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Construction of questionnaire for measurement of knowledge about child and mother care

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Abstract
The study aims to focus on the construction of knowledge scale about child and mother care of rural women. In this study questionnaire was selected for collection of the data. In the present study, self made questionnaire regarding knowledge scale was used as appropriate tool for collecting data in order to achieve the set objectives of this study. It is a "3-Points Likert Scale". In this questionnaire there are 37 statements. Among them 21 is favourable and 16 are unfavourable statements. The test-retest co-efficient of the scale was determined as 0.95 which is significant.

Keywords: Construction, questionnaire, measurement, child and mother care

Introduction

In a developing country like India, there are many constraints for better living and adequate nutrition viz. incomes are low, housing is inadequate, over- population, environmental sanitation is poor and illiteracy is widespread. There is increasing migration from the rural to the urban areas and large number of these live in slums in appalling living conditions (Ghosh, 1997).

Since the mother has to nurture the foetus, her nutrition and health have a direct relationship with birth weight and foetal stores of iron, Vitamin-A and other nutrients. At present about 80% of the world's population is living in the developing countries of Asia, Africa and Latin America. Among them India has second largest population in the world (Premi, 1991) [6].

Population of India as well as West Bengal are increasing in every year. On the other hand, yearly growth rate in percentage of West Bengal is higher than the National rate. As per census 1951 the literacy rate was 18.33% and census 2011 it became 74.01%. So the literacy rate is increasing. The literacy rate of West Bengal is higher than the National Literacy rate. But increase rate of literacy in percentage in every year is very low and it is not more than one percentage. Female literacy rate is 70.54%. In West Bengal female literacy rate is not in a very good position, because lack of education, superstition, mother child care, nutrition, health and awareness of family planning are lower.

By and large girls in India grow up in an atmosphere of social, psychological and nutritional deprivation and low literacy levels. Marriage is early, the mean age at marriage is 19 years (Ghosh, 1977) [44]. In order to bring greater impact through the Reproductive and Child Health (RCH) Program, it is important to recognise that reproductive, maternal and child health cannot be addressed in isolation as these are closely linked to the health status of the population in various stages of life cycle. The health of an adolescent girl impacts pregnancy while the health of a pregnant woman impacts the health of new born and the child. As such, interventions may be required at various stages of life cycle, which should be mutually linked (Anonymous, 2013) [1].

Education has done miracles in many field of ever day life. It has made women more adequately equipped to face and solve various multi-faced problems that intervene with their balance life. Our country's one of the major disease is illiteracy. The intellectual growth of child is depends upon a literate mother. A educated mother physically, mentally, socially and intellectually protect her child and family.

So the present study will try to prepare a construction of suitable questionnaire about knowledge regarding the child and mother care of rural women in west Bengal.

Construction of the knowledge scale

There are different types and techniques for construction of tool i.e. questionnaire, rating scale, check list, interview etc. In this study questionnaire was selected for collection of the data. Questionnaire is the printed form of tool containing set of structured statement and response. In a questionnaire the subjects are presented with a series of statements to which they respond as indicated. In the present study, self made questionnaire regarding knowledge scale was used as appropriate tool for collecting data in order to achieve the set objectives of this study. It is a "3-Points Likert Scale". There was three responses for each statement, these are a) Strongly Agree, b) Don't know c) disagree. It was a power test scale of self administering nature with sufficient number of favourable and unfavourable statements. The favourable statements were scored from maximum to minimum as 3, 2 and 1, while the unfavourable statements were scored as 1, 2 and 3, from minimum to maximum.

In order to carry out investigation, response from the selected sample is a must. This structured responses are called data, and the instrument/devices by the application of which these data are collected is called a "tool". A questionnaire is a printed form of tool containing a set of structured statement and set of response (Lindquiest, 1963) [5]. The most difficult and lengthy step of educational research is the data collection step (Singh, 2006) [7].

Item pool for the knowledge scale

As child and mother care comprises of many areas, it became necessary for the investigation to identify the areas that could be included in the test to be constructed along with the items under each area. The researcher included the following areas, education, economic condition, knowledge (Nutrition, mother care), superstition follow up, environment, hygiene. Finally the researcher decides to develop the questionnaire.

