notions, ideas, fears,

threats, and convictions about any specified topic" (Thurstone, 1928:531). Nelson defined attitude as "a felt disposition arising from the integration of experience and innate tendencies which disposition modifies, in a general way, the response to psychological objects" (Nelson, 1939b:425).

Other writers felt that it is impossible to differentiate between attitudes and values, and attitudes and social systems. In 1928, Bain wrote that "an attitude is a subjective reaction to a value. . . the relatively stable overt action of a person which affects his status in groups" (Bain, 1928:957). Ferguson supported this theory by stating that an attitude is "the acceptance value of a belief" (Ferguson, 1939:665). According to Rosenberg (1956), attitudes are composed of two variables: the intensity of the person's values and the perceived importance of the attitude object in either leading to or blocking the attainment of his values. The social significance of attitude expression was brought out by the elaborate definition of Doob, who wrote that an attitude is:

. . . an implicit response which is both anticipatory and mediating in reference to patterns of overt responses, which is evoked by a variety of stimulus patterns as a result of previous learning or of gradients of generalization and discrimination, which is itself cue- and drive-producing, and which is considered socially significant in the individual's society (Doob, 1947:136).

Bain believed that most attitude research is actually studying socially conditioned patterns of motivation. He stated that:

While it must be confessed that most writers use such terms as attitude, trait, opinion, wish, interest, disposition, desire, bias, preference, prejudice, will, sentiment, motive, objective, goal, idea, ideal, emotion, and even instinct and reflex, loosely, indefinitely, and

often interchangeably, yet it must also be admitted that there is a core of common meaning in all such usages. These, and other similar terms, refer to acquired and conditioned action patterns that motivate human social behavior (Bain, 1930:359).

Development of Attitudes

Doob stated that, if it is true that attitudes are learned, . . . then the learning, retention, and decline of an attitude are no different from the learning of a skill, a piece of prose, or a set of nonsense syllables; and they must also involve the problems of perception and motivation (Doob, 1947:135).

Many writers agreed that it is true that attitudes are learned. Droba wrote that everything in an attitude is acquired. The origin of an attitude goes to early childhood, but not before birth. Attitudes are continually "modified and developed into a relatively constant system of dispositions to determine the direction of activities that are to follow" (Droba, 1933:452). McNemar also maintained that attitudes are not innately determined; but that learning is important in the development of attitudes. Many variables, including information about issues, intelligence, personality characteristics, family background and types of experiences are related to attitudes. Thus, attitudes are a result of "the impact of the entire culture which surrounds the individual during his life. . ." (McNemar, 1946:343). Meyne stated that

. . . the development of attitudes begins early in life. Each individual goes through a wide variety of experiences and each event alters him in some way. A young child will develop certain attitudes toward the world in which he lives as a result of the ways in which adults respond to his needs, interests, and desires (Meyne 1964:11).

Nelson (1939a) reported on studies which gave support to the following factors influencing attitude formation: age, family, intelligence, books, teachers, financial status, geographical location, group mores, customs, and opinion.

These authors seemed to support the theory that attitudes are learned. As Sherif and Cantril stated,

. . . in spite of the diversity and variation of social standards, values or norms in different societies, human beings do by and large form attitudes in relation to their group (Sherif and Cantril, 1945:299).

Relation of Attitudes to Values

Beck and Barak stated that to value is to choose, to prefer, to prize. "The valued is that which is chosen among alternatives" (Beck and Barak, 1967:122).

Sherif and Cantril wrote of the attitude-value relationship as follows:

. . . the socialization which occurs when an individual becomes a member of a group consists mainly in the achievement of conformity in experience and behavior to social values, standards, or norms already established. And the process of achieving conformity is, if we analyze it closely, nothing more nor less than the formation of appropriate attitudes in relation to these socially standardized values or norms or other criteria of conduct (Sherif and Cantril, 1945:296).

Woodruff and DiVesta (1948) stated that values play an important role in the determination of expressed attitude. An indispensable component of an attitude, according to Droba, is the value. It is the goal toward which an attitude is directed (Droba, 1933). Jordan and Proctor reported that "the values one holds may be

considered as determinants of attitudes. Values are often regarded as an important source of prejudice or negative stereotype" (Jordan and Proctor, 1969:435). The assumption made by Rosenberg was that:

Moderate attitudinal affects, as compared to extreme ones, are associated with beliefs that relate the attitude object to less important values, or if to important values then with less confidence as to the existence of clear cut instrumental relationships between the attitude object and the value in question (Rosenberg, 1960:321).

Faris emphasized that the study of attitudes would be clearer if we study them in relation to the objects which are termed values.

For the attitude is toward something to which the attitude is related. . . . They [attitude and value] are correlative terms, arising simultaneously in experience. When the object changes, the attitude changes. . . . Objects are not passively received or automatically reacted to; rather is it true that objects are the result of a successful attempt to organize experience, and the externalized aspect of the organization is the object or value; the internal or subjective tendency toward it is the attitude (Faris, 1928:278).

Influence of Knowledge on Attitudes

Jones, Marcotte, and Markham (1968), Jordan and Proctor (1969), LaBue (1959), Myers (1958), and Nelson (1939a) all supported the theory that knowledge, information, contact, and experience influence the attitudes of an individual toward the objects, processes, and persons in his environment. Jordan and Proctor reported that studies since 1968 have produced these conclusions concerning variables which are important correlates, determinants, or predictors of attitudes:

- (1) Demographic factors such as age, sex, and income,
- (2) socio-psychological factors such as value orientation,
- (3) contact factors such as amount, nature,

perceive voluntariness, and enjoyment of the contact, and (4) a knowledge factor, i.e., the amount of factual information one has about the attitude object (Jordan and Proctor, 1969:433).

LaBue stated that to a large extent, "the attitudes of a person toward objects, persons, and processes have been shown to be dependent on the amount and quality of information he possesses with respect to them" (LaBue, 1959:433). Crandell stated that knowledge is one of three components which make up an attitude concept. These components are:

. . . (1) cognitive components, which are basically informational or intellectual in character; (2) affective components, which are related to feelings or emotions; or (3) behavioral components, which are described by specific action tendencies normally associated with a particular concept (Crandell, 1969:73).

After reviewing various studies, Nelson concluded that

. . . information plays a part in the development of attitudes and that the absence of information does not mean absence of attitudes but rather definite attitudes based partly on other factors, perhaps including misinformation and ignorance (Nelson, 1939a:389).

These studies suggested that information (knowledge) and experience are related to attitude formation.

Relation of Attitudes to Behavior

Many writers have studied and reported on the behavioral aspects of attitudes and generally have agreed that attitudes are true indicators of behavior. Bass and Hjalmar wrote that "traditionally, attitude has been characterized as a multidimensional construct, having affective, cognitive, and behavioral aspects" (Bass and Hjalmar, 1969:331). According to Droba, "an attitude

will, in general, be followed by a type of activity indicated in the attitude" (Droba, 1933:459). Faris (1928) stressed that attitude researchers must be interested in behavior, in what men are about to do, and in what they can be induced to do. Thus, it is vitally necessary to consider attitudes as tendencies of action. Bain (1928) reported that we cannot speak of attitudes except as they are manifested in overt behavior. Mayshark (1958) stated that one method of evaluating teaching is to accept behavior as a valid expression of developed attitudes. Myers' choice of Bernard's definition of attitude showed the behavior-attitude relationship: "An attitude is partial or symbolic behavior preparatory to overt adjustment and is transformed into true overt adjustment behavior as the adjustment proceeds" (Myers, 1958:321).

There seemed to be fairly general agreement among authorities that attitudes are true indicators of behavior.

ATTITUDE MEASUREMENT

Techniques of Measurement

A review of the literature showed that certain basic techniques for attitude measurement have been used more frequently than others. The major techniques will be summarized briefly.

The questionnaire is one of the oldest and simplest methods for determining attitudes. There are two methods of construction commonly used. In one, a direct question is presented and the subjects are free to respond with a written answer. This method has

many disadvantages. The answers represent complex and diversified shades of meaning; and it is difficult to use the data for comparative purposes (Katz and Allport, 1931). The second questionnaire method involves the use of a number of statements which represent various attitudes toward an attitude object. The individual responds with either a "yes" or "no" indicating the direction of his attitude. This method does not measure the intensity of the attitude, and the results must be interpreted carefully (Meyne, 1964).

The Thurstone (1928) method of equal-appearing intervals was a dominant influence on attitude measurement techniques. In Thurstone's scale a large variety of statements about a particular issue are collected and edited. The best items are retained, written on separate cards, and sorted by a panel of judges into categories ranging from strongly favorable to strongly unfavorable. Scale value of the items can then be determined by the median value of the judges' scores. Edwards and Kenny (1946), Meyne (1964), and Pace (1939) agreed that the Thurstone technique is a very complex and time consuming method of test construction.

In 1932, Likert devised the method of summated ratings for attitude measurement. In this method statements are gathered which represent either favorable or unfavorable attitudes toward an object. The subject may respond to the statements in one of five ways ranging from strongly agree to strongly disagree. The statements should be constructed so that on about one-half of the items a strongly agree response indicates an unfavorable attitude, while on the other

half of the statements a strongly agree response indicates a favorable attitude. As the desirability of the answer increases, the subject's score increases. Because this method eliminates the need for judges' sortings, it is considered to be simpler than the Thurstone method (Likert, 1932).

Rosander (1937) developed the situation-response method for attitude measurement. In this method an individual is presented with a situation followed by a number of possible ways to react to the situation. The responses represent different degrees of attitude toward the situation. A jury is used to assign values for each response. The subject's score is determined by the value of the responses checked (Rosander, 1937). A concern of attitude researchers has been whether or not opinions are an accurate index of attitude. The situation-response method tends to eliminate this concern, since the subjects are able to choose a specific course of action, rather than state their beliefs or opinions (Meyne, 1964; Rosander, 1937). Pace stated that because the situation-response method attempts to measure attitudes more subtly, it may be possible to arrive at results nearer to the truth (Pace, 1939).

The Guttman (1944) scalogram analysis technique presented a new approach to the problem of qualifying qualitative data. This method, based on matrix algebra, proposes a rational scheme for selecting items for the scale (McNemar, 1946). The items are arranged in such an order that an individual who responds positively to any particular item also responds positively to all other items with a lower rank (Shaw and Wright, 1967).

Edwards and Kilpatrick (1948) described a method of test construction which is essentially a synthesis of the procedures of Thurstone, Likert, and Guttman. This method uses the Thurstone procedure for scaling items, the Likert method for item selection, and the selected items must meet the requirements of Guttman's scale analysis.

Osgood, Suci, and Tannenbaum (1957) presented a new approach to attitude measurement by introducing the semantic differential technique. In this method a concept is presented and is followed by a series of polar adjectives which are separated by seven step intervals; the subject responds to the concept by indicating his position in relation to the pairs of polar adjectives. The semantic differential measures two essential properties of attitude - the direction, which depends on the alternative polar adjective selected; and the intensity, which depends on the extremeness of the scale items checked.

Studies Related in Method

There are few studies which involve the use of the situation-response technique. Rosander (1937) developed a situation-response method to study the negro-white attitude variable. Each of his twenty-four situations had from two to thirteen behavior responses. Social, political, and economic attitudes were measured with a situation-response scale by Pace (1939). This scale had thirty situations, each with from four to seven responses. In 1955, McAfee used a situation-response scale to measure the

sportsmanship attitudes of sixth, seventh, and eighth grade boys. His scale contained twenty items with four responses for each item. Mayshark (1956) constructed two forms of a situation-response scale to measure health and safety attitudes. Each form contained sixty items with five responses. Myers (1958) developed two forms of a health safety attitude scale. There were sixty items in each form and four responses for each item. Meyne, in 1964, developed a situation-response attitude scale for college men physical education majors. His final form consisted of forty items with five responses for each item.

Studies Related to Birth Defects

A review of the literature showed that much attention has been given to studies of attitudes toward the handicapped and the mentally retarded. These studies have consisted of two major types: (1) attitudes of nonhandicapped persons toward individuals with handicaps, and (2) attitudes of handicapped individuals toward themselves. Most studies have concentrated on a specific handicap. Only recently have studies been oriented toward handicaps in general.

The Attitude Toward Disabled Persons Scales (ATDP) developed by Yuker, Block, and Campbell in 1960 and 1962, have been used more extensively than any other attitude measurement techniques. Three forms of the ATDP were developed. Form O, developed in 1960, consists of twenty items. Forms A and B, developed in 1962, each contain thirty items. The scale items are in Likert format with

six responses ranging from "I Agree Very Much" to "I Disagree Very Much" (Yuker, Block, and Young, 1970). These scales measure attitudes toward disabled persons in general, rather than toward individuals with specific disabilities, and they can be used to measure attitudes of both disabled persons and nondisabled persons.

