

## Scale for measurement of the possibility of occurrence of constipation

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■ **ABSTRACT** : Constipation appears to be the most common cause of disability in many parts of world. Scientific evidences today support the concept that constipations have their roots in our daily diets. In recent years researchers have focused attention on dietary aspects of the above disease. Hence, presence study was undertaken with an objective to develop scale for measure possibility of occurrence of constipation. For present investigation the methodology followed was collection of statements, editing and pre-selection of items, selection of items, item analysis, testing the validity and reliability of scale etc. As the scale was found to be reliable and valid, the developed scale served as a scientific tool for the measurement of possibility of occurrence of constipation.

■ **KEY WORDS** : Constipation, Dietary fibre, Risk factors, Scale

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Constipation refers to a condition where the bowels move infrequently and the consistency of the stool is often dry and hard. This usually results from excess absorption of water from the stool due to slow passage of the stool in the colon. Answers to certain key questions can help you identify constipation. Has there been any change in diet, exercise habits, lifestyle (daily routine), or stress level?

Rao (2007) showed that any alteration or deviation from a normal routine may result in an alteration in bowel habits. People with constipation will often complain of a feeling of abdominal fullness or bloating. They may also experience rectal pressure or discomfort. Gaseousness, abdominal distension, and the feeling of incomplete elimination are also common complaints.

Constipation is most often caused by a low-fibre diet, lack of physical activity, not drinking enough water, or delay in going to the bathroom when you have the urge to defecate. Stress and travel can also contribute to constipation or other changes in bowel habits. Other times, diseases of the bowel (such as irritable bowel syndrome), pregnancy, certain medical conditions (like an underactive thyroid or cystic fibrosis), mental health problems, neurological diseases, or medications may be the reason for your constipation. More serious causes, like colon cancer, are much less common (Bleser *et al.*, 2005).

Kliegman (2007) showed that children and adults should get enough fibre in their diet. Vegetables, fresh fruits, dried fruits, and whole wheat, bran, or oatmeal cereals are excellent sources of fibre. To reap the benefits of fibre, drink plenty of fluids to help pass the stool. Regular exercise is also important in establishing regular bowel movements. If you are confined to a wheelchair or bed, change position frequently and perform abdominal contraction exercises and leg raises. A physical therapist can recommend exercises appropriate for your physical abilities. Hence, presence study was undertaken with an objective to develop self rating scale for measure possibility of occurrence of constipation.

The details of the steps followed in the construction of "scale to measure possibility of occurrence of constipation", have been discussed below.

### Development of self rating scale :

Achievement of this study was measuring possibility of occurrence of constipation. The procedures for construction and standardization of the scale given by Edward (1969) were followed.

### Collection of statements :

The major component, which contribute to the risk

factors of dietary fibre intake. Were collected after reviewing of relevant literature and discussion with Dietitians, Doctors in Civil Hospital and Nutrition counselors in different private hospitals in Kolhapur city of Maharashtra state.

The scale consist of one main head *i.e.* dietary fibre intake. Hence, one main head and 50 items were collected for the scale.

#### Editing and pre-selection of items :

Preliminary selection and editing of item were done as per the criteria suggested by Edward (1969). One main component and 50 items were retained after preliminary screening.

#### Selection of items :

The inventory component was circulated among 20 panel members (10 experts and 10 subjects). They were asked to rate the appropriate statements and to add or delete them if they felt. So on the basis of suggestions given and ratings of the panel members a modified list of statement was prepared.

The statements thus prepared were given to the same panel members for the relevance and face validity. The statements were rated for the response on a five point continuum *viz.*, highly satisfied, satisfied, neutral, dissatisfied and highly dissatisfied .

The statements after being tested for the relevance and face validity and language were then given to 100 subject. Exclusive of the final sample the subject were randomly selected from Kolhapur city of Maharashtra state. The subjects were requested to express their feelings of satisfaction with each statement on the five point continuum.

#### Item analysis :

The subjects were arranged in an ascending order based on the scores obtained by them, the top 25 per cent of the subject with higher scores (high groups) and 25 per cent subjects with lower scores (low groups) were used as criteria group. The middle 50 per cent respondents were deleted. The responses were analyzed to determine which of the items discriminate most clearly between high and low groups.

For evaluating the response of the high and low group to the individual statements. The 't' value was calculated by applying the following formula suggested by Edward (1969).

$$t = \frac{\bar{X}_H - \bar{X}_L}{\sqrt{\frac{\sum (X_H - \bar{X}_H)^2 + \sum (X_L - \bar{X}_L)^2}{(n_1 + n_2 - 2)}} \times \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

$$(X_H - \bar{X}_H)^2 = X_H^2 - \frac{(X_H)^2}{n}$$

$$\& (X_L - \bar{X}_L)^2 = X_L^2 - \frac{(X_L)^2}{n}$$

The value 't' was a measure of the extent to which a

given statement differentiates between the high and low group based on the 't' values, the statements with largest 't' values were selected for the scale.

