

Awareness of food nutritive value and eating practices among Nigerian bank workers

Implications for nutritional counseling and education

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Abstract

Adequate nutrition is an important aspect of a healthy lifestyle for all individuals, including bank staff. The objective of this study was to investigate the awareness of food nutritive value and eating practices among bank workers in Lagos State, Nigeria.

The study adopted a cross-sectional descriptive survey design. A purposive sample of 250 bank workers took part in the study. Means and Student *t* tests were employed for data analysis.

Results showed that bank workers were aware of the nutritive value of foods, and that eating practices commonly adopted included skipping breakfast, eating breakfast at work, buying food at work from the bank canteen, eating in between meals, buying snacks as lunch, and consuming soft drinks daily, among others. There were no significant differences between male and female bank workers in mean responses on food nutritive value or in eating practices adopted.

Good eating habits will help bank workers not only to improve their nutritional well-being, but also to prevent nutrition-related diseases. The implications for nutritional counseling and education are discussed in the context of these findings.

Abbreviations: DNA = do not adopt, EA = extremely adopt, EA = extremely aware, EPBWNAQ = Eating Practices of Bank Workers and Nutrition Awareness Questionnaire, MA = moderately adopt, MA = moderately aware, NA = not aware, SA = slightly adopt, SA = slightly aware.

Keywords: awareness, bank workers, eating practices, food, nutritional counseling, nutritive value

1. Introduction

In recent years, the scope of public health practice has continued to expand given the call to action to promote sustainable health and nutrition. Therefore, eating practices and the nutritive value of consumed foods are becoming increasingly important areas of research for nutritional counseling professionals across the globe.^[1] Adequate and proper nutrition is an important aspect of a healthy lifestyle.^[1,2] Therefore, it is essential to promote an awareness of the nutrients contained in foods in relation to their roles in body maintenance, growth, reproduction, health, and disease prevention in humans. Appropriate nutrition is important

for a variety of reasons, including optimal cardiovascular function, muscle strength, respiratory ventilation, protection from infection, wound healing, and psychological well-being.^[3] Additionally, it helps to prevent nutrition-related diseases through a diet containing the right amount of food constituents, such as carbohydrates, proteins, fats, vitamins, minerals, and water, required for body building and defense, energy supply, and regulatory functions.

The nutritional intake of individuals in developing countries such as Nigeria appears to be undergoing a transition from high-fiber, calorie-sparse, low-protein diets to low-fiber, calorie-dense, and high-protein diets.^[1,4] This changing pattern, particularly with respect to carbohydrate intake, appears to be a contributory factor to the increasing prevalence of obesity, which is a major risk factor for many noncommunicable nutrition-related diseases such as hypertension, diabetes mellitus, cardiovascular diseases, stroke, and nutrition-induced cancer.^[5] The World Health Organization (WHO) reported that nutrition-related diseases account for about 60% of all deaths, and 43% of the global burden of disease,^[6] and that by 2020, the impact of nutrition-related noncommunicable diseases is expected to rise to 73% of all deaths and 60% of the global burden of disease.^[7] According to the WHO, the conditions that promote unhealthy eating practices among individuals include a lack of adequate health and nutritional knowledge, and the acquisition of misinformation about health and nutrition matters.^[8] In addition, when foods are not consumed in quantities commensurate with individuals' body needs, malnutrition or over-nutrition may set in.^[1] Thus, given the roles played by nutrients in promoting health and optimal functioning in humans, counseling and education about diet and nutrition need to be made a priority by all relevant professionals, including nutritional counselors, home economists, and dietitians.

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The authors declare that they have no competing interests.

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Nutritional counseling and education involve people gaining knowledge about nutrition and being encouraged to bring about required changes in their food habits. The goal of nutritional counseling and education is to motivate individuals to eat healthy and sustainable diets.^[9] The aim is to teach individuals about the importance of adequate and proper nutrition, provide psycho-educational materials that reinforce messages about healthy eating skills, promote teaching skills essential for making dietary change, and provide information on how to sustain eating behavior change. Nutritional counseling and education focus on practical aspects of nutritional knowledge, and play an important role in raising public awareness and ultimately in the health of society. The main goal involves developing a nutrition plan for obtaining the appropriate and necessary nutrition to remain healthy, be physically prepared, and lead a healthy life.^[10] Thus, to promote healthy living among individuals, it might be necessary for nutritional counselors to promote good eating habits by increasing people's awareness of the nutritive value of foods and proper dietary practices.

