

Effect of dietary package on knoweldge level of celiac child's parents

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ABSTRACT

Celiac disease (CD) was once thought to be quite rare but has recently been shown to be one of the most common immune-mediated disorders. Presently, the gluten-free diet is the only treatment for celiac disease (Lapid, 2009). Gluten must be eliminated from the diet of celiac patients because its ingestion causes serious intestinal damage. The best strategy to combat the nutritional deficiencies and healing intestinal damage to celiac patients is the gluten free diet based approach. An interview schedule was developed to test the pre knowledge level of the respondents individually and their responses were recorded. Based on pre and post test differences in knowledge of subjects the initial knowledge of the respondents was poor having only 27.05 per cent. After the exposure of training package a significant improvement found in knowledge of the respondents as the pre test scores that increased from 27.05 to 68.67 per cent along with 44.59 per cent gain in knowledge.

Key Words : Celiac, Dietary package, Knowledge

INTRODUCTION

Celiac disease was originally considered a rare malabsorption syndrome of childhood, but it is now recognized as primarily an adult disease. It is closely related to specific HLA Alleles (DQ2 and DQ8) and requires the ingestion of gluten (Green and Jabri, 2006). Celiac disease (CD) is a genetically determined condition in which certain grain proteins cause an autoimmune response that damages the lining of the small intestine, causing blunting of the villi and malabsorption of nutrients. In children, CD commonly presents with failure to thrive, short stature, delayed puberty, chronic diarrhea, abdominal distention, arthralgia, anemia or unexplained nutritional deficiencies (Farell and Kelly, 2002). At present, the only effective treatment is a life-long gluten free diet (Kupper, 2005). Strict adherence to the diet allows the intestine to heal, leading to resolution of all the symptoms in most cases (Akonberg and Thomas, 2008). The study group (n=120) was composed of biopsy positive children age group of 6 -12 year of age with celiac disease. In present study an interview schedule was

developed to test the efficacy of dietary package by the pre and post knowledge level difference of the respondents (parents of celiac patients) individually and their responses were recorded.

METHODOLOGY

In the present study knowledge refers to the amount of correct information of celiac dietary practices and management before and after exposure of the training package. In order to assess the knowledge level of the respondents, knowledge items included in the interview schedule were used for the respondents and scores were assigned to them as per the scoring procedure.

After the exposure of a diet counselling package was developed on “Dietary Management of the Celiac Disease” post test was conducted to find out gain in knowledge and effectiveness of package with reference to experimental group was assessed with the help of same developed knowledge test used for pre testing after the gap of 3-4 days between exposure and post test.

Selection and development of research tool :

The structured interview schedule consist of two section in which first included general information data collected through developed questionnaire about patients *i.e.* age, onset age of disease, Parent’s education level, income, type of family, nutritional profile, family history. In second section Knowledge check in order to assess the knowledge level of the patient’s parents, an interview schedule was constructed including information on various aspects of celiac disease, nutritional adequacy, dietary practices and associated diseases. Initially, thirty-one questions were selected with the help of available literature and discussion with experts. The knowledge test was pre-tested with fifteen respondents (not included in final sample) from Bikaner to see the clarity of questions and improvement were made in the framed schedule accordingly. After pre testing the developed diet counselling package implemented for the three days through group contact by using different teaching aids and training methods.

Scoring procedure :

The respondents were asked to reply in dichotomized /multiple choice categories, which are correct or incorrect. Based on the obtained knowledge scores, knowledge levels of the respondents were categorized under these categories: low, medium and high.

Reliability test :

According to Kerlinger (1973) “Reliability is the accuracy or precision of measuring instrument”. To know reliability of Dietary package knowledge check, split half method was used.

The entire tool was administered on a group of 15 respondents other then the sample group. Total items of the test were then divided in to two equal halves by putting the odd numbered items on one side and even numbered items on the other side. Both were considered as a separate schedule. To find out agreement between two sets of questions of the schedule, correlation co-efficient were calculated and put to Spearman Brown Prophecy formula given

here.

$$r_n = \frac{2(\text{roe})}{1 + \text{roe}}$$

where, roe is the coefficient of reliability of two half-test *i.e.* odd v/s even items. It is the reliability coefficient of total test.

Result of correlation coefficient (r) was found to be 0.87, respectively for Dietary package. This values was significant, indicating the internal consistency of schedule and was reliable for the use of the study.

Validity test:

The intrinsic validity of this measuring tool was calculated by taking square root of reliability coefficient. The coefficient of validity was found 0.93, respectively for Dietary package.

