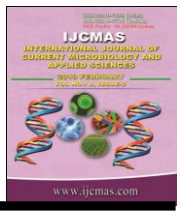
Int.J.Curr.Microbiol.App.Sci (2019) *8*(3): 145-149

International Journal of Current Microbiology and Applied Sciences
***ISSN: 2319-7706* Volume 8 Number 03 (2019)**
Journal homepage: http://www.ijcmas.com



Original Research Article https://doi.org/10.20546/ijcmas.2019.803.020

Development and Standardization of Knowledge Scale on Hygiene for Rural Women

Ingita Gohain* and Juliana Sarmah

Department of Extension and Communication Management, Assam Agricultural University, Jorhat, Assam, India
**Corresponding author*

Keywords

Hygiene, Knowledge, Rural women

Article Info

Accepted:
04 February 2019
Available Online:
10 March 2019

A B S T R A C T

The present study was aimed to construct, develop and standardize a Knowledge Scale on Hygiene. After going through several related literature, the researcher outlined a scale and after analyzing, the content framed 90 items related to the course. The prepared 90 items were revised and edited carefully and then given to a panel of experts in the field of health, hygiene and extension specialist for their valuable suggestions and corrections to ensure its quality. Thus the content validity of the tool was established. After seeking the opinion of the experts some of the items were reframed. Finally, 73 items were considered to form initial test battery for developing a standardized knowledge test. These items were subjected to item analysis. After which, a total of 30 items were remained for the final study. Simple random sampling method was adopted for the selection of 90 samples for standardization of the knowledge check. Item Analysis was done by calculating the Difficulty Index level and Discrimination Index Level of the 73 items.

Introduction

Hygiene practices play a vital role in the health status of human society. Health status of an individual reflects the quality of life. Health is one of the essential natural pre-requisite for every person to lead a successful life. Access to improved water and sanitation facilities does not, on its own, necessarily lead to improved health. Evidences have shown that good hygiene practices are very important in the health status of people. Lack of proper hygiene has been the major cause of many killer diseases in most countries of the world, including India (Garrett and Woodworth, 1981). To maintain hygiene, one must know the importance of hygienic behaviour in particular, like hand washing with soap at critical times: after defecating and before eating or preparing of food (Sarmah and Sithalakshmi, 2001). According to *WHO*, hand washing with soap can significantly reduce the incidence of diarrhea, which is the second leading cause of death amongst children less than five years old. Ansari and Gupta (2015) study found that there was a significant improvement in the knowledge score for 100 health care workers (56 doctors and 44 nurses) after the training sessions. A study done by WHO also reveals that good hand washing practices helps to reduce the incidence of other diseases like pneumonia, trachoma, scabies, skin and eye infections and diarrhea related diseases like

cholera and dysentery. The hygienic behaviour can be promoted through motivation, information and education. Before promoting information on hygiene, it was felt necessary to know the knowledge level on hygiene among the rural women (Chamyal, 2018).

Everybody knows that women are the backbone of a society. The success of any programme depends on the cooperation of the women. As Nehru said, "to awaken the people, it is the woman who must be awakened and once she is on move, then the family moves, the village moves and the nation moves." Thus, if the knowledge level of rural women on hygiene is assessed, then varieties of educational programme can be undertaken for the rural women based on their knowledge level, which in turn will help them to improve their health status in general. Therefore, the researchers have decided to make an attempt to construct and standardize the Knowledge Scale on Hygiene for rural women.

Materials and Methods

For the present study, the following procedures were followed for preparing the draft tool, administration of the tool and sampling method.

Sample

For the study, a total of 90 rural women were selected as respondents belonging to reproductive age group (15 yrs – 45 yrs) from three non sampled villages of Jorhat district. For selection of sample, random sampling technique was adopted.

Preparation of the draft tool

Based on the content area ninety (90) statements were prepared by consulting with experts of relevant field and different literatures were reviewed to form initial test battery to carry out the item analysis.

The prepared item pool was subjected to scrutiny by a panel of experts (20 nos.) in the field of health, hygiene and extension specialist. The content validity of the knowledge statements were judged in terms of clarity/ambiguity and relevancy. As per judgment of panel of experts on the knowledge statements, 17 items were eliminated. Finally, 73 items were selected to form initial test battery for developing a standardized knowledge test. All the selected items were in 'objective' form having dichotomous (correct/incorrect) type of statements.

