

Socioeconomic Disparities in Diagnosis and Management of Pediatric Celiac DiseaseL.Saheer¹¹ MBBS, Karachi Medical University.DOI: <https://doi.org/10.69491/fi48b749>

The pro-inflammatory and pathogenic immune responses to gluten in intestinal tissue in celiac disease (CD) cause structural alterations in the small intestine mucosa (1). This is the leading and the most crucial problem faced by the children especially in Underprivileged countries. Individuals from poorer socioeconomic backgrounds are less likely to be diagnosed with celiac disease, if they exhibit non-classical symptoms. Due to socioeconomic variables, which may include lower rates of health-seeking behavior and access to healthcare and celiac disease may be undiagnosed in this community (2). The children from underprivileged families have limited resources and health facilities, which seems to be the primary cause of delayed diagnoses. Understanding the socioeconomic status of underprivileged families and addressing their healthcare disparities is crucial to limit this disease in pediatrics. However, CD is a unique autoimmune condition, as it is the only one in which the environmental trigger is known: gluten, a storage protein present in wheat, barley, and rye (3). The standard course of treatment is a rigorous gluten-free diet (GFD), however the dietary limitations present a number of difficulties (4). However, this is the most onerous challenge faced by these under resourced families, sticking firmly on gluten free diet due to the high cost of gluten free products and their limited availability. It is a burden for impoverished parents to buy overpriced and extravagant food. Managing this sort of diet with financial crisis and peer pressure can induce mental health issues, such as anxiety and depression, among parents. Moreover, poor dietary intake and not following a strict gluten-free diet can result in long-term health issues, such as anemia, several autoimmune diseases, liver disease, diabetes, skin diseases, and severe growth-associated complications. Because of these restrictions, it might be difficult for some people to follow. Understanding food labels and making lifestyle adjustments are necessary to identify gluten-containing products. Bread, spaghetti, biscuits, pastries, and soups—all considered commonplace foods—cannot be consumed by anyone adhering to a gluten-free diet, unless they are specifically made without gluten. They must also look for gluten-containing ingredients on the labels of processed foods (5). Regarding gluten intake, one frequent thing observed is that a gluten rich diet is very common and is highly consumed all over the world. It is a major dietary resource for the global population. Therefore, reducing food sources from the diet seems to be a challenge. Malnutrition rates in pediatric celiac disease (CD) patients range from 20.2% to 67.3% (6). There is an increasing chance of nutritional deficiency in children diagnosed with celiac due to the low income of families in underdeveloped countries. One such deficiency is vitamin D deficiency, and a strong experimental basis supports the idea of a reciprocal link between vitamin D status and CD. A low vitamin D level has a negative effect on the clinical progression (7). The prevalence of vitamin D and vitamin C deficiency is highly recognized due to nutritional imbalances. One of the most prevalent signs of celiac disease (CD) is iron insufficiency (ID) (8). This iron deficiency, commonly known as anemia, is common among pediatric patients in low-income areas due to food shortages. Furthermore, determining the necessary teaching material is crucial at the national level because of the rising incidence of celiac disease and the absence of a minimum set of data (9). Higher general population health literacy levels are associated with improved health outcomes and service utilization. In impoverished areas, disparities in health literacy and service utilization are frequently noted (10). From the educational point of view, highlighting that illiteracy among low-income and low-class populations is of great concern. Poverty leads to a non-educational status because there is little or no awareness among the illiterate population about the disease, its conditions, and its impact on their children's growth pattern. The inability to read and understand can cause enormous psychosocial impact and have a negative impact on mental health, which can escalate health complications. These people have no knowledge of healthcare approaches and often prefer faith-based healing or traditional home remedies, which seems alarming. In summary, raising concern about celiac disease among this low-income population is crucial and requires multiple efforts by health care professionals. Strategies such as imposing policies to improve diagnosis services, visiting those areas where low-income and poverty-driven populations live, and checking their children's health could be a solution for early diagnosis. Providing support to poor families and creating awareness about this disease and its symptoms. Educating these lower-class parents can be a great remedy to overcome problems related to celiac disease in their children. Gluten-free foods can be subsidized for children with celiac disease. Furthermore, the collaboration between policymakers and organizations and healthcare departments could be the lead in addressing these issues. By adopting these measures, healthcare can achieve positive outcomes.

