



BALANCED MEAL AND DIETARY FIBRE CONSUMPTION IN THE INDUSTRIAL WORKFORCE IN GAMPAHA, SRI LANKA

G. D. D. K. Gunasena^{1*}, P. G. S. Chamilal¹ and D. N. Wanigasekara²

¹*Department of Microbiology, Faculty of Science, University of Kelaniya, Sri Lanka*

²*Department of Microbiology, Faculty of Medicine, University of Ruhuna, Sri Lanka*

The dietary behaviour of young adults in Sri Lanka is a key determinant of long-term health outcomes in the country. This study aimed to evaluate the daily dietary fibre (DF) intake and balanced meal consumption patterns among young adults employed in a Sri Lankan export processing zone, Gampaha. A cross-sectional quantitative study was conducted among 327 participants using a validated, interviewer-administered questionnaire, including 128 males and 199 females. Data were analysed using ANOVA and Tukey's post-hoc test to compare means across demographic categories using IBM SPSS Statistics 29 software. The daily mean DF intake was 19.8 g (Male: 22.3 g; Female: 18.2 g; $p < 0.05$), which is lower than the recommended daily intake. The lowest DF intake was observed in the 18-23 age group (18.4 g), and intake significantly increased with age ($p < 0.05$). DF intake differed significantly across educational levels ($p < 0.05$), with graduates reporting the highest intake (21.6 g). Place of residence also influenced intake; those who were living at home had higher DF intake than those living in boarding places. Moreover, the consumption of balanced meals was critically poor with only 2% of subjects reporting a balanced diet across all main meals. The highest proportion of balanced meals was reported at lunch (55%), while none of the participants reported consuming a balanced breakfast. The findings of this study highlighted the necessity of educating the industrial workforce on their diet and health. Further, implementing policies and providing workplace facilities to promote healthier dietary practices among young adults should be prioritised and strengthened.

Keywords: balanced diet, dietary fibre intake, export processing zone, nutrition

**Corresponding Author: deepthi@kln.ac.lk*



BALANCED MEAL AND DIETARY FIBRE CONSUMPTION IN THE INDUSTRIAL WORKFORCE IN GAMPAHA, SRI LANKA

G. D. D. K. Gunasena^{1*}, P. G. S. Chamila¹ and D. N. Wanigasekara²

¹*Department of Microbiology, Faculty of Science, University of Kelaniya, Sri Lanka*

²*Department of Microbiology, Faculty of Medicine, University of Ruhuna, Sri Lanka*

INTRODUCTION

The dietary practices of young adults represent a critical area of public health concern, particularly in rapidly industrialising countries such as Sri Lanka. Young adults, especially those employed in labour-intensive sectors like export processing zones (EPZs), are often at risk of unhealthy dietary habits due to demanding work schedules, limited access to nutritious foods, and a lack of awareness regarding balanced diets. With Sri Lanka's growing industrial workforce, understanding their nutritional practices has become crucial for developing targeted interventions.

This study aimed to fill the gap observed in the disconnect between national nutritional guidelines and the actual dietary patterns of the young working adults in Sri Lanka. Despite efforts by health authorities to promote balanced meals and adequate fibre intake, adherence remains low, particularly among factory workers, who often rely on canteen meals or skip meals due to time constraints.

Therefore, this study investigated the daily dietary fibre (DF) intake among young adults working in the EPZ in Gampaha District and evaluated their frequency of balanced meal consumption, comparing DF intake across demographic variables such as age, gender, education level, and place of residence.

METHODOLOGY

A quantitative, cross-sectional study was carried out among 327 young adult employees in the Export Processing Zone. The exclusion criteria of the study were those who were pregnant, lactating, or on a therapeutic diet. All the respondents were aged between 18 years to 35 years. Participants were selected using stratified random sampling. A structured, interviewer-administered questionnaire was used to collect data on dietary habits, including dietary fibre intake, types and timing of food consumed, and certain demographic factors such as education level and type of residence. From the original dataset, 27 subjects were excluded due to incomplete responses, resulting in a final sample size of 327. Data were analysed using ANOVA and Tukey's post-hoc test using IBM SPSS Statistics 29 software to compare means across demographic categories.

