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Research Article

Study on the Preference of Food Nutrition Components and Physical Health Based on College Students in Physical Education

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Abstract: In recent years, college students' physical health problems have been widely concerned. In this study, we conducted an empirical analysis by collecting the questionnaire from 181 college students. Through the questionnaire survey, results show that the physique healthy overall situation is better in sports specialized university, we find that nutrients on health effects from large to small is as follows: sugar, polyphenol, folic acid, tryptophan, vitamin B6, amino butyric acid, fatty acids, calcium; professional sports college students eat crab, spinach, fish, honey, meat, dairy products, cocoa, tea preference can establish better health. Regression model shows that there is a positive correlation, the greater the degree of preference, physical health is better.

Keywords: College students, food, nutrition, physical health, professional sports

INTRODUCTION

As china's rapid economic growth, people's living standards continue to improve a solid economic foundation as a guarantee, people their own health more and more attention to and constantly improve their concept of health and nutrition knowledge (Lora and Katrina, 2013; Megan and Daniel, 2014). The nutrition of the food is meant to include nutrition, diet myth, eating habits, fruit, vegetables, meat balls, nutrition and health, health and nutrition and health problems and food on human health effects (Joan and Molly, 2014). Physical health status through height standard weight, body mass index, vital capacity 1000 m (male) or 800 m (female), 50 m run and body antexion project to complete, the article for the convenience of the study, to 191 college students majoring in PE of 1000 m (male) or 800 m (female) test and food nutrition ingredient preference questionnaire, find the relationship between the nutritional content of food preferences and physical health, for physical health and a healthy diet provides valuable theoretical reference (Lisa and Hillary, 2012; Debra and Tara, 2008). In this study, we will test the relationship between food nutrition components and physical health from college students.

RESEARCH OBJECT AND METHODS

Research time and objects: Using the Internet questionnaire from January 1, 2014 to June 30, 2014 until six months; The object of study: in jiangxi, Shanghai, guangdong and hunan 8 universities 191 professional sports college students as the research object.

Questionnaire survey: Questionnaire survey was conducted among Chinese College of food nutrition and physical health of 20 experts, the questionnaire uses the five level evaluation, the impact is very big 5 points, has greater impact on points, affect the general 3 points, influence less 2 points, had little effect on the, more influence, the higher score, expert questionnaire has eight food and nutrition components, a total of 40 points, 8-12.99 said effect is very small, 13-19.99 said less effect, 20-26.99 points that influence, 27-34.99 said effect better, 35-40 said effect is very good. Table 1 results show: Professor issued seven people, recovery six people. The recovery rate is 85.71%, effective rate was 100%; Associate Professor issued 13, 11 recovery, the recovery rate was 84.62%, effective rate was 100%; other related doctoral issued 4, 3 recovery, the recovery rate of 75%, effective rate was 100%; general issued 24 people, 20 people, the recovery rate was 83.33%, effective rate was 100%.

We collected sports college students' questionnaire as 191 sports professional students like to eat food preference questionnaire: questionnaire were used in 5 grade evaluation, preference degree very high 5 points of preference, relatively high 4 points and preference in general high 3 points, preference degree is not high 2 points, preference degree is not high 1 points, the higher the score, preference degree higher and higher (Marjorie and Rachel, 2011). A total of 240 questionnaires were distributed, 216 copies were collected, 191 were valid questionnaires, the recovery rate was 90% and the effective rate was 88.43%.

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Table 1: Expert questionnaire distribution and recovery TAB (n = 20)

Indicators		Number	Issue	Recycle	Recovery (%)	Effective rate (%)
The expert	Professor	6	7	6	85.71	100
structure	Associate professor	11	13	11	84.62	100
	Related professional doctor	3	4	3	75	100
Total	20	24	24	83.3	100	

Table 2: Analysis and comparison of physical health of college students in Physical Education (n = 191)

Indicators	5points	4points	3points	2points	1points	(X±D)	T-value	p-values
N	53	42	56	40	0	3.57±1.11	44.503	0.000
Percentage (%)	27.75	21.99	29.32	20.94	0			

Table 3: The results of the analysis of the effects of nutrition and food composition on the physical health (n = 20)

