



## Research review

# Body image and eating disorders amongst Japanese adolescents. A review of the literature

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## ARTICLE INFO

## Article history:

Received 8 October 2009

Accepted 16 November 2009

## Keywords:

Eating disorders

Adolescents

Body image

Body weight

Prevalence

## ABSTRACT

This review describes the prevalence of eating disorders and disordered eating behaviors as well as factors influencing body image disturbance amongst Japanese adolescents and compares the prevalence and trends with those of Westernized countries. Although eating disorders have been previously regarded as peculiar to Western society, they are now a more global issue with reports of non-Western countries including Japan having increasing rates of eating disorders. As the aetiology of eating disorders is related to societal norms, culture and ethnicity, their study requires an understanding of body image disturbance within different cultural contexts. Although considered less prevalent than in the West, Japan has an early history of eating disorder research and trends outlined in this review suggest that, as in Western countries the interest in, and study of eating disorders in Japan has increased during the 1980s. The prevalence of eating disorders in Japan based on available reviews, epidemiological studies and clinical reports ranges from 0.025% to 0.2% for AN and from 1.9% to 2.9% for BN. Studies suggest that the prevalence of eating disorders has increased significantly during the past two decades but the prevalence is still quite low compared to those in Western countries. Strategies for culturally appropriate prevention are discussed.

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## Introduction

This review will describe the prevalence of body image and eating behaviors amongst Japanese adolescents with a particular focus on prevalence in Japan, public health problems related to body image disturbance and possible factors influencing body image disturbance amongst adolescents living in Japanese society.

Eating disorders, including anorexia nervosa (AN), bulimia nervosa (BN), binge eating disorder (BED) and eating disorders otherwise not specified (EDNOS) are major and serious health problems related to body image disturbance amongst adolescents (Thompson & Smolak, 2002). In Western countries, the rates of AN and BN amongst young females are reported to be 0.3% and 1%, respectively, in the general population (Howk & van Hoken, 2003).

Although eating disorders have been previously regarded as peculiar to Western society, they are now considered a more global issue with some researchers recently confirming that non-Western countries including Japan, China, Taiwan, Hong Kong, the Republic of Korea and Singapore (Keel & Klump, 2003) have increasing rates of eating disorders (Mellor et al., 2009). As the aetiology of eating disorders is strongly related to societal norms, culture and ethnicity (Keel & Klump, 2003), their study requires an understanding of the issues around body image disturbance within different cultural contexts.

In the current review, we systematically searched the major databases in all languages to try to identify all articles reporting any relevant Japanese studies. The databases included in our search included psychARTICLES, psychoINFO, EBM Reviews, Medline, Pre Medline, Psych Info, Current Contents, ERIC and Web of Knowledge.

In order to search the Japanese databases we used CiNii (National Institute of Informatics Scholarly and Academic Information Navigator) to search for Japanese journals. Keywords in our searches included eating disorders, body image, body dissatisfaction, Japan or Japanese, and adolescents or children.

## Early reports of eating disorders from Japan

Very early reports of eating disorders were clearly described in Japan in the medical literature dating as far back as the late-1600s

(Kagawa, cited in Nogami, 1997) and these are nicely summarized in a review by Nogami (1997).

In Nogami's review, Shutoku Kagawa (1683–1755) describes patients with a "psychic illness" who would not eat regular rice, but only small amounts of food such as chestnuts or tofu for several days, months, or sometimes for more than a year. Kagawa wrote that 'they would always vomit if they were forced to eat' and they showed bradycardia even though they were not extremely emaciated.

As further reported in the review by Nogami (1997), Kagawa saw 30 patients; most were women, with male patients numbering only two or three.

Later, observations from Japanese researchers Sueniatsu (1985) and Shiniosaka (1986) agree that Kagawa's description of "Fushoku-byo" resembles the clinical picture of anorexia nervosa today. In a later description, Kagawa also describes the case of a nun who avoided eating for a long period—a close resemblance to the Catholic saints and 'miracle maidens' of Western countries described by Rudolph Bell, in his book *Holy Anorexia* (Bell, 1985).

## Research in the late 20th century

Although considered less in number than in the West, Japan does have a well documented history of eating disorder research dating back to the 1980s. Following the research trends of Western countries the interest in and study of eating disorders in Japan increased during the 1980s (Nogami, 1997) as shown in Table 1. The prevalence of eating disorders in Japan based on reviews, epidemiological studies and clinical reports is shown in Table 1 with the range of rates for eating disorders ranging approximately from 0.025% to 0.2% for AN and from 1.9% to 2.9% for BN.

Studies which are described and summarized chronologically in Table 1 suggest that the prevalence of eating disorders has been increasing significantly during the past three decades but they also appear to continue to be quite low compared to those in Western countries (Nogami, 1997; Tsai, 2000).

There are, however, limitations around these studies due to methodological shortcomings. That is, there has been no two-stage accurate assessment studies with which to identify the rates of AN and BN amongst Japanese population groups like those that have

**Table 1**

The estimated community prevalence of eating disorders in the Japanese female population between 1981 and 2004.