RESULTS AND DISCUSSION



The mean daily DF intake among the study population was 19.8 g, with men consuming significantly more than women ($p < 0.05$; 3.6×10^{-13}). Age was positively associated with DF intake: participants aged 18-23 had the lowest intake (18.4 g), while those aged 30-35 reported the highest (21.6 g). A significant difference in DF intake across age groups was confirmed by ANOVA ($F = 34.86$, $p < 0.001$). Educational level also influenced the DF intake as graduates (21.6 g) consumed more DF than those with only O/L qualified workers (19.3 g), though the trend was non-linear. Tukey's test revealed significant differences between the graduate and O/L, diploma and O/L, and graduate and A/L categories. Balanced meal consumption was inadequate across the study population. Only 2% of participants consumed balanced meals for all three main meals. Lunch was the most balanced meal (55%), while breakfast and dinner were often neglected among the participants. Home-based participants had higher DF intake compared to those residing in boarding houses. These findings highlighted the prevalence of suboptimal dietary fibre intake and inconsistent balanced meal practices among young adult EPZ workers.

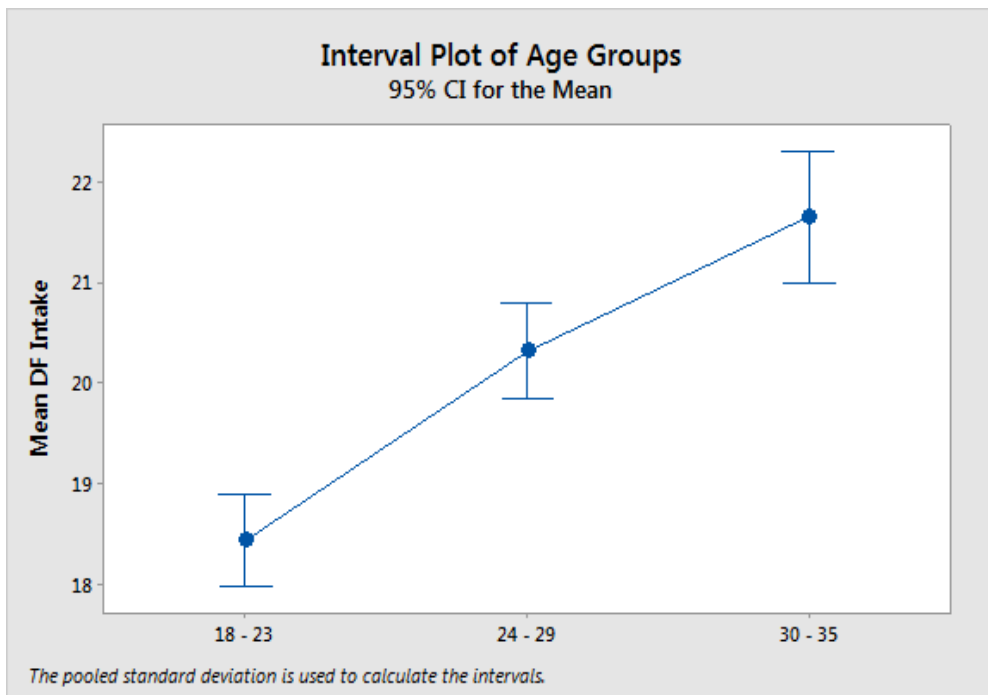


Figure 1: Interval plot of mean DF intake by age groups among the study population