Index	N	Mean (points)	S.D.	Ranking	T value	p-value
Color tryptophan	20	4.20	0.77	4	25.335	0.000
Folic acid	20	4.25	0.85	3	27.839	0.000
ω-3 fatty acids	20	3.95	0.94	7	20.829	0.000
Sugar	20	4.55	0.76	1	42.754	0.000
Vitamin B6	20	4.10	0.84	5	25.335	0.000
Calcium	20	3.70	0.80	8	23.158	0.000
Polyphenol	20	4.35	0.88	2	27.990	0.000
γ-Aminobutyric acid	20	4.05	0.89	6	23.700	0.000
General	20	33.15	6.35		31.13	0.000

S.D.: Standard deviation

The test method: 191 PE undergraduates were male (1000 m) or female (800 m) test, before the test scores (3.20 male and female 3.10 previous) 5 points, test scores (male 3.20-3.39.99, female 3.10-3.29.99) to 4 points, test scores (male 3.40-3.59.99, female 3.30-3.49.99) to 3 points, test scores (4 male -4.19.99, female 3.50-4.09.99) to 2 points, test scores (4.20 male and female 4.10) 1. Physical tests, the male 1000 m or 800 m of women's performance is an important indicator of physical health.

Mathematical statistics method: Mainly used to judge the value of the data collected the verification of theoretical assumptions (Eun and Natalie, 2009; Jean and Lizzy, 2012). According to the needs of the research purposes, this study analyzes the statistical analysis tool mainly uses the statistical software package SPSS18.0 software of the variance analysis and regression analysis.

Logical reasoning: By using the method of comparison, deduction, induction, analysis and deduction, the logical analysis of the data statistics is carried out and the corresponding theoretical conclusions are drawn.

RESULTS AND DISCUSSION

Professional sports college students physical health is good: 191 college students majoring in sports man 1000 m or women's 800 m test, Table 2 results display: 5 min and 53 people accounted for 27.75%, 4 min, 42 people (21.99%, 3 minutes and 56 people accounted for 29.32%, 2 min and 40 people accounted for 20.94%, 1 point, average score for 3.57 close to 4, standard deviation was 1.11 and $T = 44.503$, $p = 0.000<0.01$ that sports professional college students' physical health has a very significant difference, difference, mean value closer to 4. score for 1 min, professional sports college students' physical health is not very good, the overall situation is good.

Analysis on the influence of food nutrition composition on physical health: 20 food nutrition experts believe the impact on physical health questionnaire, the results in Table 3 show: tryptophan mean of 4.20 points, a standard deviation of 0.77, $T = 25.335$, $p = 0.000<0.05$; mean 4.25 points folic acid, standard the difference is 0.85, $T = 27.839$, $p = 0.000<0.05$; ω-3 fatty acids mean of 3.95 points, a standard deviation of 0.94, $T = 27.829$, $p = 0.000<0.05$; mean 4.55 points sugar, a standard deviation of 0.76, $T = 42.754$, $p = 0.000<0.05$; vitamin b6 mean of 4.10 points, a standard deviation of 0.84, $T = 25.335$, $p = 0.000<0.05$; 3.70 points calcium mean, the standard deviation is 0.80, $T = 23.158$, $p = 0.000<0.05$; polyphenols mean 4.35 points, the standard deviation is 0.88, $T = 27.990$, $p = 0.000<0.05$; γ-aminobutyric acid mean of 4.05 points, a standard deviation of 0.89, $T = 23.700$, $p = 0.000 <0.05$; overall mean of 33.15 points, a standard deviation of 6.35, $T = 31.13$, $p = 0.0000.05$; nutritional components influence on physical health descending order: sugar, polyphenols, folic acid, tryptophan, vitamin b6, γ- amino acid, ω-3 fatty acids, calcium.