Study	Region/City	Age	Sample	Prevalence (per 100,000)	
				AN	BN
Mizuno (1981)	Fukui	12–15	12,179	8.2	–
Nakai (1983)	Kyoto	12–15	5,005	239.8	–
Mizushima (1984)	Ishikawa	12–15	21,153	33.1	–
Tomita (1985)	Nagoya	12–15	13,762	65.4	–
Ohzeki (1985)	Sanin	12–15	18,040	83.1	–
Miuno (1983)	Fukui	15–18	12,674	39.5	–
Nakai (1983)	Kyoto	15–18	8,491	23.6	–
Nakai (1983)	Kyoto	15–18	6,476	139	–
Azuma (1984)	Kyoto	15–18	19,250	145.5	–
Mizushima (1984)	Ishikawa	15–18	15,250	59	–
Nakagawa (1984)	Sapporo	15–18	13,009	23.1	–
Tomita (1985)	Nagoya	15–18	11,084	117.3	–
Tomita (1985)	Aichi	15–18	73,553	10.9	–
Suematsu (1985)	Tokyo	15–18	1,799	55.6	–
Suematsu (1985)	Ohita	15–18	5,101	78.4	–
Kiriike (1988)	Yamanashi	18–21	456	–	2.9%
Nakamura (1999)	Niigata	General	130 hospitals	4.79	1.02
		15–29	1,326 clinics	17.1	5.79
Kuboki (1996)	–	General (including men)	5,283 medical institutions	3.6–4.5	1.3–2.5
		General		6.3–9.7	3.2–4.3
		13–29		25.2–30.7	12.8–13.6
Watanabe (2004)	–	13–18	–	2.3%	–

–: no available data.

been conducted in Western countries (Cummins, Simmons, & Zane, 2005). In addition, there are insufficient longitudinal data to determine the prevalence of eating disorders precisely at the present time. Also, the subjects were chosen from limited living areas and around half of research was conducted in rural areas which have been shown to have a reduced prevalence of eating problems and poor body image perceptions compared to urbanised areas (van Son, van Hoeken, Bartelds, van Furth, & Hoek, 2006).

Other limitations are related to the known systematic underestimation of the prevalence due to lack of reporting and treatment. Patients suffering eating disorders are less likely to seek hospitalisation (Kuboki, Nomura, Ide, Suematsu, & Araki, 1996) and are less likely to participate in eating disorders research (Beglin & Fairburn, 1992). Recent Japanese data as outlined in Table 2 shows the prevalence of eating disorders in female adolescents aged 13–18 years is estimated at 2.3% and that two-thirds of those who had eating disorders did not seek hospitalisation (Watanabe et al., 2004). One explanation for this trend is that the access to treatment programs for eating disorders in Japan is also much lower than those of Western countries (Takagi & Suzuki, 2001).

Consideration of this research indicates that the prevalence of eating disorders in Japan is likely to be higher than that reported and the prevalence in non-clinical settings and of subclinical symptoms is high. Some researchers have also warned that the rate of eating disorders for the Japanese population is increasing and that Japanese females are at a particularly high risk of eating disorders as indicated by the decreasing average BMI amongst Japanese females which decreased significantly from 1960 to 1995 (Kiriike, Nagata, Sirata, & Yamamoto, 1998; Nogami, 1997).

#### *Eating disorder symptoms in non-clinical settings*

Although there have been fewer studies overall on the diagnosis of clinical eating disorders amongst Japanese adolescents compared with those undertaken in Western countries, a number of studies investigating eating disorder symptoms have been published over the last two decades and these have provided some notable findings.

These are summarized in Table 2. Most of these have been based on studies using self-questionnaires, such as the eating attitude test-26 (EAT-26), eating disorder inventory (EDI), or original questionnaires developed by the researchers. Japanese versions of EAT-26 and EDI have been developed and measurements confirmed for validity and reliability (Shimura, Horie, Kumano, Sakano, & Suematsu, 2003), although measurements have been questioned on its validity for adolescent girls of non-White ethnicity (Smolak & Striegel-Moore, 2001). Most of these studies have been focused on the female population in non-clinical settings.

Mukai, Crago, and Shisslak (1994) reported that 35% of participants who are female high school students scored in the clinical range of the EAT-26 (Mukai et al., 1994). Mukai and

McCloskey (1996) also showed that the rates of participants who scored above the diagnosable score for the ChEAT-26 (the children's form of the 26-item eating attitudes test) were 14.1% amongst children aged 8–10 years. Importantly results from these studies directed attention to eating disorders amongst Japanese adolescents and recognised them as a public health concern.

Subsequently, further research has been conducted to gauge the prevalence of eating disorders in non-clinical settings. Most of studies showed that the rates of eating disorder symptoms amongst Japanese adolescents were from 5% to 10% in females (Makino, Hashizume, Yasushi, Tsuboi, & Dennerstein, 2006; Nakamura et al., 1999; Yamatsuta & Nomura, 2005). Results, however, are not consistent with the previous study by Mukai et al. (1994), which was quite high. The rates of eating disorder symptoms in males were thought to be lower (2–3%) than that of females (Nishizawa et al., 2003; Yamamoto, Uemoto, Shinfuku, & Maeda, 2007).

These studies generally show a lower rate of eating disorders than in Western countries. They do, however, show that rates for subclinical eating disorders were much higher than those in clinical settings in Japan (Nishizawa et al., 2003). This implies that there could be a lot of adolescents with subclinical eating disorders as a potential risk group, which cannot be detected by these questionnaires only. Indeed, EAT-26 was developed to detect AN rather than BN and BED. Although BN in Japan has been looked at in studies, the precise changes in rate for it, and the reasons for the increase have not been attributed.

#### *Disordered eating behaviors in Japan*

Disordered eating and exercising behaviors such as skipping meals, obsessive exercise, vomiting, and using laxatives or diuretics have been recognised as subclinical symptoms of eating disorders and are recognised predictors of the onset of the resulting clinical range of eating disorders (Stice, Davis, Miller, & Marti, 2008).

A summary of available studies from Japan spanning the years from 1994 to 2006 is presented in Table 3. Studies about unhealthy eating behaviors in Japan have been conducted using self-administrated questionnaires to assess the prevalence of weight loss and dieting experiences. According to the National Nutrition Survey (2004) which was undertaken in 2002 amongst 15–19 year olds, the rate of those who are currently trying to lose weight was 64.1% in females, which was the highest across all age groups, while the rate was 24.7% in males. In addition, amongst the same aged female group, 68.6% and 41% of those categorised as normal and underweight, respectively, were trying to lose weight (Ministry of Health Labour & Welfare, 2004). Although the number of females who undertook a diet regime spanned all age groups, diet behaviors by those who are underweight were significantly found within the group of 15–19 years of age.