RESULTS AND DISCUSSION

To find out the effectiveness of the developed training package in terms of knowledge gained by the respondents. The results presented under have been sub-divided as follows:

- Overall knowledge level of the respondents in pre-test
- Overall knowledge level of the respondents in post-test
- Knowledge gained by respondents
- Overall gain in knowledge

Overall knowledge level of the respondents in pre-test :

The section describes the existing preliminary level of knowledge of the respondents regarding selected celiac dietary management. An interview schedule was developed to test the pre knowledge level of the respondents individually and their responses were recorded.

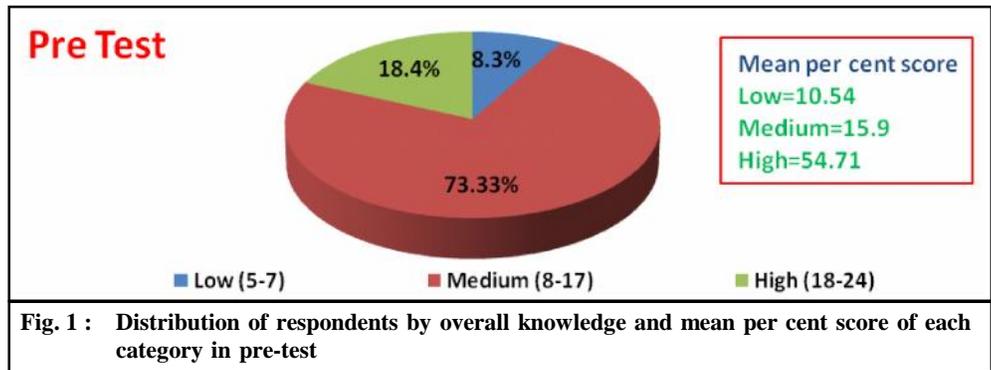
Table 1 shows that the highest score obtained by the respondents was 24 and the lowest score was 5 with knowledge range of 19 having coefficient of range of 0.66. Standard deviation of knowledge check in the pre-test was 5.03 and co-efficient of variation was found to be 40.5. On the basis of standard deviation knowledge check was categorized in to high, maximum and low.

Table 1 : Score range of knowledge and standard deviation in pre-test				
Range of knowledge	Co-efficient of range	Average score	Standard deviation of knowledge check	Co-efficient of variation (%)
5-24 (19)	0.66	12.42	5.03	40.5

Data presented in the Table 2 and Fig. 1 reveals that in pre test majority of the respondents (73.33 %) had medium knowledge with the mean per cent score of 15.9 whereas respondents having high level of knowledge was 15.9 per cent with mean per cent scores of 54.71 and respondents were having low level of knowledge were only 8.3 per cent with mean per cent

Table 2 : Distribution of respondents by overall knowledge and mean per cent score of each category in pre-test

Knowledge with score range	Frequency (n)	Percentage (%)	Mean per cent score
Low (5-7)	5	8.3	10.54
Medium (8-17)	44	73.33	15.9
High (18-24)	11	18.4	54.71



score of 10.54. This shows that most of the respondents had the medium knowledge.

Overall knowledge level of the respondents in the post-test :

This section describes knowledge level of the respondents after the exposure of the developed training package by investigator. Same knowledge check was administered to the test of the knowledge after the exposure of training package individually and their responses were recorded. Data show in the Table 3 indicates that in the post-test the highest score obtained by the respondents was 49 and the lowest score was 26 with knowledge range of 33 having coefficient of range of 0.3. Standard deviation of knowledge check in the pre-test was 7.48 and co-efficient of variation was found to be 20.06.

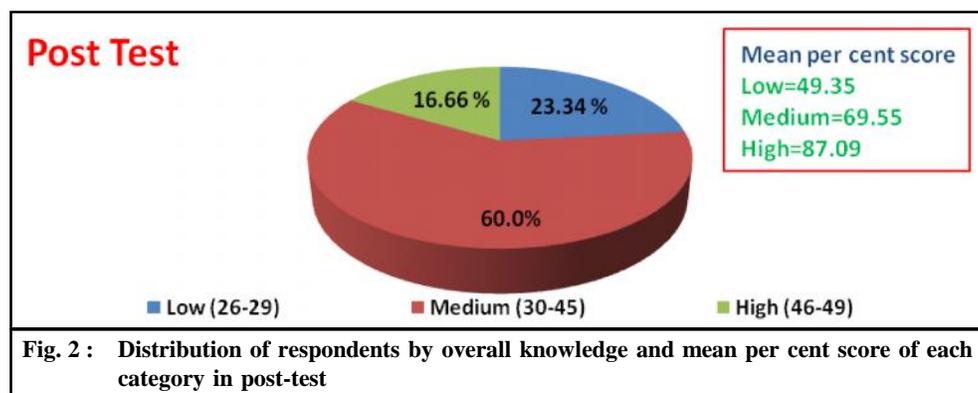
Table 3 : Score range of knowledge and standard deviation in post-test