Correlation analysis of the relationship between food nutrition and physical health of college students in Physical Education: College Students' preference and physical health eat crab is related. Eat crab preference and physical health by regression analysis. In SPSS16.0 execution analyzes command, regression, linear regression analysis, Table 4 results show: eat crab the hobby degree (3.51 + 1.83) and

Table 4: Correlation and regression analysis of College Students' preference and physical health to eat crab (table n = 191)

Index	(X±D)	R	Model F	Model P	B value	T value	p-value
Sea crab	3.51±1.83	0.870	586.898	0.000	0.266	2.021	0.047
Physical health	3.57±1.11				0.939	22.226	0.000

Table 5: Correlation and regression analysis of College Students' preference and physical health to eat spinach (table n = 191)

Index	(X±D)	R	Model F	Model P	B value	T value	p-value
Spinach	3.42±1.00	0.812	366.868	0.000	0.491	2.934	0.004
Physical health	3.57±1.11				0.898	19.154	0.000

Table 6: Correlation and regression analysis of College Students' preference and physical health to eat fish (table n = 191)

Index	(X±D)	R	Model F	Model P	B value	T value	p-value
Fish	3.42±1.00	0.839	450.197	0.000	0.448	2.926	0.004
Physical health	3.57±1.11				0.885	21.218	0.000

Table 7: Correlation and regression analysis of College Students' preference and physical health to eat honey (table n = 191)

Index	(X±D)	R	Model F	Model P	B value	T value	p-value
Honey	3.53±0.98	0.775	285.001	0.000	0.478	2.520	0.013
Physical health	3.57±1.11				0.874	16.882	0.000

correlation R = 0.870> college student's mental health (3.57 + 1.11) of 0.3, model, F = 586.898, p = 0.000<0.05; T = 2.021 and 22.226, p = 0.047 and the 0.000<0.05), B = 1.266 and 0.939. That correlation greater than 0.3, with acceptable correlation and model p value less than 0.05, with statistical significance and t value test results of both p-values were less than 0.05. Therefore, we can reject the null hypothesis, that they indeed have a linear correlation, regression model was established as Y = 0.266 + 0.939X (y means mental health factor; X represents eat crab hobby degree coefficient). This is because the crab, bean curd, dried meat floss, black sesame and other food ingredients there are a lot of tryptophan nutrition. Visible, college students eat crab preference and physical health exist positive correlation that is like to eat crab preference degree higher, better physical health.

There is a positive correlation between the degree of preference of college students eating spinach and physical health. Eat spinach preference and physical health by regression analysis. In SPSS16.0 execution analyzes command, regression, linear regression analysis, Table 5 results show: to eat spinach hobby degree (3.42+1.00) and the correlation R = 0.812> college students' mental health (3.57+1.11) 0.3, model (F = 366.868, p = 0.000<0.05; T = 2.934 and 19.154, p = 0.004 and 0.000<0.05), B = 0.491 and 0.898. That correlation greater than 0.3, with acceptable correlation and model p value less than 0.05, with statistical significance and t value test results of both p-values were less than 0.05. Therefore, we can reject the null hypothesis, that they indeed have a linear correlation, regression model was established to: Y = 0.266 + 0.939X (y said mental health factor; X represents eating spinach hobby degree coefficient). This is because the spinach, lettuce, rape, bananas and animal liver and other foods are a lot of folic acid nutrients. Can be seen, the degree of preference for college students to eat spinach and physical health is positively related, that is to say, like eating spinach, the higher the degree of physical health is better.

Eat fish preference degree and physical health of college students exist positive correlation. Eat fish preference and physical health of regression analysis, in SPSS16.0 execution analyze command, regression, linear regression analysis, Table 6 results showed that eating fish hobby degree (3.52 + 1.05) and correlation R = 0.839>0.3 college students mental health (3.57 + 1.11), model (F = 450.197, p = 0.000<0.05; T = 2.926 and 21.218, p = 0.004 and 0.000<0.05), B = 0.448 and 0.885,. That correlation greater than 0.3, with acceptable correlation and model p value less than 0.05, with statistical significance and t value test results of both p-values were less than 0.05. Therefore, we can reject the null hypothesis, that they indeed have a linear correlation, regression model was established to: Y = 0.266 + 0.939X (y means mental health factor; X represents eat fish hobby degree coefficient). This is because the fish, silver carp, black carp, herring and tuna food there are a large number of Omega -3 fatty acid nutrition composition. Visible, eat fish preference degree and physical health of college students exist positive correlation, that is like to eat fish hobby degree is high, has the better physical health.