Because the writer was unable to locate any studies concerned entirely with attitudes toward birth defects, this section will include studies which measure attitudes of nonhandicapped individuals toward individuals who have been handicapped by birth defects and by causes other than birth defects. The studies have been grouped into three sections: (1) Attitudes of Parents Toward the Handicapped, (2) Attitudes of Professionals Toward the Handicapped, and (3) Attitudes of Children and Students Toward the Handicapped.

Attitudes of parents toward the handicapped. Studies of parental attitudes toward various handicapping conditions have appeared in recent literature. In 1959, Thurstone developed a sentence completion scale to measure parental attitudes toward handicapped children. Forty-five items were grouped into seven categories: reactions and concerns; handicapped satisfactions and discomforts; reactions of brothers and sisters; reactions of friends, neighbors, and community; institutional care; hopes and expectations for the handicapped; and general considerations. Thurstone (1960) used this scale to determine the attitudes of parents of institutionalized cerebral palsied retarded patients. Barsch (1964) asked parents of handicapped children to rank ten

handicapping conditions according to severity: cerebral palsy, mental retardation, mental illness, brain injury, blindness, epilepsy, deafness, polio, heart trouble, and diabetes. This ranking method was then used with parents of nonhandicapped children, teachers, nurses, and professional therapists.

Increased attention has been given to the study of parental attitudes toward the mentally handicapped. In the study conducted by Worchel and Worchel (1961), parents of mentally retarded children used a seven point rating scale to rate their mentally retarded child, their concept of an "ideal" child, and their concept of most children. In 1966, a forty item, sentence completion attitude scale was devised by Condell to measure the attitudes of parents of mentally retarded children toward mental retardation. A personal interview study by Meyers, Sitkei, and Watts (1966) attempted to determine the nature of community information and attitudes toward the mentally retarded and their education. Zuk, Miller, and Bartram, and Kling (1961) studied the relation of religious background to maternal acceptance of mentally retarded children. They devised a Likert type questionnaire to determine attitudes toward religion and mental retardation.

Attitudes of professionals toward the handicapped. A study by Auvenshine (1962) was concerned with how different groups of people view education and disabled persons. This study used the Attitude Toward Disabled Persons Scale (Form O) to examine the attitudes of four groups in eleven nations: (1) teachers, (2) managerial and executive personnel, (3) white collar workers and

laborers, and (4) special educators and rehabilitative personnel. A survey of educational, medical, psychological, and social work groups was made by Warren and Turner (1966). Subjects were to rank seven areas of exceptionality: academically talented, anti-social, slightly handicapped, mentally retarded, hearing handicapped, brain injured, and severely retarded. These rankings were then compared with the subject's knowledge of exceptionality and familiarity of types of exceptionality. Jordan and Friesen (1968) tested the attitudes of professional persons from special education and rehabilitation occupations. The purpose was to determine the relationships between variables related to nationality, interpersonal values, personal contact with the disabled, and attitudes toward the disabled. Shears and Jensema (1969) devised a questionnaire to determine the attitudes of college undergraduates, graduates, and psychiatric technicians. They were to rank ten anomalies (blind, deaf mute, mentally retarded, physically handicapped, cerebral palsied, homosexual, mentally ill, amputee, severe stutter, and harelip) according to desirability in a friend and as a self affliction.

Many studies are concerned with the attitudes of teachers toward handicapped children. A study by Combs and Harper (1967) used check lists to present descriptions of schizophrenic, cerebral palsied, psychopathic, and mentally deficient children. Twenty-five paired adjectives were then applied by teachers to each category. Efron and Efron (1967) devised a seventy statement Likert format questionnaire to compare attitudes toward mental retardation.

Subjects were divided into two groups: persons in general education and persons in non-educational occupations. Conine (1969) used the Attitudes Toward Disabled Persons Scale (Forms A and B) to determine teachers' acceptance or rejection of disabled persons. Jordan and Proctor (1969) investigated the attitudes of teachers toward the educational placement of exceptional children. Subjects marked a sixty item inventory with responses ranging from complete inclusion in school to complete exclusion from school. A ninety-one item information inventory was also given to measure factual information about exceptional children.

Attitudes of children and students toward the handicapped.

Pictures were most commonly used to elicit elementary school children's expressions of attitudes toward the handicapped. The Citizenship Education Project and the National Foundation for Infantile Paralysis (1956) developed a social distance scale and a picture story technique to determine fourth, fifth, and sixth grader's attitudes toward disabled children. The social distance scale consisted of ten pictures of boys and girls with various kinds of disabilities. The picture story showed seven boys (one with crutches) on a hike. The subjects were asked to tell a story about the hike. Billings (1963) asked children of grades one, three and six to write a story about a picture of a normal child and about a picture of a crippled child.

Richardson, Goodman, Hastorf, and Dornbusch (1961) developed six drawings of boys and girls which have been used in several subsequent studies of elementary school children's attitudes. The

drawings included: a child with crutches and a leg brace, a child in a wheelchair, a child with a forearm amputation, a child with a facial disfigurement, an obese child, and a child with no physical handicap. In 1963, Goodman, Richardson, Dornbusch, and Hastorf used these six drawings to compare the attitudes of seven groups: (1) 10-11 year old boys and girls - various races and religions, (2) 10-11 year old boys and girls - white and Jewish, (3) 10-11 year old boys and girls - Catholic, (4) 10-11 year old boys and girls - white, Negro, and Puerto Rican lower income families, (5) 10-11 year old boys and girls - white, Negro, and Puerto Rican upper income families, (6) mentally retarded children, and (7) adults concerned with rehabilitation of the physically disabled. Richardson and Royce (1968) used the six drawings to determine the importance of skin color and physical disability in establishing children's preference for other children. In 1970, Richardson modified the six drawings to show subjects pictures of their own sex. Subjects for Richardson's study included children from kindergarten through high school and their parents.

Researchers have used several methods to study the attitudes of high school students toward handicapped individuals. Jaffe (1966) used four measures of attitudes: a semantic differential evaluative factor, a semantic differential strength-activity factor, an adjective checklist favorability rating factor, and a social distance scale. Matthews and Westie (1966) modified the six drawings developed by Richardson for use with high school

students. They combined the rank ordering of preference for the drawings with a social distance scale to determine attitudes toward physical handicaps. Sellin and Mulchahay (1965) devised fifty-four agree-disagree questions to study the effects of an institutional tour on attitudes toward mental retardation. The questionnaire was given to high school seniors before and after an institutional tour.

An early study by Mussen and Barker (1944) used a paired adjectives method to determine nonhandicapped college students' attitudes toward handicapped individuals. Subjects were asked to use twenty-four personality characteristics to rate a crippled person and an "ideal" person. Kvaraceus (1956) studied the attitudes of graduate students toward eight categories of deviate children: (1) superior and gifted, (2) mentally retarded and defective, (3) emotionally disturbed, (4) delinquent, (5) blind and partially seeing, (6) deaf and hard of hearing, (7) speech defectives, and (8) crippled and physically handicapped. The subjects responded to four statements: (1) the category he would most prefer to teach or work with, (2) the category he would least prefer to teach or work with, (3) the category he knows most about, and (4) the category he knows least about. Feinberg (1967) tested the attitudes of college students by administering three attitude-toward-disability scales: a Likert type scale, a sentence completion test, and a picture story essay test. Noonan, Barry, and Davis (1970) used nine attitude instruments to measure attitudes of college women toward visible disabilities. A Likert type scale,

a picture ranking test, essay stories about a series of pictures, and a set of social desirability scales were included in the test battery.

Summary of related literature. Studies of the attitudes of the nonhandicapped toward the handicapped have been directed toward three major groups: parents, professionals, and children and students. These studies have used a variety of formats, depending on the purpose of the study and the age level of the subjects. The techniques employed most frequently were: interviews, questionnaires, sentence completion, Likert type scales, social distance scales, adjective checklists, and pictorial rankings or essays. The review of the literature revealed that there have been no studies directly related to attitudes toward handicapping conditions caused specifically by birth defects.

CHAPTER IV

PROCEDURE

The purpose of this study was to develop a valid scale to measure attitudes toward the prevention of birth defects and toward those who have birth defects. In determining the procedure for this study, the writer felt that a preliminary judges' study would improve the scale items and would give the writer an opportunity to become familiar with the statistical techniques to be used. In the preliminary study, thirty items were given to a panel of five judges. From the results of the preliminary study and from the suggestions made by the preliminary judges, it was possible to send forty-four items to a final panel of five judges. The evaluations and response weightings of the final judges resulted in a final attitude scale of thirty items. To determine the reliability of the scale, it was administered to thirty freshman and sophomore college women at The University of North Carolina at Greensboro. This chapter presents the procedure for the preliminary judges' study, the final judges' study, and the administration of the final attitude scale.

DEVELOPMENT OF THE SCALE

Selection of a Measurement Technique

After reviewing the techniques used for measuring attitudes, the situation-response technique was selected for use in

this study. This method has been used by Rosander (1937), Pace (1939), McAfee (1955), Mayshark (1956), Myers (1958), and Meyne (1964). According to Pace (1950), the value of an attitude measurement is largely dependent upon knowing the behavior that is associated with it. The situation-response technique does not depend upon what a person says he believes, but on what he says he will do in a variety of specific situations. Pace (1939) listed four reasons for using a situation-response technique: (1) it may be possible to obtain more truthful results because attitudes may be measured more subtly, (2) the situation-response technique helps eliminate vagueness and generality of the statements, (3) an attitude inferred from the situation-response scale would be less extreme than one inferred from other measurement techniques, and (4) it is more difficult for a subject to consistently choose similar responses in a situation-response scale.

Selection of Areas

Six areas related to birth defects were selected as a guide in the development of the attitude scale items. These areas were: (1) Causes and Prevention, (2) Association With and Acceptance of, (3) Work With, (4) Abilities of, (5) Schooling, and (6) Financing of Programs.

The areas were established after discussions with the writer's advisor and faculty members and an analysis of related studies. There was no attempt made to assign a definite number of items to each area. The areas were used only as a guide in the development of the scale items.

Development of Items

The development of the situations and responses was based on consultation with faculty members and a study of books, periodicals, and booklets, pamphlets, and other materials from various organizations which deal with birth defects.

Each situation and its five responses were typed on a separate sheet of paper. Several graduate students then read each item and made comments to help clarify poorly constructed statements.

As the scale items were developed, several faculty members critically evaluated each item. Responses which were practical and most relevant to the situation did not always appear to show a range of attitude. Some items needed major revisions, some items were accepted with minor revisions, and some items were rejected. Following this evaluation, thirty acceptable items remained.

Several criteria for construction of items became apparent during the development of the scale items.

1. Statements should be clear and concise.
2. Irrelevant information should not be included in the situation, but enough information for understanding must be given.
3. The situations and responses must not have more than one interpretation.
4. Items should be a behavior situation rather than a knowledge situation.
5. Situations should be realistic.

6. Each response should contain only one idea or variable.
7. The responses should be selected so that they are relevant to the situation and represent, as nearly as possible, a wide range of attitudes.
8. Uncommon terminology should be avoided.
9. Proper punctuation and sentence construction should be used.
10. The use of parallel construction and consistent tense is important.

Preliminary Judging of Thirty Items

In order to obtain a better idea of the range and desirability of the responses and to receive suggestions for improving the items, the thirty items were judged by five instructors in the Department of Health, Physical Education and Recreation at The University of North Carolina at Greensboro. A list of these instructors may be found in Appendix A, page 67.

The instructors were asked to weight the responses for each item on a 5 to 1 scale (5 points given for the most desirable response) and, if necessary, to assign the same values to two or more responses. They were also asked to evaluate each item in view of its contribution to the attitude scale. The following method was used to evaluate each item: E - Essential - should be included; D - Desirable - acceptable; and U - Undesirable - should be left out. The judges were encouraged to make comments and

suggestions concerning any aspect of the scale items. The directions for the preliminary judges may be found in Appendix C, page 73.

Correlation of Preliminary Judges' Weightings

The rank-difference correlation (ρ) was used to determine the degree to which the five judges agreed with each other in weighting the responses. An average item coefficient of correlation was computed for twenty-six of the thirty items by averaging all five judges' intercorrelations for the item. Correlations could not be completed for four items because one judge did not weight the responses. The average intercorrelation for each judge for the entire scale was determined by averaging his coefficients of intercorrelations for each of the twenty-six items.