**Table 2**

Studies of diagnosed clinical eating disorder prevalence using the EAT-26 amongst Japanese children, adolescents and young adults between 1994 and 2008.

Study	Sample	Age	Mean score of EAT-26	Rate of clinical eating disorders
Mukai et al. (1994)	197 (females)	18.9 (mean)	16.99	35%
Mukai (1996)	70 (girls)	8–11	–	14%
Mukai et al. (1998)	171 (females)	20.2 (mean)	9.8	–
Nakamura et al. (1999)	2685 (females)	16.3 (mean)	–	5.40%
Nakamura et al. (1999)	406 (females)	20–39 (mean)	4.3	1.50%
Nishizawa et al. (2003)	1128 (both)	15–17	–	2.4% (boys), 11.2% (girls)
Yamatsuta and Nomura (2005)	698 (females)	Undergraduate	–	7.50%
Yamamoto (2006)	263 (boys), 220 (girls)	13.9 (mean)	–	3.2% (boys), 7.1% (girls)
Makino et al. (2006)	7812 (females)	19.6	–	5.10%
Kayano et al. (2008)	106 (males), 305 (females)	18.73 (males), 18.68 (females)	6.5 (males), 9.47 (females)	–

–: no data provided.

**Table 3**

Prevalence of dieting, disordered eating and unhealthy eating behaviors in Japanese adolescents and young adults between 1994 and 2006.

Study	Sample	Age	Major findings
Mukai et al. (1994)	197 (females)	18.9 (mean)	60% of females had experiences of occasional binge eating. 15% of females occasionally vomited.
Nakamura et al. (1999)	406 (females)	27.9 (mean)	42.4% (dieting experiences), 5.9% (fasting experiences), 14.3% (used diet pills), 10.3% (laxative abuse), 3.7% (diuretic abuse).
Kaneko et al. (1999)	709 (boys), 923 (girls)	10–17	22% of 10-year-old girls and 37% of 17-year-old girls had dieting experiences, whereas 20% of boys at each age had dieting experiences. 32% of girls who were thin and 14% of girls who were very thin were also trying to lose weight.
National Nutrition Survey in 2002 (2004)	301 (males), 314 (females)	15–19	24.1% and 64.1% of males and females were trying to lose weight regardless of their current weight. 40% of females who were underweight were trying to lose weight.
Suka et al. (2006)	2452 (boys), 2792 (girls)	12–13	5.7% and 17.3% of boys and girls had dieting experiences. Dieting behaviors were associated with their body perceptions.

Unhealthy dieting behaviors appear to start in Japan in early adolescence. Some research has shown that around 20% of 10 years old girls and boys had already undertaken dieting experiences (Kaneko, Kiriike, Ikenaga, Miyawaki, & Yamagami, 1999; Suka et al., 2006). The rates for adolescents who had undertaken dieting behaviors also increased as they got older (Kaneko et al., 1999).

Some studies have investigated unhealthy eating behaviors. Mukai et al. (1994) pointed out that 60% of female participants admitted to having at least sometimes engaged in a binge eating and 15% of them answered that they vomit occasionally. Nakamura et al. (1999) showed that from a sample of 406 participants, 42.4% had dieting experiences and 5.9% had fasting experiences. In regard to the use of laxatives, diet pills and diuretics, 14.3%, 10.3%, 3.7% of them, respectively, have used these ways to lose weight (Nakamura et al., 1999).

The results from these studies, particularly amongst young adolescents have been and are still inconsistent, mainly due to differences of instruments and sampling. There has been little study on unhealthy eating behaviors amongst males. High rates of unhealthy eating behaviors across the various studies indicate that there is a need to address these behaviors to prevent the onset of widespread severe eating disorders across this group.

#### *Obesity in Japan as an influence on body image and eating disorders*

Obesity is one of the most prominent and popular issues in the media in developed societies and the issue also receives a lot of attention in Japan. From a simplistic clinical perspective, becoming obese occurs when energy intake exceeds energy consumption, but the problems around obesity are multi-causal and complex. Binge eating disorder may account for a significant proportion of obesity cases and hence, obesity is considered a potential risk factor for acquiring eating disorders and vice versa (Darby, Hay, Mond, Rodgers, & Owen, 2007). Dieting is known to predict weight gain in teenaged girls (Neumark-Sztainer, Wall, Haines, Story, & Eisenberg, 2007).

Research findings have focused public attention on obesity in Japan through health promotion campaigns. According to the National Health and Nutrition Survey in Japan (2007), amongst Japanese populations aged over 20 years, the rate of obesity in males and females was 30.4 and 20.2, respectively. Comparing this to the rate of 20 years prior, the rate of obesity particularly in the male population has increased significantly (Ministry of Health Labour and Welfare, 2008). This trend may place an added focus upon weight issues and may precipitate or worsen body image concerns and the tendency towards eating disorders.

Interestingly, although many health professionals in Japan have been concerned about rates of obesity particularly amongst males, the prevalence in the female population has actually been decreasing (Hayashi, Takimoto, Yoshita, & Yoshiike, 2006) with

the number of underweight females increasing significantly in the 20–39 year age group. The prevalence of underweight in females in their 20s was 25.2% and this proportion of underweight has increased continually in the past 20 years (Ministry of Health Labour and Welfare, 2008). It is thought that many young females tend to be thinner due to an extreme desire for thinness and dieting behaviors and because they have a very different ideal body image from young males (Hayashi et al., 2006; Takimoto, Yoshiike, Kaneda, & Yoshita, 2004).

