Original Article

Time Transition of Routines in Fast Food Consumption-Importance to Public Health

Nutrition Section

AKANSHA KHARE[1], CHANDRA PAL SHARMA[2], NEELU JAIN GUPTA[3]

(cc) BY-NC-ND

ABSTRACT

Introduction: Fast Food (FF) consumption reduces the nutritional quality of daily diet. FF is even more detrimental to human health, if preferred during night-time meals, because metabolism is slower at end of the day. Quality of food and time of eating are nutritional determinants of the health.

Aim: To study the association of anthropometric and societal factors such as age, Body Mass Index (BMI), health awareness with frequency of FF and preference for meal timings.

Materials and Methods: Through a cross-sectional Google-form food preference survey of 2887 people, it was sought to uncover a possible association between the perception and frequency of FF and preference for mealtimes. Unadjusted associations of people's eating preferences with age, BMI and health awareness with FF intake was analysed using Spearman's correlation coefficients, Cronbach's α, Eigen values, odd ratios, relative risk factors and χ^2-tests.

Results: The high odd ratio revealed greater FF popularity in adolescents and children as compared to adults. Principal component analysis revealed four important factors (Eigen value >0.9; factor weight >12%) viz., age, busy life, body weight and weekend drive. Taking FF as a food quality index, there was food quality jetlag between week days and weekends. Psychometric analysis revealed a positive association between preferred mealtime and FF intake.

Conclusion: Mealtimes regulate the human circadian system; therefore, health consequences of FF consumption ensconce other determinants of public health like night eating and lifestyle. The deteriorating effects of FF are associated with circadian disruption. More research is needed to highlight associativity of different lifestyle factors detrimental to circadian health.

INTRODUCTION

Lifestyle is a sum whole of various factors such as busyness, eating preferences, urbanization, light exposure, moods, socio-economic status, health awareness etc. Diverse food choices and lifestyle in digital era deregulates daily behavioural and metabolic rhythms, especially in developing countries [1]. The globalisation of technology in digital age has altered humankind's association with food. People tend to consume food according to taste and without investing much time, even if it is compromised in nutritional value. FF thus, is a popular contemporary food. FF is high in sugar, trans fats and processed ingredients. It negatively impacts people's BMI, and is partly responsible for health concerns in digital age [2].

FF generally contains cheaper ingredients such as high fat, refined grains and synthetic sugars which are often habituating and less nutritive [3]. FF cravings and co-morbidities are universally linked with sedentary habits and diminished sleep duration [4]. Cultural differences alter individual access to FF across different countries. For example, in India FF allurements include taste and popularity [5], people in America and Europe find it easier to eat away from home [4]. FF contributes to the current obesity epidemic in urban India [6,7]. Mealtimes peripherally regulate circadian rhythm [8]. A delay in meal timing deregulates circadian machinery [9,10]. Further, deterioration of dietary quality also has biological implications. Nutritional quality is related to both to appetite and daily rhythm of eating- fasting, the later, in turn impacts the overall circadian rhythm in body [11,12].

Present survey evaluated association of demographic traits like age, BMI, length of sleep, daily activity with frequency/attitude towards changing food habits and preferences. Although, few studies have investigated adverse eating behaviours of adolescent and young adults [13,14], it is not known that transitional stages of life i.e., childhood to adulthood etc., behold stage-wise differences

in general perception about FF associated eating behaviours among urban Indians.

Present study survey was different from existing eating habit survey [4] in the fact that it inquired some specific questions such as preferred mealtime, as a putative behavioural marker of circadian routine.

The present study aimed to assess time and preference of FF intake and associated factors such as age, BMI and health awareness that might impact human health.

MATERIALS AND METHODS

The cross-sectional google-form survey was at Chaudhary Charan Singh University, Meerut, Uttar Pradesh, India. The survey was conducted from February 2019 to June 2019, as per guidelines of Indian Council of Medical Research, India [15]. This study was approved by the Human Ethical Committee (approval number: CCS-2019/HEC-101).

Inclusion criteria: The complete response forms from respondents, aged between 6-93 years, were considered as inclusion criteria.

Exclusion criteria: Incomplete forms were excluded from the study. A total of 2941 respondents successfully filled the questionnaire forms in total. The incomplete forms were discarded and finally 2887 participants from Delhi-including national capital territory (NCT) were included.