Ranking of Responses

The judges' weightings for each response were totaled and averaged. Rankings were then assigned to each response by rounding its average weighting to the nearest whole or half number. Thus, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5 and 5 were the only possible rankings. The most desirable attitudes were represented by the highest rankings.

Criteria for Items to Be Included on Final Judges' Form

Criteria used to determine which items would be sent to the final judges were:

1. Average item coefficient of correlation must be .700 or better.

2. Three of the five judges must consider the item either desirable or essential.
3. The five responses for each item must include three different rankings with at least one rank below 3 and one rank above 3. For example, an item ranked 3, 3, 2, 2, 1 would not be accepted; neither would an item ranked 2, 2, 2, 5, 5.

These criteria were met by twenty-six of the thirty items. Four items could not be subjected to the criteria because one judge did not rate the responses.

Comments made by the preliminary panel of judges concerning interpretation of statements, necessity of words or phrases, and inclusion of some responses were used to revise the twenty-six items before they were sent to the final panel of judges. Eighteen more items were developed from suggestions made by the preliminary judges, from the revision of items which had been rejected prior to the preliminary judging, and from the revision of the four items which could not be subjected to the criteria for the final form.

Selection of Final Judges

A panel of experts in birth defects was chosen in order to obtain competent judgment in evaluating the items and in weighting the responses for the final scale. Each of the judges has worked with children who are handicapped as a result of birth defects and with families of defective children.

The following judges served on the final panel:

1. A medical doctor who is a specialist in gynecology and obstetrics.
2. A medical doctor (pediatrician) who is the head of the Children and Youth Program for the Guilford County Health Department.
3. The director of the Greensboro Cerebral Palsy and Orthopedic School.
4. The Western North Carolina Field Representative for the National Foundation of the March of Dimes.
5. The Central North Carolina Field Representative for the National Foundation of the March of Dimes.

The assistance of each judge was requested by letter (see Appendix B, page 70). A self-addressed post card was enclosed for the judge's reply. The names of the final panel of judges are listed in Appendix A, page 67.

Preparation of Scale Items for Final Judges

The forty-four scale items were prepared for the judges in the following way:

1. The order of items and the order of responses under each item were arranged by chance selection.
2. Items were typed and placed two on a page and sent to the judges along with detailed instructions. (See Appendix C, page 73, for the instructions for the final judges.)
3. A letter of appreciation, which included a suggested date for the items to be returned, and a self-addressed

envelope were enclosed with the items. (See Appendix B, page 70.)

Weighting the Responses: Final Study

Judges were asked to assign a value of 5 points to the response which they judged to be representative of the most desirable attitude, 4 points to the next most desirable attitude, 3 points to the next most desirable attitude, 2 points to the next most desirable attitude, and one point to the least desirable attitude. The judges were instructed to assign the same value to two or more responses if they thought the responses were equally desirable or equally undesirable.

There were two reasons for weighting the responses. First, to obtain an order of desirability of attitudes as expressed by the responses. Second, to obtain a numerical ranking for the responses so that subjects' scores could be calculated and treated statistically.

Correlation of Final Judges' Weightings

The rank-difference correlation (ρ) was used to determine the degree to which the five judges agreed with each other in weighting the responses. An average item coefficient of correlation was computed for each of the forty-four scale items by averaging all judges' intercorrelations for the item. The average intercorrelation for each judge for the entire scale was determined by averaging his coefficients of intercorrelation for each of the forty-four items.

Ranking of Responses

The judges' weightings for each response were totaled and averaged. Rankings were then assigned to each response by rounding its average weighting to the nearest whole or half number. Thus, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, and 5 were the only possible rankings. The most desirable attitudes were represented by the higher rankings.

Selection of Items for the Final Attitude Scale

The criteria used in determining which items would be included on the final attitude scale were:

1. Average item coefficient of correlation must be .850 or better.
2. Four of the five judges must consider the item either desirable or essential.
3. The five responses for each item must include three different rankings with at least one rank below 3 and one rank above 3. For example, an item ranked 3, 3, 4, 4, 5 would not be accepted; neither would an item ranked 1, 1, 1, 4, 4.

After applying the criteria, thirty of the forty-four items remained.

ADMINISTRATION OF ATTITUDE SCALE

Selection of Students

The subjects were college women classified by The University of North Carolina at Greensboro as freshmen or sophomores. Because

the University does not reclassify students until fall semester, the subjects included entering freshmen, rising sophomores, and rising juniors. The scale was administered during the last week of the first summer school session and again during the second week of the second summer school session. Therefore, subjects were required to be enrolled for both summer school sessions.

Arrangements for First and Second Administration of Attitude Scale

Arrangements for the first administration of the attitude scale were made by personally contacting women students who were classified as freshmen or sophomores. On the morning of the first and second testing sessions, reminder notices were placed on the dormitory doors of the students who had agreed to come to the two testing sessions.

First and Second Administration of the Attitude Scale

Arrangements were made to have a classroom open from 3 to 5 P.M. and from 7 to 9 P.M. on the day of the first testing session. The scale was administered two weeks later during the same hours. Students were given an attitude scale, written directions, and an answer sheet as they entered the room. They were instructed to record on their answer sheets their class standing as of next fall and were encouraged to ask questions. It was emphasized that, although students were to sign their names to the answer sheet, complete anonymity would be guaranteed. Complete student directions may be found in Appendix E, page 96.

Scoring of the Attitude Scale

The response rankings were typed on a spirit master and made into a spirit master transparency. The transparency, which corresponded with the answer sheet format, indicated the response ranking for every item on the attitude scale. The total score for each subject was computed by placing the spirit master transparency over the answer sheet and totaling the rankings assigned to each response. A high total score indicated a favorable attitude, while a low total score indicated an unfavorable attitude.

TREATMENT OF DATA

Validity of the Attitude Scale

Validity of the final attitude scale was found by averaging the item coefficients of correlation for the thirty items which: (1) had an average item coefficient of correlation of .850 or better; (2) had been evaluated as either desirable or essential by four of the five judges; (3) had within the five responses three different rankings with at least one rank below 3 and one rank above 3.

Reliability of the Attitude Scale

The test-retest method using identical forms was employed to establish reliability of the attitude scale. The coefficient of correlation was determined by the Pearson product-moment original data formula.

CHAPTER V

FINDINGS

The purpose of this study was to develop a valid scale to measure attitudes toward the prevention of birth defects and toward those who have birth defects. In a preliminary study, thirty items of the scale were given to a panel of five judges. The judges were instructed to evaluate the desirability of each item of the scale and to weight the responses for each item. They were also encouraged to make comments and suggestions concerning any aspect of the scale items. From the results of the preliminary study and the suggestions made by the preliminary judges, it was possible to send forty-four items to a final panel of judges. (Appendix D, page 78, contains the forty-four items.)

After considering the item evaluations and response weightings of the final judges, thirty of the forty-four items remained on the final attitude scale. (See starred items in Appendix D.) To determine the reliability using the test-retest method, the scale was administered to thirty freshman and sophomore women at The University of North Carolina at Greensboro. An analysis of data pertinent to both the preliminary and final study will be presented in this chapter.

ANALYSIS OF DATA FOR PRELIMINARY STUDY

Average Intercorrelations of Response Weightings

The rank-difference (ρ) method of correlation was used to determine the degree to which the five judges agreed with each other in weighting the responses. The intercorrelations between judges 1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 3-4, 3-5, 4-5 were calculated for twenty-six of the thirty items. Correlations for four items could not be determined because one judge failed to weight the responses. (See Appendix F, page 98, for a complete listing of the coefficients of intercorrelations for five judges.)

Thus, each judge was a part of four correlations for twenty-six items of the scale. The average intercorrelation of each judge for the entire scale was determined by totaling his four correlations for each of the twenty-six items and dividing the total by 104. The average intercorrelation for each of the five judges for the twenty-six items is shown in Table I.

TABLE I
AVERAGE INTERCORRELATIONS OF JUDGES ON
TWENTY-SIX ITEMS IN PRELIMINARY STUDY

Judge	Average Intercorrelation Five Judges	Average Intercorrelation Four Judges
1	.833	.854
2	.837	.898
3	.838	.837
4	.756	-
5	.819	.846

The average intercorrelations of judges 1, 2, 3, and 5 were very close and higher than the average intercorrelation for judge 4. Consequently, judge 4 was dropped from the study. Thus, correlations between judges 1-2, 1-3, 1-5, 2-3, 2-5, and 3-5 were the only correlations used in the preliminary study. See Appendix F, page 101, for a complete listing of the coefficients of intercorrelation for four judges. The average intercorrelation for each judge was then re-calculated by totaling his three correlations for each of the twenty-six items and dividing the total by 78. The average intercorrelation for each of the four judges is shown in Table I, page 40. All future calculations, weightings, and response rankings in the preliminary study were based on the information supplied by four judges.

Evaluation of Items

The judges were asked to evaluate each total item on the scale in view of its contribution to the attitude scale. The judges were instructed to use the following method for rating each item: E - Essential - should be included; D - Desirable - acceptable; U - Undesirable - should be left out. Three of the four judges had to evaluate the item as either desirable or essential in order for the item to be included without revisions on the final judges' form.

Twenty-nine of the thirty items on the preliminary judges' form were evaluated as either desirable or essential by three of the four judges. The one item which was evaluated as undesirable

by two judges was revised and included on the final judges' form. Appendix F, page 101, contains a complete listing of item evaluations.

Average Item Correlation

The average coefficient of correlation for each item was computed by averaging the four judges' intercorrelations for each item. The average coefficient of correlation was only calculated for twenty-six of the thirty items because one judge failed to weight the responses of four items. The average item coefficient of correlation indicated the degree to which the four judges agreed with each other in rating the responses for that item. An average correlation of .700 or better was set as the standard for placement of an item on the final judges' form. The average coefficients of correlation for each item are given in Table II, page 43.

Three of the twenty-six items had coefficients of correlations below the .700 acceptance level. These items (18, 20, and 23) were revised before being placed on the final judges' form.

Range of Intercorrelation

The range of intercorrelation of four judges for each item is given in Table II, page 43. The range indicated the high and low intercorrelations between the four judges for each of the twenty-six scale items. The lowest intercorrelation for all items on the scale was .05 and the highest intercorrelation was 1.0.

TABLE II
 RANGE OF INTERCORRELATIONS AND AVERAGE COEFFICIENTS
 OF CORRELATION OF FOUR JUDGES FOR TWENTY-SIX
 ITEMS IN PRELIMINARY STUDY*

Item	Range of Intercorrelations	Average Item Coefficients of Correlation
1	.90 - 1.0	.954
2	.70 - .975	.896
3	.875 - .975	.941
4	.75 - 1.0	.883
5	.70 - .95	.858
6	.975 - 1.0	.988
7	.70 - 1.0	.879
8	.90 - 1.0	.946
9	.575 - .90	.771
10	.90 - 1.0	.950
11	.70 - .90	.767
12	.70 - .90	.854
13	.90 - 1.0	.967
14	1.0 - 1.0	1.0
15	1.0 - 1.0	1.0
16	.75 - 1.0	.908
18	.125 - .975	.613
19	.875 - 1.0	.938
20	.05 - .95	.467
21	.35 - .95	.713
22	.75 - 1.0	.838
23	.10 - .80	.550
24	.80 - .90	.867
25	.90 - 1.0	.967
28	.875 - 1.0	.904
29	.875 - .975	.892

*Intercorrelations and item coefficients for items 17, 26, 27, and 30 were not calculated because one judge did not weight the responses.

Weighting and Ranking of Responses

The judges were asked to assign weights to each response to determine the order of desirability of the responses. The judges were instructed to assign a value of 5 points to the response which they believed was the most desirable attitude, and values of 4, 3, 2, and 1 to the remaining responses in declining order of desirability. The judges were asked to assign the same value to two or more responses if they thought the responses were equally desirable or undesirable. Thus, the judges rated each response independently of the others and in direct relation to the situation; responses did not have to be compared with each other to determine which responses were higher or lower than others. The weightings assigned by the judges for each response were totaled and averaged. Rankings were then assigned to each response by rounding its average weighting to the nearest whole number. Half numbers kept their same value. Thus, average weightings of 1 and 1.25 were assigned a ranking of 1; average weightings of 1.5 were assigned a ranking of 1.5; average weightings of 1.75, 2 and 2.25 were assigned a ranking of 2; and so on. The total and average of response weightings and the response rankings for items in the preliminary study may be found in Appendix F, Table VIII, page 102.