Unfortunately, in Japan, adolescents aged 5–17 years are not included in the National Health and Nutrition survey and BMI is not used to assess fatness in this age group. Instead, percent excess overweight has been used as a measure of fatness. It is therefore difficult to compare how the prevalence of obesity has changed across the generations. Due to the inconsistent means of assessment, the prevalence of obesity amongst school children in Japan has been significantly underestimated (Inokuchi, Matsuo, Takayama, & Hasegawa, 2009). This suggested underestimation has been used to arrive at inaccurate comparisons suggesting that Japanese adolescents are relatively thin compared to other countries (Murata, 2000).

Research studies conducted in Japan also suggest that normal weight amongst young adolescents has also gradually been getting lower over the last two decades. The rate has changed from 64.0% to 57.0% and from 62.1% to 56.6% in males and females in these 15 years (Ministry of Health Labour & Welfare, 2004). The rates for “overweight and obesity” and “thin and too thin” are increasing. This suggests a tendency towards the two extremities of weight and a polarisation in adolescents’ body shape that in turn indicates that current health education programs and campaigns are not working for this group.

In summary, eating disorders, unhealthy eating behaviors and obesity can be said to be common and increasingly prevalent health problems amongst Japanese adolescents and these issues need to be considered as a priority for educational programs to improve body image and related problems amongst Japanese adolescents.

#### *Body image disturbance in Japan*

Body image disturbance has grown in prevalence and as such is now a major threat to adolescent health in Westernised countries worldwide (Paxton, 2000). Of the many aspects of body image disturbance, body dissatisfaction is a particular target issue for adolescent health practitioners with approximately 60% of females and 30% males in the USA identified as sufferers (Neumark-Sztainer, Story, Hannan, Perry, & Irving, 2002). Adolescents who have body dissatisfaction typically engage in unhealthy behaviors, such as restrained diet, use of diet pills and obsessive exercise. These are also known predictors for being overweight or obese, and

for eating disorders such as anorexia nervosa and bulimia (Littleton & Ollendick, 2003). In addition, body dissatisfaction is also linked with mental disorders including depression and anxiety amongst this group (Stice & Whitenton, 2002).

Body image research, which began in the 1980s, has dramatically increased in-line with the growing awareness a negative body image has as one of the key factors contributing to eating disorders (Grogan, 2008). A substantial number of these studies show that the type and degree of body image disturbance varies according to factors, such as gender, age, ethnicity, peers, family, personal experiences and socio-cultural influences (O'Dea, 2008; Ricciardelli & McCabe, 2003; Stice & Whitenton, 2002). These studies suggest that the risk is greatest amongst women within the Western cultural context (Pate, Pumariega, Hester, & Garner, 1992) and perhaps less so for those in a non-Western context, though this outcome is due more to lack of relevant studies rather than any research conclusions.

#### *Body image studies in Japan*

A summary of the findings from body image studies in Japan is given in Table 4. Young Japanese women of all weight categories tend to overestimate their body image, whereas self-evaluation in males was generally accurate (Ministry of Health Labour and Welfare, 2004; Yamamoto et al., 2007). Studies summarized in Table 4 show that 41% and 68% of Japanese female adolescents aged 6–13 years and 16–18 years, respectively, had negative body image perception and high desire for thinness, regardless of their actual weight (Ohtahara, Ohzeki, Hanaki, Motozumi, & Shiraki, 1993). Consistent with the findings by Ohtahara et al. (1993), Kaneko et al. (1999) also report similar findings, that many Japanese girls had weight and shape concerns. Similarly, as this trend of overestimation has grown in most female age groups since 1998, it is considered that body image perception amongst Japanese females has become distorted (Hayashi et al., 2006). Consistent with the findings of these studies of a distorted body image amongst Japanese females, groups of underweight girls, normal girls and normal weight boys tended to regard their actual

physiques as rather broad, demonstrating that many girls are excessively preoccupied with thinness (Nishizawa et al., 2003).

Literature tends to confirm that a significant number of Japanese adolescents have some degree of body image disturbance from early adolescence and in particular, girls are at an unusually high risk. Ohtahara et al. (1993) (Table 4) found that 30% of girls aged 6 years showed distorted body image perception, body dissatisfaction and a desire for a thin ideal. According to Suka et al. (2006), girls aged 10–17 years perceived themselves as average or too fat (60.9%), wanted to be thinner (24.5%) and had tried dieting (7.5%). Boys showed lower rate across all of these three categories. Interestingly, those who perceive themselves as fat are not always consistent with those who are actually overweight, particularly amongst girls.

It is notable that across all the cited research most studies reporting on cultural influences on female body image disturbance and there are few studies about male body image concerns. In a review of studies about the role of ethnicity and culture in body image and disordered eating amongst males, Ricciardelli, McCabe, Williams, and Thompson (2007) reported that evidence on Asian male body image concerns was inconsistent and still unclear.

In Japan, Ohtahara et al. (1993) reported that male adolescents want to gain weight. Suka et al. (2006) found that body satisfaction in males increased due to gained muscularity as they became older. In addition, Kagawa et al. (2007) found that males tend to underestimate their body weight and that they want to be bigger, suggesting that current results may not accurately reflect body dissatisfaction, as may young males are also known to be obsessed with exercise and unhealthy eating behaviors (O'Dea & Yager, 2006). The underestimation of body shape and size and subsequent body dissatisfaction in Japanese males therefore need to be further explored to examine these phenomena from a cultural perspective.

There are some limitations of body image studies in Japan. Although some researchers reported similar overall results, the use of various and inconsistent instruments, limits the comparison of the results. Moreover, most of the published Japanese studies used self-reported weight and height to calculate BMI, which has been found to be inaccurate in some cases (Urata, Fukuyama, & Tahara,

**Table 4**

A summary of findings from body image studies conducted among young males and females in Japan between 1993 and 2007.

