

Gluten Free Diet Adherence and Impact on Patients with Celiac Disease in Aseer Region

Ahmad Ayed M Alshbriqe^{1*}, Abdullah Nasser M Alqahtani¹, Abdullah Mohammed Mosa¹, Abdulkhaliq Yahya Alahmari¹, Fahad Abdullah Al-Jarad¹, Nasser Omair Al Tufayl¹, Abdullrhman Ali Hassan¹, Mohammed Salah Almoiedy¹, Ali Jaber Asiry¹, Javed Iqbal Wani²

¹MBBS, Internal Medicine Department, College of Medicine, King Khalid University, Abha, Saudi Arabia.

²MD, Associated Professor,

Internal Medicine Department, College of Medicine, King Khalid University, Abha, Saudi Arabia.

ABSTRACT

Background: We sought to evaluate the impact of the gluten-free diet on the patients with celiac disease because its complaints are anemia, chronic diarrhea, bloating, flatulence, abdominal pain and altered bowel habits.

Method: Email-out survey was used. Quality of life was evaluated using the 'SPSS 19', and celiac-specific questions.

Results: In the sample 80% of people who suffered from celiac are men, 45.1% of them are under 23 years, 55% of them are single, 93.7% of them are Saudi, 35.9% of them have a bachelor degree, 40.8% of them doesn't work, 53.5% of them their monthly income less than 3000, 54% of them live in the middle and, 81% of them have a partial level of adherence score.

Conclusions: Gluten free diet adherence among celiac Disease Patients in the sample is partial for in average.

Keywords: Gluten Free Diet; Celiac Disease; Aseer; Attitude; Cross-Sectional Studies.


*Correspondence to:

Ahmad Ayed M Alshbriqe, MBBS,
Internal Medicine Department,
College of Medicine,
King Khalid University, Abha, Saudi Arabia.

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INTRODUCTION

Coeliac disease (CD) or gluten-sensitive enteropathy (GSE) is a genetically based autoimmune disease characterized by lifelong intolerance to specific storage proteins in wheat (gliadin), rye (secalin) and barley (hordein), which are collectively called 'gluten'. In CD, gluten triggers the progressive damage to the mucosal villi of the small intestine. Malabsorption of iron, folate and calcium is common as these nutrients are absorbed in the proximal small bowel. As the disease progresses along the intestine, malabsorption of carbohydrate, fat and the fat-soluble vitamins A, D, E and K, and other micronutrients occurs. Secondary lactose intolerance resulting from decreased lactase production by the damaged villi is also common.¹ To monitor response to treatment in clinical and research settings, it is essential to accurately measure gluten-free diet (GFD) adherence in a standardized manner.² Most of the patients who seek medical consultation for gastrointestinal problems show an associated affective disorder. These patients should be managed by a team including gastroenterologists, psychologists and/or psychiatrists, or by a gastroenterologist having expertise in the treatment of psychological disorders.³ Pathogenetic mechanism involves injury to the small intestinal mucosa with decreased absorptive surface area, reduction of digestive enzymes resulting in impaired

absorption of micronutrients such as fat-soluble vitamins, B 12, malabsorption, along with mucosal edema and epithelial cell damage are also noted in severe forms. Increased number of intraepithelial lymphocytes is a typical feature of active disease. It is usually pronounced in early phases even when disease has not manifested clinically and there is little or no villus shortening on histopathological evaluation. Majority of these lymphocytes are of CD3/CD8 +T cell type. A substantial subpopulation of these cells bears natural killer cell receptors and may respond to stress signals. Serological tests such as positive tissue transglutaminase and anti-endomysial antibodies are also helpful in establishing a diagnosis.⁴ In symptomatic patients, a strict gluten-free diet is highly effective in alleviating symptoms and may pre-vent long-term complications. The extent to which patients with screen-detected (i.e., symptomless) disease benefit from dietary restriction is unknown. Although some evidence suggests that such patients may have decreased bone mineral density that improves with a gluten-free diet, a lifelong diet may be difficult to maintain. Because persons with silent disease consider themselves healthy, receiving a diagnosis of silent celiac disease and adhering to a gluten-free diet may impair quality of life for these individuals.⁵

OBJECTIVES

1. To determine the impact of having to follow a GF diet on the quality of life of individuals with CD.
2. To assess compliance with the diet and identify difficulties experienced with following such a diet.
3. To evaluate sources of information about CD and its treatment.