A criterion for acceptance of the items required that the five responses for each item include three different rankings with at least one rank above 3 and one rank below 3 for each of the scale items. This criterion was met by the twenty-three items which had acceptable average item coefficients of correlations of judges' weightings.

Summary of Revisions of Items

Items which did not meet the established .700 average item coefficient of correlation or the required three evaluations of either desirable or essential were revised before being placed on the final judges' form. Many other items also received minor revisions after considering comments and suggestions made by the judges.

Validity of Preliminary Form

Validity of the preliminary form was found by averaging the item coefficient of correlation for the twenty-three items which (1) had an average item coefficient of correlation of .700 or better, (2) had been evaluated as either desirable or essential by three of the four judges, (3) had, within the five responses, three different rankings with at least one rank below 3 and one rank above 3. The validity for the twenty-three items in the preliminary study was found to be .898.

ANALYSIS OF DATA FOR THE FINAL STUDY

Average Intercorrelations of Response Weightings for Forty-Four Items

The rank difference (ρ) method of correlation was used to determine the degree to which the five judges agreed with each other in weighting the responses. Intercorrelations between judges 1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 3-5, and 4-5 were calculated. See Appendix G, Table IX, page 105, for a complete listing of the coefficients of intercorrelations for each item of the scale. The average intercorrelation of each judge for the entire scale was determined by

totaling his four correlations for each of the forty-four items and dividing the total by 176. The average intercorrelation for each of the five judges for the forty-four scale items is shown in Table III. Because each of the judge's average intercorrelations for the forty-four items was so closely related, the information supplied by five judges was used in the final study.

TABLE III
AVERAGE INTERCORRELATIONS OF JUDGES ON
FORTY-FOUR ITEMS IN FINAL STUDY

Judge	Average Intercorrelation
1	.841
2	.825
3	.814
4	.825
5	.823

Evaluation of Items

The thirty items from the preliminary study, plus fourteen new items were sent to a panel of five judges. The judges were asked to evaluate each total item on the attitude scale in view of its contribution to the attitude scale. The judges were instructed to use the following method for rating each item: E - Essential - should be included; D - Desirable - acceptable; U - Undesirable - should be left out.

Four of the five judges had to evaluate each item as either desirable or essential in order for the item to be included on the final attitude scale. Of the forty-four items on the final judges' form, forty-one items were evaluated as either desirable or essential by four of the five judges. Items 19, 24, and 38 were rejected because two of the five judges evaluated the items as undesirable in relation to their contribution to the entire scale. For a list of all item evaluations see Appendix G, Table IX, page 105.

Average Item Correlation

The average coefficient of correlation for each item was computed by averaging the five judges' intercorrelations for each item. The average item coefficient of correlation indicated the degree to which the five judges agreed with each other in rating the responses for an item. The average coefficient of correlation was calculated for forty-one of the forty-four items. The average coefficient of correlation was not determined for items 19, 24, and 38. These items were previously rejected because two of the five judges evaluated the items as undesirable in relation to their contribution to the entire scale.

An average item correlation of .850 or better was set as the standard for placement of an item on the final attitude scale. Eleven of the forty-one items had average coefficients of correlation below the .850 acceptance level. Thus, items 5, 6, 10, 11, 16, 21, 26, 37, 39, 41, and 42 were eliminated from the attitude scale. For a complete listing of average item coefficients of correlation refer to Table IV, page 48.

TABLE IV
 RANGE OF INTERCORRELATIONS AND AVERAGE COEFFICIENTS
 OF CORRELATION OF FIVE JUDGES FOR FORTY-FOUR
 ITEMS IN FINAL STUDY

Item	Range of Intercorrelations	Average Item Coefficients of Correlation
1	.90 - 1.0	.94
2	.825 - 1.0	.905
3	.800 - 1.0	.92
4	.825 - 1.0	.905
5	.175 - .975	.645
6	.575 - 1.0	.83
7	1.0 - 1.0	1.0
8	.70 - 1.0	.86
9	.825 - 1.0	.915
10	-.200 - .975	.368
11	-.525 - .975	.26
12	.60 - 1.0	.865
13	.875 - 1.0	.95
14	1.0 - 1.0	1.0
15	1.0 - 1.0	1.0
16	.40 - 1.0	.735
17	.90 - 1.0	.96
18	.775 - 1.0	.918
19		
20	.825 - 1.0	.908
21	.30 - .90	.68
22	.875 - 1.0	.945
23	.625 - 1.0	.855
24		
25	.70 - 1.0	.885
26	.475 - .975	.595
27	.825 - 1.0	.89
28	1.0 - 1.0	1.0
29	.875 - 1.0	.935
30	.675 - 1.0	.855
31	.70 - 1.0	.870
32	.875 - 1.0	.950
33	.775 - .975	.908
34	.675 - .975	.893
35	.70 - 1.0	.910

TABLE IV (continued)

Item	Range of Intercorrelations	Average Item Coefficients of Correlation
36	.750 - .975	.863
37	-.100 - .775	.288
38		
39	.40 - .975	.74
40	.90 - 1.0	.94
41	.675 - 1.0	.825
42	.325 - 1.0	.66
43	.80 - 1.0	.90
44	.90 - 1.0	.96

Range of Intercorrelations

The range of intercorrelations of five judges for each item is detailed in Table IV, page 48. The range indicates the high and low intercorrelations between the five judges for each of the forty-four scale items. The lowest intercorrelation for all items on the scale was $-.525$ and the highest intercorrelation was 1.0 .

Weighting and Ranking of Responses

The judges were asked to assign weights to each response to determine the order of desirability of the responses. The judges were instructed to assign a value of 5 points to the response which they believed was the most desirable attitude, and values of 4, 3, 2, and 1 to the remaining responses in declining order of desirability. The judges were asked to assign the same value to two or more responses if they thought the responses were equally desirable or undesirable. Thus, the judges rated each response independently of the others and in direct relation to the situation; responses did not have to be compared with each other to determine which responses were higher or lower than others.

The weightings assigned by the judges for each response were totaled and averaged. Rankings were then assigned to each response by rounding its average weighting to the nearest whole or half number. Thus, average weightings of 1 and 1.2 were assigned a ranking of 1; average weightings of 1.4 and 1.6 were assigned a ranking of 1.5; average weightings of 1.8, 2, and 2.2 were assigned a ranking of 2; and so on. The total and average of response

weightings and the response rankings for items in the final study may be found in Appendix G, Table X, page 107.

The criteria for acceptance of the items required that the five responses for each item include three different rankings with at least one rank above 3 and one rank below 3 for each of the scale items. This criterion was met by the thirty items which had acceptable average item coefficients of correlations of judges' weightings. The thirty items are the starred items in Appendix D, page 78.

Summary of Item Elimination

Evaluation of the items by the judges resulted in the elimination of fourteen of the forty-four items. Low average item coefficients of correlation (below .850) caused eleven items to be eliminated, and three items were rejected because more than one of the five judges rated the items as undesirable.

Average Intercorrelations for Thirty Final Items

The rank difference (ρ) method of correlation was used to determine the degree to which the five judges agreed with each other in weighting the responses for the final thirty items. The average intercorrelation of each judge for the entire scale was determined by totaling his four correlations for each of the thirty items and dividing the total by 120. The intercorrelation for each of the five judges for the thirty final scale items is shown in Table V, page 52.

TABLE V
 AVERAGE INTERCORRELATIONS OF FIVE JUDGES
 ON FINAL THIRTY ITEMS

Judge	Average Intercorrelation
1	.930
2	.907
3	.929
4	.910
5	.922

Validity of the Final Attitude Scale

Validity of the final attitude scale was found by averaging the item coefficients of correlation for the thirty items which: (1) had an average item coefficient of correlation of .850 or better, (2) had been evaluated as either desirable or essential by four of the five judges, (3) had, within the five responses, three different rankings with at least one rank below 3 and one rank above 3. The validity of the final attitude scale was .920.

Reliability of the Final Attitude Scale

The thirty items of the attitude scale were administered to forty-one freshman and sophomore college women at The University of North Carolina at Greensboro. Two weeks later, the same thirty items of the attitude scale were administered to thirty of the

forty-one students. The first and second test scores of these thirty students were used in determining the reliability of the attitude scale. The reliability of the scale, calculated by the Pearson product-moment original data formula, was .807.

CHAPTER VI

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

SUMMARY

The purpose of this study was to develop a valid scale to measure attitudes toward the prevention of birth defects and toward those who have birth defects. The situation-response measurement technique, which consists of a situation and five behavior responses for each item, was used in the study. In a preliminary study, thirty scale items were given to five instructors in the Department of Health, Physical Education, and Recreation at The University of North Carolina at Greensboro. These judges were instructed to evaluate the importance of each item in the attitude scale and to weight the desirability of the responses for each item on a 5 to 1 scale. The rank-difference (ρ) method of correlation was used to determine the degree to which the five judges agreed with each other in weighting the responses. Intercorrelations between judges 1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 3-4, 3-5, and 4-5 were calculated. An average item coefficient of correlation was then computed by averaging the five judges' intercorrelations for each item. The criteria used in determining which items would be sent to a final panel of judges were:

- (1) average item coefficient of correlation must be .700 or better,
- (2) three of the five judges must consider the item either desirable or essential, and
- (3) the five responses for each item must include

three different rankings with at least one rank below 3 and one rank above 3.

After considering the results of the preliminary study and the suggestions made by the preliminary judges, it was possible to send forty-four items to a final panel of five expert judges. The judges were instructed to evaluate the importance of each item in the attitude scale and to weight the desirability of the responses for each item on a 5 to 1 scale. The rank-difference (ρ) method of correlation was used to determine the degree to which the five judges agreed with each other in weighting the responses. Inter-correlations between judges 1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 3-4, 3-5, and 4-5 were calculated. An average item coefficient was then computed by averaging the five judges' intercorrelations for each item. The criteria used in determining which items would be included on the final attitude scale were: (1) average item coefficient of correlation must be .850 or better, (2) four of the five judges must consider the item either desirable or essential, (3) the five responses for each item must include three different rankings, with at least one rank below 3 and one rank above 3.

After considering the average item coefficients, item evaluations, and response weightings of the final judges, fourteen of the forty-four items were eliminated. Thus, the final attitude scale consisted of thirty items.

Validity of the final attitude scale was found by averaging the item coefficients of correlation for the thirty items. The validity for the entire scale was .920.

The thirty items of the final attitude scale were administered to forty-one freshman and sophomore college women at The University of North Carolina at Greensboro. Two weeks later, the same thirty items of the attitude scale were administered to thirty of the forty-one students. The first and second test scores of these thirty students were used in determining the reliability of the attitude scale. The reliability of the scale, calculated by the Pearson product-moment original data formula, was .807.

CONCLUSIONS

A reliable and valid attitude scale was developed to measure the attitudes of college freshman and sophomore women toward the prevention of birth defects and toward those who have birth defects.

RECOMMENDATIONS

These recommendations are presented:

1. A scale to measure the attitudes of college men toward birth defects should be developed.
2. This attitude scale should be given to a larger sample of freshman and sophomore college women to further examine the scale's reliability.
3. To further validate the scale: (a) an equivalent form of this scale should be made and (b) this attitude scale should be given to a group of subjects known to have positive attitudes toward birth defects and/or to a group of subjects known to have negative attitudes toward birth defects.

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APPENDIXES

MEMORANDUM OF THE PRESIDENT'S OFFICE

Mrs. Robert G. Bellamy Mr. Richard W. Bellamy
 Mr. Peter L. Bellamy Dr. Martin S. Bellamy
 Mr. Robert G. Bellamy

APPENDIX A

Preliminary and Final Judges

Faculty members in the Department of Health, Physical
 Education, and Recreation of the University of North
 Carolina at Greensboro.

JUDGES ASSISTING IN THE PRELIMINARY STUDY*

Mrs. Nancy G. Hubbard Mr. Richard W. St.Pierre

Dr. Pearl C. Pettersen Dr. Marian K. Solleder

Dr. Carrie Lee Warren

*Faculty members in the Department of Health, Physical Education, and Recreation at The University of North Carolina at Greensboro.

