Asian Journal of Clinical Nutrition

ISSN 1992-1470

science alert

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Asian Journal of Clinical Nutrition 3 (3): 92-102, 2011
ISSN 1992-1470 / DOI: 10.3923/ajcn.2011.92.102

Eating Attitude, Body Image, Body Composition and Dieting Behaviour among Dancers

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ABSTRACT

Dancers are prone to have high risk of eating disorder, obsess to be physically thin and generally will have body image distortion. This research has studied the prevalence of risk of eating disorder among dancers, comparison of the body composition between dancers and control subjects and to examine the relationship between eating attitude, body image concern, body composition and dieting behaviour. A set of self-administered questionnaires that consist of Eating Attitude Test (EAT-26), Body Attitude Test (BAT) and Dieting Behaviour were conducted on 23 dancers and 50 lean subjects. Measurement on weight, height, mid upper arm circumference and skinfold thickness of triceps, abdomen, suprailiac and thigh was taken. The result showed dancers have high prevalence of risk of eating disorder (21.74%) compared to control subjects (12.00%). There were also significant mean differences in percentage of fats and percentage of lean body weight, when $p<0.05$. In addition, there were significant positive strong correlation between eating attitude and body image concern ($p = 0.002$, $r = 0.606$) as well as correlation between dieting behaviour and body image concern ($p = 0.012$, $r = 0.515$). Moreover, the relationship between BMI and dieting behaviour showed positive strong correlation when $p = 0.002$ and $r = 0.614$ where dancers choosed to use diet pills ($p = 0.001$), vomit and taken laxatives ($p = 0.016$) for dieting. In conclusion, dancers were very concern about body figure, appearnce and fear of gaining weight which can lead to unhealthy dieting habits.

Key words: Dancers, eating disorder, body image, body composition, eating and dieting behaviour

INTRODUCTION

Development of Eating Disorder (ED) among professional dancers becomes a trend since the pressure to become thin and not overweight can stimulate the unrealistic ideas about body weight, appearance and perception (Preti *et al*., 2008) and they usually get engage with unhealthy diet behaviour (Gibbs, 2011). Anorexia Nervosa (AN) and Bulimia Nervosa (BN) are the terms that normally heard among dancers where people are afraid of weight gain. AN defined as a severe ED characterized by decreased food intake, important weight loss (BMI<17.5 kg m^{-2}) and reduced body fat (Tolle *et al*., 2003). While, NIMH (2011) had defined BN as a scenario of uncontrolled eating of large amounts of food and followed by behaviour of forced to vomit, using laxatives or diuretics, extremely fasting, or it can be any combination of these behaviour. Currently, the prevalence of incidence of ED become increasing not only in female but it already occurred in

male with almost equal percentage (Hudson *et al.*, 2007). While, in a research by Janout and Janoutova (2004) among various groups included models, skaters gymnasts and dancers showed dancers were the top three groups that have high risk of ED. In the study done in Malaysia by Quah *et al.* (2009) towards atheletes showed the prevalence of risk to get ED were high (89.2%). And the same situation occurred in Singapore where the incidences rate of young female aged 15-24 years old having anorexia nervosa were increase over the past century until 1970s (Ung, 2005). However, lean people also have high prevalence of underweight (Sanlier and Unusan, 2007a) which later can develop ED if they have negative perception about weight and shape with additional lower nutrition status.

In previous study, ballet dancers always demand to be physically thin (Skeleton, 2010) and have higher tendency to get body image distortion (Tseng *et al.*, 2007). It can be due to the pressure of maintaining body weight, body appearance and it will effects how they control themselves in front of foods. Combination of emotional and experiential of shame and anxiety about body as well as low self-esteem can create to ED (Tiggemann and Kuring, 2004). There were few of previous studies that discussed about this issue not only among dancers, but also other risk group of ED like athletes, gymnasts, models, ballerinas and celebrity. Most of the diet practiced are considered unhealthy which it would cause adverse consequences to the body (AL-Kurd and Ezzad Faris, 2011). Preti *et al.* (2008) studied among professional fashion models and shown dancers were prone to get ED as well as concern about body weight and shape. Tseng *et al.* (2007) have the same finding where dancers were extremely afraid about body shape, always thinking about losing weight and have high prevalence of ED compared to non-dancers. The stress to become thin is one of the factors that can affects body weight and body mass index (Sanlier and Unusan, 2007b) and can continuos to developing ED.