Eat honey preference and physical health by regression analysis. In SPSS16.0 execution analyze command, regression, linear regression analysis, Table 7 results show that eating honey hobby degree (3.53 + 0.98) with correlation R = 0.775> college students mental health (3.57 + 1.11) of 0.3 and model (F = 285.001, p = 0.000<0.05; T = 2.520 and 16.882, p = 0.013 and 0.000<0.05), B = 0.478 and 0.874. That correlation greater than 0.3, with acceptable correlation and model p value less than 0.05, with statistical significance and t value test results of both P values were less than 0.05. Therefore, we can reject the null hypothesis, that they indeed have a linear correlation, regression model was established to: Y = 0.266 + 0.939X (y said mental health factor; X represents eat honey hobby degree coefficient). This is because honey, sugar rich fruits and other foods there is a lot of

Table 8: Correlation and regression analysis of College Students' preference and physical health to eat meat (table n = 191)

Index	(X±D)	R	Model F	Model P	B value	T value	p-value
Meat	3.45±1.04	0.849	486.496	0.000	0.476	3.255	0.001
Physical health	3.57±1.11				0.895	22.057	0.000

Table 9: Correlation and regression analysis of College Students' preference and physical health to eat Dairy (table n = 191)

Index	(X±D)	R	Model F	Model P	B value	T value	p-value
Dairy	3.54±1.07	0.861	541.244	0.000	0.412	2.909	0.004
Physical health	3.57±1.11				0.891	23.265	0.000

Table 10: Correlation and regression analysis of College Students' preference and physical health to eat Cocoa bean (table n = 191)

Index	(X±D)	R	Model F	Model P	B value	T value	p-value
Cocoa bean	3.51±0.91	0.859	543.405	0.000	-0.083	-2.605	0.011
Physical health	3.57±1.11				1.040	23.311	0.000

Table 11: Correlation and regression analysis of College Students' preference and physical health to eat Tea (table n = 191)

Index	(X±D)	R	Model F	Model P	B value	T value	p-value
Tea	3.49±0.85	0.865	562.809	0.000	-0.393	-2.288	0.023
Physical health	3.57±1.11				1.133	23.724	0.000

sugar nutrients. Can be seen, the degree of preference for honey and the health of the students have a positive correlation, that is to say, like eating honey, the higher the degree, the better physical health.

There are positive correlation between the degree of preference of college students and the health of constitution. Eat meat preference and physical health by regression analysis. In SPSS16.0 execution analyzes command, regression, linear regression analysis, Table 8 results show: eat meat loving degree (3.45 + 1.04) and the correlation R = 0.849> college students' mental health (3.57 + 1.11) 0.3, model (F = 486.496, p = 0.000<0.05; T = 3.255 and 22.057, p = 0.001) and 0.000<0.05), B = 0.476 and 0.895. That correlation greater than 0.3, with acceptable correlation and model p-value less than 0.05, with statistical significance and t value test results of both p-values were less than 0.05. Therefore, we can reject the null hypothesis, that they indeed have a linear correlation, regression model was established to: Y = 0.266 + 0.939X (y said mental health factor; X represents meat hobby degree coefficient). This is because the meat, vegetables, fruits, nuts and cereals and other foods there is a large number of vitamin B6 nutrients. Can be seen, the degree of preference for meat and meat type of college students is positively related to physical health, that is to say, like eating meat, the higher the degree of physical health is better.

There is a positive correlation with the degree of preference of College Students' Constitution in dairy products. Milk product preferences and physical health by regression analysis. In SPSS16.0 execution analyze command, regression, linear regression analysis, Table 9 results showed that dairy products like (3.54 + 1.07) level and the mental health of college students (3.57 + 1.11) correlation R = 0.861>0.3, model (F = 541.244, p = 0.000<0.05; T = 2.909 and 23.265, P = 0.004 and 0.000<0.05), B = 0.412 and 0.891. That correlation greater than 0.3, with acceptable correlation and model p value less than 0.05, with statistical significance and t value test results of both P values were less than 0.05. Therefore, we can reject the null hypothesis, that they indeed have a linear correlation, regression model was established to: Y = 0.266+0.939X (y said mental health factor; X represents dairy hobby degree coefficient). This is because there are large amounts of calcium nutrition in milk products, sesame, fish, seaweed, nuts, legumes and purple cabbage and so on food. Visible, students milk product preferences and physical health there is a positive correlation, that is like dairy products hobby degree is high, physical health is better.