Administration of knowledge scale on selected sample

The items were finally administered to 90 rural women selected randomly from three non sampled villages of Jorhat district of Assam. Scores of 1(one) and 0 (zero) were given for correct and incorrect responses respectively. Therefore, there was a possibility of respondents scoring the maximum points for all correct answers and zero points for all wrong answers. Thus the range of obtainable score was 0-73 after computing the total scores obtained by each of the respondents (Table 1).

Item analysis

The scores obtained by the 90 respondents were arranged in descending order of the total scores and the respondents were divided into six equal groups – G1, G2, G3, G4, G5 and G6 with 15 respondents in each group. For the purpose of item analysis, the middle two groups namely G3 and G4 were eliminated retaining only the four terminal groups with high scores (G1 and G2) and with low scores (G5 and G6).

Item difficulty index (P)

The next step is to determine the Item Difficulty Index. Item difficulty was determined by the percentage of individuals who were able to pass each item. The index of item difficulty indicated the extent to which an item was difficult. Practically, if an item is to distinguish among individuals, it should not be so easy that all persons can pass it, nor should be difficult that none are able to pass it.

The item difficulty as worked out in the present study was P, i.e the percentage of respondents answering an item correctly. The item with P values ranging from 20 to 80 was considered for the final knowledge test battery.

Item Discrimination Index ($E^{1}/_{3}$)

The second criteria for item selection were the discrimination index indicated by $E^{1}/_{3}$ value for an item. The function of item discrimination index is to find out whether an item really discriminates a well-informed respondent from a poorly informed respondent. The formula used is as follows:

$$E^{1}/_{3} = \frac{(S_1+S_2) - (S_5+S_6)}{N^{1}/_{3}}$$

Where, S_1, S_2, S_5 and S_6 are the frequencies of correct answers in groups G_1, G_2, G_5 and G_6 respectively.
N is the total number of respondents in the sample selected for item analysis.

In the present study, the item with $E^{1}/_{3}$ values ranging from 0.20 to 0.73 were considered for the final selection for inclusion in the knowledge test.

For establishing internal validity of the check point, biserial correlation coefficient (rpbis) was estimated since the items were scored simply as 1 if correct and 0 if incorrect. According to Garrett (1981) point biserial 'r' assume that the variable, which has been classified into two categories, can be thought of as concentrated at two distinct points along a graduated scale or continuum. The formula for the point biserial r is:

$$\text{rp bis} = \frac{M_p - m_q}{\sigma} \times pq$$

where,
rp bis = Point biserial correlation coefficient
M_p = Mean score on continuous variable of successful group on dichotomous variable.
M_q = Mean score on continuous variable of unsuccessful group on dichotomous variable.
σ = Standard deviation on continuous variable for total groups
p = Proportion of persons falling in successful group on dichotomous variable.
q = 1-p, or the second group

Eventually, 30 items having significant biserial correlation at 0.01 level and 0.5 level of probability were selected for the final knowledge check with 9 items on General Hygiene and Food Hygiene, 13 items on Personal Hygiene and Menstruation Hygiene and 8 items on Environmental Hygiene.

Results and Discussion

Testing the reliability of the knowledge check

A split half reliability coefficient of the test was also corrected by using the Spearman Brown formula and it was found to be 0.93. The reliability coefficient of the whole test was estimated from the formula given below:

$$rtt = 2\ roe/1 + roe$$

where,

rtt = reliability coefficient of the whole test
roe = reliability coefficient of the half-test found experimentally.

Both these coefficients provide an estimate of the internal consistency of the test and thus the dependability of the test scores.