Range of knowledge	Co-efficient of range	Average score	Standard deviation of knowledge check	Co-efficient of variation (%)
26-49 (33)	0.3	37.27	7.48	20.06

Data presented in the Table 4 and Fig. 2 reveals that in pre test majority of the respondents (60 %) had medium knowledge with the mean per cent score of 69.55 whereas respondents having high level of knowledge was 16.66 per cent with mean per cent scores of 87.09 and

Table 4 : Distribution of respondents by overall knowledge and mean per cent score of each category in post-test

Knowledge with score range	Frequency (n)	Percentage (%)	Mean per cent score
Low (26-29)	14	23.34	49.35
Medium (30-45)	36	60	69.55
High (46-49)	10	16.66	87.09



respondents having low level of knowledge were only 23.34 per cent with mean per cent score of 49.35.

Knowledge gained by respondents (between pre and post test) :

This section describes the differential knowledge gain by the respondents and average score gained along with the co-efficient of variation after exposure of developed training package. The data presented in Table 5 shows that the highest score obtained by the respondents was 33 and the lowest score was 17 with knowledge range of 17 having coefficient of range of 0.32. Standard deviation of knowledge check in the pre-test was 3.97 and co-efficient of variation was found to be 16.14. On the basis of standard deviation knowledge check was categorized in to high, maximum and low.

Table 5 : Score range of knowledge and standard deviation (gain in knowledge)				
Range of knowledge	Co-efficient of range	Average score	Standard deviation of knowledge check	Co-efficient of variation (%)
17-33 (16)	0.32	24.6	3.97	16.14

Overall gain in knowledge :

The data on overall gain in knowledge presented in Table 6 and Fig. 3 indicate that there was significant difference in the pre-test and the post- test scores of the respondents as calculated 't' value, which was found to be significant at 0.01 level of significance.

The mean per cent score given in Table 7 Shows that the initial knowledge of the respondents was poor having only 27.05 per cent. After the exposure of training package a significant improvement found in knowledge of the respondents as the pre test scores that increased from 27.05 to 68.67 per cent along with 44.59 per cent gain in knowledge.

Table 6 : Differential knowledge gained by the respondents (between pre-test and post-test)			
Knowledge with score range	Frequency (n)	Percentage (%)	Mean per cent score
Low (17-20)	7	11.67	32.47
Medium (21-29)	45	75	44.48
High (30-33)	8	13.33	56.81

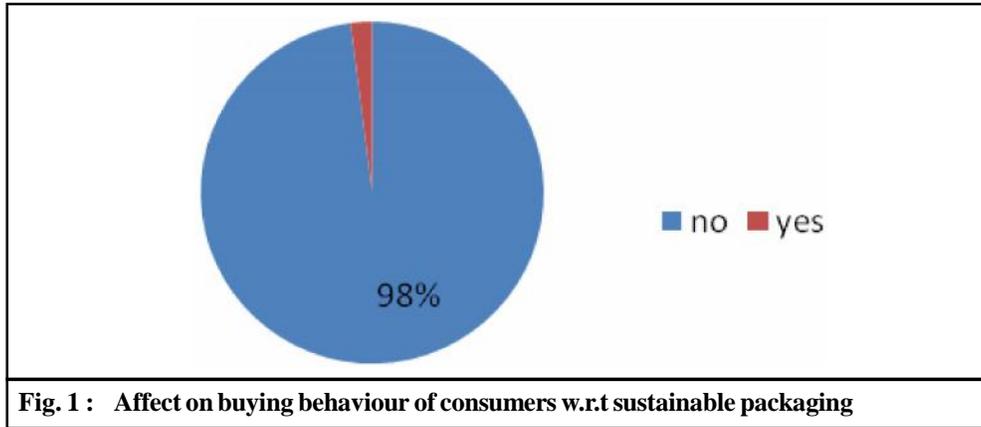


Table 7 : Overall gain in knowledge of the respondents		
Items	Mean per cent score	Calculated 't' value
Pre test	27.05	
Post test	68.67	35.76 **
Gain	44.59	

Conclusion :

Nutritional counselling via Dietary package (Dietary management of celiac disease) brought about significance changes in knowledge.

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