Sample size calculation: Sample size was calculated online with estimating population of Delhi (NCT) as 3 crore with 95% confidence limit [16].

Prior to this, a pilot survey was started in November 2018, with 60 participants, approached personally, to initially identify how time and type of food choices varied among different age groups of an urban population. Questions were appended to assess preferred daily time of food and other components of lifestyle such as busy

life or eating out during the weekend. Participants were asked to fill a 17 Multiple Choice Question (MCQ) paper questionnaire including demographic details and frequency/attitude towards FF in comparison to traditional Indian meal. The survey answers were entered on excel sheet, statistically assessed for construct validity. The internal consistency reliability of pilot survey was tested using Cronbach's α (value=0.808). Pilot survey was not included in final statistical analysis.

With same questions as the pilot survey, a 30-second Google-form survey was developed by authors and circulated using electronic media from February 2019 to June 2019. It was conveyed to the respondents, that this was a research survey without economic weightage. Questions were designed to identify how far the type of food choices, busy schedules and taste variations differed among different age groups of the study cohort. Few parents expressed enthusiasm to fill for their children, whose responses were grouped separately. All respondents over 14 years of age were allowed to respond to the survey, with counter consent (short messaging etc.,) of parents of those below 18 years. Demographic information for this self-reported survey included gender, age, vegetarian/non-vegetarian, height (feet), weight (kg) and general sleep/wake timings. BMI was calculated from height (feet) and weight (kg) reported. The 17 questions of a 30-second google-form survey were carefully designed to test respondent's chronotype, awareness, attitude to FF and lifestyle [Annexure-1]

STATISTICAL ANALYSIS

Data were collected using Google forms and inputs of respondents were collected in MS Excel. To describe eating preferences of subjects, descriptive statistics included frequencies and percentages, and quantitative variables. Spearman's correlation coefficients, Cronbach's α, Eigen values, odd ratios, relative risk factors and χ^2-tests were calculated on MS Excel to determine the unadjusted associations of people's health aptitude and eating preferences with demographic variables reported in the survey. Data were analysed using Statistical Package for the Social Sciences (SPSS) version 14.0 and Prism GraphPad V.9.0.2. Analysis was reported with tabular presentation as required.

RESULTS

In this cross-sectional study, the 30-second Google-form survey was successfully responded by 2887 participants. Respondents were grouped according to their age; the children group ranged between 6-13 years (15%); young adults between 14-20 years (28%) and 21-93 years were grouped as adults (57%). As shown in [Table/Fig-1], participation of females in groups ranged between 40-44%. Interestingly, the BMI calculated from self-reported height

and weight ranged between 19 and 24. Similarly, the in-bed (sleep onset) and out-bed (wake up) times were used to calculate sleep hours which were >8 hour for children but averaged between 7 to 8 hour for people above 14 years of age. More than 2/3rd of the participants (1959) reported vegetarian diet albeit this did not affect their love for FF. About 42% (1208) people reported liking for dinner (hence late chronotype) over other daytime meals. About 2/3rd of respondents reported eating FF at least once every week i.e., 2035 (70.4%) adults reported self-perceived weekly-daily frequency of FF intake. Number of people eating FF during weekdays was 852 (29.52%) which increased to 2287 (79.2%) on weekends. To simplify a comparison of weekday-weekend transition of food choice between the three groups, the cohort was reassigned into two groups, i.e., those below and above 18 years of age as children in India, depends on parents for weekend outings. These two groups exhibited age differences in 'shift in weekday-weekend diet i.e., the increase in FF eaters was 83.6% were below 18 years of age, while 63.8% were adults above 18 years of age. Overall, 17 questions of survey demonstrated an internal consistency reliability of Cronbach's α=0.6378, which was less than pilot survey Cronbach's α=0.808.

Variables	Adult	Young Adult	Children
N	1645 (57%)	805 (28%)	437 (15%)
Age range (years)	21-93	14-20	6-13
Age M±SE (years)	35.3±0.2	16.79±0.07	12.1±0.09
Females, n (%)	682 (41.4%)	359 (44.5%)	174 (39.8%)
BMI (M±SE)	23.4±0.11	19.8±0.14	19.41±0.17
Sleep duration, M±SE (hours)	7.6±0.03	7.6±0.04	8.2±0.04
Vegetarian n (%)	1053 (64.0)	569 (70.7)	337 (77.1)
Enjoy night-time meal n (%)	676 (41.1)	343 (42.6)	189 (43.2)
Prefer fast food n (%)	1064 (64.7)	630 (78.2)	390 (89.3)
Never eaten fast food n (%)	155 (9.4)	19 (2.4)	16 (3.7)

[Table/Fig-1]: Anthropometric details of respondents.