The purpose of this study is to determine the prevalence of risk of eating disorder among dancers, comparison of body composition and scores of questionnaires which are EAT-26, BAT and dieting behavior, as well as to study the relationship between eating attitude, body image concern, body composition and dieting behavior among dancers.

MATERIALS AND METHODS

Subjects: Female dancers (n = 23) from National Heitage and Art Culture Academy (ASWARA), Kuala Lumpur were recruited for this study which all of them are Degree and Diploma of Performing Art. While sample as a control subjects (n = 50) were students that recruited from MARA University of Technology (UiTM). Data were collected from 1st April 2011 to the end of May 2011. Simple random sampling was used as sampling design where both of the subjects were randomly chosen and they were volunteered to participate in this study.

Anthropometric: Body weight (kg), height (cm) and skinfold thickness which composed at the site of triceps (mm), abdomen (mm), suprailiac (mm) and thigh (mm) as well mid upper arm circumferences (cm) were measured to determine body mass index, BMI [weight (kg)/height (m)^2], percentage of fats, percentage of lean body weight, body density and arm muscle area. Body weight was measured by using Digital Weighing Scale SECA 813 to the nearest 0.1 kg and measuring height by using Body Meter SECA 206 to the nearest 0.1 cm. Besides that, in measuring mid upper arm circumferences, Circumferences Measure Tape SECA 201 was used and measured to the nearest 0.1 cm. In skinfold thickness measurement, Skinfold Caliper BETA/LANGE was used and measured to the nearest 0.1 cm.

EAT-26: Eating Attitude Test (EAT-26) questionnaire (Garner *et al*., 1982) were used in purpose to measure the symptoms of any characteristics of eating disorder and it was a combination of three subscale which are dieting scale, bulimia and food preoccupation scale and oral control scale. The score for question 1 until 25 are 3 = always, 2 = usually, 1 = often, 0 = sometimes, 0 = rarely and 0 = never. But for questions number 26, the score is 0 = always, 0 = usually, 0 = often, 1 = sometimes, 2 = rarely, 3 = never. By using a cut-off point of 20, subjects have high level concern about their diet, body weight, eating behaviour and having risk of eating disorder will scores more compared to healthy person.

BAT: Body Attitude Test (BAT) from Probst *et al*. (1995) is a set of questionnaire that measure subjects attitudes towards their own body (Preti *et al*., 2008). It was specially developed for female in order to assess their own body image experience and can differentiate either having eating disorder or not with the higher scores on test and negative attitudes (Probst *et al*., 1995). A 20 items scored in a scale 0 to 5 (0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = usually and 5 = always) were used for all questions except questions number 4 and 9 where the scores are vice versa. The highest score are 100 and the higher subject scores the higher their body dissatisfaction experience.

Dieting behaviour: Accompanying the EAT26, dieting behaviour questionnaire were used which it can discriminate the presence or absence of attitudes and behaviour towards eating of the subjects which it was associated with the risk of having eating disorder. The ten dieting behaviour questions were covered and assessed self-report binge eating, self-induced vomiting or taking any laxatives, taking diet pills, exercised, dieted, fasting, skipping meals in order to lose weight or keep from gaining weight. It also covered what subjects going to do about their weight, were they afraid of gaining weight and were they want to be as thin as possible. Frequency of these behaviour were used to estimate the presence of extreme body weight control and fear of gain weight.

Statistical analysis: All data obtained were coded and analyzed by using Statistical Package for Social Sciences (SPSS) version 17.0. The independent t-test was used to determine the mean difference of body composition and scores of the questionnaires between dancers and control subjects. Pearson's Coefficient of correlation also used to examine the relationship between the variables and Pearson's Chi Square was used to see the association of the categorical variables of dieting behaviour between dancers and control subjects. The level of significance difference or p-value was set to 0.05 together with the Confidential Interval (CI) at 95%.