Table.1 Following are the items of the standardized scale

Sl No.	Items
1	Boiling of feeding bottles and nipples before using does not have any chance of germ transmission.
2	Disposable plates, glasses and containers are hygienic.
3	Food is not infected if handled by a person suffering from infectious disease.
4	Prolonged boiling of milk before serving is necessary.
5	Ladle used for stirring meat, fish can also be used for serving food without cleaning/ washing.
6	Mopping of floors with plain water in the house gives protection from germs.
7	Proper flushing of toilet after using is a good hygienic practice.
8	To maintain hygiene, it is not necessary to keep separately cooked and uncooked foods in a refrigerator.
9	Utensils are not necessary to be rinsed with hot water before using.
10	Washing of hands with soap and water after changing a baby's diaper (nappy) is advisable.
11	Washing of hands properly with soap after scrubbing soiled/filthy utensils is not necessary.
12	Hands are to be washed properly after urination.
13	Washing of hands with soap after taking care of sick people is not that necessary.
14	A child must be given bath everyday with mild soap and luke warm water.
15	Washing hands with soap before preparing or handling cooked/ ready-to-eat food is necessary.
16	Sharing of soaps and towels may increase danger of cross-infection.
17	It is not necessary to change clothes after each bath.
18	It is not necessary to wear chappals/ slippers while going for defecation.
19	Washing of hands properly with soap after defecation is not that important.
20	A sanitary pad can be used for more than 6 hours.
21	Sanitary pads after using has to be washed and disposed off in a proper way (in pit) to reduce spreading of infection from it.
22	Washing hands with soap after handling a used sanitary pad is not necessary.
23	The surrounding of the source of drinking water is not necessary to be cleaned regularly
24	The source of drinking water has to be atleast 8-10 mtrs. away from the toilet.
25	Kitchen wastes are to be disposed properly in a particular pit for decomposition.
26	Stagnated water is not an important reason for mosquito breeding.
27	Open defecation of children is not a serious matter as it does not spread infection or germs.
28	It is not important to construct hen's and bird's coop away from the main house.
29	Dumping of household waste for 2 days inside the house does not lead to the growth of harmful insects.
30	Pet animals are to be kept away/ aside to maintain hygiene at home.

Validity of the scale

Content validity was measured by the extent to which the items included in the test represent the total universe of hygiene message for rural women. The universe of the content was covered widely from the available literature assumed that the scores obtained by administering the knowledge test measure what it was intended to be measured.

Moreover, the validity of the test item was also tested by method of point biserial correlation coefficient (rpbis). The items with highly significant biserial correlation coefficients at 0.01 and 0.5 levels of probability indicated the validity of the items in relation to the knowledge test designed to measure the knowledge of rural women.

The knowledge check developed could serve the purpose for measuring knowledge of rural women on hygiene.

The final scale consisted of 30 (thirty) statements. The scale have both positive and negative statements, rural women's responses could be recorded on a two point continuum as correct and incorrect and score as 1 (one) and 0 (zero).

Each positive statement, if responded 'correct' and each negative statement if responded 'incorrect' may be given 1 (one) score, and each positive statement if responded 'incorrect' and each negative statement if responded 'correct' may be given 0 (zero) score.

It is concluded that the knowledge check developed and standardized has a total of thirty (30) items with 9 items on General Hygiene and Food Hygiene, 13 items on Personal Hygiene and Menstruation Hygiene and 8 items on Environmental Hygiene. The knowledge check developed and standardized was valid and reliable. Hence, the check could serve the purpose for assessing the hygiene knowledge of rural women.

References

Ansari SK, Gupta, P. *et al.* 2015. Assessment of the Knowledge, Attitude and Practices Regarding Hand Hygiene amongst the Healthcare Workers in a Tertiary Health Care Centre. *International Journal of Pharma Research and Health Science* CODEN (USA)-IJPRUR, e-ISSN: 2348-6465, vol. 3(3)

Chamyal, D S. 2018. Development and Standardization of Information and Communication Technology Knowledge Scale. *The International Journal of Indian Psychology*. Volume 6, Issue 3, http://www.ijip.in. (July-September, 2018)

Garrett, E. H. and Woodworth, R. S. 1981. Statistics in psychology and education. Bombay: Vakils, Feffer and Simons Ltd.

Sarmah, J. and Sithalakshmi, S. 2001. Knowledge Check for Assessing Health and Nutritional Knowledge of Women in ICDS Programme. *Indian Journal of Extension Education*, Vol, XXXVII No. 1&2, 2001

How to cite this article:

Ingita Gohain and Juliana Sarmah. 2019. Development and Standardization of Knowledge Scale on Hygiene for Rural Women. *Int.J.Curr.Microbiol.App.Sci.* 8(03): 145-149.
doi: https://doi.org/10.20546/ijcmas.2019.803.020