[Table/Fig-2] shows correlations of demographics such as gender, BMI, age, vegetarian etc., and preferred meal timing, weekday-weekend transition in FF intake and whether leading a busy lifestyle was related to FF intake. Gender significantly correlated to BMI and vegetarian (p<0.001) habit, etc. Age was inversely related to FF preference (p<0.001) i.e., elder subject reported lesser liking for FF. BMI significantly correlated (p<0.01) to FF preferences. Females showed better consciousness in FF consumption over males. Psychometric analysis of eating preferences of subjects revealed a positive association between preferred meal timing and FF intake. People who exhibited preference for dinner also exhibited inclination towards FF. Respondents who reported busy lifestyle significantly

Parametres	Gender	Age	Body mass index	Veg/Non-veg	PTOE	Weekday pref. for FF	Weekend pref. for FF	Frequency of eating FF	Health conscious-FF pref.	FF preferred	How busy are you?
Gender	1.00										
Age	-0.06***	1.00									
Body mass index	-0.09***	0.39**	1.00								
Veg/Non-veg	-0.2***	0.12*	0.11	1.00							
PTOE	-0.05***	-0.02***	-0.05***	0.05	1.00						
Weekday pref. for FF	0.04	-0.08***	-0.02***	0.11	0.01	1.00					
Weekend pref. for FF	0.10	-0.24***	-0.17***	-0.17***	0.01	0.01	1.00				
Frequency of eating FF	0.00	0.23**	0.06	-0.05***	0***	-0.24***	-0.15***	1.00			
Health awareness- FF pref.	-0.03***	0.05	0.00	0.01	0.02	-0.02***	-0.01***	0.02	1.00		
Type of FF preferred	0.06	0.05	0.06	-0.03***	0.02	-0.03***	-0.03***	0.01	-0.05***	1.00	
How busy are you?	0.00	0.21*	0.09	0.01	0***	-0.01***	-0.06***	0.07	0.00	0.09	1.00

[Table/Fig-2]: Correlation between health parameters and attitude towards fast food.
*indicates that correlation is significant at the 0.05 level (two-tailed); **indicates that correlation is significant at the 0.01 level (two-tailed); ***indicates that correlation is significant at the 0.001 level (two-tailed);
PTOE: Preferred time of eating

S. No.	Components	Eigen value	Odd ratio	95% CI	p-value	Relative risk
1	Perceived preference for FF with age	2.17	2.15±0.2	1.63-2.89	0.0001	1.19
2	Busy life and Perceived FF preference	1.17	0.85±0.09	0.69-1.05	0.001	0.96
3	BMI and FF intake	0.91	0.86± 0.08	0.72-1.03	0.001	0.96
4	Weekend fast food intake and PTOE.	0.93	1.19± 0.1	1-1.42	0.001	1.13

[Table/Fig-3]: Principal component analysis depicting associativity of fast food preference with health risk factors.
PTOE: Preferred time of eating; Statistical principal component analysis using parameters viz. Eigen values and odd ratios were used to assess health risk factors and chi-square to calculate p-value; CI: Confidence interval.

exhibited a preference for FF on weekends as compared who did report busy life.

Principal component analysis revealed four important factors (Eigen value >0.9; factor weight >12%). [Table/Fig-3] shows associations based on these factors' viz., perceived preference for FF with age, busy life and perceived FF preference, BMI and FF intake, and weekend drive for FF intake and preferred meal timing. A higher odds' ratio (>1) was observed for factors indicating: (a) younger age-groups showed significantly (p<0.0001) higher chances of FF consumption than adults; and (b) people who reported a busy lifestyle, exhibited preference for FF (p<0.001). Also, people who exhibited higher preference for dinner also exhibited 13% greater inclination for FF during weekend (p<0.001) and high BMI people also related to greater (p<0.001) intake of FF.