JUDGES ASSISTING IN THE FINAL STUDY

Dr. Karl L. Barkley
Gynecology and Obstetrics
600 Walter Reed Drive
Greensboro, North Carolina

Mr. Peter G. Bronson
Western Field Representative
National Foundation of March of Dimes
1516 Elizabeth Ave., Suite 200-C
Charlotte, North Carolina 28204

Dr. Elizabeth Ford
Guilford County Health Department
Children and Youth Program
300 East Northwood Street
Greensboro, North Carolina 27401

Mrs. A. M. Inman, Executive Director
Cerebral Palsy and Orthopedic School
1508 Gatewood Ave.
Greensboro, North Carolina

Mr. Jack E. McGee
Field Representative
National Foundation of March of Dimes
P. O. Box 10691
Raleigh, North Carolina 27605

May 27, 1971

Dear _____

I am a graduate student in health education at the University of North Carolina at Greensboro. One of the requirements for completion of my master's degree is that I complete a research thesis in the area of interest to me. For the past few years, I have identified a unit on birth defects in my health education curriculum. It is my belief that the knowledge of students concerning the unit is important to their ability to understand and accept the children and people who have birth defects. However, I have not been able to acquire the necessary background of study of birth defects actually have resulted in my thesis study.

APPENDIX B

Correspondence

For this reason, I am requesting that you help to review the curriculum unit on birth defects. I have drafted a unit on birth defects in my health education curriculum. The subject matter is the same as the unit which I have drafted. I would appreciate your help in reviewing the unit and making suggestions for improvement.

I am requesting that you help to review the curriculum unit on birth defects. I have drafted a unit on birth defects in my health education curriculum. The subject matter is the same as the unit which I have drafted. I would appreciate your help in reviewing the unit and making suggestions for improvement.

If you agree to be a judge, the \$10.00 of honorarium will be sent to you by the end of the month of June or by return to me within one month after you receive this.

I have enclosed a self-addressed postpaid box for your convenience in replying. If you need any questions, you may call me at 336-375-3377.

I would appreciate you taking your time to give me in this study.

Sincerely,

May 27, 1971

Dear

I am a graduate student in health education at The University of North Carolina at Greensboro. One of the requirements for completion of my master's degree is that I complete a research thesis in an area of interest to me. For the past two years, I have included a unit on birth defects in my high school health classes. It is my belief that the knowledge my students gained during the unit improved their attitude toward and acceptance of children and people who have birth defects. However, I have not been able to scientifically determine if study of birth defects actually does result in attitude change.

For this reason, I have chosen to construct a scale to measure attitudes toward birth defects as a thesis study. I have chosen to use a situation-response technique in which a situation is briefly described and five action responses are stated. The subject selects the one response which best indicates what he would do if he were faced with the situation.

I am requesting that you help in rating the responses under each situation. A point value of five would be assigned to the response which you judge to be the most desirable, four to the next most desirable, and three, two, and one given to descending desirability of responses. Your point ratings will be combined with those of other judges and will determine the order of desirable responses to each item on the final scale.

If you agree to be a judge, the 30 to 40 situation items will be sent to you during the second or third week of June to be returned to me within one week after you receive them.

I have enclosed a self-addressed postcard for your convenience in replying. If you have any questions, you may call me at 919-379-5197.

I deeply appreciate you taking your time to help me in this study.

Sincerely,

Miss Geraldine Zelfer

June 13, 1971

Dear

Enclosed are forty-four situation response items and directions for you to follow when evaluating the items and rating the responses. The purpose of this scale is to measure attitudes toward the prevention of birth defects and toward those who have birth defects.

I am very interested in any suggestions or comments that you may have regarding any items and/or responses. But please be sure to rate the items as they are written before you make any changes or suggestions. I would particularly welcome comments about any items you rate as undesirable.

Thank you very much for helping me to complete my thesis study. I am grateful for your time and cooperation. If you have any questions, you may call me at 919-379-5042.

I would appreciate it if you would return the items to me by Wednesday, June 23. I have enclosed a self-addressed, stamped envelope for your convenience.

Sincerely,

Miss Geraldine Zelfer

Encl. 3

INSTRUCTIONS TO JUDGES

A. J. ...

APPENDIX C

Instructions for Judges

The first of the following cases and instructions apply to judges of the court in general and to the judges of the court in special sessions. The second set of instructions apply to the judges of the court in special sessions only.

1. The judge shall preside over the court and shall see that the court is conducted in an orderly and dignified manner. He shall see that the court is kept in session for the time specified in the order of the court.

2. The judge shall see that the court is kept in session for the time specified in the order of the court.

3. The judge shall see that the court is kept in session for the time specified in the order of the court.

4. The judge shall see that the court is kept in session for the time specified in the order of the court.

5. The judge shall see that the court is kept in session for the time specified in the order of the court.

6. The judge shall see that the court is kept in session for the time specified in the order of the court.

7. The judge shall see that the court is kept in session for the time specified in the order of the court.

8. The judge shall see that the court is kept in session for the time specified in the order of the court.

9. The judge shall see that the court is kept in session for the time specified in the order of the court.

10. The judge shall see that the court is kept in session for the time specified in the order of the court.

INSTRUCTIONS FOR PRELIMINARY JUDGES

A Situation-Response Scale to
Measure Attitudes Toward Birth Defects

DIRECTIONS:

The items on the following pages are situation-response items for a scale to measure attitudes toward birth defects. This scale was developed for use with senior high school students and/or college freshmen.

Please read each situation. Then read the five responses which indicate possible attitudes toward the situation. Remember you are not taking this attitude test. You are a member of a jury who is to judge the responses ranging from the most desirable attitude to the least desirable attitude. Assign a value of five (5) points to the response which you judge to be the most desirable attitude, four (4) points to the next most desirable attitude, three (3) points to the next most desirable attitude, two (2) points to the next most desirable attitude, and one (1) point to the least desirable attitude. For example:

— You have been a volunteer helper for a children's recreation program at the local YMCA for the past year. The director comes to you and says that he is planning to start a program for children who are physically handicapped. What would you do if he asked you to help with the program?

- 5 A. I would welcome the opportunity to work with physically handicapped children.
- 4 B. I would be willing to work with physically handicapped children if no one else would.
- 1 C. I would strongly object to working with physically handicapped children.
- 3 D. It wouldn't matter one way or the other if I worked with physically handicapped children.

2 E. I would be reluctant to work with physically handicapped children.

If you had rated the item as indicated, it would mean that you rated A as the most desirable, B as the next most desirable, D as the next most desirable, E as the next most desirable, and C as the least desirable.

If you feel it is absolutely impossible to rate the responses for a particular item on a 5 to 1 value scale, assign a duplicate value to two or more responses if you think they are equally desirable or equally undesirable. For example, you may feel that two responses rate "4" points, or two responses rate "1" point, and no response rates "3" points.

Also, please evaluate each total item. Indicate in the space provided to the right of the item how you would rate each item in view of its contribution to the attitude scale. Use the following method for rating each item:

E - Essential - should be included

D - Desirable - acceptable

U - Undesirable - should be left out

Your ratings of responses and evaluation of items will be combined with those of the other judges to determine the items and response weightings to be used on the final attitude scale.

INSTRUCTIONS FOR FINAL JUDGES

A Situation-Response Scale
to Measure Attitudes Toward Birth DefectsDirections:

The items on the following pages are situation-response items for a scale to measure attitudes toward birth defects. This scale was developed for use with college freshman and sophomore women.

Please read each situation. Then read the five responses which indicate possible attitudes toward the situation. Remember you are not taking this attitude test. You are a member of a jury who is to judge the responses ranging from the most desirable attitude to the least desirable attitude. Assign a value of five (5) points to the response which you judge to be the most desirable attitude, four (4) points to the next most desirable attitude, three (3) points to the next most desirable attitude, two (2) points to the next most desirable attitude, and one (1) point to the least desirable attitude. For example:

— You have been a volunteer helper for a children's recreation program at the local YMCA for the past year. The director comes to you and says that he is planning to start a program for children who are physically handicapped. What would you do if he asked you to help with the program?

- 5 A. I would welcome the opportunity to work with physically handicapped children.
- 4 B. I would be willing to work with physically handicapped children if no one else would.
- 1 C. I would strongly object to working with physically handicapped children.

3 D. It wouldn't matter one way or the other if I worked with physically handicapped children.

2 E. I would be reluctant to work with physically handicapped children.

If you had rated the item as indicated, it would mean that you rated A as the most desirable, B as the next most desirable, D as the next most desirable, E as the next most desirable, and C as the least desirable.

If you feel it is absolutely impossible to rate the responses for a particular item on a 5 to 1 value scale, assign a duplicate value to two or more responses if you think they are equally desirable or equally undesirable. For example, in a given item, you may feel that two responses rate "4" points, two responses rate "1" point, and one response rates "3" points.

Also, please evaluate each total item. Indicate in the space provided to the left of the item how you would rate each item in view of its contribution to the attitude scale. Use the following method for rating each item:

E - Essential - should be included

D - Desirable - acceptable

U - Undesirable - should be left out

Please be sure that each item in the scale is evaluated and that each response for every item is rated. Responses for items evaluated as undesirable should be rated.

Your ratings of responses and evaluation of items will be combined with those of the other judges to determine the items and response weightings to be used on the final attitude scale.

APPENDIX D

Attitude Scale Items

ATTITUDE SCALE ITEMS

- ___ 1.* You have been a volunteer helper for a children's recreation program at the local YMCA for the past year. The director comes to you and says that he is planning to start a program for children who are mentally retarded. What would you do if he asked you to help with the program?
- ___ A. I would be reluctant to work with mentally retarded children.
- ___ B. I would be willing to work with mentally retarded children if the director couldn't find anyone else.
- ___ C. I would strongly object to working with mentally retarded children.
- ___ D. I would welcome the opportunity to work with mentally retarded children.
- ___ E. It would not matter one way or the other if I worked with mentally retarded children.

- ___ 2.* Your community is in need of a comprehensive program for the treatment and education of children with birth defects. Various committees are being formed to publicize the campaign, to raise money, and to enlist volunteers to help with the program. What would you do?
- ___ A. I would work a little bit if someone asked me to help.
- ___ B. I would volunteer to help with some aspect of the program.
- ___ C. I would not help with any aspect of the program.
- ___ D. I would help only if I personally knew someone who would benefit from such a program.
- ___ E. I would make a monetary contribution but would prefer not to volunteer my time.

*Starred items were used on the final attitude scale.

- ___ 3. * A new family moves next door. Their twelve year old daughter, the same age as your younger sister, is mentally retarded. Your sister wants to play with her. How would you react?
- ___ A. I would not care if my sister played with the mentally retarded child as long as my classmates didn't know about it.
 - ___ B. I would encourage my sister to invite the mentally retarded child over to our house to play.
 - ___ C. I would not want my sister to play with the mentally retarded child.
 - ___ D. I would want my sister to play with the mentally retarded child only if an adult were present.
 - ___ E. I would not care if my sister played with the mentally retarded child at her house.
-
- ___ 4. * You and a group of your friends are at a football game. A teenage boy working in a concession stand has a disfiguring birthmark on his face. One of your friends makes a sarcastic remark to the boy about his appearance. Everyone laughs and thinks it is a harmless joke. What would you do?
- ___ A. I would say something to the boy to try to make him feel better.
 - ___ B. I probably would not say anything to my friend at any time, but I would not think what he said was funny.
 - ___ C. I would say nothing because what he said was a harmless joke.
 - ___ D. I would tell my friend, in the presence of the group, that I didn't think what he said was funny.
 - ___ E. I would not say anything to my friend then, but I would tell him later that I didn't approve of what he said.

- ___ 5. An agency in your community has received a generous federal grant. The committee in charge of distributing this money has decided to release a majority of the funds to establish and maintain a center for the care and training of children with birth defects. How do you feel about this decision?
- ___ A. Government funds should be used to establish a center for research in the prevention of birth defects.
 - ___ B. Government funds should not be used to help children with birth defects.
 - ___ C. It is good that government funds are used to establish and maintain a center for children with birth defects.
 - ___ D. Government funds should be used to establish a center for children with birth defects, but maintenance costs should be supported by the parents.
 - ___ E. Government funds should be used to establish a center for children with birth defects, but maintenance costs should be supported by local donations.
- ___ 6. A bill, on the ballot for the upcoming elections would release more state tax funds for research concerning the cause and prevention of birth defects. Assuming that you are of age to vote, what would you do?
- ___ A. I would vote against the bill and would try to persuade others to vote against it also.
 - ___ B. I would vote for the bill.
 - ___ C. I would skip this section of the ballot, because it doesn't matter one way or the other to me.
 - ___ D. I would vote for the bill and would try to persuade others to vote for it also.
 - ___ E. I would vote against the bill.