RESULTS

Demographic data: The general characteristics for dancers and control subjects were shown in Table 1 with percentage and total of subjects for each criteria. The average age of dancers were 22 years old and control subjects were 19 years old. While the race of the subjects showed both of dancers and control group were mostly Malay with 52.17% (n = 12) and 96.00 (n = 48). The percentage for Chinese population among dancers were 39.13 (n = 9) and there was no Chinese population present among control group since the subjects selected only among students at MARA University of Technology only. On the religion distribution, most of the dancers and control group were Muslim; 47.83% (n = 11) and 94.00% (n = 47); and there were 21.74% (n = 5) of dancers and 6.00% (n = 3) control group were Christian.

Table 1: Distribution of general demographic data for both dancers and control subjects

	Subjects, % (n)	
Parameters	Dancers	Control subjects
Race		
Malay	52.17 (12)	96.00 (48)
Chinese	39.13 (9)	-
Others	8.69 (2)	04.00 (2)
Religion		
Muslim	47.83 (11)	94.00 (47)
Christian	21.74 (5)	06.00 (3)
Buddha	17.39 (4)	-
Others	13.04 (3)	-
Education level		
Diploma	73.91 (17)	94 (47)
Degree	26.08 (6)	06.00 (3)
Total family income		
≥RM 1000.00	30.43 (7)	30.00 (15)
RM 1001.00-RM 2000.00	4.35 (1)	30.00 (15)
RM 2001.00-RM 3000.00	39.13 (9)	10.00 (5)
RM 3001.00-RM 4000.00	13.04 (3)	20.00 (10)
≥RM 4001.00	13.04 (3)	10.00 (5)
Total family members		
≥3 person	8.69 (2)	08.00 (4)
4-6 person	65.22 (15)	42.00 (26)
7-10 person	26.09 (6)	36.00 (18)
≥11 person	-	04.00 (2)

Table 2: Prevalence of risk of eating disorder of samples with Mean±SD

	Percentage risk of eating disorder, % (n)			
Group	Risk ED[a]	Not Risk ED[b]	Mean±SD	p value
Dancers	21.74 (5)	78.26 (18)	15.70±11.811	0.042[a]
Control subjects	12.00 (6)	88.00 (44)	10.26±09.758	

Significant at $p<0.05$. [a]Risk of eating disorder, [b]Not risk of eating disorder

There were also only 17.39% (n = 4) of dancers were Buddha and 13.04% (n = 3) were categorized as others. Most of samples are diploma students with total family members in a range four to six people. While, in criteria of total family income, both samples have different family income background where most of dancers were in a range RM 2001.00-RM 3000.00 and control subjects in a range = RM 1000.00 and RM 1001.00-RM 2000.00.

Prevalence of risk of eating disorder: Study showed that dancers have high risk of eating disorder with 21.74% compared to control subjects which was 12.00%. There was significant difference between dancers and control subjects in scores of EAT26 when $p<0.05$ ($p = 0.042$) and Mean±SD for scores showed higher in dancers than control subjects (Table 2).

Body composition of dancers and control subjects: There were significant difference between group of dancers and control subjects in terms of percentage of fat with Mean±SD = 19.07±4.979

Table 3: Differences of body composition and questionnaires inventories between dancers and control subjects with Mean±SD, mean difference, t stats and p value