DISCUSSION

The survey results show intricate association between lifestyle, eating preferences and FF consumption. Since childhood obesity can lead to a variety of adverse health outcomes and associate with lifestyle related diseases in adulthood, an obvious aim of present survey was to explore factors contributing to possible interventions to curb FF consumption in Indian society. Contrary to earlier surveys aiming at public education regarding FF [4,5], present study looked for constituent factors and time preferences associated with FF intake. Almost 2/3rd of respondents reported themselves as vegetarian. There were gender differences i.e., males ate more FF than females. Maximum FF intake was observed among children. Wang MC et al., have pointed out that Singaporean working women cook infrequently, families eat out frequently, and children exert considerable influence on food choices of family [17]. Therefore, responsibility of women folk towards FF explosion cannot be diluted. Age and gender differences closely related to FF intake such that people tend to decline FF intake with increasing age. Aloia CR et al., did a small survey with 204 residents (aged 35 to 65 years) of Chandigarh, a city 300 km away from Delhi NCR and reported a lower intake of FF among them [18]. However, they agreed with motivational factors for FF consumption as convenience, price, social enjoyment, and quality of meals. Similarly, health awareness also had inverse relationship with FF intake.

Survey suggested increased preference for night mealtime. In present study, respondents who liked dinner over other meals of the day had an enhanced drive for FF in weekend. Preference for FF related more to being young and liking for dinner, than individual's BMI and a busy lifestyle. People with preference for eating later in a day tend to eat over a longer daily interval [12,19]. Eating over a prolonged period (>12 hours/day) perturbs the circadian clock, increasing the risk for metabolic diseases [20]. Lifestyle, human body metabolism and daily rhythm of food consumption interact in complex manner [21,22]. Obesity is primary modifiable health risk factor, which invigorates with FF intake. Continued excess of FF consumption along with night binging might render co-morbidities [23] like coronary heart disease, stroke, hypertension, diabetes, cancer, Polycystic Ovarian Syndrome (PCOS), osteoarthritis, respiratory problems etc. FF action in digestive tract initiates by throwing off gut microbiota due to higher indigestible, low fibre and high fat content, perturbing a balance of eating routines. A disrupted gastrointestinal microbiome

suffers with loss of good bacteria thereby decrease in metabolic, immunologic, and protective functions of body [24,25].

The biological innuendo from widespread use of FF is increased health risk capable of invigorating into serious health condition [23]. One study has shown that altered gut microbiota would be a sign of modern-diet associated obesity among children in developing countries. These associations vary from country to country. Few similar studies revealed frequency of FF intake was not significantly associated with perceived healthfulness of FF [4,14,26]. Preferred meal timing was also significantly associated with age and BMI [6,12].

The survey also elaborated few psychosocial and metabolic correlates of FF intake. Being vegetarian, appeared to influence the preference for FF and was related to the weekday-weekend transition of FF preference. A similar survey in America also revealed that weekend diet as less healthful than weekday diet and that weekend consumption was associated with higher calorie intake of poorer quality [27]. Apparently weekday-weekend transition is a consequence of digitisation having certain common implications on lifestyle across the globe. For this reason, present study survey results on Indian subjects appear in agreement with earlier survey results from different countries. Author suggest that parents need to lead their children by example and health awareness; while the schools need to strictly implement Food and Safety Standards Act of India 2011 guidelines [28].

Peer influence [29] and satiety [30] were considerations among school students, influencing FF consumption. Not only that 4/5th of the respondents were below 18 years of age, who preferred FF as compared to 2/3rd of adult respondents. The survey also revealed the cohort, with maximum fallibility for weekend FF intake. Respondent's social strata and health awareness did append to negative attitudes towards FF, but the fallibility to FF exceeded the awareness zeal and FF consumption emerged to be perceived as a convention or ritual [31].

Limitation(s)

Albeit, other factors contributing to FF associated circadian deregulation, not addressed in current survey, are also important.

CONCLUSION(S)

It is concluded that FF consumption is associated with age, BMI, health awareness of people. Inadvertent weekday-weekend transitions in food types must also be discouraged in society. Besides availability, FF eating behaviour is associated with age and circadian preferences such as liking for dinner, than individual's BMI, a busy lifestyle. Health and wellness programmes to outreach and educate society about food security and health hazards of FF, need to mobilise as a national drive.