Before attempting to construct the preliminary draft test, the researcher made thorough review of the up to date existing literature and texts, consulted with expert and resource persons in the field of research under discussion. Primarily a set of forty statements were formed as the draft form of the knowledge scale. Then a revised form of the questionnaire were prepared and again presented to the experts and resource persons with a request to them to examine the purpose, clarity, language, intensity and appropriateness of each of the statement. As per the suggestion of the experts and resource persons necessary changes / modifications were made in the questionnaire and ultimately forty statements were kept in the knowledge scale about child and mother care. This final statements or items encompassed all the seven dimensions as mentioned above.

Pre-try out of the knowledge scale

The preliminary constructed knowledge part of the questionnaire was administrated on 60 people of all over rural West Bengal are in order to find out the difficulties of the people in responding to the items and understanding the language. After this preliminary administration, screening and editing of the items had done on the basis of their judgment. Efforts were taken to improve the language in understanding the items. Opinions of the resource persons and expert were sought to remove ambiguity if any and to improve the language of the statements. In this way every items was checked and modified to make it respondent friendly.

Try out of the knowledge scale

The try-out of knowledge scale about child and mother care was applied on 160 individuals from the selected sample. All samples were selected from rural areas. In case of illiterate subject, the researcher himself read out the questionnaire and sought her responses on each statement. On the basis of their responses, the researcher himself marked the response sheet. While in case of primary, secondary and higher educated subjects the questionnaire was handed over to them with the instruction to read the questionnaire carefully and then put their response in the corresponding boxes against each statement. The score of all the statements so obtained were summed up as per their relevant weight age.

Item analysis of the knowledge scale

The item analysis of a test usually two kinds of information, i.e., item difficulty and item discrimination. The index of item difficulty reveals how difficult an item is, whereas, the index of discrimination indicates the extent to which an item discriminates between the well-informed individuals and poorly informed ones. The items were checked and modified on the basis of pre-testing and administered to 160 respondents for item analysis. The respondents for administering the items were randomly selected and were not included in the sample for final study. This was done to avoid testing effect. Nevertheless, these 160 respondents were representative of the community in which the
final study was conducted. Each one of the 160 respondents to whom the test was administered was given a score 3, 2 & 1 for each item, according to whether the answer was agreed, neutral & disagreed. The total number of correct answers given by a respondents out of 40 items was the knowledge score of an individual. Ultimately, the final form of knowledge scale retained 37 statements respectively.

Reliability and Validity of the knowledge scale

Reliability refers to consistency of score value obtained on the same individual on repeated measurement with the same tool on different occasions or with different but equivalent or parallel instruments on the same or different occasions, or and evaluable examining conditions (Boyle and Fisher, 2007) [2]. The investigator applied test-retest to find out the reliability of the test. In this method a single form of test is administered twice on the same sample with a reasonable time gap. This yields two independent sets of scores. The correlation between the two sets of scores give the value of reliability co-efficient. A positive and significant correlation coefficient between the two sets of scores indicates that the test is reliable. Here test-retest calculated by Product Moment Method.

In the present study, the test was re-administered upon 60 rural women which were selected randomly from the original sample. To reduce the memory effect to a minimum retest was held 15 days after the final administration of the original test. Then the investigator found out the reliability co-efficient between the test scores and retest scores of those same groups of rural women. The test-retest co-efficient of the scale was determined as 0.95 which is significant.

The validity of a test, or of any measuring instrument, depends upon the fidelity with which it measures what it supported to measure (Garrett, 1985) [3]. The test items in the knowledge scale of child and mother care extensively represent the objectives of this study. The content of the test and its specification was verified by a number of specialists in the field of child and mother care.

The test has a high reliability co-efficient value. Therefore, theoretically it was highly valid. To find out the external validity of the test, the investigators used statistical calculation and found out the internal consistencies of each item on the basis of the results obtained from the criterion of internal consistency, the investigators selected the most differentiating statements for the final form of the knowledge scale. For these reasons, it is assumed that the test was highly valid.

Final Form of Knowledge Scale

There are 21 favourable statements and 16 unfavourable statements. The distribution of items among the 7 dimensions are presented in the following table :

Table 1: Distribution of the items among different dimensions of knowledge scale about child and mother care.

Sl No.	Dimensions	Statement Number		Score
		Favourable (+)	Unfavourable (-)	
1	Education	16	1,16,32	4
2	Economic Condition	22	2,13,17,25	5
3	Knowledge (Nutrition mother care)	6, 8, 23, 33	4,18	6
4	Superstition	3,5,9,11,14,19,20,26,29,34,35,36	-	12
5	Follow up	-	10,30,37	3
6	Environment	7	15,24,27,31	5
7	Hygiene	21,28	-	2
	Total	21	16	37

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