Study	Sample	Age	Major findings
Ohtahara et al. (1993)	130 (boys), 125 (girls)	6–18	41% and 68% of the girls in elementary school and high school, respectively, perceived their ideal weight to be less than the normal weight. Most boys were likely to want to gain weight.
Kaneko et al. (1999)	709 (boys), 923 (girls)	10–17	48% of 10-year-old girls and 84% of 17-year-old girls described themselves as “fat” or “too fat”. 22% of 10-year-old girls and 37% of 17-year-old girls had dieting experiences, whereas only 20% of boys at each age had dieting experiences.
Kowner (2002)	273 (males), 332 (females)	20 (mean)	Japanese showed similar patterns for body esteem to other cultural groups, but the score was lower than previous studies in other cultural contexts. Japanese males had higher positive body esteem score than females.
Nishizawa et al. (2003)	1128 (both)	15–17	Girls showed greater desire for thinness than boys. Desire for thinness and eating problems were strongly correlated in both boys and girls.
Kowner (2004)	143 (males), 120 (females)	20.7 (mean)	Japanese young people had lower body satisfaction compared to that of other countries.
National Nutrition Survey in 2002 (2004)	301 (males), 314 (females)	15–19	70.9% and 17.9% of females who were “normal weight” and “underweight” perceived themselves as “fat”. Authors report that the percentage has significantly increased since 1998. 24.1% and 64.1% of males and females were trying to lose weight regardless of their current weight. 40% of females who are underweight were trying to lose weight.
Suka et al. (2006)	2452 (boys), 2792 (girls)	12–13	34.2% of girls described themselves as fat. 58.0% of girls showed a desire for thinness. These percentages were significantly higher than those of boys. Boys tend to have a positive body image as they get older, whereas girls tend to have a negative body image.
Yamamoto et al. (2007)	263 (boys), 220 (girls)	13.9 (mean)	7% of girls and 3% of boys showed clear indications of abnormal eating behavior. Girls had a significant gap between current body image and ideal body image, while boys did not have a significant gap between them.
Kagawa et al. (2007)	84 (males), 139 (females)	20.5 (mean)	Females showed a significantly greater desire for thinness than males. Females tended to overestimate their body shape, whereas males tended to underestimate their body shape.

**Table 5**  
Cross-cultural comparative studies of body image amongst Japanese young people and those from other countries.

Study	Sample (Japanese)	Age	Major findings
Saito et al. (1997) (comparison with Australians)	138 (males), 130 (females)	Undergraduate	Ideal self-image of Japanese males was significantly lower than that of Australian males. Japanese females were more likely to describe themselves as bigger than Australian females.
Mukai et al. (1998) (comparison with Americans)	171 (females)	20.2 (mean)	Japanese females showed greater body dissatisfaction compared to that of American females. BMI was not a significant predictor of eating disorders for Japanese females. The need for social approval predicted eating disorders in Japanese females.
Yates et al. (2004) (comparison with White, African-American, Chinese, Hawaiian)	68 (males), 87 (females)	Undergraduate	BMI was highly correlated with body and self-satisfaction, but there were significant ethnic differences in body image. Japanese females were highly dissatisfied with their body and self although they were relatively small.
Shih and Kubo (2005) (comparative study with Taiwan)	144 (females)	20.2 (mean)	Japanese females showed lower body satisfaction than Taiwanese females.
Wardle et al. (2006) (comparison amongst 22 countries)	(18,512 participants)	17–30	Perception of being overweight and attempts to lose weight were highest amongst Asian participants regardless of the current body weight. Japanese showed the highest prevalence of perceived overweight.
Kayano et al. (2008) (comparison with Indian, Omani, Euro-American, Filipino)	106 (males), 305 (females)	18.73 (males), 18.68 (females)	There were cultural differences in eating attitudes and body image perceptions.

2001). The appropriate instruments need to be standardized to accurately examine body image amongst Japanese adolescents. In addition, the emergence of a relationship between body image disturbance and eating related problems is not reported. Further studies are required to confirm the findings from studies within Japanese adolescents and contrast with those conducted in Western countries.

#### *Comparative studies about body image disturbance*

With the high emergence of eating related problems, the recognition towards cultural difference of body image has been increasing dramatically as each culture has different idea of body image (Grogan, 2008; Smolak & Striegel-Moore, 2001). There is a need for additional studies to differentiate between different cultural groups amongst Asians, which is rarely done (Ricciardelli et al., 2007). Although studies conducted amongst the Japanese population are still few, some comparative studies have been conducted between Japanese participants and Asian populations or those from other countries and these are summarized in Table 5.

Although a thin ideal body image has been confirmed mainly within Westernized Caucasian females, there were no cultural differences of body shape perception and ideal body shape for males and females amongst university students in Australia with Northern European, Southern European and Asian background (O'Dea, 1999). In addition, this Australian study found that amongst underweight young women there was no cultural difference in body size preferences with most desiring a slim ideal and 42% desiring weight loss (O'Dea, 1998). These results confirm that young women living in Western countries aspire to the thin ideal regardless of their cultural background.

In the study conducted by O'Dea (1999), Asian males and females had significantly higher rates of underweight than participants from Caucasian, Northern European or other backgrounds (28.1% and 55.2%). Interestingly, Asian males and females wanted to be bigger compared to Europeans. Considering that the participants were living in the same cultural settings, the results also imply that Asian students are more susceptible to body image concerns than their European peers (O'Dea, 1999).

Saito, O'Dea, O'Brien, and Tazaki (1997) showed that Japanese female students had a significantly bigger body image discrepancy between their actual-self and their ideal-self when compared to Caucasian female students in Australia (Saito et al., 1997). Although there was a difference in male body image between

Japanese students and Australian students, the results were not considered significant as their perceptions reflected their actual body shape and analysis of their height and weight showed it largely reflected what they had described (Saito et al., 1997).