REFERENCES

[1] Vilar-Compte M, Burrola-Méndez S, Lozano-Marrufo A, Ferré-Eguiluz I, Flores D, Gaitán-Rossi P, et al. Urban poverty and nutrition challenges associated with accessibility to a healthy diet: A global systematic literature review. Int J Equity Health. 2021;20:40.

[2] Keshari P, Mishra CP. Growing menace of fast food consumption in India: Time to act. Int J Community Med Public Health. 2016;3:1355-62.

[3] Dhobale RV. Kumbhar SG, Gore AD, Waghachavare VB, Kadam YR, Dhumale GB. A study of food fads and overweight in adolescents from an urban area. Int J Community Med Public Health. 2016;34:813-17.

[4] Dave JM, An LC, Jeffery RW, Ahluwalia JS. Relationship of attitudes toward fast food and frequency of fast-food intake in adults. Obesity. 2009;17:1164-70.

[5] Kaur M, Hegde AM. Are we aware of what we are we are what we eat- An epidemiological survey. Int J Clin Pediat Dent. 2008;11:13-16.

[6] Gupta NJ, Khare A. Disruption in daily eating-fasting and activity-rest cycles in Indian adolescents attending school. PLoSOne. 2020;151:e0227002. Available from: https://doiorg/101371/Jpone 0227002.

[7] Joseph N, Nelliyanil M, Rai S, Babu YPR, Kotian SM, Ghosh T, et al. Fast food consumption pattern and its association with overweight among high school boys in Mangalore city of southern India. J Clin Diagn Res. 2015;95:LC13-17.

[8] Oike H. Modulation of circadian clocks by nutrients and food factors. Biosci Biotechnol Biochem. 2017;81(5):863-70.

[9] Wehrens SMT, Christou S, Isherwood C, Middleton B, Gibbs MA, Archer SN, et al. Meal timing regulates the human circadian system. Curr Biol. 2017;2712:1768-75e3. Available from: Doi: 101016/jcub201704059.

[10] Kinsey AW, Ormsbee MJ. The health impact of nighttime eating: Old and new perspectives. Nutrients. 2015;74:2648-62.

[11] Manoogian EMC, Panda S. Circadian rhythms time-restricted feeding and healthy aging. Ageing Res Rev. 2017;39:59-67.

[12] Gupta NJ, Kumar V, Panda S. A camera-phone based study reveals erratic eating pattern and disrupted daily eating-fasting cycle among adults in India. PLoS One. 2017;123:e0172852. Available from: https://doiorg/101371/Jpone0172852.

[13] Paeratakul S, Ferdinand DP, Champagne CM, Ryan DH, Bray GA. Fast-food consumption among US adults and children: Dietary and nutrient intake profile. J Am Diet Assoc. 2003;103(10):1332-38.

[14] Al Faris NA, Al-Tamimi JZ, Al-Jobair MO, Al-Shwaiyat NM. Trends of fast food consumption among adolescent and young adult Saudi girls living in Riyadh. Food Nutr Res. 2015;59:1. Available from: Doi: 103402/fnrv5926488.

[15] Bhargava B. Handbook on National Ethical Guidelines for Biomedical and Health Research Involving Human Participants. New Delhi: Indian Council of Medical Research; 2018.

[16] https://worthix.com/sample-size-calculator/. [Assessed Date: 22.01.2020].

[17] Wang MC, Naidoo N, Ferzacca S, Reddy G, Van Dam RM. The role of women in food provision and food choice decision-making in Singapore: A case study. Ecol Food Nutr. 2014;536:658-77.

[18] Aloia CR, Gasevic D, Yusuf S, Teo K, Chockalingam A, Patro BK, et al. Differences in perceptions and fast food eating behaviours between Indians living in high- and low-income neighbourhoods of Chandigarh India. Nutr J. 2013;12:4. Available from: Doi:101186/1475-2891-12-4.

[19] Cohen S, Lemay EP. Why would social networks be linked to affect and health practices? Health Psychol. 2007;26:410-17.

[20] Gill S, Panda S. A smartphone app reveals erratic diurnal eating patterns in humans that can be modulated for health benefits. Cell Metab. 2015;22:789-98.

[21] Gupta NJ. Lifestyle and circadian health: Where the challenges lie? Nutr Metab Insights. 2019;12:01-04.

