Association Of Eating Speed With Gastrointestinal Symptoms And Quality Of Life Among Young Women: A Cross-Sectional Study

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Abstract:

Eating speed is an important dietary behaviour that influences gastrointestinal (GI) health and quality of life. The present study aimed to assess eating speed categories and examine their association with gastrointestinal symptoms and quality of life among women aged 18-25 years. A cross-sectional study was conducted among 100 participants using a structured questionnaire, self-reported eating speed categories, a modified Gastrointestinal Symptom Rating Scale (GSRS), and quality of life questions. Data were analysed using descriptive statistics and the Chi-square test. Significant associations were observed between eating speed and bloating ($p=0.0228$), abdominal pain ($p=0.0001$), heartburn ($p<0.001$), post-meal nausea ($p=0.0001$), excessive belching ($p<0.001$), and indigestion ($p<0.001$), whereas constipation and diarrhoea showed no significant association. Participants reporting frequent gastrointestinal symptoms demonstrated significantly poorer academic/professional performance and social eating habits. These findings suggest that encouraging mindful eating behaviours may promote optimal gastrointestinal health and improve quality of life among young women.

Keywords—Eating speed, Gastrointestinal symptoms, Quality of life, Young women.

I. INTRODUCTION

Eating speed is an important behavioural factor that influences digestion and gastrointestinal health. Rapid eating has been associated with reduced chewing, delayed satiety, and increased gastrointestinal complaints such as bloating, abdominal pain, heartburn, and indigestion [1], [3]. These symptoms may interfere with daily activities and reduce quality of life, especially among young adults [4], [5].

Although several international studies have examined eating speed and gastrointestinal symptoms [1]-[3], limited information is available regarding their association and impact on quality of life among young women in India. Therefore, the present study was undertaken to assess eating speed categories, examine their association with gastrointestinal symptoms, and evaluate the impact of gastrointestinal symptoms on quality of life among women aged 18-25 years.

Gastrointestinal symptoms such as bloating, abdominal pain, heartburn, nausea, constipation, and diarrhoea are commonly reported among young adults and may adversely affect daily functioning and quality of life. Eating behaviour, particularly eating speed, has emerged as a modifiable lifestyle factor influencing gastrointestinal health through mechanisms such as reduced chewing, rapid gastric filling, and delayed satiety. However, evidence from Indian young women remains limited. Therefore, this study aimed to investigate the association between eating speed categories, gastrointestinal symptoms, and quality of life among women aged 18-25 years.

II. MATERIALS AND METHODS

A descriptive cross-sectional study was conducted among 100 women aged 18-25 years from selected colleges in Hyderabad, Telangana. Data were collected using a structured questionnaire including demographic information, anthropometric measurements, self-reported eating speed categories, a modified Gastrointestinal Symptom Rating Scale (GSRS), and quality of life questions. Data were

analysed using descriptive statistics and the Chi-square test. A p-value of <0.05 was considered statistically significant. Participants were selected using a random convenience sampling technique. Women aged 18-25 years who voluntarily consented to participate were included in the study. Individuals with previously diagnosed gastrointestinal disorders, chronic systemic diseases, pregnancy, or incomplete questionnaires were excluded. Body Mass Index (BMI) was classified according to the World Health Organization (WHO) classification. Written informed consent was obtained from all participants before data collection, and confidentiality and anonymity of the participants' information were maintained throughout the study.

III. RESULTS AND DISCUSSION

TABLE I
Distribution of Participants According to age

Age	Frequency
18-20	41
21-23	43
24-25	16
TOTAL	100

The table shows the age distribution of the study participants. The majority of participants belonged to the 21-23 years age group (43.0%), followed by 18-20 years (41.0%) and 24-25 years (16.0%)

TABLE II
Distribution of Participants According to BMI Categories

BMI	Frequency
Underweight	20
Normal	55
Overweight	25
TOTAL	100

The table shows the distribution of participants according to BMI categories. Most participants had normal BMI (55.0%), followed by overweight (25.0%) and underweight (20.0%).

TABLE III
Distribution of Participants According to Eating Speed Categories

Eating Speed Categories	Frequency	Percentage(%)
Slow	33	33
Moderate	50	50
Fast	17	17
TOTAL	100	100

The majority of participants were moderate eaters (50%), followed by slow eaters (33%) and fast eaters (17%).

TABLE IV
Association Between Eating Speed Categories and Gastrointestinal Symptoms.

