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# Dispositional and situational factors as determinants of food eating behaviour among sedentary and blue-collar workers in Nigeria's premier teaching hospital



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**ABSTRACT:** This cross-sectional survey investigated the role of dispositional (self-efficacy and self-esteem), and situational factors (distractibility and perceived food variety) as determinants of food eating behaviour (FEB). Hospital employees (N500) in Nigeria's premier teaching Hospital participated. Results showed that self-efficacy and self-esteem jointly predicted cognitive restraint dimension of FEB ( $F(2,499) = 26.00$ ;  $R^2 = 0.10$ ;  $p < .05$ ). Dispositional variables also jointly predicted uncontrolled eating ( $F(2,499) = 17.41$ ;  $R^2 = 0.07$ ;  $p < .05$ ), emotional eating ( $F(2,499) = 28.58$ ;  $R^2 = 0.10$ ;  $p < .05$ ), and cognitive restraint ( $F(2,499) = 35.60$ ;  $R^2 = 0.13$ ;  $p < .05$ ) dimensions of FEB. Age ( $\chi^2 = 64.81$ ;  $df = 1$ ;  $p < .05$ ), and marital status ( $\chi^2 = 32.74$ ;  $df = 4$ ;  $p < .05$ ) were associated with FEB. Therefore, dispositional and situational variables are predictors of FEB as evidenced in previous literatures. The need for primary prevention, and assertiveness to reduce distractibility and eating disorders was highlighted towards maintaining health and efficiency at work is recommended.

Many chronic health problems are associated with modifiable lifestyle behaviours, such as poor dietary choices and physical inactivity (Food Today, 2010). Hospital workers, especially physicians, nurses, dieticians etc. are by virtue of their training and duty expected not only to have adequate knowledge about food choices and eating habits, but consistently show evidence of good eating behaviour to maintain health, and adequate energy for job efficiency. The extent to which health workers themselves adhere to healthy lifestyles deserve investigation. This study is therefore an empirical investigation into the psychological and demographic determinants of eating behaviour among health workers.

Food eating behaviour means the pattern by which an individual selects food items, the manner and how much is eaten over a period. It has three dimensions- cognitive restraint, uncontrolled eating, and emotional eating (Lauzon, Romon, Deschamps, Lafay, Borys, Karlsson, Ducimetiere, & Laventie, (2004). These dimensions of FEB have been related to both dispositional and contextual variables (Rolls, Castellanos, Halford, Kilara, & Panyam, (1998).

Dispositional variables such as self-efficacy, locus of control and self-esteem have been shown to have implication for food selection pattern (McCaul, Glasgow, & Schafer, 1987) but which of the variables are related to food selection remains controversial. There is literature evidence about the effect of situational variables in the prediction of food selection pattern (e.g. Fisher, Rolls, &

Birch, 2003), but the situational antecedents of eating behaviour remains poorly understood. Similarly, little is known about the role of self-esteem, age, job status, and marital status in FEB among blue and white collar workers in health care industries, hence the focus of this study.

## Objectives:

This study is therefore to:

1. Determine whether dispositional variables (self-efficacy and self-esteem) predict food eating behaviour (cognitive restraint, uncontrolled eating, and emotional eating).
2. Investigate whether situational variables (distractibility and perceived food variety) determine FEB.
3. Test the association between demographic factors (age, job status, and marital status) and FEB.
4. Explore any significant difference between sedentary and blue-collar workers on FEB.
5. Investigate the significant main or joint influence of dispositional and situational factors on uncontrolled eating dimension of FEB.

## Method

The cross sectional survey examined contextual and environmental factors determining FEB. The study took place in Ibadan, Nigeria's third largest city with a population of 5.6 million in 2006 (Wikipedia, 2010). The University College Hospital (UCH), the country's premier teaching hospital, is situated in Ibadan.

accidentally selected participants included blue-collar workers (N266), i.e. porters, drivers, and artisans; as well as a sedentary sample (N234), made up of administrators, physicians, laboratory staff and nurses with a mean age of 32.81 years.