Awareness, as described by Biesta and Osberg,^[11] is one's ability to notice things, a state of being fully conscious of what one knows or has learned. Nutritional awareness seems to be directly linked to nutritional knowledge, attitudes, and actions, which may have an effect on people's eating practices.^[12] Nutritional awareness is also related to knowledge of the interrelationships between nutritional matters and human life, which may have an effect on a person's life.^[13] In the present study, nutritional awareness entails being cognizant of the kind of foods an individual eats and the reasons for eating such foods. It is possible that through generating awareness, individuals may be more likely to make informed food choices and decisions conducive to their health despite their occupation.

However, it appears that a person's occupation can influence his or her nutritional awareness and daily diet. Maduabum^[1] observed that it is a common practice for bank workers in the Apapa area of Lagos State, Nigeria, to leave their homes between 4.00 and 5.00 AM daily to get to their places of work on time. As a result, most of these bank workers are compelled to eat what is available in and around their workplaces. Food canteens are available in many banks in Lagos State, where bankers can buy and eat foods. A canteen is a facility where freshly prepared hot food is served from behind a counter or self-served from buffets. It is also called "cafeteria" and "mess."^[14] Mostly carbohydrate-rich foods and drinks are sold in many of these canteens. Moyses and Collare^[15] reported that bank workers consume foods rich in protein, calcium, iron, riboflavin, and niacin in lower amounts than those recommended. Most bank workers (e.g., cashiers) also tend to have a sedentary lifestyle,^[1] and those who engage in such lifestyles burn fewer calories than active individuals; thus, they might need fewer total calories as well as fewer grams of protein, carbohydrates, and fat.

Robinson^[16] reported that individuals who fail to consume sufficient nutrients could experience fatigue and/or inability to be actively involved in their activities. A recent study in Nigeria showed that bank workers experience fatigue and other behavioral problems,^[17] which may be associated with malnutrition. According to Wanjek,^[14] malnutrition can make workers lethargic, mentally and physically, which increases the chance of workplace accidents. It is possible that being aware of the nutritive value of foods and good eating habits could enable bank workers to make informed nutritional choices and adopt good eating practices. According to the WHO,^[16] reasonable knowledge of nutrition is the main factor associated with good eating

habits. Therefore, the objective of this study was to investigate the awareness of food nutritive value and eating practices of bank workers in Lagos State, Nigeria. Specifically, the study hypothesized that there would be no significant differences between male and female bank workers in terms of their awareness of food nutritive value or eating practices adopted.

2. Methods

2.1. Ethical approval

Approval for conducting this study was obtained from the Faculty of Vocational and Technical Education at the University of Nigeria, Nsukka (Ethical Approval Number: VTE/ERA/0011). Participants provided verbal informed consent.

2.2. Study design

The study adopted a cross-sectional descriptive survey design.

2.3. Setting

This study was carried out in Apapa Local Government Area of Lagos State, Nigeria.

2.4. Participants

Study participants were recruited from a population of 5490 bank workers in Apapa Local Government Area of Lagos State, Nigeria, between March and July 2015. The study participants were 250 bank workers purposively selected for the study. Inclusion criteria included providing informed consent, being readily available to complete the questionnaire and returning it on the spot to the researchers, and working full-time as bank staff. An exclusion criterion was implied when a bank worker did not meet any one of the inclusion criteria. Table 1 shows the demographic characteristics of the study participants.

2.5. Measures

2.5.1. Eating practices of bank workers and nutrition awareness questionnaire. The Eating Practices of Bank Workers and Nutrition Awareness Questionnaire (EPBWNAQ) is a 27-item questionnaire developed by the researchers, which consists of 2 sections—A and B. Section A collects information on bank workers' demographic characteristics, whereas section B is divided into 2 clusters addressing awareness of food nutritive value and eating practices, respectively. Items in the first cluster of section B are answered on a 4-point scale (Extremely Aware [EA] = 4, Moderately Aware [MA] = 3, Slightly Aware [SA] = 2, and Not Aware [NA] = 1). Items in the second cluster of section B are

Table 1
Participants' demographic characteristics.