METHOD

All CD patients completed an original impact of GFD on the life questionnaire as a mail-out questionnaire. We depended on sample consists of 142 observations and 32 variables. Data were analyzed using SPSS v19 for Windows Logic checks were performed using cross-tabulations for key variables. The proportion of respondents choosing different options was calculated for each question. Where relevant, for discrete variables were performed when comparing two groups. Analytical descriptive method was used to achieve the objective of the study by depending on descriptive statistics and cross tables.

RESULTS

1. Descriptive statistics

80% of people who suffer from celiac in the sample are females and, 20% only of them are males.

The most suffer from celiac is category "under 23", it means that adults and children are the most people who suffer from celiac. The least suffer from celiac is category "47 and older". The most suffer from celiac is single people and the least suffer from celiac is divorced people.

Figure 1 showed that the most suffer from celiac is people who have a bachelor degree since they are 35.9% of the sample. The most suffer from celiac is people who don't work since they represent the highest percentage and, the student category also suffers from celiac since they represent 39%.

Figure 2 showed that 53.5% of people who suffer from celiac have monthly income less than 3000 and, people who have monthly income more than 10000 are the least suffer category from celiac since they are 12% of the sample.

Fig 1: The educational level of celiac patients in the sample

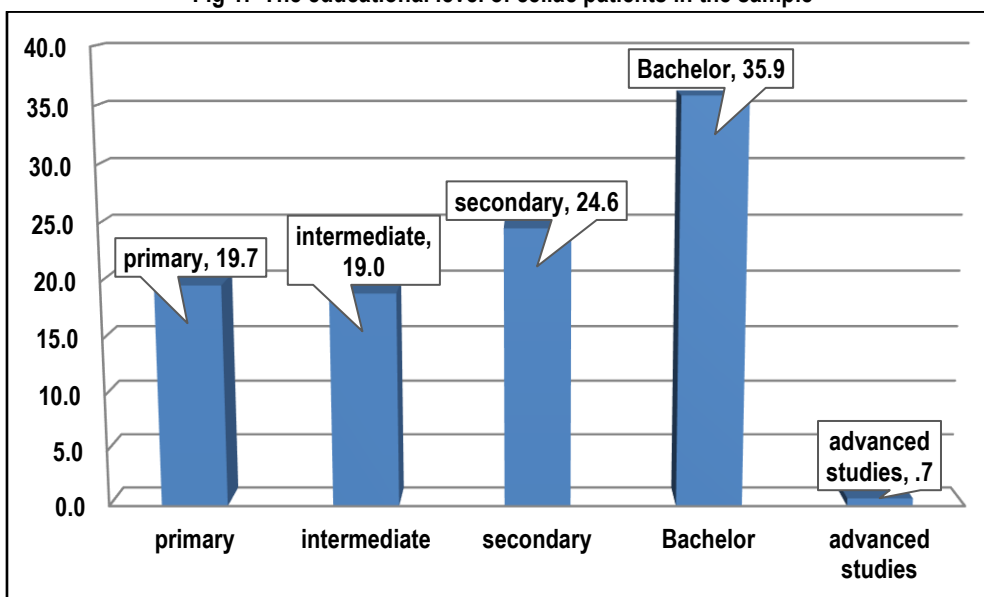


Fig 2: Monthly income of celiac patients in the sample

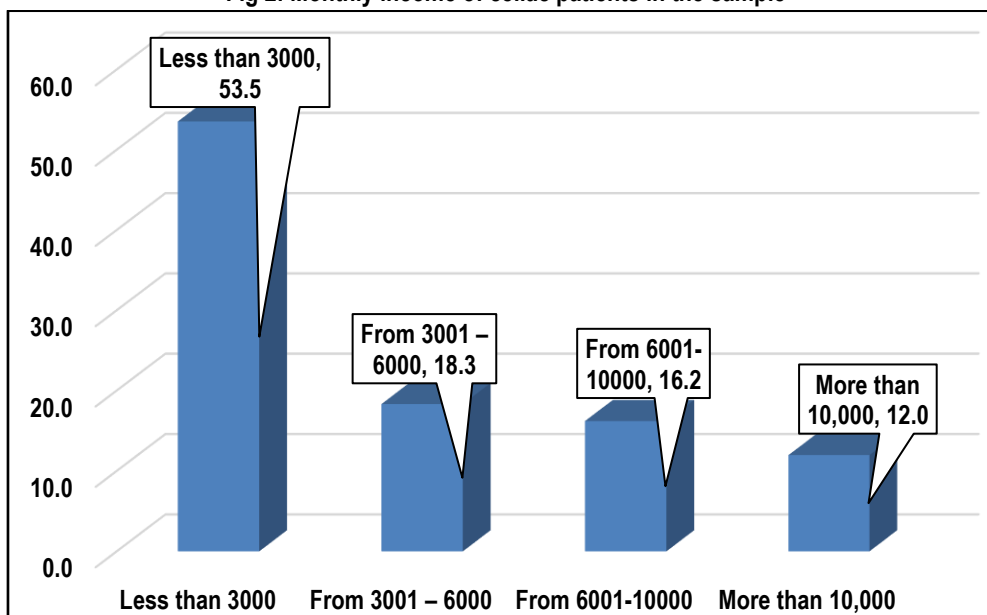


Fig 3: Adherence score of celiac patients in the sample

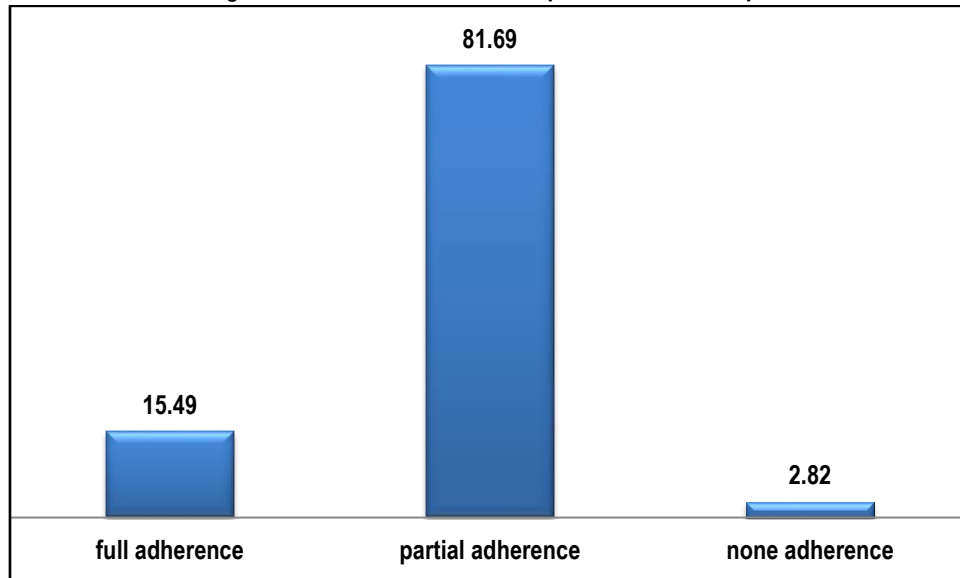