Variables	Dancers (n = 23) (Mean±SD)	Control subjects (n = 50) (Mean±SD)	Mean difference (95% CI)	t-stats	p-value
Body composition					
Height	154.66±05.016	155.55±04.349	-0.884 (-3.178, 1.409)	-0.769	0.445
Weight	048.24±04.875	050.75±08.653	-2.511 (-6.371, 1.349)	-1.297	0.199
BMI[a]	020.13±01.679	020.89±03.116	0.75 (-0.63, 2.14)	1.089	0.280
% fat	019.07±04.979	027.51±03.871	-8.44 (-10.570,-6.305)	7.089	0.000
% LBW[b]	080.09±04.144	072.84±04.700	-7.228 4.969, 9.526)	-6.034	0.000
AMA[c]	022.66±05.584	020.73±06.254	1.932 (-1.110, 4.973)	-1.266	0.210
BD[d]	001.06±00.011	001.04±00.021	0.019 (0.010, 0.029)	-4.170	0.000
EAT-26, BAT and dieting behaviour inventories					
EAT26[e]	015.70±11.811	010.26±09.758	05.436 (0.19, 10.679)	2.067	0.042
BAT[f]	044.52±15.635	028.66±16.750	15.862 (7.62, 24.11)	3.836	0.000
DB[g]	004.83±02.823	004.56±2.4510	00.266 (-1.026, 1.558)	0.411	0.683

Significant at p 0.05, [a]Body mass index, [b]% Lean body weight, [c]Arm muscle area, [d]Body density, [e]Eating attitude test-26, [f]Body attitude test, [g]Dieting behavior

for dancers and 27.51±3.871 for control subjects when the p-value was less than 0.05 (p value = 0.000) (Table 3). Besides that, percent of lean body weight also have mean significant difference when p value = 0.000 with Mean±SD for dancer 80.09±4.144 and 72.84±4.700 for control subjects. Both of percent fat and lean body weight showed that dancers group have low in body fat but high in free fat mass. Body density also showed a significant mean difference when p value was less than 0.05. However, although Body Mass Index (BMI), arm muscle area and body weight did not have significant mean difference, the dancers group still have low Mean±SD = 20.134±2.482 of BMI, high arm musce area 22.661±5.584 and low body weight 48.24±4.875.

Scores in EAT-26, BAT and dieting behaviour inventories: Scores of Eating Attitude Test (Eat26) questionnaires was calculated by total up all the scores for each questions and used of Likert-scale. By using the cut-off point of 20, subjects scores more than that have tendency to get risk of eating disorder.

Meanwhile, in Body Attitude Test (BAT), the higher the subjects scores, so the more subjects have experienced on body image concern.

Other than that, in dieting behaviour questionnaire which are an open-ended questions, 10 questions used to define the way the subjects choose daily to diet by using option of 'yes' or 'no' for each questions.

General Mean±SD of three sets of questionnaires were presented in Table 3. In Eat-26 scores, it showed significant mean difference when dancers group scores more although it did not beyond the cut-off point, the scores still higher than control subjects with p value = 0.042 and Mean±SD = 15.70±11.811 and 10.26±9.758. While scores for body attitude test also showed significant mean difference when dancers scores higher than control subjects with Mean±SD = 44.52±15.635 and 28.66±16.750. The higher the scores for BAT the higher the experience of body attitude among them. So, this result showed that dancers were more concern about their body image and appearance compared to control subjects. In spite of this, both of dancers and control subjects showed almost similar in scores of dieting behaviour where there is no significant mean difference when p more than 0.05 (p = 0.683).

Table 4: Pearson's correlation analysis in order to see the relationship between EAT 26, BAT and Dieting Behaviour for dancers and control subjects

	EAT 26[a]		BAT[b]	
Group	p value	r value	p value	r value
Dancers (n = 23)				
EAT 26[a]	-	-	-	-
BAT[b]	0.002*	0.606	-	-
Db[c]	0.016*	0.338	0.012*	0.515
Control subjects (n = 50)				
EAT 26[a]	-	-	-	-
BAT[b]	0.000*	0.575	-	-
Db[c]	0.016*	0.500	0.000**	0.479

*Pearson's p<0.05. **Pearson's p<0.01. [a]Eating attitude test-26, [b]Body attitude test, [c]Dieting behavior

Table 5: Percentage of subjects who scores on Body Attitude Test (BAT)

	Percentage of Subjects, % (n)	
Score on body attitude test	Dancers	Control subjects
0-20	-	32.00 (16)
21-40	52.17 (12)	52.00 (26)
41-60	30.43 (7)	10.00 (5)
61-80	17.39 (4)	6.00 (3)
81-100	-	-