- ___ 7.* Many public schools have a policy of offering special education courses for mentally retarded students. What is your opinion of this policy?
- ___ A. It is difficult to justify a policy such as this in public schools.
 - ___ B. This practice should be stopped.
 - ___ C. This policy has more to be said for it than against it.
 - ___ D. It is good that schools follow this policy.
 - ___ E. This policy has as many good points as bad points.
- ___ 8.* You have just moved into a new community. Your six-year old sister, who has congenitally malformed arms, wants to go to the neighborhood swimming pool with you. What would you do?
- ___ A. I would be glad to take her with me.
 - ___ B. It wouldn't matter one way or the other if I took my sister with me.
 - ___ C. I would take her only if my mother made me.
 - ___ D. I would take her but would not tell anyone that she is my sister.
 - ___ E. I would refuse to take her with me.
- ___ 9.* A group of your friends is planning to work in the local hospital for physically handicapped children during the Christmas vacation and want you to join them. What is your opinion regarding working with these children?
- ___ A. I think it would be personally satisfying to help the handicapped children.
 - ___ B. I would only work for pay because I need extra money at Christmas time.
 - ___ C. I would work with these children because I have always been curious about handicapped children.
 - ___ D. I would not want to help these handicapped children.
 - ___ E. It would be very difficult for me to help these handicapped children because I feel so sorry for them.

- ___ 10. You and your husband have decided to have a baby. Experts have predicted that an epidemic of German measles is expected to reach your city within the next three months. Research shows that such conditions as cataracts, congenital deafness, abnormal heart formation and mental deficiency may occur in the baby if the mother contacts German measles during the early months of pregnancy. To your knowledge you have never had German measles. How would this prediction affect your decision to have a baby?
- ___ A. I would wait until the epidemic is over before becoming pregnant.
 - ___ B. The prediction of an epidemic would not influence my decision to have a baby as planned.
 - ___ C. I would wait to see if I became pregnant. If so, I would go to the doctor to get a German measles vaccination.
 - ___ D. I would make every attempt to isolate myself from anyone who might have German measles, but I would continue with my plans to have a baby.
 - ___ E. I would make an appointment with a physician to receive a vaccination for German measles. I would then wait at least three months before becoming pregnant.
- ___ 11. You are planning to marry. You find that in both of your families there is a history of cystic fibrosis in some of the past generations. This disease affects children's respiration and digestion. If both you and your fiance carry a gene for cystic fibrosis, each of your children has one chance in four of having the disease. How would this knowledge influence your decision to marry and have children?
- ___ A. I would marry this person but would not have children.
 - ___ B. This information would not influence my decision to marry this person and have children.
 - ___ C. I would seek the advice of a medical specialist in genetic counseling before making a decision about marrying this person.
 - ___ D. I would not marry this person.
 - ___ E. I would plan to marry this person and have one child. If this child does have cystic fibrosis, I would not have any more children.

- ___ 12.* A bill, introduced in the state legislature, would require that each newborn infant be given an inexpensive test for PKU. PKU is an inborn error in metabolism which results in mental retardation when not diagnosed and treated in infancy. What is your reaction to such a bill?
- ___ A. The bill should be passed.
- ___ B. The bill should not be passed; the test is not needed unless a physician recommends it.
- ___ C. I would actively work to promote passage of this bill.
- ___ D. The bill should not be passed; the parents should make the decision to test the infant.
- ___ E. The bill should not be passed; the testing is too time consuming.
- ___ 13.* Your husband wants to make a contribution to the National Foundation of March of Dimes. The contribution would be used for research in preventing and caring for those who have birth defects. How do you feel about this?
- ___ A. I would be strongly in favor of our making this contribution.
- ___ B. I would prefer to contribute a small amount to the National Foundation of March of Dimes and more to another foundation.
- ___ C. I would prefer that we make our contribution to another foundation.
- ___ D. I would want to know more about this foundation before we made a contribution.
- ___ E. I would insist that we not make a contribution to this foundation.
- ___ 14.* Some public schools have a policy of offering courses especially adapted to meet the needs of physically handicapped students. What is your opinion of this policy?
- ___ A. It is good that schools follow this policy.
- ___ B. It is difficult to justify a policy such as this in public schools.
- ___ C. This policy has as many good points as bad points.
- ___ D. This policy has more to be said for it than against it.
- ___ E. This practice should be stopped.

___ 15.* One of your friends says that public schools should have a regulation that prohibits all mentally retarded children from attending public schools, unless they are placed in special classes which are separated from the "normal" children. How do you feel about this statement?

- ___ A. I agree with my friend's statement.
- ___ B. I strongly agree with my friend's statement.
- ___ C. I strongly disagree with my friend's statement.
- ___ D. I disagree with my friend's statement.
- ___ E. I am undecided about how I feel about this statement.

___ 16. You are engaged to be married. Your future husband has an Rh positive blood factor and you have an Rh negative blood factor. How would this information influence your decision to marry this person and have children?

- ___ A. I would marry but would not have any children of my own.
- ___ B. I would not marry this person.
- ___ C. This information would not influence my decision to marry and have children.
- ___ D. I would marry and would seek the care of a physician during each pregnancy.
- ___ E. I would marry but would have only one child.

___ 17.* You have been a volunteer helper for a children's recreation program at the local YMCA for the past year. The director comes to you and says that he is planning to start a program for children who are physically handicapped. What would you do if he asked you to help with the program?

- ___ A. I would welcome the opportunity to work with physically handicapped children.
- ___ B. I would strongly object to working with physically handicapped children.
- ___ C. I would be reluctant to work with physically handicapped children.
- ___ D. I would be willing to work with physically handicapped children if the director couldn't find anyone else.
- ___ E. It wouldn't matter one way or the other if I worked with physically handicapped children.

___ 18.* You are a parent who has a preschool child who was born mentally deficient. In a medical examination the child was diagnosed as eventually being capable of only fifth grade reading level. He will need special training to be able to partially support himself as an adult. What kind of school do you think the child should attend?

- ___ A. I would enroll him in special education classes in the local public school.
- ___ B. I would place him in an institution.
- ___ C. I would enroll him in a special day training school for the mentally retarded in the community.
- ___ D. I would not send him to school. He should be tutored at home.
- ___ E. I would want him to attend regular classes in a public school.

___ 19. One of your best teenage friends has been dating steadily for over a year. She comes to you and tells you that she is afraid she is pregnant. She doesn't know what to do and asks your advice. What would you tell her?

- ___ A. I would suggest that she not tell anyone anything until she waits for another month to find out if she is pregnant.
- ___ B. I would suggest that she discuss this first with her boyfriend.
- ___ C. I would suggest that she talk with her parents.
- ___ D. I would suggest that she talk to the school counselor.
- ___ E. I would suggest that she go to a doctor immediately.

___ 20.* You are reading in an airport terminal while waiting for a flight scheduled to depart in 2 hours. A mother enters the terminal with a child who has two artificial arms. The child sits down beside you. What would be your reaction?

- ___ A. I would continue to read, but would occasionally watch the child out of curiosity.
- ___ B. I would continue to read, but I would feel very sorry for this child.
- ___ C. I would continue to read. The presence of such a child would not cause me to act differently.
- ___ D. I would move to another chair or into another section of the terminal.
- ___ E. I would talk to the child.

- ___ 21. You are a married woman in your second month of pregnancy. You are spending a three week vacation visiting a friend. You are very tired because you find it very difficult to sleep at nights. Your friend offers you some of her sleeping tablets. What would you do?
- ___ A. I would ask the local pharmacist for advice.
 - ___ B. I would not take any sleeping pills without first calling my doctor.
 - ___ C. I would try my friend's sleeping pills.
 - ___ D. I would not take the pills. I would try to get as much sleep as I could at night and take naps during the day.
 - ___ E. I would get as much exercise as possible during the day, so that I would be tired enough to sleep at nights.
- ___ 22.* When you were engaged, both you and your fiance had premarital medical examinations and received genetic counseling. You have now been married over a year and want to have a baby. What is your opinion regarding your medical care?
- ___ A. I would wait for three or four months to be sure I was pregnant and would then seek medical care for the remaining months of pregnancy.
 - ___ B. I would seek medical care only if a symptom such as vaginal bleeding, swollen feet, or abdominal pains occurred.
 - ___ C. I would not seek medical care until labor pains began.
 - ___ D. The amount of medical care desired would depend upon whether I had had a child before. I would seek medical care earlier and more often for my first child than for subsequent children.
 - ___ E. I would want to be examined by a doctor as soon as possible after conception, and I would want medical care to continue throughout pregnancy.

- ___ 23.* You are a heavy smoker. You are planning to become pregnant. How would pregnancy affect your smoking habits?
- ___ A. I would follow my doctor's advice concerning smoking.
 - ___ B. I would stop smoking during pregnancy.
 - ___ C. I would continue to smoke as usual.
 - ___ D. I would cut down to no more than three cigarettes a day.
 - ___ E. I would not smoke during the first three months of pregnancy but would continue to smoke as usual during the remaining months.
- ___ 24. You are overweight and have just found out that you are pregnant. What course of action regarding nutrition would you follow?
- ___ A. Since I must now eat enough for two people, I would disregard any gain in weight.
 - ___ B. I would follow the advice of a medical doctor.
 - ___ C. I would be extra careful in choosing foods to cut down on calories but would attempt to maintain a balanced diet.
 - ___ D. I would continue to eat as usual.
 - ___ E. I would eat as usual but would take vitamin and mineral supplements.
- ___ 25.* A new girl has enrolled in your high school class. Although she has above average intelligence, she has poor neuro-muscular coordination and a speech impairment due to cerebral palsy. How would you react to this girl?
- ___ A. I would invite her to go to activities with me and my friends.
 - ___ B. Her defects would be unpleasant to me, and I would avoid any contact with her.
 - ___ C. I would not know how to treat her and would probably not make an attempt to get to know her.
 - ___ D. I would accept her as I would any other new student.
 - ___ E. I would willingly study with her.

- ___ 26. You and your husband have just moved to a new city. Your husband's new boss has invited the family over to his home for dinner. You have three children, one of whom is a mongoloid. What would you do?
- ___ A. I would leave our mongoloid child with a babysitter and would take our other two children.
 - ___ B. I would not go at all.
 - ___ C. I would accept his invitation and would take all of our children with us.
 - ___ D. I would accept his invitation and leave all the children with a babysitter.
 - ___ E. I would call him to see if it would be agreeable to bring our mongoloid child with us.
- ___ 27.* You are a parent who has a twelve year old child who is physically handicapped. The child is able to care for himself and is able to get around by use of crutches or artificial limbs. What kind of school would you want him to attend?
- ___ A. I would enroll him in a special school for handicapped children.
 - ___ B. I would enroll him in the public school special education class for mentally retarded children.
 - ___ C. I would send him to school in another city.
 - ___ D. I would want him to attend regular classes in a public school.
 - ___ E. I would not send him to school. He should be tutored at home.
- ___ 28.* An institution for children with serious birth defects needs some extra help which requires personal contact with the children there. You are asked to help. What would you do?
- ___ A. I would refuse to help.
 - ___ B. I would not only be glad to go and help but would encourage others to go also.
 - ___ C. I would help only if I were paid or if I were given extra credit for a class.
 - ___ D. I would help only if my friends consent to go also.
 - ___ E. I would go and help gladly.

- ___ 29.* You have been a babysitter for your neighbors for several years. Recently they had a child with multiple limb deformity. They call and want you to babysit. What would be your response?
- ___ A. I would be repulsed at the thought of handling such a baby and would tell the parents I could not babysit.
 - ___ B. I would babysit but would be worried about handling the baby.
 - ___ C. I would be happy to continue to babysit.
 - ___ D. I would babysit at least once out of curiosity.
 - ___ E. I would only babysit if I were paid more than usual.
- ___ 30.* One of your first cousins who has always lived in a distant city moves into your community. After some time you realize that you love each other and want to get married. What would you do?
- ___ A. I would seek the advice of a medical specialist in genetic counseling before making a decision about marrying my cousin.
 - ___ B. I would not marry my cousin.
 - ___ C. I would marry my cousin and have children no matter what anyone said.
 - ___ D. I would marry my cousin but would seek genetic counseling before making a decision to have children.
 - ___ E. I would marry my cousin but not have children.
- ___ 31.* One of your friends has an epileptic seizure during the class period. You have not known that she was an epileptic. How would you now feel about this person?
- ___ A. I would not feel any differently toward this girl.
 - ___ B. I would want to become more knowledgeable about epilepsy.
 - ___ C. I would pity this girl and would try to help her.
 - ___ D. I would not associate with this person.
 - ___ E. I would be afraid to be alone with this girl.

___ 32.* A neighbor of yours has a child who is mentally retarded. What attitude should she take concerning the child?

- ___ A. She must help her mentally retarded child develop to his capacity.
- ___ B. She might as well accept the fact that her child can never improve.
- ___ C. She must realize that her child will never be truly happy.
- ___ D. She should attempt to keep others from knowing that her child is retarded.
- ___ E. She must realize that there are worse things than having a mentally retarded child.

