

DESIGNING ATTITUDE SCALES: THEORETICAL CONSIDERATIONS

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Attitudes have a very strong influence on the behavior of a person. They provide the link between knowledge and practice. In spite of having correct knowledge, a person may not exhibit the desired behavior, if his attitudes are unfavorable. This can be illustrated by a simple example - doctors know all about the fact that smoking causes cancer yet this does not deter them from smoking.

For any educational programme to succeed, attention should be paid, not only to imparting knowledge but also to changing the attitudes. In the absence of an attitudinal change, imparting knowledge alone may not have the desired effect. Assessment of atti-

tudes is generally considered a psychologist's domain and very few clinicians have received training in assessment of attitudes. We reviewed the literature on 'attitudes' regarding infant feeding. Out of the 100 odd studies reviewed, not one had assessed attitudes by the accepted scientific methodology and in most cases, it was the knowledge component only which had been passed off as 'attitudes'.

The purpose of this communication is to sensitize the clinicians regarding basic principles of attitudes and attitude assessment, so that they can design attitude scales to measure the attitudes before and after the educational intervention and can evaluate the efficiency of the same. If attitude scores are poor, it may be necessary to provide special inputs to change the attitudes towards favorable direction. In addition, simple steps for designing and standardizing an attitude scale have also been presented.

Attitudes can be defined as learned predisposition to react favorably or unfavorably towards a person or an object(1). The keyword in this definition is 'learned' which means that by intervention, it is possible to change attitudes for better or for worse. Attitudes are formed by coming in contact with a person or an object. They can also be formed by coming in contact with a person who holds a particular attitude towards a particular person. It is not our intention to go into various theories regarding attitude formation. Interested readers can refer to standard texts(1) for more details.

Attitudes have 3 components - cognitive, conative and active. In other words, we know something, we *believe* it to be true and

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we act accordingly. We know that earth is round. Tomorrow, if some one were to present concrete evidence that earth is square, we will accept that it is square because we are not emotionally for or against roundness. On the other hand, if someone were to say that infanticide is good way to control population, we will react, because emotionally we are against infanticide. It is this *emotional* component, which distinguishes attitudes from simple knowledge.

Attitudes are formed on the basis of various aspects or facets of a person and not on one attribute only. If we know that our neighbor is a patriot, we will form positive attitudes towards him. If we were to know after sometime, that he beats his wife, we might revise our attitudes towards him. If later on, we come to know that he has donated some money for a noble cause, the attitudes will change further. We might say that although he beats his wife but overall he is a good person. This is known as the phenomenon of attitude averaging(2). Because of this, most people have attitudes about a person in one direction only rather than having 2 different sets of attitudes.

Assessment of Attitudes

For assessing attitudes, specialized attitude scales are needed. Various methods of constructing attitude scales have been reported in literature. These include - Thurstone scales, Linkert scales, Osgood's Semantic Differential and Guttman scales(3). Of these, Likert scales are the easiest to construct and are most widely used in clinical and educational work. We shall limit our discussion to Likert-type scales only.

For constructing a Likert type scale, the first step is to collect various statements on different aspects of a person or object regarding which the attitudes have to be

assessed. This can be done by reviewing the previous published studies, discussions with representative sample of population or by asking the subject experts. The correctness of statements is not important, as long as they express opinions held by a substantial number of people. It is important that they represent definite favorableness or unfavorableness to a particular point of view and number of favorable and unfavorable statements is approximately equal. The favorable and unfavorable statements are randomly mixed and presented in the form of a questionnaire (*Appendix I*).

Administering and Scoring

The respondents are required to indicate their rating on all statements. The scales can have from a minimum of 3 points (yes, can't say, no) to a maximum of 11 points. The decision to devise a 3, 5, 7, 9 or 11 point scale is based on a maturity of respondents. In general, a 5 point scale has been found to give satisfactory results. Scales with 3 points don't distinguish between different strengths of attitudes, while those with 9 or 11 points make it difficult for the respondents to pick the intended response.