Relationship of body attitude and dieting behaviour: There was a significant positive strong correlation between diet habits and their concerning of body image among dancers when $p<0.05$ ($p = 0.012$, $r = 0.515$) and control group had significant positive but fair correlation ($p = 0.000$, $r = 0.479$) (Table 4). Dancers group had high percentage when the scores increase; score 41 to 60 (30.43%) and score 61 to 80 (17.39%). The higher the score the higher subjects had experienced in body attitude concern (Table 5).

Relationship of eating attitude and body attitude: Result showed that dancers have a positive strong correlation between eating attitude and their body attitude when $p<0.05$ ($p = 0.002$, $r = 0.606$) (Table 4). It indicated that dancers were very concern about their body appearance, body figure and it affects their eating attitude by controlling their food intake.

Relationship of dieting behaviour and body composition: The relationship between dieting behaviour and body composition was tabulated in Table 6. Analysis towards dancers subjects showed there was significant ($p<0.05$), positive good correlation ($r = 0.614$) between dieting behaviour and Body Mass Index (BMI). So, the higher the BMI of oneself, the higher the preferences towards their body weight status. The same result also found among control subjects where there was significant ($p<0.05$), positive fair correlation ($r = 0.422$) between dieting behaviour and Body Mass Index (BMI). However, compared to dancers group, the control group showed there was significant ($p<0.05$), positive fair correlation ($r = 0.359$) between dieting behaviour and arm muscle area. It indicated that, the more the subjects scores on dieting behaviour the higher of the arm muscle area.

Table 6: Pearson's correlation analysis in order to see the relationship between body composition and EAT 26, BAT and dieting behaviour for dancers and control subjects

	EAT 26[a]		BAT[b]		Db[c]	
Group	p-value	r value	p-value	r value	p-value	r value
Dancers (n = 23)						
Body Mass Index (BMI)	0.470	-0.017	0.069	0.386	0.002	0.614
% Fats	0.168	-0.210	0.673	0.093	0.775	0.063
% Lean body weight	0.396	0.058	0.401	-0.184	0.647	-0.101
Arm muscle area	0.222	0.168	0.224	0.264	0.162	0.302
Body density	0.475	0.014	0.087	-0.365	0.199	-0.278
Control subjects (n = 50)						
Body Mass Index (BMI)	0.444	-0.020	0.009	0.366	0.002	0.422
% Fats	0.218	-0.112	0.191	0.188	0.165	0.199
% Lean body weight	0.180	-0.132	0.309	-0.147	0.208	-0.181
Arm muscle area	0.297	-0.077	0.094	0.240	0.011	0.359
Body density	0.145	-0.153	0.053	-0.275	0.109	-0.229

Pearson's $p<0.05$. [a]Eating Attitude Test-26, [b]Body attitude test, [c]Dieting behavior

Association of subjects with dieting behaviour inventories: On dieting behaviour questionnaires, 65.22% (n = 15) dancers were reported want to lose weight, 21.74% (n = 5) reported to stay the same weight, only 8.69% (n = 2) dancers want to gain weight and 4.35% (n = 1) dancers did not have intention to do about their weight.

Moreover, dancers have constantly thinking about weight and shape with 22 dancers, (95.65%) as against 39 control subjects (78.00%) (chi square = 3.57, df = 1, p = 0.059) (Table 7). There were significant difference where dancers used diet pills (p = 0.001), vomit and taken laxatives (p = 0.016) in their diet to maintain body weight. Besides that, dancers also reported tend to exercise (86.96%) and fasting (52.17%) in purpose to keep from gaining weight compared to control subjects that mostly exercised to maintain body weight (70.00%). Furthermore, there was a significant difference between subjects and intention to be thin when p = 0.020 and more than half of the dancers have strong wish to be thin as possible. Table 7 represent summarization of association between dieting behaviour and both dancers as well as control subjects.