___ 33.* A girl with a cleft palate and cleft lip has been assigned to the same camp cabin as your twelve year old daughter. Although the girl has had surgical treatment, her face is deformed and she has a speech impairment. How do you feel about this situation?

- ___ A. I would hope that my daughter could accept a deformed child.
- ___ B. I would complain to the camp director and demand that deformed children not be placed in the camp in future years.
- ___ C. I would request that the deformed girl be moved to a different cabin.
- ___ D. I would request that my daughter be placed in another cabin.
- ___ E. It would not make any difference to me.

___ 34.* You have agreed to work in a camp for physically handicapped children. What would you expect of these children?

- ___ A. These children's limitations should be realized and their abilities developed.
- ___ B. These children are seldom happy. They will find it difficult to be successful.
- ___ C. These children should be pitied and given special attention.
- ___ D. These children may become discouraged easily and need help in developing self-confidence.
- ___ E. These children cannot be expected to do everything on their own.

- ___ 35.* You have a congenitally deformed child. Your community is starting an informal parents' group to provide an opportunity for parents of congenitally deformed children to discuss their problems. How would you feel about joining this group?
- ___ A. I would not join; parent discussion groups are a waste of time.
 - ___ B. I would join only if I knew some of the other parents.
 - ___ C. I would join; the reassurance offered by other parents would be beneficial.
 - ___ D. It would be difficult for me to join. I find it hard to talk about my child and my family problems.
 - ___ E. I would be willing to attend the first meeting to see if the meetings were helpful.

- ___ 36.* Many medical personnel recommend that everyone have a thorough physical examination before they marry. What is your opinion regarding the value of a premarital medical examination?
- ___ A. I would want a premarital examination only if I had not had prior sexual relations.
 - ___ B. Premarital examinations are not necessary and I would not have one.
 - ___ C. I would not think a medical examination necessary until I became pregnant.
 - ___ D. I would want both my fiance and I to have a premarital medical examination only if one or both of us had a family history of abnormalities.
 - ___ E. I definitely would want both my fiance and I to have a premarital examination.

- ___ 37. The youngest of five children in a family is severely mentally retarded. The child is not able to do anything for himself and is bedridden. The parents expect the brothers and sisters to help care for him. What is your opinion regarding the care of this child?
- ___ A. The mother should be mainly responsible for the care of the child.
 - ___ B. Under no circumstances should the child be removed from the home. All family members should work together to care for the child.
 - ___ C. The child should receive institutional care during the day and should return to the family at night.
 - ___ D. The parents should take this child to specialists until they find one who can help the child get better.
 - ___ E. The child should be placed in an institution.
- ___ 38. Your married sister has just found out she is pregnant. Someone has told her that she can increase her chances of having a beautiful child by looking at beautiful people, pictures, and statues during her pregnancy. What is your opinion of this statement?
- ___ A. It is beneficial for the baby if the mother looks at beautiful things during her entire pregnancy.
 - ___ B. I doubt that this statement is true.
 - ___ C. I really don't know whether or not this statement is true.
 - ___ D. The child would only be affected if the mother looks at beautiful things during the first three months of pregnancy.
 - ___ E. This statement is not true; it is contrary to the facts of heredity.

- ___ 39. A classmate of yours was born with a congenital birth defect. She has a deformed right arm and must wear an artificial limb. Several of your friends think that she should not date or plan to marry. What do you think?
- ___ A. She should be able to marry but should neither have nor adopt any children.
 - ___ B. She should be able to marry but should seek genetic counseling before making a decision to have children.
 - ___ C. She should be able to marry and have children.
 - ___ D. She should not marry. She is not capable of managing a household or caring for children.
 - ___ E. She should be able to marry but should adopt children.
- ___ 40.* There is a girl with a congenital club foot in your physical education class. She is not able to run well or maneuver quickly. The class is being divided into groups to practice skills. Would you want this girl in your group?
- ___ A. I would be concerned about having her in my group for fear that she might be hurt.
 - ___ B. I would not want her to be in my group.
 - ___ C. I would be glad to have her in my group.
 - ___ D. I would not choose her for my teammate, but if she were assigned to my group, I would put up with her.
 - ___ E. I am sure that there would be some part for her to play in the group.
- ___ 41. A blind girl is living in the dormitory room next to you. What would be your reaction to this girl?
- ___ A. I probably would not make any special attempt to get to know this girl.
 - ___ B. I would study with her in the dorm.
 - ___ C. I would try to include her in many of my activities.
 - ___ D. I would feel uncomfortable in her presence because I do not know how to act when I am with blind people.
 - ___ E. She must depend on other people so I would offer to help her.

- ___ 42. Almost everyone has heard of a family in which one of the children was born mentally or physically defective. What do you think is the cause of these defects?
- ___ A. Birth defects are due to heredity and to environmental influences during prenatal development.
 - ___ B. The mother did not receive proper medical supervision during pregnancy.
 - ___ C. The birth of such a child is a matter of chance; the parents could not prevent it.
 - ___ D. Normal healthy parents cannot have a child with birth defect.
 - ___ E. God is punishing parents for their sins.
- ___ 43.* You are co-leader of a Brownie Scout troop in your neighborhood. You receive a telephone call from a mother who would like to know if her blind daughter could join the troop. What would be your response?
- ___ A. I would be willing to have her join.
 - ___ B. I would let her join the troop if her mother agreed to come to all the troop activities.
 - ___ C. I would be willing to have her join if someone would show me how to work with her.
 - ___ D. I would let the other troop leader make the decision about allowing the blind girl join.
 - ___ E. I would not want her to join the troop.
- ___ 44.* One of your friends says that public schools should have a regulation that prohibits all physically handicapped children from attending public schools unless they are placed in special classes which are separated from the "normal" children. How do you feel about this statement?
- ___ A. I disagree with my friend's statement.
 - ___ B. I am undecided about how I feel about this statement.
 - ___ C. I strongly disagree with my friend's statement.
 - ___ D. I strongly agree with my friend's statement.
 - ___ E. I agree with my friend's statement.

A SITUATION-RESPONSE SCALE TO MEASURE
ATTITUDE TOWARD BIRTH DEFECTS

INSTRUCTIONS

This is a situation-response scale to measure attitudes toward birth defects. This scale is not a knowledge test. There are no right or wrong answers.

Please read each situation carefully. Then select the response which most nearly represents what you would do if you were confronted with the situation.

APPENDIX E

Directions for Students

Do not make any marks on the questionnaire. Put your answers on the answer sheet provided. Place an \mathbb{X} in the circle corresponding to the response you select. For example, if you select response A, place an \mathbb{X} in the circle in the column under A. If you select response B, place an \mathbb{X} in the circle in the column under B, and so on.

Select only one response for each item. Please be sure to answer every item.

Remember, your name will not be used in this study in any way.

A SITUATION-RESPONSE SCALE TO MEASURE
ATTITUDES TOWARD BIRTH DEFECTS

DIRECTIONS:

This is a situation-response scale to measure attitudes toward birth defects. This scale is not a knowledge test. There are no right or wrong answers.

Please read each situation carefully. Then select the response which most nearly represents what you would do if you were confronted with the situation.

Do not make any marks on the scale questions. Put your answers on the answer sheet provided. Place an X in the circle corresponding to the response you select. For example, if you select response A, place an X in the circle in the column under A. If you select response B, place an X in the circle in the column under B, and so on.

Select only one response for each item. Please be sure to answer every item.

Remember, your name will not be used in this study in any way.

TABLE VI

ITEM EVALUATIONS AND COEFFICIENTS OF INTERCORRELATION OF FIVE
JUDGES' RESPONSE WEIGHTINGS IN PRELIMINARY STUDY

Judges Items	Correlation of Response Weightings										Item Evaluations				
	1-2	1-3	1-4	1-5	2-3	2-4	2-5	3-4	3-5	4-5	1	2	3	4	5
1	.90	.90	.90	.975	1.0	1.0	.975	1.0	.975	.975	E	E	E	U	E
2	.70	.975	.90	.90	.925	.90	.90	.975	.975	1.0	E	E	E	D	E
3	.90	.975	.975	.975	.975	.975	.875	1.0	.95	.95	E	E	E	E	E
4	.80	.80	.65	.75	1.0	.70	.975	.70	.975	.825	E	E	E	D	E
5	.90	.70	.30	.85	.80	.30	.95	.30	.95	.35	E	E	U	D	D
6	1.0	1.0	1.0	.975	1.0	1.0	.975	1.0	.975	.975	D	E	D	D	E
7	.825	.70	.80	.70	.975	.975	.975	.95	1.0	.95	D	E	D	E	E
8	1.0	.975	.825	.90	.975	.825	.90	.775	.925	.925	E	E	E	E	E
9	.90	.675	.55	.975	.675	.55	.825	.975	.575	.475	D	E	E	E	E
10	.975	1.0	.925	.925	.975	.975	.90	.925	.925	.925	E	E	U	D	E
11	.80	.70	.50	.80	.70	.90	.70	.60	.90	.50	E	E	U	D	E
12	.90	.70	.975	.875	.90	.975	.875	.825	.875	.90	E	E	D	D	E
13	.975	.90	.90	.975	.975	.925	1.0	.90	.975	.925	D	E	E	E	U
14	1.0	1.0	.95	1.0	1.0	.95	1.0	.925	1.0	.95	D	E	D	E	E
15	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	E	E	E	E	U
16	.90	.90	.625	.750	1.0	.375	.950	.375	.950	.225	D	E	U	D	D
17*	-	-	-	-	.850	1.0	.85	.85	1.0	.85	E	E	E	E	E
18	.975	.80	.550	.275	.725	.425	.125	.90	.775	.925	E	E	D	E	E
19	.90	1.0	-.325	.975	.90	-.625	.875	-.325	.975	-.175	D	E	U	U	E
20	.95	.80	.875	.150	.60	.825	.05	.825	.250	-.125	E	E	E	E	E

TABLE VI (continued)

Judges Items	Correlation of Response Weightings										Item Evaluations				
	1-2	1-3	1-4	1-5	2-3	2-4	2-5	3-4	3-5	4-5	1	2	3	4	5
21	.95	.50	.70	.95	.35	.65	.925	.90	.60	.80	E	E	U	D	E
22	.75	.975	.75	.75	.775	.80	1.0	.875	.775	.80	E	E	U	D	E
23	.40	.80	1.0	.70	.60	.40	.10	.80	.70	.70	D	U	U	D	E
24	.80	.90	.575	.80	.90	.925	.90	.675	.90	.825	D	D	U	U	E
25	.975	.90	.675	.975	.975	.775	1.0	.825	.975	.775	D	E	E	E	E
26*	-	-	-	-	-.15	-.15	-.95	1.0	-.25	-.25	D	E	E	E	E
27*	-	-	-	-	.30	.35	.30	.95	.80	.95	E	E	D	E	E
28	.875	.90	.975	1.0	.875	.90	.875	.875	.90	.975	E	E	E	E	E
29	.825	.975	.975	.90	.90	.90	.875	1.0	.875	.875	E	E	E	E	E
30*	-	-	-	-	.95	.65	.90	.85	.75	.35	E	E	U	D	D

*One judge failed to weight the responses for these items.

TABLE VII
 ITEM EVALUATIONS AND COEFFICIENTS OF
 INTERCORRELATION OF FOUR JUDGES'
 RESPONSE WEIGHTINGS IN
 PRELIMINARY STUDY

Judges Items	Correlation of Response Weightings						Item Evaluations			
	1-2	1-3	1-5	2-3	2-5	3-5	1	2	3	5
1	.90	.90	.975	1.0	.975	.975	E	E	E	E
2	.70	.975	.90	.925	.90	.975	E	E	E	E
3	.90	.975	.975	.975	.875	.95	E	E	E	E
4	.80	.80	.75	1.0	.975	.975	E	E	E	E
5	.90	.70	.85	.80	.95	.95	E	E	U	D
6	1.0	1.0	.975	1.0	.975	.975	D	E	D	E
7	.825	.70	.70	.975	.975	1.0	D	E	D	E
8	1.0	.975	.90	.975	.90	.925	E	E	E	E
9	.90	.675	.975	.675	.825	.575	D	E	E	E
10	.975	1.0	.925	.975	.90	.925	E	E	U	E
11	.80	.70	.80	.70	.70	.90	E	E	U	E
12	.90	.70	.875	.90	.875	.875	E	E	D	E
13	.975	.90	.975	.975	1.0	.975	D	E	E	U
14	1.0	1.0	1.0	1.0	1.0	1.0	D	E	D	E
15	1.0	1.0	1.0	1.0	1.0	1.0	E	E	E	U
16	.90	.90	.75	1.0	.95	.95	D	E	U	D
17*	-	-	-	.85	.85	1.0	E	E	E	E
18	.975	.80	.275	.725	.125	.775	E	E	D	E
19	.90	1.0	.975	.90	.875	.975	D	E	U	E
20	.95	.80	.150	.60	.05	.250	E	E	E	E
21	.95	.50	.95	.35	.925	.60	E	E	U	E
22	.75	.975	.75	.775	1.0	.775	E	E	U	E
23	.40	.80	.70	.60	.10	.70	D	U	U	E
24	.80	.90	.80	.90	.90	.90	D	D	U	E
25	.975	.90	.975	.975	1.0	.975	D	E	E	E
26*	-	-	-	-.15	-.95	-.25	D	E	E	E
27*	-	-	-	.30	.30	.80	E	E	D	E
28	.875	.95	1.0	.875	.875	.90	E	E	E	E
29	.825	.975	.90	.90	.875	.875	E	E	E	E
30*	-	-	-	.95	.90	.75	E	E	U	D

*One judge failed to weight the responses for these items.