Fig 4: The duration of GFD of celiac patients in the sample

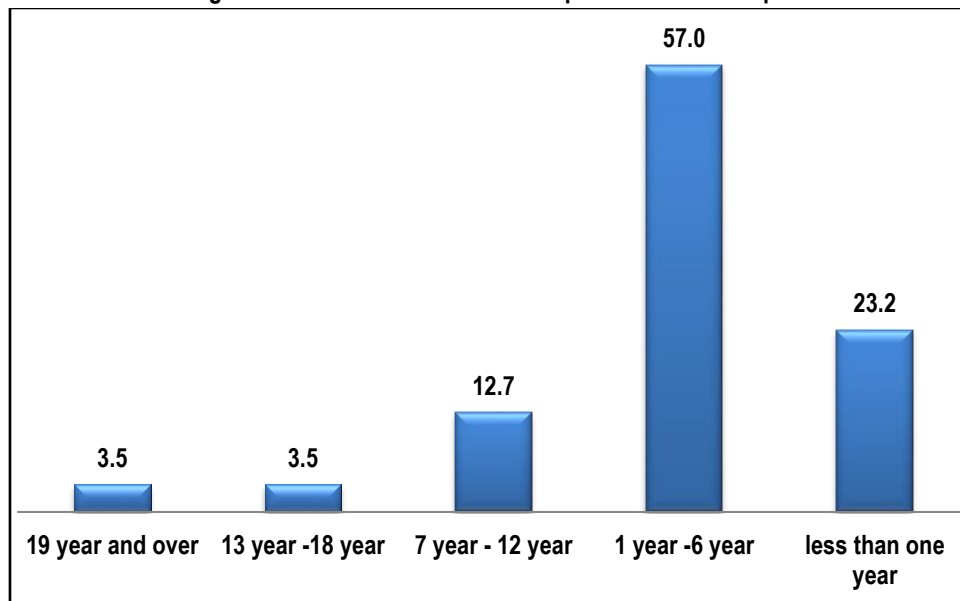


Fig 5: The effect of celiac on satisfaction

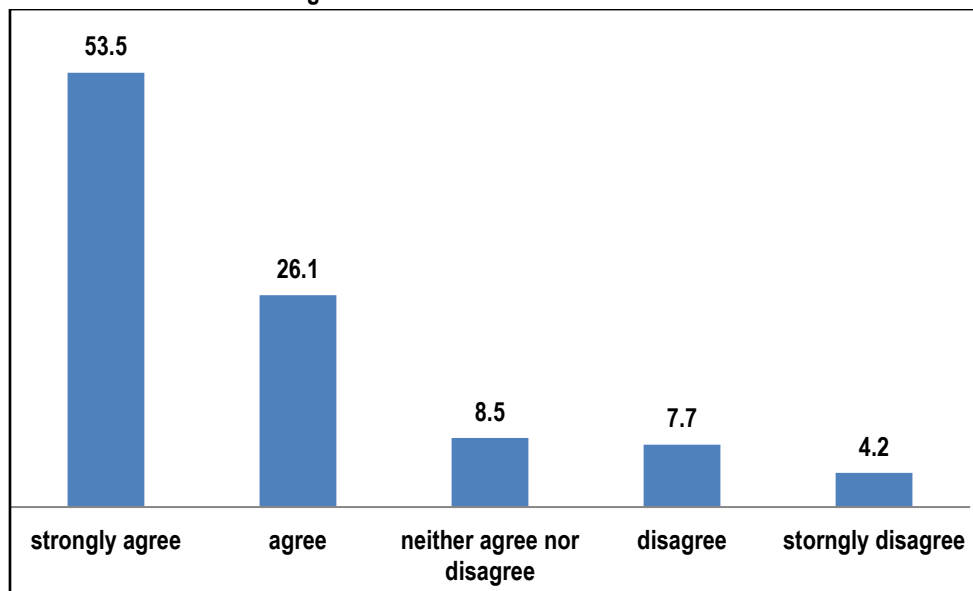


Table 1: The results of chi-2 test for all variables & adherence score

Variable	P-value	Decision
Age	>0.05	Accept H ₀
gender	>0.05	Accept H ₀
work	>0.05	Accept H ₀
Marital status	>0.05	Accept H ₀
Educational level	>0.05	Accept H ₀
Monthly income	>0.05	Accept H ₀
The duration of disease	<0.05	Accept H ₀
The duration of GFD	>0.05	Accept H ₀

The hypnosis of chi-2 test: H₀: there is no significant relationship; H₁: there is a significant relationship

Figure 3 showed that 81.7% of people have a partial adherence score of celiac patients and 15.5% of them have a full adherence score. 50.7% of people suffered from celiac their duration of disease is from year to 6 years, 6.3% of them suffered 19 years and more years from it.