DISCUSSION

Prevalence of risk of eating disorder: Dancers group (21.74%) were significantly higher p = 0.042 than the control group (12.00%) and it's a almost quarter of the sample have risk in developing ED. This result was supported by the previous study done among fashion models showed that high prevalence of ED were reported (Preti *et al*., 2008). While, in a study done by (Torres-McGehee *et al*., 2009), the prevalence among dance subjects was more than quarter of the sample which was 25.5%.

Body composition of dancers and control subjects: It is important to measure the body composition because not only it can predict the healthy status of individual but also can determine how much the fats or muscles had gained or lost (Shah and Bilal, 2009). The findings showed that dancers have mean body weight, Body Mass Index (BMI) and percentage of fat less than control subjects since they have to control body weight as required in order for them to be physically active in any dancing movement. Calculation of the BMI itself can predict how much body fatness stored

Table 7: Pearson's Chi Square analysis distribution of dieting behaviour for both dancers and control subjects

	n (%)			
Attributes	Dancers (n = 23)	Control subjects (n = 50)	χ^2 statistics (df)	p-value
Constantly think about weight and shape				
Yes	22 (95.65)	039 (78.00)	03.574 (1)	0.059
No	1 (4.35)	011 (22.00)		
Afraid of weight gain				
Yes	18 (78.26)	035 (70.00)	00.540 (1)	0.462
No	5 (21.74)	015 (30.00)		
Strong wish to be thin				
Yes	15 (65.22)	018 (36.00)	05.429 (1)	0.020
No	8 (34.78)	036 (64.00)		
Dieted				
Yes	11 (47.83)	019 (38.00)	00.628 (1)	0.428
No	12 (52.17)	031 (62.00)		
Exercised				
Yes	20 (86.96)	035 (70.00)	02.436 (1)	0.118
No	3 (13.04)	015 (30.00)		
Vomit and taken laxatives				
Yes	4 (17.39)	001 (02.00)	05.849 (1)	0.016
No	19 (82.61)	049 (98.00)		
Diet pills				
Yes	5 (21.74)	000 (00.00)	11.669 (1)	0.001
No	18 (78.26)	50 (100.00)		
Fasting				
Yes	7 (30.43)	023 (46.00)	01.577 (1)	0.209
No	16 (69.57)	027 (54.00)		
Skipping meals				
Yes	12 (52.17)	017 (34.00)	02.173 (1)	0.140
No	11 (47.83)	033 (66.00)		

Pearson's $p<0.05$

in the body (Paknahad *et al*., 2008). Torres-McGehee *et al*. (2009) also found that the group of at risk eating disorder which is dancers have low percentage of fats compared to not at risk group.

As similar with body composition characteristics of anorexia nervosa patients, dancers that classified as a group to get eating disorder will have the same body composition figure with them.

Scores in EAT-26, BAT and dieting behaviour inventories: In all questionnaires, dancers scores more and showed significant mean difference with control subjects. It signify that dancers were concern about their eating and diet habits, body image and really cautious about body weight, changes in body weight, their appearance and some of them already get engaged with unhealthy diet habits. The previous research towards nursing, cosmetic, high school, medical students, fashion models, figure skaters, gymnasts and dancers showed that dancers was the third group that scores higher in eating attitude test after gymnasts and skaters (Janout and Janoutova, 2004). Whereas subjects scores low in EAT26 does not mean that they are not in risky group but diagnosis from physician or professional are more accurate.

Relationship of body attitude and dieting behaviour: Body image is a broad construct that refers to visual images of attitudes toward the body (Torres-McGehee *et al*., 2009). Dancers

were very concern on how they were looked, appearance, image and shape. In a study done by Ravaldi *et al*. (2006) reported that female ballet dancers were over concerned about their leaness and performance and affect the diet habits. Conversely, control subjects were less likely for body dissatisfaction. In addition, factor that may contribute to body dissatisfaction is their suite entire which may slim-fit entire that can expose their body figure and affect their appearance (Torres-McGehee *et al*., 2009). Hausenblas and Downs (2001) stated that greater body image disturbance can be due to three factors which are negative behaviour like purging, excessive exercise and dieting; negative attitude such as depression and lower self esteem and cognition like distorted thought processes.