Participants' banks	N	%	Male, N (%)	Female, N (%)
Guarantee trust Bank Plc	35	14	15 (13.89)	20 (14.08)
United bank for Africa Plc	35	14	17 (15.74)	18 (12.68)
Diamond bank Plc	40	16	18 (16.67)	22 (15.49)
First bank of Nigeria Plc	50	20	20 (18.52)	30 (21.13)
Zenith bank Plc	50	20	22 (20.37)	28 (19.72)
EcoBank Plc	40	16	16 (14.81)	24 (16.90)
Total	250		108 (43.20)	142 (56.80)

N=number of participants, %=percentage.

Table 2**Mean responses and *t* test analyses of awareness of food nutritive value of male and female bank workers.**

No	Statements on nutritive value of foods	M ₁	SD ₁	M ₂	SD ₂	M _t	Awareness	Significance	Dec.
1	Carbohydrates provide energy for the body	3.93	1.00	3.98	0.94	3.96	EA	0.92	NS
2	Carbohydrates raise blood sugar levels	3.67	0.86	3.66	0.85	3.67	EA	0.83	NS
3	Glucose stimulates the production of insulin	3.48	0.95	3.49	0.99	3.49	MA	0.66	NS
4	Protein is needed for the building and repair of body tissues	3.62	0.92	3.64	0.93	3.63	EA	0.52	NS
5	Fat and oils are energy sources	3.92	0.89	3.93	0.88	3.92	EA	0.31	NS
6	Sources of vitamins and minerals are protective foods	3.61	0.91	3.63	0.98	3.62	EA	0.46	NS
7	Vitamin C helps to prevent scurvy	3.57	0.82	3.56	0.82	3.57	EA	0.20	NS
8	Vitamin D helps to maintain calcium homeostasis	3.11	0.89	3.09	0.90	3.10	MA	0.94	NS
9	Calcium helps to maintain and build strong bones and teeth	3.73	0.77	3.75	0.75	3.74	EA	0.15	NS
10	Milk and other dairy products are important for bone health	3.64	0.87	3.63	0.98	3.63	EA	0.71	NS
11	Water assists in removing waste products from the body	3.65	0.93	3.66	0.85	3.66	EA	0.35	NS
12	Water helps to maintain homeostasis in the body	3.21	0.91	3.23	0.91	3.22	MA	0.27	NS
13	Water transports nutrients to cells in the body	3.37	0.95	3.35	0.79	3.36	MA	0.74	NS
14	Excess energy is stored in the body in the form of fat or adipose tissue	3.41	0.96	3.39	0.79	3.40	MA	0.35	NS

Dec=decision, EA=extremely aware, M₁=mean of male bank workers, M₂=mean of female bank workers, MA=moderately aware, M_t=total mean, NS=not significant, SD₁=standard deviation of male bank workers, SD₂=standard deviation of female bank workers. Degrees of freedom=246; *P*=0.05

also answered on a 4-point scale (Extremely Adopt [EA] = 4, Moderately Adopt [MA] = 3, Slightly Adopt [SA] = 2, and Do Not Adopt [DNA] = 1). The reliability of the EPBWNAQ section B was examined with the present study sample using Cronbach alpha, which was 0.89 and 0.86 for the first and second clusters of section B, respectively. The overall reliability index of the EPBWNAQ section B was 0.88.

2.5.2. Data collection. The researchers adopted a direct delivery and retrieval approach to collect the required data. Respondents were met face-to-face at the bank where they worked and received the questionnaire to complete and return directly to the researchers.

2.5.3. Power estimation. Power analysis was conducted to estimate the appropriate sample size for the present study. The statistical power of the test was estimated using SPSS version 20 (IBM Corp.) based on Brown criteria.^[18] The observed power for the present study was 0.90.