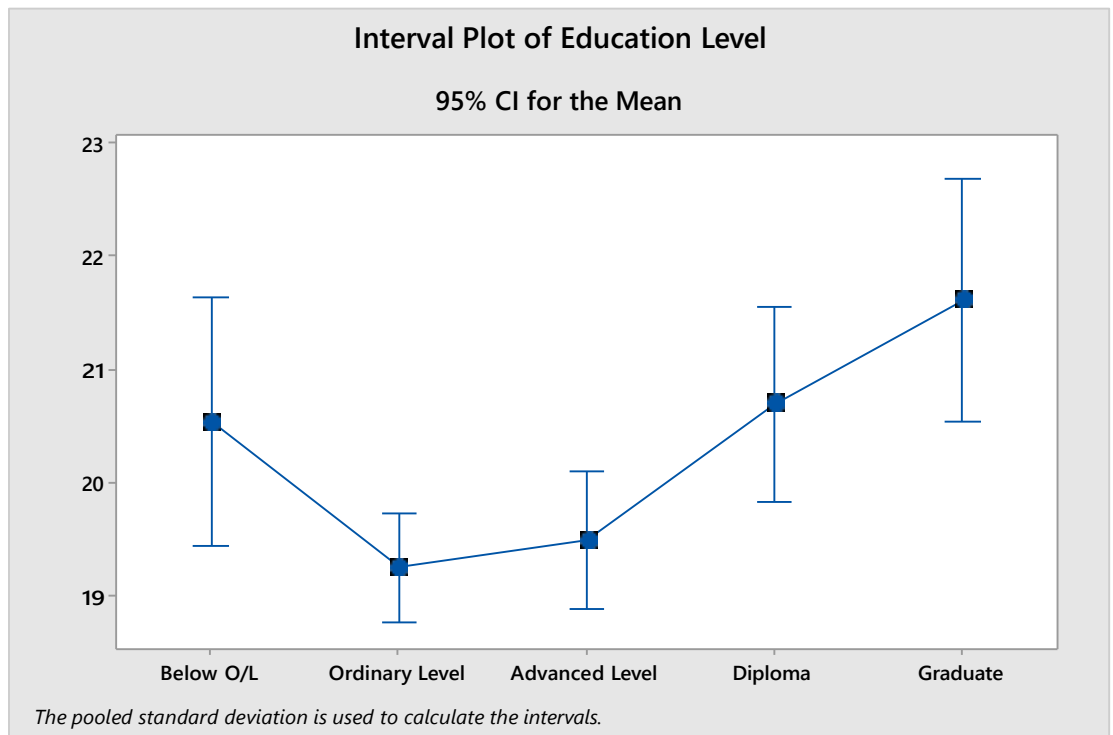


Figure 2: Interval plot of mean DF intake of individuals with different education levels

The study underscores critical gaps in dietary practices among young adults in industrial settings. The findings suggest the need for targeted nutritional interventions, particularly in workplace environments. Based on the findings, the authors recommend the integration of nutrition educational programs in EPZs and the provision of healthier food options in workplace canteens. Further, periodic awareness campaigns focusing on the benefits of dietary fibre consumption and a balanced diet could be conducted through collaborations between public health authorities and factory-based industries.

REFERENCES

Anderson, J. W., Baird, P., Davis, R. H., Jr., Ferreri, S., Knudtson, M., Koraym, A., & Williams, C. L. (2009). Health benefits of dietary fiber. *Nutrition Reviews*, 67(4), 188–205.



Cho, S. S., O'Sullivan, K., & Richard, S. (1999). Worldwide dietary fiber intake: Recommendations and actual consumption patterns. In S. S. Cho, L. Proskey, & M. Dreher (Eds.), *Complex carbohydrates in foods* (pp. 772–810). CRC Press.

Jayawardena, R., Byrne, N. M., Soares, M. J., Katulanda, P., & Hills, A. P. (2013). Food consumption of Sri Lankan adults: An appraisal of serving characteristics. *Public Health Nutrition*, 16(4), 653–658.

Kamphuis, C. B., de Bekker-Grob, E. W., & van Lenthe, F. J. (2015). Factors affecting food choices of older adults from high and low socioeconomic groups: A discrete choice experiment. *The American Journal of Clinical Nutrition*, 101(4), 768–774.