TABLE VIII

TOTAL OF RESPONSE WEIGHTINGS, AVERAGE OF RESPONSE WEIGHTINGS AND
RESPONSE RANKINGS OF FOUR JUDGES IN PRELIMINARY STUDY*

Item	Total of Weightings					Average of Weightings					Response Rankings				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
1	8	13	4	20	14	2	3.25	1	5	3.5	2	3	1	5	3.5
2	14	20	4	9	12	3.5	5	1	2.25	3	3.5	5	1	2	3
3	7	20	4	14	13	1.75	5	1	3.5	3.25	2	5	1	3.5	3
4	13	7	4	19	16	3.25	1.75	1	4.75	4	3	2	1	5	4
5	18	4	19	11	11	4.5	1	4.75	2.75	2.75	4.5	1	5	3	3
6	4	16	11	20	8	1	4	2.75	5	2	1	4	3	5	2
7	8	4	15	20	14	2	1	3.75	5	3.50	2	1	4	5	3.5
8	20	16	9	7	4	5	4	2.25	1.75	1	5	4	2	2	1
9	20	10	14	5	11	5	2.5	3.5	1.25	2.75	5	2.5	3.5	1	3
10	15	4	5	10	20	3.75	1	1.25	2.50	5	4	1	1	2.5	5
11	16	9	19	5	11	4	2.25	4.75	1.25	2.75	4	2	5	1	3
12	17	9	20	7	5	4.25	2.25	5	1.75	1.25	4	2	5	2	1
13	20	14	8	14	4	5	3.5	2	3.5	1	5	3.5	2	3.5	1
14	20	8	12	16	4	5	2	3	4	1	5	2	3	4	1
15	8	4	20	16	12	2	1	5	4	3	2	1	5	4	3
16	8	4	16	20	12	2	1	4	5	3	2	1	4	5	3
18	19	6	17	10	10	4.75	1.5	4.25	2.5	2.5	5	1.5	4	2.5	2.5
19	4	10	17	12	20	1	2.5	4.25	3	5	1	2.5	4	3	5
20	11	11	14	4	17	2.75	2.75	3.5	1	4.25	3	3	3.5	1	4

TABLE VIII (continued)

Item	Total of Weightings					Average of Weightings					Response Rankings				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
21	7	14	4	19	14	1.75	3.5	1	4.75	3.50	2	3.5	1	5	3.5
22	6	7	4	10	20	1.5	1.75	1	2.5	5	1.5	2	1	2.5	5
23	17	16	4	12	11	4.25	4	1	3	2.75	4	4	1	3	4
24	4	19	17	8	9	1	4.75	4.25	2	2.25	1	5	4	2	2
25	20	4	8	15	15	5	1	2	3.75	3.75	5	1	2	4	4
28	4	20	8	9	17	1	5	2	2.25	4.75	1	5	2	3	4
29	4	17	20	7	9	1	4.25	5	1.75	2.25	1	4	5	2	2

*Items 17, 26, 27, and 30 were not included because one judge failed to weight the responses.

TABLE IX

ITEM EVALUATIONS AND COEFFICIENTS OF INTERCORRELATION OF FIVE
JUDGES' RESPONSE WEIGHTINGS IN FINAL STUDY

Judges Items	Correlation of Response Weightings										Item Evaluations				
	1-2	1-3	1-4	1-5	2-3	2-4	2-5	3-4	3-5	4-5	1	2	3	4	5
1	.90	1.0	.90	1.0	.90	1.0	.90	.90	1.0	.90	D	E	E	E	E
2	.825	.825	.975	1.0	1.0	.90	.825	.90	.825	.975	D	E	D	E	E
3	.975	.975	.875	.975	1.0	.800	1.0	.800	1.0	.800	E	E	E	E	E
4	1.0	.825	.825	.975	.825	.825	.975	1.0	.90	.90	E	E	D	E	D
5	.575	.70	.90	.70	.975	.825	.175	.90	.20	.50	D	D	E	E	D
6	.975	1.0	.60	1.0	.975	.575	.975	.60	1.0	.60	D	D	D	E	D
7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	E	E	D	E	E
8	.875	.70	.70	.90	.825	.825	.975	1.0	.90	.90	E	E	D	E	E
9	.975	.90	.90	.90	.825	.825	.825	1.0	1.0	1.0	E	E	E	E	E
10	.775	.675	.575	.375	.975	.125	-.025	-.100	-.200	.50	E	D	D	E	E
11	.750	.725	.125	.075	.975	.075	-.525	0.00	-.20	.60	E	E		E	D
12	.975	.975	.725	.975	1.0	.80	.90	.80	.90	.60	E	E		E	D
13	.875	.875	.875	.875	1.0	1.0	1.0	1.0	1.0	1.0	E	E	U	E	D
14	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	E	E	D	E	E
15	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	E	E	E	E	E
16	.625	.875	.625	.625	.40	1.0	1.0	.80	.40	1.0	E	E	D	E	E
17	.90	1.0	1.0	1.0	.90	.90	.90	1.0	1.0	1.0	E	E	E	E	E
18	.825	.975	1.0	1.0	.775	.825	.825	.975	.975	1.0	U	E	D	E	E
19	.975	.975	.425	.825	.90	.60	.90	.50	.70	-.100	E	U	D	D	U
20	.875	1.0	.90	.825	.875	.975	.925	.90	.825	.975	E	E	D	E	E

TABLE IX (continued)

Judges Items	Correlation of Response Weightings										Item Evaluations				
	1-2	1-3	1-4	1-5	2-3	2-4	2-5	3-4	3-5	4-5	1	2	3	4	5
21	.60	.70	.50	.90	.90	.30	.70	.60	.90	.70	E	D	D	E	U
22	.975	.95	.90	1.0	.975	.875	.975	.95	.95	.90	E	D	U	E	E
23	.975	.875	.975	.625	.90	1.0	.70	.90	.90	.70	E	U	D	E	D
24	.975	.975	.975	.875	.90	.90	.800	1.0	.90	.90	E	U	D	E	U
25	.975	.90	.70	1.0	.975	.825	.975	.90	.90	.70	E	E	E	E	E
26	.075	.475	.80	.875	.600	.575	.525	.475	.575	.975	U	E	D	E	E
27	.875	.90	.90	.90	.825	.875	.825	.90	1.0	.90	E	E	U	E	E
28	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	E	E	D	E	E
29	.925	.95	.975	1.0	.875	.90	.925	.875	.95	.975	E	E	D	E	E
30	.675	.975	.975	.825	.70	.70	.90	1.0	.90	.90	E	D	D	E	D
31	.825	.90	.70	1.0	.975	.975	.825	.90	.90	.70	E	E	E	E	E
32	.875	.90	.90	.90	.975	.975	.975	1.0	1.0	1.0	E	E	D	E	E
33	.975	.975	.90	.825	.925	.925	.775	.925	.925	.925	E	E	D	E	E
34	.975	.875	.975	.925	.95	.95	.875	.90	.675	.825	E	E	D	E	E
35	.90	1.0	1.0	.90	.90	.90	.70	1.0	.90	.90	E	E	E	E	E
36	.825	.750	.90	.975	.775	.975	.925	.750	.775	.975	E	D	D	E	D
37	.075	-.075	.225	.775	-.100	.70	.225	.60	.075	.375	U	E	D	E	E
38	.975	.500	.90	.975	.425	.925	1.0	.60	.425	.925	D	D	U	U	D
39	.90	.40	.975	.800	.70	.875	.90	.425	.60	.825	D	E	U	E	E
40	1.0	.90	.90	.90	.90	.90	.90	1.0	1.0	1.0	D	E	D	E	E
41	.825	.90	.90	.90	.725	.725	.675	1.0	.80	.80	E	E	D	E	E
42	.325	.975	.875	.325	.40	.70	1.0	.90	.40	.70	E	E	U	E	E
43	.80	.90	.90	.80	.90	.90	1.0	1.0	.90	.90	D	E	D	E	E
44	.90	.90	.90	.90	1.0	1.0	1.0	1.0	1.0	1.0	E	E	E	E	E

TABLE X

TOTAL OF RESPONSE WEIGHTINGS, AVERAGE OF RESPONSE WEIGHTINGS AND
RESPONSE RANKINGS OF FIVE JUDGES IN FINAL STUDY*

Item	Total of Weightings					Average of Weightings					Response Rankings				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
1	10	18	5	25	17	2	3.6	1	5	3.4	2	3.5	1	5	3.5
2	19	25	5	14	12	3.8	5	1	2.8	2.4	4	5	1	3	2.5
3	9	25	6	17	19	1.8	5	1.2	3.4	3.8	2	5	1	3.5	4
4	25	11	5	18	20	5	2.2	1	3.6	4	5	2	1	3.5	4
7	10	5	20	25	15	2	1	4	5	3	2	1	4	5	3
8	25	19	11	13	5	5	3.8	2.2	2.6	1	5	4	2	2.5	1
9	25	10	17	5	17	5	2	3.4	1	3.4	5	2	3.5	1	3.5
12	21	14	24	11	6	4.2	2.8	4.8	2.2	1.2	4	3	5	2	1
13	25	16	9	20	6	5	3.2	1.8	4	1.2	5	3	2	4	1
14	25	10	15	20	5	5	2	3	4	1	5	2	3	4	1
15	10	5	25	20	15	2	1	5	4	3	2	1	5	4	3
17	25	5	10	19	16	5	1	2	3.8	3.2	5	1	2	4	3
18	25	5	20	13	9	5	1	4	2.6	1.8	5	1	4	2.5	2
20	12	14	20	5	25	2.4	2.8	4	1	5	2.5	3	4	1	5
22	15	8	5	17	25	3	1.6	1	3.4	5	3	1.5	1	3.5	5
23	22	22	5	16	11	4.4	4.4	1	3.2	2.2	4.5	4.5	1	3	2
25	22	5	10	23	17	4.4	1	2	4.6	3.4	4.5	1	2	4.5	3.5
27	21	6	11	24	6	4.2	1.2	2.2	4.8	1.2	4	1	2	5	1
28	5	25	10	15	20	1	5	2	3	4	1	5	2	3	4
29	5	19	24	11	11	1	3.8	4.8	2.2	2.2	1	4	5	2	2

TABLE X (continued)

Item	Total of Weightings					Average of Weightings					Response Rankings				
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E
30	25	17	5	17	12	5	3.4	1	3.4	2.4	5	3.5	1	3.5	2.5
31	20	24	17	5	10	4	4.8	3.4	1	2	4	5	3.5	1	2
32	25	6	7	5	19	5	1.2	1.4	1	3.8	5	1	1.5	1	4
33	25	6	7	10	20	5	1.2	1.4	2	4	5	1	1.5	2	4
34	25	7	8	19	16	5	1.4	1.6	3.8	3.2	5	1.5	1.5	4	3
35	6	14	25	10	20	1.2	2.8	5	2	4	1	3	5	2	4
36	9	5	10	16	25	1.8	1	2	3.2	5	2	1	2	3	5
40	12	5	25	13	20	2.4	1	5	2.6	4	2.5	1	5	2.5	4
43	22	14	23	11	5	4.4	2.8	4.6	2.2	1	4.5	3	4.5	2	1
44	20	15	25	6	9	4	3	5	1.2	1.8	4	3	5	1	2

*Items 5, 6, 10, 11, 16, 19, 21, 24, 26, 37, 38, 39, 41, and 42 did not meet the criteria to be included on the final scale.