2.5.4. Data analysis. The collected data were analyzed using descriptive statistics (mean and standard deviation). Item scores were designated as dependent variables and sex as the independent variable. Using purposively set benchmark mean values, the item scores of the first cluster of the EPBWNAQ section B (awareness of food nutritive value) were interpreted as follows: Extremely Aware (EA) = 3.50–4.00; Moderately Aware (MA) = 3.00–3.49; Slightly Aware (SA) = 2.50–2.99; and Not Aware (NA) = 1.00–2.49. Using similar purposively set benchmark mean values, the item scores of the second cluster of the EPBWNAQ section B (eating practices) were interpreted as follows: Extremely Adopt (EA) = 3.50–4.00; Moderately Adopt (MA) = 3.00–3.49; Slightly Adopt (SA) = 2.50–2.99; and Do Not Adopt (DNA) = 1.00–2.49. The Student *t* test was used to examine the differences between males and females at 0.05 level of significance. Before performing the *t* tests, the normality of the distribution of the data was assessed using the Shapiro-Wilks normality test. Data were found to be normally distributed (*P* = 0.70). To perform the *t* tests, item scores were treated as test variables, whereas sex was used as the grouping variable. During coding, the numerical value of 1 was the label for male bankers, whereas the value of 2 was the label for female bankers.

3. Results

The results in Table 2 reveal participants' awareness levels of food nutritive value. Bank workers in this study were extremely aware that carbohydrates provide energy for the body (total mean [M_t] = 3.96), carbohydrates raise blood-sugar levels (M_t = 3.67), protein is needed for the building and repair of body tissues (M_t = 3.63), fat and oils are energy sources (M_t = 3.92), sources of vitamins and minerals are protective foods (M_t = 3.62), vitamin C helps prevent scurvy (M_t = 3.57), calcium helps to maintain and build strong bones and teeth (M_t = 3.74), milk and other dairy products are important for bone health (M_t = 3.63), and water assists in removing waste products from the body (M_t = 3.66). In addition, the bank workers were moderately aware that glucose stimulates the production of insulin (M_t = 3.49), vitamin D helps to maintain calcium homeostasis (M_t = 3.10), water helps to maintain homeostasis in the body (M_t = 3.22), water transports nutrients to cells in the body (M_t = 3.36), and excess energy is stored in the body in form of fat or adipose tissue (M_t = 3.40). Therefore, these results imply that the bank workers were aware of food nutritive value.

Furthermore, the results in Table 2 reveal no significant differences between male and female bank workers in their awareness of food nutritive value, given that the *P* values for all *t* tests ranged from 0.15 to 0.92 at 246 degrees of freedom and were therefore higher than the chosen level of significance (0.05). This suggests that both male and female bank workers in the investigated area are equally aware of the nutritive value of consumed foods irrespective of their sex.

The results in Table 3 show that buying food at work from the bank canteen (M_t = 3.62) was extremely adopted by bank workers as an eating practice. In addition, skipping breakfast and eating only lunch and dinner (M_t = 3.32); eating breakfast at work (M_t = 3.40); carrying prepared breakfast from home to work (M_t = 3.21); eating in between meals (M_t = 3.26); and eating balanced meals 3 times daily (M_t = 3.20) were moderately adopted as eating practices by the bank workers. The results also show that the bank workers slightly adopted the following eating practices: skipping lunch (M_t = 3.32); buying food from fast food shops and restaurants (M_t = 2.89); buying snacks as lunch (M_t = 2.59); having dinner at 6 PM daily (M_t = 2.93); and buying breakfast or lunch from food vendors (M_t = 2.70). Additionally,

Table 3**Mean responses and *t* test analyses of eating practices of male and female bank workers.**

No	Items on eating practices	M ₁	SD ₁	M ₂	SD ₂	M _t	Adoption	Significance	Dec.
1	Skipping breakfast and having only lunch and dinner	3.30	0.99	3.33	0.87	3.32	MA	0.21	NS
2	Skipping lunch	3.70	1.03	3.80	1.11	2.61	SA	0.47	NS
3	Eating breakfast at home before going to work	2.83	1.05	3.10	1.12	1.76	DNA	0.38	NS
4	Eating breakfast at work	3.56	1.14	3.70	1.18	3.40	MA	0.40	NS
5	Carrying prepared breakfast from home to work	3.61	1.16	3.66	1.10	3.21	MA	0.45	NS
6	Buying food at work from bank canteen	2.98	1.15	3.44	1.21	3.62	EA	0.46	NS
7	Buying food from fast foods vendors and restaurants	3.25	1.16	3.56	1.09	2.89	SA	0.33	NS
8	Eating in between meals	3.80	1.06	3.90	1.12	3.26	MA	0.55	NS
9	Eating balanced meals three times daily	3.20	0.99	3.18	1.04	3.20	MA	0.49	NS
10	Buying snacks as lunch	2.59	1.09	2.57	1.11	2.59	SA	0.37	NS
11	Consuming soft drinks daily	3.14	1.03	3.20	1.01	3.16	MA	0.43	NS
12	Having dinner at 6 PM daily	2.93	1.12	2.70	0.91	1.35	SA	0.52	NS
13	Buying breakfast or lunch from food vendors	2.20	1.00	2.43	1.11	2.70	SA	0.41	NS