GI Symptoms	Infrequent			Occasional			Frequent			χ^2	P - value
Eatingspeed categories	Fast	Moderate	Slow	Fast	Moderate	Slow	Fast	Moderate	Slow		
Bloating	6	28	24	4	14	7	7	8	2	11.36	0.0228
Abdominal pain/cramps	7	42	30	5	7	2	5	1	1	22.93	0.0001
Heartburn/acid reflux	6	36	31	2	12	1	9	2	1	39.90	<0.001
Post meal nausea	6	34	25	4	15	5	7	1	3	22.66	0.0001
Excessive Belching/ Burping	6	45	28	1	4	5	10	1	0	49.04	<0.001
Constipation	10	28	19	5	15	11	2	7	3	0.51	0.970
Diarrhoea	14	39	27	2	8	3	1	3	3	1.11	0.892
Indigestion/post meal heaviness	7	26	27	1	20	3	9	4	3	32.35	<0.001

The findings showed that fast eaters experienced gastrointestinal symptoms more frequently than slow and moderate eaters. Significant associations were observed for bloating, abdominal pain, heartburn, post-meal fullness, excessive belching and indigestion. However, constipation and diarrhoea were not significantly associated with eating speed. These findings are consistent with previous international studies demonstrating that rapid eating increases gastrointestinal complaints [1]-[3]. Fast eating reduces chewing time, increases aerophagia, promotes rapid gastric filling, delays satiety, and may impair gastric accommodation, thereby contributing to symptoms such as bloating, abdominal pain, heartburn, nausea, excessive belching, and indigestion [1]-[3]. Similar observations have been reported among Japanese adults and other international populations [1], [2].

TABLE V
Association Between Overall Gastrointestinal Symptoms and Quality of Life

Quality of life	X^2	P-value	Association
Academic/professional performance	11.93	0.018	Significant
Social eating habits	10.46	0.033	Significant

Participants with more frequent gastrointestinal symptoms reported greater impairment in academic/professional performance and social eating

habits. A statistically significant association was observed between overall gastrointestinal symptom frequency and both quality-of-life domains ($p < 0.05$) These findings suggest that gastrointestinal symptoms can negatively affect daily functioning and social interactions among young women. Similar findings have been reported in previous studies demonstrating that gastrointestinal symptoms are associated with poorer quality of life [4], [5].

IV. LIMITATIONS

This study was cross-sectional; therefore, causal relationships cannot be established. Eating speed was self-reported and may be subject to recall bias. The study population consisted of women from selected colleges in Hyderabad, which may limit the generalizability of the findings.

V. STRENGTHS

This is among the few Indian studies simultaneously evaluating eating speed, gastrointestinal symptoms and quality of life among young women. The findings provide useful evidence for promoting healthy eating behaviours as a simple lifestyle strategy to improve gastrointestinal health.

VI. CONCLUSIONS

The present study demonstrated a significant association between eating speed categories and gastrointestinal symptoms among women aged 18-25 years. Fast eaters experienced gastrointestinal symptoms such as bloating, abdominal pain, heartburn, post-meal nausea, excessive belching, and indigestion more frequently than moderate and slow eaters. However, constipation and diarrhoea did not show a significant association with eating speed. Furthermore, overall gastrointestinal symptom frequency was significantly associated with poorer academic/professional performance and social eating habits, indicating a negative impact on quality of life. The present study demonstrated that faster eating speed was significantly associated with several gastrointestinal symptoms and poorer quality of life among young women. Promotion of slower and more mindful eating may represent a simple behavioural strategy to reduce gastrointestinal symptoms and improve overall well-being. Future multicenter longitudinal studies with larger sample sizes are recommended to confirm these findings.

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REFERENCES

1] M. Yamane, D. Ekuni, S. Mizutani, et al., “Relationships Between Eating Quickly and Gastrointestinal Symptoms in Young Adults,” BMC Public Health, vol. 14, p. 1206, 2014. Doi: 10.1186/1471-2458-14-1206.

[2] S. Tanihara, T. Imatoh, M. Miyazaki, et al., “Eating Quickly Is Associated with Gastrointestinal Symptoms Among Japanese Adults,” Journal of Gastroenterology, vol. 46, no. 1, pp. 5-11, 2011.

[3] H. Suzuki, J. Matsuzaki, S. Okada, et al., “Association Between Eating Behavior and Functional Gastrointestinal Disorders,” Journal of Neurogastroenterology and Motility, vol. 23, no. 4, pp. 620-628, 2017. Doi: 10.5056/jnm16153.

[4] D. A. Drossman and W. L. Hasler, “Rome IV-Functional Gastrointestinal Disorders: Disorders of Gut-Brain Interaction,” Gastroenterology, vol. 150, no. 6, pp. 1257-1261, 2016. Doi: 10.1053/j.gastro.2016.03.035.

[5] D. A. Revicki, M. Wood, I. Wiklund, and J. Crawley, “Reliability and Validity of the Gastrointestinal Symptom Rating Scale (GSRS),” Quality of Life Research, vol. 7, no. 1, pp. 75-83, 1998. Doi: 10.1023/A:1008841022994.