There is a positive correlation between the degree of preference of college students and the health of the Constitution. Eat cocoa beans preference degree and physical health by regression analysis. In SPSS16.0 execution analyze command, regression, linear regression analysis, Table 10 results show: eat cocoa beans hobby degree (3.51 + 0.91) and mental health (3.57 + 1.11) correlation R = 0.859>0.3, model (F = 543.405, p = 0.000<0.05; T = -2.605 and 23.311, p = 0.011 and 0.000<0.05), B = -0.083 and 1.040. That correlation greater than 0.3, with acceptable correlation and model p-value less than 0.05, with statistical significance and t value test results of both p-values were less than 0.05. Therefore, we can reject the null hypothesis, that they indeed have a linear correlation, regression model was established to: Y = 0.266 + 0.939X (y said mental health factor; X represents eat cocoa beans hobby degree coefficient). This is because of the presence of a large number of nutrients, such as cocoa beans, soybeans and red wine, etc. Can be seen, the degree of preference of cocoa beans and students have a positive correlation, that is to say, like to eat cocoa beans, the higher the degree of physical health is better.

There is a positive correlation between the degree of preference of college students and the health of the Constitution. Eat tea preference and physical health by regression analysis. In SPSS16.0 execution analyzes command, regression, linear regression analysis, Table 11 results show: eat tea in the hobby degree (3.49 + 0.85) and mental health (3.57 + 1.11) correlation R = 0.865 above 0.3, model (F = 562.809, p = 0.000<0.05; T = -2.288 and 23.724, p = 0.023 and 0.000<0.05), B =

-0.393 and 1.133. That correlation greater than 0.3, with acceptable correlation and model p value less than 0.05, with statistical significance and t value test results of both p-values were less than 0.05. Therefore, we can reject the null hypothesis, that they indeed have a linear correlation, regression model was established to: Y = 0.266 + 0.939X (y said mental health factor; X represents eat tea hobby degree coefficient). This is because of the presence of a large number of nutrients, such as tea, wood, Astragalus and rice germ, etc. Can be seen, the degree of preference for tea and physical health of college students are positively related, that is to say, like to eat tea, the higher the degree of physical health is better.

CONCLUSION

Professional sports college students' physical health overall situation is good and very good physical health more and not very bad. Experts think the nutrient effect on physical health order from large to small is: sugar, polyphenols, folic acid, tryptophan, vitamin b6, γ-aminobutyric acid, ω-3 fatty acids, calcium; Professional sports university raw sea crab, spinach, fish, honey, meat, dairy products, beans, tea preference degree is positively correlated to establish regression model, the greater the appetite and physical health.

REFERENCES

Debra, L.F. and M.C. Tara, 2008. Motivation, self-efficacy, physical activity and nutrition in college students: Randomized controlled trial of an internet-based education program. Prevent. Med., 47(4): 369-377.

Eun, J. and C. Natalie, 2009. Effect of nutrition intervention using a general nutrition course for promoting fruit and vegetable consumption among college students. J. Nutr. Educ. Behav., 41(2): 103-109.

Jean, H. and P. Lizzy, 2012. Undergrad and overweight: An online behavioral weight management program for college students. J. Nutr. Educ. Behav., 44(6): 604-608.

Joan, E. and B. Molly, 2014. Are health science students' beliefs about infant nutrition evidence-based? Nurse Educ. Today, 34(1): 92-99.

Lisa, M.Q. and L. Hillary, 2012. Factors across home, work and school domains influence nutrition and physical activity behaviors of nontraditional college students. Nutr. Res., 32(10): 757-763.

Lora, B.B. and J. Katrina, 2013. Eating competence of college students in an introductory nutrition course. J. Nutr. Educ. Behav., 45(3): 269-273.

Marjorie, R.F. and C. Rachel, 2011. Point-of-purchase nutrition information influences food- purchasing behaviors of college students: A pilot study. J. Am. Diet. Assoc., 111(5): S42-S46.

Megan, M.P. and F. Daniel, 2014. Prevalence and correlates of food insecurity among students attending a midsize rural university in oregon. J. Nutr. Educ. Behav., 46(3): 209-214.