The Japanese discontent with body image was also confirmed in an international survey on University students across 22 countries conducted by Wardle, Haase, and Steptoe (2006). In that study, Japanese male and female students showed the highest incidence of "perceived overweight" and "trying to lose weight" for each gender. Asian populations (Japanese, Korean and Thai) overall had negative body image and a higher incidence of weight control compared to other countries. Furthermore, Yates, Edman, and Aruguete (2004) found that in combining each Asian subgroup- or country-based group into a single category denoted as "Asian", significant cultural differences of body image became less prominent, suggesting that there are distinct Asian ethnic subgroup differences in body image and weight disturbance (Wardle et al., 2006).

Yates et al. (2004) compared BMI and body/self-dissatisfaction amongst male and female college students of seven different ethnicities living in Hawaii (White, Japanese, African-American, Filipino, Chinese, Hawaiian, and multiethnic). They showed that, regardless of ethnic and gender differences, BMI was highly correlated with body and self-dissatisfaction. Only Japanese females did not follow this, instead, Japanese females showed low BMI, high body dissatisfaction, and the highest self-dissatisfaction score of any group, male or female (Yates et al., 2004).

Consistent with this result, Mukai, Kambara, and Sasaki (1998) also revealed that BMI was a significant predictor of eating disturbances for American women, but that this did not apply for Japanese women with the latter displaying greater body dissatisfaction but no more eating disturbances than American women (Mukai et al., 1998). Similarly, comparison within Eastern countries shows that Japanese female students have higher body dissatisfaction than Taiwanese female students and the Japanese also rate themselves as larger despite no significant difference in BMI (Shih & Kubo, 2005).

It should be noted that there are some limitations in those comparative studies, mainly due to the number of the subjects and the lack of detailed cultural explanation towards body image disturbance for Japanese adolescents. However, results from comparative studies still indicate that the culturally entrenched thin ideal amongst Japanese adolescents is well known and consistently recorded.

**Table 6**  
Socio-cultural factors identified as influencing body image and eating problems amongst Japanese Adolescents and young people.

Study	Sample	Age	Major findings
Mukai (1996)	897 (females)	13–16 (grade 7–11)	Maternal factors were as stronger than peer influence in grade 8 and 9 girls, whereas the opposite tendency was seen in girls in grade 10 and 11.
Mukai et al. (1998)	171 (females)	20.2 (mean)	Peers had a greater impact on their dieting behaviors as they got older.
Kowner (2002)	273 (males), 332 (females)	20 (mean)	The need for social approval predicted eating disorders in Japanese females. Body esteem is positively related to self-esteem and body consciousness, and negatively to social anxiety for both genders.
Kowner (2004)	143 (males), 120 (females)	20.7 (mean)	Low body satisfaction is caused by a discrepancy between perceptions of actual boy shape and the ideal-self as well as to self-esteem and a predisposition to interpersonal phobia.
National Nutrition Survey in 2002 (2004)	301 (males), 314 (females)	15–19	42.3% and 65.8% of males and females described themselves as “slightly fat” or “fat” because of comparison with others.
Saito (2004)	321 (females)	18–34	The onset of eating disorders amongst Japanese females is influenced by socio-cultural factors. In particular, the adaptation for social expectation for females leads to low self-esteem and resulting eating disorders.
Pike and Borovoy (2004)	4 female cases	18–23	The model of Westernisation has limited use when explaining the rise of eating disorders in Japan. The increase of eating disorders in Japan is related to cultural values, expectations and pressures regarding the female role in Japanese society.
Takimoto et al. (2004)	30,903 (females)	15–29	Females aged 15–19 living in metropolitan areas showed significantly higher rates for classification as thin and extremely thin, compared to those who are living in smaller towns.
Ozawa et al. (2005)	973 (females)	20.7 (mean)	The prevalence of eating disturbance in females who frequently read magazines was seven times as high as that in those who do not read magazines.
Hayashi et al. (2006)	1,731 (females)	15–39	Females living in metropolitan areas showed a greater drive for thinness compared to those who were living in smaller towns.
Yamamoto et al. (2007)	263 (boys), 220 (girls)	13.9 (mean)	There was relationship between abnormal eating behavior and individual psychological complaints, current and ideal body image and low self-esteem.
Yamamiya et al. (2008)	289 (females)	19.9 (mean)	Body image and eating disturbance amongst Japanese females were significantly influenced by socio-cultural factors, such as peer, media and family.
Nakamura (2008)	2,242 (both)	10–15	Adolescents living in a big city were more likely to have unhealthy eating behaviors compared to those living in smaller towns.

### Factors associated with body image disturbance and eating related problems amongst Japanese adolescents

There has been some research looking more closely at body image differences between Japan and other countries and the various factors influencing body image and all studies related to the topic have been summarized in Table 6. Kowner (2002) investigated Japanese body image from a cultural perspective, focusing on body esteem. He found that the Japanese identified similar characteristics of body esteem as these cited by Americans, which mainly consisted of physical and sexual attractiveness (Kowner, 2002). However, both male and female Japanese body esteem scores were significantly lower than those of Americans, Chinese and Israelis (Kowner, 2002). This result indicates that Japanese body image may have a peculiar dimension shaped by Japanese society.

The study of Kowner (2002) also explained lower body esteem amongst Japanese in terms of self-effacement, lower self-esteem and body consciousness and greater social anxiety compared with those in Western countries (Kowner, 2002, 2004). These are thought to stem from broader cultural and historical perspectives in Japanese society, which has experienced high incongruence between Western-oriented culture and Japanese traditional culture (Kowner, 2004).

Furthermore, Pike and Borovoy (2004) using case studies of qualitative interviews, described some specific features of Japanese society correlated with eating disorders. Data suggested that the model of “Westernisation” which is suggested as a factor in the development of eating disorders has limits in adequately explaining the idea that young Japanese are attempting to fulfil traditional gender roles in the onset of eating disorders. Although this study did not specifically explore body image in Japanese society, the results may be extrapolated to suggest that Japanese body image is strongly influenced by such socio-cultural factors.