Figure 4 showed that 57 of people suffered from celiac their duration of GFD is from year to 6 years, 3.5% of them their duration is 19 years and more years from it. 49.3% of people who suffered from celiac their weight range between 48-87K and, 41.5% of people who their weight less than 48K suffered from celiac. 57.7% of people who suffered from celiac their height 152 and over, 38.8% of people who their height range between 119-151 suffered from celiac.

Figure 5 showed that 53.5% of celiac disease are strongly agree and 4.2% of them are strongly disagree.

2. The Relationship Between Adherence Score and All Variables

According to the table 1 and the hypnosis we will accept H₀ for all variables since P-value < α = 0.05 so, there isn't any relationship between adherence score and each variable.

3. The General Mean of Adherence Score

After calculating the general mean for all cases, we found it = 1.64084507. It means that there is a partial adherence level for people who suffered from celiac in average.

DISCUSSION

Celiac disease is characterized by small intestinal damage with loss of absorptive villi and hyperplasia of the crypts, typically

leading to malabsorption.⁶ Recent studies indicate that celiac disease has an adult prevalence of at least 1% in most countries, placing it among the most common inflammatory intestinal disorders.⁷ Once celiac disease is diagnosed, a gluten-free diet must be initiated.⁸ Of the 2681 adult respondents, 74.5% were female, and 25.5% were male (ratio 3/1), and their mean age was 56 years (SD: 15, range: 16–90). The majority of participants (69%) had some post-secondary education. The mean age at diagnosis was 46 years and the mean duration of disease after diagnosis was 10 years. Seven percentage were first diagnosed as children, and of these 57% (i.e. 4% of total respondents) reported that their

Symptoms disappeared and then reoccurred during adulthood
Impact of gluten-free diet

Ninety-seven percentages of the respondents had been instructed to follow a GF diet for life. Eighty-six percentages were referred to a dietitian. When asked if they followed a GF diet, 90% described their diets as strictly GF. Eight percentages reported following a 'partial gluten-free' diet. Reported changes in health after the introduction of a GF diet were 'improved a lot' (83%), moderate improvement (13%), little improvement (3%) and no improvement (1%). Difficulties identified in following a GF diet included lifestyle changes such as avoiding travel and eating outside the home. Other problems included finding GF foods, especially those of good quality, determining whether foods were GF, and not being invited out because of the diet. Maintaining a GF diet when in hospital was also identified as a concern. These difficulties are summarized in Table 2.¹

Table 2: Impact of GFD on the life

	All of the time (%)	Most of the time (%)	Some of the time (%)	Never (%)	N/A or do not know
Brought gluten-free foods when travelling	53	22	19	6	0.2
Avoided restaurants	6	27	48	19	-
Had difficulty finding good quality gluten-free foods	8	22	53	17	-
Had difficulty finding gluten-free foods	6	19	60	15	-
Could not determine if foods were gluten-free	5	13	67	15	-
Avoided travelling	3	10	25	62	0
Worried about staying in hospital because of CD	8	5	14	72	1
Felt left out of meal invitations because of CD	2	6	28	63	1

The present study showed that 80% of people who suffer from celiac in the sample are females and, 20% only of them are males, the most suffer from celiac is category "under 23", it means that adults and children are the most people who suffer from celiac, the most suffer from celiac is people who have a bachelor degree since they are 35.9% of the sample, 98% from adults have full adherence, and 81.7% of people have a partial adherence score of celiac patients and 15.5% of them have a full adherence score. By comparing the results we will find that it definitely agrees.

CONCLUSION

The celiac disease is more popular among adults; the duration of disease is between 2-8 years. Most people have partial adherence score; it means that celiac patients face a lot of restrictions in their life. Following a GF diet imposes a large number of restrictions which can impact on the quality of life of individuals with CD. Strategies to help individuals cope with these restrictions should be included in education programs for both the patients and the medical team treating them. The health and quality of life of persons with CD could be further enhanced by: early diagnosis of CD; increased availability of good quality GF foods in the marketplace, in restaurants and during hospital stays, and more complete labeling of food ingredients.

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