Data was collected with the use of a 70-item self report questionnaire divided into five sections. The 10-item Section A tapped socio-demographic information including: age, marital status, BMI, etc. Section B contained the 7-item Bosscher and Smith (1998) self-efficacy scale. Section C of the questionnaire contained the 10-item Rosenberg self esteem scale. High score on the scale implies high level of self-esteem, vice versa (Rosenberg, 1965). The 15-item section D contained the Mindfulness Awareness Attention Scale (MAAS) developed by Brown and Ryan (2003) to measure distractibility levels. Section E was the perceived food variety scale (PFVS) developed for the study. Fifteen items were generated through a focus group discussion, literature review and suggestion of experts. An initial content analysis by experts led to deletion of 5 items. Psychometric analysis of the items included item analysis, confirmatory principal component analysis (PCA), and internal consistency analysis using Cronbach alpha. Section F contained the Three-Factor Eating Questionnaire (TFEQ-R18) originally developed by Stunkard and Messick, (1985).

Following a review of the research protocol and questionnaire, the researcher obtained approval and letter of introduction to UCH authorities. Having established that the study met ethical standards, the hospital granted permission to carry out the study. Five hundred and sixty-five consenting prospective participants were reached and assessed before the questionnaires were given to them for completion. They were each given one week to complete the questionnaires. However, only 500 questionnaires were fully completed and retrievable, representing 88% response rate. Retrieved questionnaires were coded, and analysed using the SPSS statistical software.

As shown in Table 1, the dispositional variables (i.e. self-efficacy and self-esteem) were significant joint predictors of cognitive restraint dimension of FEB ( $F(2,499) = 26.00$ ;  $R^2 = 0.10$ ;  $p < .05$ ), jointly accounting for 10% predictability of cognitive restraint dimension of FEB. Self-efficacy ( $\beta = 0.19$ ;  $p < .05$ ); and self-esteem ( $b = 0.17$ ;  $p < .05$ ) significantly independently predicted cognitive restraint dimension of FEB.

Table 2 shows that distractibility and perceived food variety significantly jointly predicted cognitive restraint dimension of FEB

TABLE 1: TABLE 1: MULTIPLE REGRESSION ANALYSIS TABLE SHOWING DISPOSITIONAL VARIABLES PREDICTING COGNITIVE RESTRAINT, UNCONTROLLED EATING, AND EMOTIONAL EATING DIMENSIONS OF FEB

Cognitive restraint	$\beta$	T	P	F	$R^2$	P
Self-efficacy	0.19	4.02	<.05	26.00	0.10	<.05
Self-esteem	0.17	3.45	<.05			
<b>Uncontrolled eating</b>						
Self-efficacy	0.26	5.40	<.05	17.41	0.07	<.05
Self-esteem	-0.02	-0.38	Ns			
<b>Emotional Eating</b>						
Self-efficacy	0.36	7.54	<.05	28.58	0.10	<.05
Self-esteem	-0.14	-3.00	<.05			

TABLE 2: MULTIPLE REGRESSION ANALYSIS TABLE SHOWING SITUATIONAL VARIABLES PREDICTING COGNITIVE RESTRAINT, UNCONTROLLED EATING, AND EMOTIONAL DIMENSIONS OF FEB

Cognitive restraint	$\beta$	T	P	F	$R^2$	P
Distractibility	0.17	3.40	<.05	35.60	0.13	<.05
Perceived food variety	0.23	4.62	<.05			
<b>Uncontrolled eating</b>						
Distractibility	0.48	11.97	<.05	194.67	0.44	<.05
Perceived food variety	0.27	6.63	<.05			
<b>Emotional Eating</b>						
Distractibility	0.53	12.09	<.05	121.20	0.33	<.05
Perceived food variety	0.07	1.63	Ns			