These studies support the conclusion reached in a review by Spurgas (2005) who found that body image issues in non-Western context are not consistent with those in a Western context.

In order to explore possible culturally related factors in the development of body image in Japan, the following literature are reviewed.

#### *Socio-cultural factors*

Socio-cultural factors have been regarded as the most influential risk factors for body image disturbance in a substantial number of studies from Japan (Spurgas, 2005; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Body image disturbance in Japan is also thought to include some socio-cultural factors which are peculiar to that specific culture (Pike & Borovoy, 2004; Wardle et al., 2006).

The tripartite influence model of body image disturbance is a well-known theoretical model which refers to three influential socio-cultural factors: peers, parents and media (Thompson et al., 1999). This model also includes two mechanisms; social comparison and thin ideal internalisation, which mediate between these influences (Thompson et al., 1999).

Yamamiya, Shroff, and Thompson (2008) replicated a study conducted in the USA to examine this tripartite model using 285 Japanese female university students. The results suggest that socio-cultural variables have similar influences on body image disturbance to those in the USA and this model might be applicable to Japanese adolescents (Yamamiya et al., 2008). However, this study investigated a relatively small number of females in a limited age group. Confirmatory studies of this result using a larger number subjects and studies including males are required to examine the applicability of the research to an exclusively Japanese population.

#### *Peers*

Peers have been confirmed as an influential factor on body image amongst adolescents (Dohnt & Tiggemann, 2006; Hutchinsin & Rapee, 2007; McCabe, Ricciardelli, & Finemore, 2002). In Japan, there are few studies to investigate the relationship between peer influences and body image disturbance and dieting behaviors. Only one study conducted by Mukai et al. (1994) confirmed peer

influence as a factor in the body image development of Japanese females aged 13–17 years. Supporting this earlier result, a [National Nutrition Survey in 2002 \(2004\)](#) also refers to 65.8% of females aged 15–19 years perceiving themselves as bigger or fatter when compared with others, i.e. peers and the general public.

### Media

The media has been recognised as a key antagonist in creating negative body image amongst adolescents with researchers widely acknowledging that there is a significant relationship between media exposure and body image disturbance ([Tiggemann, 2006](#)). Some longitudinal studies have identified that exposure to the media predicts negative body image and the acceptance of the 'thin ideal' as a predictor for problematic eating behaviors ([Field, Camargo, Taylor, Berkey, & Colditz, 1999](#); [Ricciardelli & McCabe, 2003](#)).

In Japan, despite a huge prevalence of media use amongst adolescents, research about the impact of it on adolescents falls behind western countries. Recently, [Ozawa, Tomiie, Miyano, Koyama, and Sakano \(2005\)](#) conducted a questionnaire survey to investigate the relationship between eating disorders and exposure to women's magazine that included articles about the thin ideal. The study showed that most participants often read the magazines and those who often read them tended to have eating disordered symptoms compared to those who do not read women's magazines ([Ozawa et al., 2005](#)).

### Family

Family plays a major role in our socio-cultural setting and it has been suggested that parents who over-protect or over-control their child's eating can contribute to the development of body image disturbance and eating disorders ([Thompson & Smolak, 2002](#)). [Yamamoto et al. \(2007\)](#) implied that more adolescents in Japan might have the negative impressions from their family, including inflexibility and distance from the family compared to previous generations. They also found out that adolescents with a negative impression of family cohesion and adaptability were more likely to have low self-esteem ([Yamamoto et al., 2007](#)).

In particular, the role of the mother has a significant influence on body image in Japan. Young adolescents are known to engage in monitoring behavior with their mothers by sharing weight concerns and dieting behaviors. In addition, young adolescents report expectations and pressure from their mothers to lose weight or stay thin ([Mukai, 1996](#)).

In summary, studies related to socio-cultural factors suggest that Japanese society has a strong ideal of thinness created by their own cultural values mixed with Western ideals. It is thought that the media and significant others enhance this culturally bounded issue and that the mediation of these cultural surroundings reinforces the thin ideal which is embedded within individuals. This can be used as a framework to understand Japanese adolescent body image.

### Gender roles

The gender expectations of the female role is recognised as an influential factor in the desire for the slim ideal and the subsequent body image concerns and resultant eating problems amongst Japanese women. This gender influence is confirmed by the predominance of eating disorders in the female population when compared to rates amongst males ([Smolak & Murnen, 2001](#)). In a society such as Japan, the role of the modern liberated women is still expected to take a back seat to the role of the female in traditional culture. Women face conflict in wanting to achieve

equality in areas such as the workplace with a more conservative traditional maternal role ([Pike & Borovoy, 2004](#)).

In-line with traditional Japanese norms, self-assertion is regarded as immature or selfish, and self-praising and self-promotion are recognised as bad manners ([Kayano et al., 2008](#)). Even with the gradual changes happening in regard to gender equality in some facets of Japanese society, women are still expected to praise men to confirm their higher status over women in the vertical societal hierarchy. As a result of adherence by most women to this socio-culturally standardised gender role, women lose self-esteem, self-assertion and the ability to cope with social issues ([Pike & Borovoy, 2004](#)). This low self-esteem, expected self deprecation and high regard for slimness as norms of physical beauty then lead to the onset of eating disorder symptoms ([Saito, 2004](#)).

### Personal factors

Personal traits are other factors that can potentially lead to body image disturbance in adolescents as both biological and environmental influences cause significant changes in behavior and mental state. Low self-esteem is a common issue for this age group and this is known to be strongly associated with negative body image and eating problems ([Shroff & Thompson, 2006](#)).