[22] Mohr P, Wilson C, Dunn K, Brindal E, Wittert GA. Personal and lifestyle characteristics predictive of the consumption of fast foods in Australia. Public Health Nutr. 2007;1012:1456-63.

[23] McCuen-Wurst C, Ruggieri M, Allison KC. Disordered eating and obesity: Associations between binge-eating disorder night-eating syndrome and weight-related comorbidities. Ann NY Acad Sci. 2018;14111:96-105.

[24] Kaczmarek JL, Thompson SV, Holscher HD. Complex interactions of circadian rhythms eating behaviours and the gastrointestinal microbiota and their potential impact on health. Nutr Rev. 2017;759:673-82.

[25] Nakayama J, Yamamoto A, Palermo-Conde LA, Higashi K, Sonomoto K, Tan J, et al. Impact of westernized diet on gut microbiota in children on Leyte Island. Front Microbiol. 2017;8:197. Available from: Doi: 103389/fmicb201700197.

[26] Panda S. Circadian physiology of metabolism. Science. 2016;354(6315):1008-15.

[27] An R. Weekend-weekday differences in diet among U S adults 2003-2012. Ann Epidemiol. 2016;261:57-65.

[28] The Gazette of India Extraordinary Part III- Sec. 4. Food Safety and Standards Authority of India. MINISTRY OF HEALTH AND FAMILY WELFARE, 1st August 2011, pages 1 to 776. F.No. 2-15015/30/2010.

[29] Seo HS, Lee SK, Nam S. Factors influencing fast food consumption behaviours of middle-school students in Seoul: An application of theory of planned behaviours. Nutr Res Pract. 2011;5(2):169-78.

[30] Mattsson J, Helmersson H. Eating fast food: Attitudes of high-school students. Int J Consum Stud. 2007;31(1):117-21.

[31] Miura K, Giskes K, Turrell G. Socio-economic differences in takeaway food consumption among adults. Public Health Nutr. 2011;15(2):218-26.

PARTICULARS OF CONTRIBUTORS:
1. Student, Department of Zoology, Chaudhary Charan Singh University, Meerut, Uttar Pradesh, India.
2. Student, Department of Zoology, Chaudhary Charan Singh University, Meerut, Uttar Pradesh, India.
3. Professor and Head, Department of Zoology, Chaudhary Charan Singh University, Meerut, Uttar Pradesh, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Neelu Jain Gupta,
Professor and Head, Department of Zoology, Chaudhary Charan Singh University,
Meerut, Uttar Pradesh, India.
E-mail: drneelujgupta@hotmail.com

ANNEXURE 1: SURVEY QUESTIONNAIRE

30 Second Survey- You and Fast-Food:

1. Name-
2. Country-
3. City-
4. Gender-
   A. Female
   B. Male
   C. Others
5. Age (years)-
6. Height (feets)-
7. Weight (kg)-
8. Preferred diet-
   A. Veg
   B. Non-veg
9. Sleep time-
   A. 7-8 PM
   B. 8-9 PM
   C. 9-10 PM
   D. 10-11 PM
   E. 11-12 PM
   F- Mostly after mid night
10. Wake up time-
   A. Before 3 AM
   B. 4-5 AM
   C. 5-6 AM
   D. 6-7 AM
   E. 7-8 AM
   F. 8-9 AM
   G. Mostly after 12 PM
11. Favourite meal of the day-
   A. Breakfast
   B. Lunch
   C. Dinner

12. **What type of meal you enjoy the most?**

    A. Indian fast-food- samosa/golgappa

    B. Continental fast-food-pasta/burger/noodles

    D. Non-veg

    E. Indian fast-food-paneer chapati/any veg curry rice

13. **How many times do you eat fast-food?**

    A. Several times a week

    B. Daily

    C. Weekly

    D. Once/twice a week

    E. Several times a year

    F. Never

14. **If all the foods below had equal health benefits then what type of food you would prefer?**

    A. Dry fruits

    B. Fruits

    C. Traditional Indian food

    D. Fast food

15. **Most preferred fast food-**

    A. Pizza

    B. Burger

    C. Momos

    D. Chaat

    E. Noodles

16. **How busy are you?**

    A. Not at all

    B. A bit

    C. Moderately busy

    D. Very busy