TABLE 3: CHI-SQUARE TABLE SHOWING THE RELATIONSHIP BETWEEN AGE, JOB STATUS, MARITAL STATUS AND FEB

Variables	Food eating behaviour		Total	Df	$\chi^2$	P		
Age	Younger	Low 163: 75.8%	High 113: 39.6%	276: 55.2%	1	64.81	<0.05	
	Older	52: 24.2%	172: 60.4%					224: 44.8%
	Total	215: 100%	285: 100%					500: 100%
Job status	Junior	83: 38.6%	89: 31.2%	172: 34.4%	2	5.58	>0.05	
	Intermediate	86: 40.0%	110: 38.6%	196: 39.2%				
	Senior	46: 21.4%	86: 30.2%	132: 26.4%				
	Total	215: 100%	285: 100%	500: 100%				
Marital status	Single	141: 38.6%	134: 47.0%	275: 55.0%	4	32.74	<0.05	
	Married	66: 30.7%	98: 34.4%	164: 32.8%				
	Widowed	-	19: 6.7%	19: 3.8%				
	Divorced	5: 2.3%	16: 5.6%	21: 4.2%				
	Separated	3: 1.4%	18: 6.3%	21: 4.2%				
	Total	215: 100%	285: 100%	500: 100%				

( $F(2,499) = 35.60$ ;  $R^2 = 0.13$ ;  $p < .05$ ). Furthermore, distractibility ( $\beta = 0.17$ ;  $p < .05$ ); and perceived food variety ( $b = 0.23$ ;  $p < .05$ ) significantly independently predicted cognitive restraint dimension of FEB. Situational variables significantly jointly predicted uncontrolled eating dimension of FEB among sedentary and blue-collar workers ( $F(2,499) = 194.67$ ;  $R^2 = 0.44$ ;  $p < .05$ ). Distractibility

( $b = 0.48$ ;  $p < .05$ ); and perceived food variety ( $\beta = 0.27$ ;  $p < .05$ ) had significant main influence on uncontrolled eating dimension of FEB.

Table 3 shows that there was significant positive association between age and the three dimensions of FEB ( $\chi^2 = 64.81$ ;  $df = 1$ ;  $p < .05$ ). Marital status is also significantly associated with FEB ( $\chi^2 = 32.74$ ;  $df = 4$ ;  $p < .05$ ). However, job status had no significant association with FEB ( $\chi^2 = 5.58$ ;  $df = 2$ ;  $p > .05$ ).

The above Table shows that there was no significant effect of categories of workers on food eating behaviour ( $t = 0.75$ ;  $df = 498$ ;  $p > 0.05$ ). Thus, sedentary workers did not differ significantly ( $x = 35.33$ ) on FEB compared to blue-collar workers ( $x = 34.76$ ).

Table 5 reveals that there was significant main effect of distractibility ( $F(1, 499) = 44.48$ ;  $p < .05$ ), perceived food variety ( $F(1, 499) = 30.40$ ;  $p < .05$ ), and self-efficacy ( $F(1, 499) = 17.36$ ;  $p < .05$ ) on uncontrolled eating. Self-esteem had no significant main effect on uncontrolled eating ( $F(1, 499) = 0.02$ ;  $p > .05$ ). There was a significant three-way interaction effect of distractibility, perceived food variety, and self-efficacy ( $F(1, 499) = 4.89$ ;  $p < .05$ ), on uncontrolled eating.

## Discussion

This study has established that self efficacy and self esteem are joint determinants of cognitive restraint, uncontrolled eating, and emotional eating, i.e. the three dimensions of food eating behaviour, but self-esteem had no independent effect on uncontrolled eating. Additionally, distractibility and perceived food variety were significant independent predictors of all the three dimensions of food eating behaviour, except that perceived food variety did not predict emotional eating. There was no significant difference between white and blue collar workers on food eating behaviour.