[Kowner \(2004\)](#) says that Japanese low body esteem amongst Japanese is correlated with poor self-esteem, body consciousness, and social anxiety. This explanation is consistent with comparative studies from other Asian countries. Although lower self-esteem may represent individuals of many collectivist cultures, the scores on body esteem of the Hong Kong were still higher than Japanese. Low self-esteem is considered to be a common condition amongst young Japanese ([Kowner, 2002](#)). Social anxiety amongst Japanese adolescents is considered a significant contributory factor in further developing low self-esteem and low body esteem. In fact, social anxiety is a major mental disorder amongst young adults known as "*taijin kyofu sho* (interpersonal phobia)" with 30% of university students thought to be seeking hospitalisation for it ([Nagai, 1994](#)).

Japanese culture has also been shown to place a strong emphasis on conformity to social norms and therefore Japanese people may be more sensitive to other's evaluations of themselves, compared to that in Western society ([Nogami, 1997](#)). Following this assumption, [Mukai et al. \(1998\)](#) identified that the need for approval correlated positively with body dissatisfaction amongst Japanese girls. Personal factors, such as low self-esteem and social anxiety, appear to be culturally mediated influential factors which worsen the body image of Japanese youth.

### Environmental factors

It has been proposed that the area of residence may also have an influence on the body image of young people in Japan. In the recent study of [Hayashi et al. \(2006\)](#) young Japanese women aged over 15 years living in metropolitan areas show a significantly higher desire for thinness than women living in smaller cities or smaller towns. Although there was no significant difference between the overestimation of body size of women living in larger cities and smaller towns, women living in large cities were more likely to have a distorted body image.

Similarly, [Takimoto et al. \(2004\)](#) also reported that females aged 15–19 years living in metropolitan areas were predominantly categorised as underweight compared to those living in smaller towns. In the same study, adolescents living in a big city were more likely to have unhealthy eating behaviors in comparison to their peers from smaller towns ([Nakamura, 2008](#)). These studies imply



that there is a geographical or socioeconomic influence on body perception, drive for thinness and resulting eating problems amongst Japanese youth.

### Implications for school-based education and policy

Following the changes of lifestyles in Japan towards a more Westernized pattern, there has been an increased concern from government about underweight and obesity, and imbalanced nutrient intake. In 1997, the Health and Physical Education Council indicated that instruction related to eating habits should be dealt with as an important part of health education in order to enrich and sustain a fulfilling life (Ministry of Education Science Sports and Culture, 1999). This report also stated that, "it is essential not only to teach food-related awareness to children but also to develop a practical attitude toward combining this awareness with desirable eating habits" (Ministry of Education Science Sports and Culture, 1999).

The instruction of such school-based health education is currently conducted through classes such as Health and Physical Education, Home Economics and Special Activities. In the current Japanese secondary school curriculum, instruction related to healthy eating habits is more likely to be knowledge oriented education informing students about food and nutritional knowledge. Although the government aims to develop a positive and healthy attitude, the curriculum remains information-based and has not established any comprehensive educational strategies to address psychological aspects of eating.

Eating disorder intervention programs used in Japan have lacked any appropriate cultural awareness. For example, a number of intervention programs directed at Japanese female students were found to have decreased their desire for thinness, disordered behaviors and body dissatisfaction only slightly or had no significant effect (Nagai, Aoki, Masuda, & Iwafuji, 2007; Takahata & Katsuhara, 2005). This suggests that there are limitations in conducting Western-based intervention programs which are culturally inappropriate for use in Japan.

In an attempt to improve public health, a government policy for adolescent health promotion and family health titled "Healthy Family 21" was launched in Japan in 2000. An aim of this policy is to focus on the prevention of eating disorders and underweight which is currently increasing amongst Japanese adolescents. However, the interim report of this policy has found that the situation has not improved since 2000 and rather, it has got worse (Ministry of Health Labour and Welfare, 2006). These results imply that the current educational strategy for adolescent health is not effective and that it is essential to develop more appropriate and comprehensive approaches to improve the eating attitudes and habits of adolescents in Japan.

### Conclusion

The aim of the current review was to identify and summarize the literature related to body image and related eating problems in Japan. Findings suggest that body image disturbance is becoming more prevalent amongst adolescents in Japan and that the situation is regarded as a public health concern. Although these problems were previously thought to be peculiar to female adolescents, some studies show that Japanese males also could have negative body image and resulting eating problems. The prevalence of clinically diagnosed eating disorders in Japan appear to remain lower than that of Western countries but subclinical eating disorders in non-clinical are significant and increasing. As body image disturbance is strongly associated with adolescent mental and physical health, many researchers suggest that a population-based approach to the prevention of eating

problems and the improvement of adolescent body image is well founded.

This review revealed several possible factors which are likely to adversely influence Japanese body image. Japan continues to become a part of a globalized and Westernized world which perpetually propagates cultural ideals of slimness, but also clings to being a non-Western traditionally Japanese society. Japanese people, particularly the younger generation, receive ideals of beauty from both Western and Japanese traditions. Young people may undergo a great deal of conflict between the different cultural ideals. As both sets of ideals are encouraging people to be thin in different ways and for different reasons, the negative influence on the young Japanese body image may be worse than in other countries. The Westernisation, modernisation and national character of the current generation of young Japanese certainly plays an important role in establishing their body image but the specific causal pathways remain relatively unexplored and vague.

The previous studies conducted in Japan were all based on a predominantly quantitative methodology. Such studies adequately confirm the existence of the relationship between poor body image and eating problems, but the review also suggests that there is a need for qualitative studies to confirm these possible factors and probe the deeper explanations.

Finally, despite the apparent need for prevention of body image and related eating problems, the current school education curriculum does not appear to adequately address body image problems or the prevention of these pernicious and seemingly increasing problems. In order to contribute to improved adolescent health as the government has intended, the investigation and development of an appropriate school body image education strategy appears to be required. Such a preventive strategy should aim to decrease the current high rates of eating disorders and underweight as well as obesity. In order to suitably develop the most efficacious and culturally appropriate educational strategies, a deeper understanding by gathering Japanese adolescents "voice" is strongly required. Such a study is currently being undertaken in order to inform the most current and relevant health and body image education in Japan.

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