Dec = decision, DNA = do not adopt, EA = extremely adopt, M₁ = mean of male bank workers, M₂ = mean of female bank workers, MA = moderately Adopt, M_t = total mean, NS = not significant, SA = slightly adopt, SD₁ = standard deviation of male bank workers, SD₂ = standard deviation of female bank workers. Degrees of freedom = 246; *P* = 0.05.

it was found that the bank workers moderately adopted consuming soft drinks daily ($M_t = 3.16$) as an eating practice, and did not adopt the practice of eating breakfast at home before going to work ($M_t = 1.76$).

Furthermore, the results in Table 3 reveal no significant differences between male and female bank workers in terms of their commonly adopted eating practices, as the *P* values for all *t* tests ranged from 0.21 to 0.55 at 246 degrees of freedom and were therefore higher than the chosen level of significance (0.05). This suggests that both male and female bank workers in the investigated area adopt similar eating practices irrespective of their sex.

4. Discussion

This study aimed to investigate the awareness of food nutritive value and eating practices among bank workers in Lagos State, Nigeria. First, the findings from this study indicate that bank workers were aware of the nutritive value of foods. Additionally, there were no significant differences between male and female bank workers in their awareness of food nutritive value. Participants showed awareness that carbohydrates provide energy for the body and also raise blood sugar. According to Crapo et al,^[19] carbohydrates constitute a large part of most foods needed by the body for its supply of energy. Additionally, Jenkins et al^[20] reported that carbohydrates tend to raise blood glucose levels.

Furthermore, this study revealed that bank workers were aware that glucose stimulates the production of insulin in the body. According to the American Dietetic Association,^[21] the digestion of carbohydrate increases blood glucose, which stimulates the production of insulin in the human body. Findings from this study also show that bank workers were aware that protein is needed for the building and repair of body. According to Fuhrman,^[22] protein should be included in every meal, and Mahan and Escot^[23] also stressed that proteins are needed for the growth and maintenance of muscles.

The bank workers in this study were aware that fat and oils are energy sources, and that excess energy is stored in the body in form of fat or adipose tissue. This finding is in line with that of Montouri et al^[24] who stated that fats and oils are energy sources and their excess in the body is stored as adipose tissue. Participants were also aware that sources of vitamins and minerals are protective foods, vitamin C helps to prevent scurvy,

vitamin D helps to maintain calcium homeostasis, and calcium helps to maintain and build strong bones and teeth. These beliefs are aligned with the opinion of Young and Pellet,^[25] who claimed that calcium is needed for building strong bones and teeth especially during childhood and adolescence. To further buttress these findings, it is noteworthy that, according to Mitchell and Haroun,^[26] vitamins are regarded as micronutrients, and deficiency of any of them may result in different forms of nutrient-deficiency diseases. Furthermore, bank workers were also aware that water assists in removing waste products from the body, helps to maintain homeostasis, and transports nutrients to cells in the body. These findings are consistent with the European Food Safety Authority,^[27] which has stated that water is needed for the transportation of nutrients in the body as well as for maintaining body homeostasis.

The findings on bank workers' eating practices show that the following were commonly adopted: skipping breakfast and lunch, eating breakfast at work, carrying breakfast from home to work, buying food from bank canteens, buying food from fast food outlets, buying snacks to eat as lunch, eating in between meals, and buying breakfast or lunch from food vendors, among others. These findings are consistent with those of Gibson,^[28] who stated that bank workers' eating practices include skipping meals especially breakfast, fast food consumption, frequent snacking, and other unhealthy dietary behaviors. Additionally, in support of the current findings, Oguntona^[29] stated that snacks account for 25% to 33% of the daily energy intake of bank workers, and Awoyemi and Jogunola^[30] reported that fast food consumption and patronizing food vendors and bank canteens are common eating practices among bank workers. Furthermore, Uche^[9] reported that skipping meals is one of the eating practices most commonly adopted by urban workers. By implication, bank workers eat outside of their homes daily, and thus spend less time at home. In this study, it was also found that the consumption of soft drinks was one of the eating practices adopted by the bank workers. This finding lends support to Uche,^[9] who reported that an average Lagos resident does not have a snack without a soft drink.