**Table 1 : Details about items developed and finally retained in scale for constipation**

Sr. No.	Heads/ dimensions	Total number of items identified	No. of items retained after relevancy test
1.	Dietary fibre intake	95	50

#### Testing the validity and reliability of the scale :

The validity of test or of any measuring instrument depends upon fidelity with which it measures what it purports to measure a test is valid when the performance which measures correspond to the same performance as otherwise independently measured or objectively defined validity is a relative term (Garrett, 1981).

Kerlinger (1978) defined reliability as accuracy or precision of a measuring instrument. A scale can be said to be reliable only when it will consistently produce the same result when applied to the sample any number of times reliability of the scale was assessed by split half method.

The split half method is employed when it is not feasible to construct parallel forms of the test nor advisable to repeat, the test itself one of its main advantages is the fact that all data for computing reliability are obtained upon one occasion, so that variation brought about by differences between the two testing situations are eliminated (Garrett, 1981).

For calculating the reliability, the scores for the 54 statements finally selected for the scale were given to 70 office workers, who were randomly selected. The scores thus obtained were split up as statements with even numbers and statements with odd numbers. Spearman Brown prophecy formula for estimating reliability from two comparable halves of the test (Garrett, 1981).

Hence, the reliability co-efficient of dietary fibre intake at the scale was 0.79 it was found to be positively significant.

#### Self rating scale of subject :

The mean score of each item was calculated by multiplying frequency of response with the weightage and dividing the number of respondents. Based on the scores obtained following classification was made.

**Table 2 : Self rating scale**

Category	Marks
Highly satisfied	4
Satisfied	3
Neutral	2
Dissatisfied	1
Highly dissatisfied	0

**Table 3: Developed scale to measure the possibility of occurrence of constipation**

Sr.No.	Dietary fibre intake	4	3	2	1	0
1.	How much satisfied are you about the fluid in your diet ?					
2.	How much satisfied are you about the barley in your diet?					
3.	How much satisfied are you about the Bengal gram (whole) in your diet?					
4.	How much satisfied are you about the Bengal gram (dhal) in your diet?					
5.	How much satisfied are you about the green gram (whole) in your diet?					
6.	How much satisfied are you about the green gram (dhal) in your diet?					
7.	How much satisfied are you about the moth beans in your diet?					
8.	How much satisfied are you about the peas (green) in your diet?					
9.	How much satisfied are you about the peas (dry) in your diet?					
10.	How much satisfied are you about the peas (roasted) in your diet?					
11.	How much satisfied are you about the rajmah in your diet?					
12.	How much satisfied are you about the red gram in your diet?					
13.	How much satisfied are you about soyabean in your diet?					
14.	How much satisfied are you about the bread in your diet?					
15.	How much satisfied are you about the corn flakes in your diet?					
16.	How much satisfied are you about the puffed wheat in your diet?					
17.	How much satisfied are you about the beetroot row in your diet?					
18.	How much satisfied are you about the beetroot boiled in your diet?					
19.	How much satisfied are you about the cabbage in your diet?					
20.	How much satisfied are you about the carrots in your diet?					
21.	How much satisfied are you about the cauliflower in your diet?					
22.	How much satisfied are you about the mushrooms in your diet?					
23.	How much satisfied are you about the radish in your diet?					
24.	How much satisfied are you about the spinach in your diet?					
25.	How much satisfied are you about the tomatoes in your diet?					
26.	How much satisfied are you about the black berries in your diet?					
27.	How much satisfied are you about the apples in your diet?					
28.	How much satisfied are you about the dates in your diet?					
29.	How much satisfied are you about the fruit salad in your diet?					
30.	How much satisfied are you about the grapes in your diet?					
31.	How much satisfied are you about the mangoes in your diet?					
32.	How much satisfied are you about the oranges in your diet?					
33.	How much satisfied are you about the pears in your diet?					
34.	How much satisfied are you about the pineapple in your diet?					
35.	How much satisfied are you about the almonds in your diet?					
36.	How much satisfied are you about the coconuts in your diet?					
37.	How much satisfied are you about the fenugreek leaves in your diet?					
38.	How much satisfied are you about the spinach in your diet?					
39.	How much satisfied are you about the pumpkin in your diet?					
40.	How much satisfied are you about the pomegranate in your diet?					
41.	How much satisfied are you about the pineapple in your diet?					
42.	How much satisfied are you about the peas in your diet?					
43.	How much satisfied are you about the papaya in your diet?					
44.	How much satisfied are you about the onion-green in your diet?					
45.	How much satisfied are you about the lady finger in your diet?					
46.	How much satisfied are you about the mustard leaves in your diet?					
47.	How much satisfied are you about the custard apple in your diet?					
48.	How much satisfied are you about the cucumber in your diet?					
49.	How much satisfied are you about the cluster beans in your diet?					
50.	How much satisfied are you about the banana in your diet?					

### Conclusion :

As the scale was found to be reliable and valid, the developed scale will serve as a scientific tool for the measurement of possibility of occurrence of constipation. When score is satisfactory that time possibility of occurrence of constipation is less and when score is dissatisfactory that time possibility of occurrence of constipation is more for that patients required fibre rich diet .

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