For using a 5 point scale, respondents are given the following options - strongly agree, agree, can't say, disagree, strongly disagree. Scaling technique assigns a scale value to each of the 5 responses. Positive items are scored as 5, 4, 3, 2 and 1 while negative items are scored as 1, 2, 3, 4 and 5. By giving score for each statement, the instrument yields a total score for each respondent. Dividing the score by number of items on the scale, gives mean attitude score, which shows the degree of respondent's favorableness towards that given point of view. On a 5 point scale, which has been scaled as above, following interpretations can be drawn:

- 5 - Most favorable attitude
- 3 - Neutral attitude
- 1 - Most unfavorable attitude.

Standardizing the Scale

Before the scale is administered to the target respondents, it should be standardized and its reliability tested. The best measure of reliability would be 'Test-retest reliability'. However, since that is likely to bring in the 'practice effect' into picture, we go in for determining the internal consistency of the scale, which helps to eliminate items that are ambiguous or that are not of the same type as rest of the scale. To test for internal consistency, split-half method is commonly used. The scores are computed on the odd numbered items and even numbered items and the correlation between two halves is calculated by using the 'Pearson-product-moment correlation' formula. The value thus obtained gives reliability of half scales, which can be converted into reliability of full scale using the Spearman-Brown Prophecy formula(4). The values are tested for significance using the standard statistical tables.

Another way to test for internal consistency is to calculate the co-efficient of correlation between scores on an individual item versus scores on rest of the scale *minus* that item. This helps to identify the items which need to be replaced or reworded.

Limitations of Attitude Scales

Even the most precisely designed and standardized scales may fail to measure attitudes with the precision that one would desire. There is no basis for the belief that the 5 points indicated on the scale are equally spaced. The interval between 'strongly agree' and 'agree' may not be the same as that between 'agree' and 'can't say' - this is akin to a beauty contest, where one cannot say that the contestant who was adjudged first

was twice as beautiful as the contestant who was the runner up. It is also unlikely that statements are of equal value in 'for-ness' or 'againstness'. Further, a respondent may not be able to validly react to a short statement in absence of qualifying situations. It is doubtful whether equal scores obtained by several individuals indicate equal favorableness towards a given point. And even though the scale provides for anonymous response, there is a possibility that people may answer according to what they think they *should* feel rather than how they *do* feel.

Inferring attitudes from expressed opinions also has many limitations. People may conceal their attitudes and express socially acceptable opinions. Even behavior itself may not be a true indication of attitudes. When politicians kiss babies, their behavior may not be a true expression of their affection for children.

However, with these limitations, the description or measurement of opinion may, in many instances, be related to real attitudes very closely.

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3. Hamblin AC. Evaluation and Control of Training, 1st edn. London, Mc Graw Hill Book Co., 1974; pp 1-200.
4. Best JW, Kahn JV. Research in Education, 6th edn. Delhi, PHI 1992, pp 248-250.

APPENDIX 1

Checklist for Preparing Statements for the Scale

1. Define or qualify terms that could be easily misinterpreted.

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2. Be careful in using adjectives that have no agreed meaning.
 3. Beware of double negatives.
 4. Underline negative words (e.g., not) to make them obvious.
 5. Provide a point of reference when asking for a rating.
 6. Avoid unwanted assumptions.
 7. Phrase statements that are appropriate for all respondents.
 8. Avoid too strong or too mild statements.
 9. Have approximately equal number of positive and negative statements.
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NOTES AND NEWS

SYMPOSIUM ON PERSISTENT DIARRHEA IN INFANTS AND CHILDREN

A one day symposium on 'Persistent diarrhea in infants and children' is being organized by the Department of Pediatrics, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh on *19th December, 1993*. Distinguished faculty members from different Indian Universities will be participating.

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