Finally, no significant differences were found in the adopted eating practices of male and female bank workers. Therefore, the sex of the respondents did not significantly affect their opinions on the eating practices they usually engaged in. Thus, nutritional information charts can be developed and displayed on walls of bank halls and canteens to enable bank workers irrespective of

sex to become more conscious of the nutritive value of foods and their own eating practices. Nutrition awareness can be enhanced through collaboration with organizations, various sectors, health officials, and government agencies aimed at supporting nutrition intervention programs.^[17] Nutritional counseling and education intervention programs could take the form of nutrition seminars, workshops, and nutritional counseling symposia. Nutrition education and counseling programs could be organized for bank workers with a focus on the nutritive aspects of foods and healthy eating practices as recommended by Duyff.^[31]

5. Limitations

The present study has some limitations. First, considering only one variable (sex) can limit the contribution made by the study. Demographic characteristics such as educational background, ethnicity, marital status, and religious orientation were not included, and this might affect the generalizability of the results. Further limitations involve the lack of data on variables such as age, years working in the bank, and ranking, which could have provided a broader platform to describe the eating practices and awareness of food nutritive value of bank workers. Future studies are urged to assess these sociodemographic characteristics of bank staff to more significantly describe the eating behaviors and awareness of food nutritive value of this occupational group both in Nigeria and in other countries.

Additionally, the study sample size was small, and thus, the current findings are not fully generalizable to the entire population of bank staff in Nigeria. The researchers hope that future studies will include larger samples and also cover a wider study area, and that similar studies on this population will be conducted in other countries. Finally, some nutrition experts might argue that the item statements of the questionnaire stating that carbohydrates raise blood sugar and glucose stimulates the production of insulin would be relevant only if this study focused on people with diabetes. However, the inclusion of these statements aimed to unveil the respondents' general understanding of food nutritive value in the Nigerian context. It is possible that an individual is aware of this information even though s/he is not a diabetic, and s/he could use such information in handling future health concerns related to diabetes in his/her household. Therefore, exploring such knowledge is critical for future studies focusing on the awareness of eating practices and food nutritive value, especially in developing countries such as Nigeria.

6. Implications

Poor eating behaviors and nutrition knowledge deficits may harmfully affect health and increase healthcare costs. To promote good eating habits among bank workers in Nigeria, banking institutions can collaborate with nutritional counseling professionals to develop dietary frameworks to guide the eating behaviors of their workers. Nutritional counseling professionals can help bank staff to master one of the most important prerequisites of good health, a balanced diet.^[32] In turn, bank staff could benefit from weight loss and prevention of illness when their eating practices and knowledge of food nutritive value are improved.

Nutritional counselors can guide bank workers toward achieving nutrition-related goals by developing a nutrition plan capable of promoting adequate and healthy eating practices. The researchers would like to urge nutritional counselors to receive adequate training in cognitive-behavioral skills to be used in

nutritional counseling and education. These techniques can be invaluable in helping individuals to make successful changes in their dietary practices.^[32] Finally, it is possible that through the adoption of healthy diets facilitated by nutritional counselors, many of the known nutritional health issues affecting people of all ages might be avoided by bank workers.

7. Conclusions

The present study showed that bank workers in Lagos State of Nigeria are aware of the nutritive value of foods. However, there is a need for bank workers to increase their adoption of good eating practices. Good eating habits will help bank workers not only to improve their nutritional well-being, but also to prevent nutrition-related diseases. Various media should be used for the dissemination of nutritional information among bank workers. Nutrition seminars, counseling, and workshops for bank workers should be organized on a regular basis to enhance their awareness and knowledge of nutrition-related behaviors. The Food Guide Pyramid with suitable graphics and pictures should be displayed on bank canteen walls, and bank managers may set up nutrition monitoring teams in all branches, aimed at ensuring that adequate nutrition is available to bank workers in the food canteens.

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