The discovery that self-efficacy and self-esteem significantly jointly and independently predicted cognitive restraint, uncontrolled eating, and emotional eating dimensions of food eating behaviour has also been supported in part by the findings of McCaul, Glasgow, and Schafer, (1987). This means that an individual's belief that s/he can perform a novel or difficult task, or cope with adversity - in various domains of human functioning could influence the three dimensions of an individual's food eating behaviour.

The finding indicating that situational variables; distractibility and perceived food variety independently predicted the three dimensions of food eating behaviour has been supported in part by the findings of Brunstrom and Mitchell, (2006), Bellisle and Dalix, (2001), as well as Kahn and Wansink (2004). The differences in the findings in this study compared to earlier literatures are two-fold. First, the study established that distractibility and perceived food variety could further jointly determine the three dimensions of food eating behaviour. Second, it established that perceived food variety does not significantly affect emotional eating.

TABLE 4: INDEPENDENT T-TEST TABLE COMPARING SEDENTARY AND BLUE-COLLAR WORKERS ON FEB

Dependent variable	Categories of workers	N	X	SD	Df	T
Food eating behaviour	Sedentary Workers	234	35.33	7.86	498	0.75
	Blue-collar Workers	266	34.76	9.03		

TABLE 5: 2X2X2X2 ANOVA SHOWING THE MAIN AND INTERACTION EFFECTS OF DISTRACTIBILITY, PERCEIVED FOOD VARIETY, SELF EFFICACY, AND SELF ESTEEM ON UNCONTROLLED EATING DIMENSION OF FEB

Source	SS	Df	MS	F
Distractibility (A)	1378.30	1	1378.30	44.48
Food variety (B)	942.04	1	942.04	30.40
Self-efficacy (C)	537.97	1	537.97	17.36
Self-esteem (D)	0.51	1	0.51	0.02
A x B	187.47	1	187.47	6.05
A x C	425.84	1	425.84	13.74
A x D	43.35	1	43.35	1.40
B x C	236.67	1	236.67	7.64
B x D	243.53	1	243.53	7.86
C x D	120.61	1	120.61	3.89
A x B x C	151.57	1	151.57	4.89
A x B x D	6.18	1	6.18	0.01
B x C x D	8.31	1	8.31	0.27
A x B x C x D	16.28	1	16.28	0.53
Error	14998.00	484	30.99	
<b>Total</b>	<b>21842.80</b>	<b>499</b>		

Like any member of the society, health workers are also vulnerable to the influences of distractions such as internet browsing, electronic devices, and TV shows. Considering the potential occupational stress inherent in the healthcare professions, especially in a resource limited setting like Nigeria, many health workers make conscious efforts to engage the use of any of any of the devices mentioned above to relieve cushion intrinsic and extrinsic pressures, in an effort to prevent occupational burnout. Allowing distractions at meal time could significantly affect many aspects of eating behaviour unconsciously.

There was a significant association between age and food eating behaviour. In this study, older participants recorded higher scores on food eating behaviour compared to younger participants. This suggests that health workers beyond the mean age i.e. 32.81 years, are more likely to have greater cognitive restraint, uncontrolled eating, and emotional eating respectively. It is necessary to consider the possible extraneous influence of youthful exuberance, explorative behaviour, pseudo-infallibility, and lesser experience on the attitude and behaviours of younger people. However, neither job status, nor category at work (white or blue collar) predicted food eating behaviour in this study.

Married participants reported highest scores in food eating behaviour compared to participants with other marital statuses. This may be connected to the higher level of social support available in marriage. But marital status did not predict food eating behaviour in the study.

## Conclusion

These suggest that the training of many physicians, nurses, and other health workers even at the premier and foremost health institution have not significantly discriminated them from less skilled staff in the area of food selection, and consumption

behaviours. Training and experience are expected to translate into safe health practices.

Unguarded food choices could lead to chronic health problems (Food Today, 2010). A pragmatic programme of health risk and impact assessment, self-efficacy and assertiveness to reduce distractibility and eating disorders among healthcare workers would mitigate the risks associated with unsafe eating behaviour among health workers, and by so doing assure the health of the nation. □

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