Relationship of eating attitude and body attitude: Over control in eating behaviour may contribute to body image distortion and later they may suffer with stressed, feeling of as shamed, low self-esteem and negative self worth towards their physical body appearance (Reiss, 2001). Eating habits also influenced the development of disease where it can be averted by enhancing the nutritional status and practices a healthy eating (Musingo and Wang, 2009). Based on the result, the pressure about body image and eating attitude was greater among dancers because they may have high expectation on physical appearance compared to control subjects that may not too much control on diet and eating habits. Ozgen and Kisac (2009) also showed the same result where ballerinas were the population that much more concern about body shape. While, in separate study among lean people showed no significant relationship exist between eating attitude and body image concern (Akdevelioglu and Gumus, 2010) and it indicates that lean people were less concern compared to dancers.

Besides that, eating and dieting habits, as well as body image perception among dancers may be influenced by people around that close and have a strong affection. Peer group, family, or relatives were the people that may impact the behaviour of the individual. So that, not only dancers will have concequences of body image, but also lean peole around. Yet, the correlation was still higher among high risk of eating disorder group which were dancers.

Relationship of dieting behaviour and body composition: Analysis the relation between dieting behaviour and Body Mass Index (BMI) showed significant good correlation which indicated that subjects with higher BMI are prone to engage in unhealthy dieting behaviours. It is because as the subjects more restrict the diet, the more the subjects become obsess with the foods and they craving for the foods (Smith and Kovatch, 2011). Subjects tend to extreme hunger, stressed and feel any diet end-up with no benefits, but when they start to eat again, then it starts to feel guilty and disgusted about the foods . That was the reason why subjects tend to have high body mass index due to uncontrol of eating and inappropriate diet habits. As reported in reviewed article by Noorduin and Vandereycken (2003), some individual who practices binge or purging activity may have body mass index over than normal and can achieved obese. Subjects can be suffered from bulimia or binge eating where both of these condition involve in eating too much food and they will feel guilty afterward.

Association of subjects with dieting behaviour inventories: Dancers group tend to exercise and skip meals in order to maintain or keep gaining weight. But the control subjects tend to exercise only to maintain their weight. Yet, there are small percentage of dancers practicing inappropriate methods to maintain or lose weight such as using diet pills, taken laxatives and

involved in purging activity like vomitting. This behaviour will reflects their psychology on obsessing fear in any change in their body weight and appearance. However, both subjects were worried about their weight and shape as well as afraid of gaining weight. This result also indicated that not only dancers have risk on eating disorder but also the control subjects which are lean people but in a very small percentage. It is supported in a study by Chin and Nasir (2009) showed that lean people also concerned about weight and shape since they skipped their breakfast in intention to lose weight.

The previous study that supports the result above was by Ozgen and Kisac (2009) towards ballerinas and ballet dancers and they found that most of ballerinas were more concern about their dieting, afraid of gaining weight, have strong desire to be thin and slim, as well as they tried to vomit as a result for lose weight. While, in another study by Janout and Janoutova (2004) whereby their study towards various groups included dancers has found approximately most of the subjects used method of exercise (13%) as dieting habits as well as fasting (7%) or combination of both (19%) in purpose to maintain body weight. And this study also indicate that most of subjects have interest to lose weight and have desire to thin as possible.

CONCLUSION

This study showed higher prevalence on the risk of developing eating disorder and very concern about their physical appearance, body figure and it will reflects how they control with food intake and continuously affects their eating habits. Dancers tend to exercise and skipping meals as methods to lose weight, however there were some of them practiced purging, taking diet pills and laxatives and skipping meals which actually unhealthy habits in maintaining body weight.

ACKNOWLEDGMENT

The author would like to thank all the parties that involved in this study included National Heritage and Art Culture Academy (ASWARA), Kuala Lumpur, lecturers and also all participants for their involvement, cooperation and support in this research.

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