References:

1. Keshtkari A, Danaei M, Mollaali M. Association of HLA-DQ4/5 genotype polymorphisms with celiac disease in a group of children in Southwest Iran: A case-control study. *Health Sci Rep.* 2024 Jul 14;7(7):e2242. doi: 10.1002/hsr2.2242. PMID: 39011150; PMCID: PMC11246975.
2. Roy A, Mehra S, Kelly CP, Tariq S, Pallav K, Dennis M, Peer A, Lebwohl B, Green PH, Leffler DA. The association between socioeconomic status and symptoms at diagnosis of celiac disease: A retrospective cohort study. *Therap Adv Gastroenterol.* 2016 Jul;9(4):495-502. doi: 10.1177/1756283X16637532. Epub 2016 Mar 18. PMID: 27366218; PMCID: PMC4913330.
3. Matera M, Guandalini S. How the Microbiota May Affect Celiac Disease and What We Can Do. *Nutrients.* 2024 Jun 14;16(12):1882. doi: 10.3390/nu16121882. PMID: 38931237; PMCID: PMC11206804.
4. Buriánek F, Gege C, Marinković P. New developments in celiac disease treatments. *Drug Discov Today.* 2024 Jul 25:104113. doi: 10.1016/j.drudis.2024.104113. Epub ahead of print. PMID: 39067614.
5. Roy A, Mehra S, Kelly CP, Tariq S, Pallav K, Dennis M, Peer A, Lebwohl B, Green PH, Leffler DA. The association between socioeconomic status and the symptoms at diagnosis of celiac disease: a retrospective cohort study. *Therap Adv Gastroenterol.* 2016 Jul;9(4):495-502. doi: 10.1177/1756283X16637532. Epub 2016 Mar 18. PMID: 27366218; PMCID: PMC4913330.
6. Elwenspoek M, Banks J, Desale PP, Watson J, Whiting P. Exploring factors influencing quality of life variability among individuals with coeliac disease: an online survey. *BMJ Open Gastroenterol.* 2024 Jun 2;11(1):e001395. doi: 10.1136/bmjgast-2024-001395. PMID: 38830687; PMCID: PMC11149133.
7. Taskin DG, Ata A. The value of mid-upper arm circumference for malnutrition screening in pediatric celiac disease. *Adv Clin Exp Med.* 2023 Dec;32(12):1369-1375. doi: 10.17219/acem/162294. PMID: 37140016.
8. Trasciatti S, Grizzi F. Vitamin D and celiac disease. *Adv Food Nutr Res.* 2024;109:249-270. doi: 10.1016/bs.afnr.2023.12.004. Epub 2024 Mar 21. PMID: 38777415.
9. Zifman E, Schujovitzky D, Moskovitz-Hivert Y, Galai T. The Association Between Iron Deficiency at Diagnosis, Female Sex, and Tissue Transglutaminase Antibody Normalization in Pediatric Celiac Disease. *Cureus.* 2024 Jun 23;16(6):e62951. doi: 10.7759/cureus.62951. PMID: 39044891; PMCID: PMC11264568.
10. Langarizadeh M, Rahmati P, Yousefpour Azari S, Sarpourian F, Sayadi MJ, Langarizadeh MH, Fatemi Aghda SA. Identifying and validating the educational needs to develop a Celiac Self-Care System. *BMC Prim Care.* 2023 Jun 14;24(1):121. doi: 10.1186/s12875-023-02076-8. PMID: 37316859; PMCID: PMC10265559.



This open access article by International Annals of Health Sciences - Liaquat College of Medicine & Dentistry is licensed under Creative Commons Attribution-Non-Commercial 4.0 International.