



Perspective on Obesity Problems and Associated Factors to Reduce Weight among Overweight and Obese Housewives: A Qualitative Study

Nur Shahida Abdul Aziz*, Nor Azian Mohd Zaki, Noor Safiza Mohamad Nor, Rashidah Ambak and Cheong Siew Man

Abstract

Introduction: The World Health Organization has declared obesity a global epidemic. In Malaysia the prevalence of obesity has reached an upward trend. Findings from the National Health and Morbidity Survey 2011 indicated that obesity among women was higher as compared to men and mean Body Mass Index among housewives was highest compared to other job categories. The aim of this qualitative study was to explore perspective on obesity problems and to gain a better understanding on barriers and facilitators to reduce weight among housewives in order to develop a weight loss intervention package.

Methodology: This qualitative survey is part of the "My Body is Fit and Fabulous at Home" (MyBFF@Home) which involved in-depth interviews with 28 overweight and obese housewives in low cost flats around Klang Valley. Housewives were sampled purposively and data were analysed using thematic analysis. Themes and subthemes were also coded, explored and refined using the NVIVO software.

Results: Five main themes associated with obesity problems emerge from the analysis that included 'personal feelings, beliefs, lifestyles, life issues and effort to reduce weight'. Housewives perceived that their body size were big or too big and felt dissatisfied with their weight. Six main barriers were identified which included support, attitude, safety, environment, time and life issues such as finance and health problems. Self motivation, lifestyle, mindset, appealing figure, family and peer support were identified as facilitators to motivate housewives to reduce weight.

Conclusion: These findings provided tools useful to develop strategies to empower housewives to reduce and to sustain their weight loss over a period of time.

Keywords

Overweight and obesity; Housewife; Barrier and facilitator; Qualitative study

Introduction

Obesity is a major public health treat worldwide and is a known risk factor for a number of chronic diseases such as cardiovascular disease, hypertension, Type 2 Diabetes, dyslipidaemia and cancer [1-2] Other health consequences of obesity include Osteoarthritis (OA) and knee pain [3-4].

An increasing trend of overweight and obesity prevalence is seen among the Malaysian population. The National Health and Morbidity Surveys (NHMS) reported an upward trend of overweight and obesity prevalence for the past 15 years of which there was a 12.8% and 10.8 % increase in overweight obesity [5,6] respectively. Women showed a higher prevalence of obesity (15%) than men (10%) in the Malaysian population (MANS, 2003) [7]. In the NHMS 2015, the prevalence of obesity among females has increase (29.6 %), and this prevalence was also found to be higher than men (25.0%) [8]. In addition, the mean Body Mass Index (BMI) among housewives was also higher than other job categories (Mean BMI: 26.6 kg/m²) [8]. These findings have shown that overweight and obese female adults (including housewives) were also one of the high risk groups that require specific obesity intervention or weight reduction programme.

Although a considerable number of studies on overweight and obesity have been undertaken in Malaysia, there is little current information regarding the perception among overweight and obese housewives and their intentions on weight loss. Thus, before developing any weight reduction interventions for this high risk group, in-depth qualitative study was adopted to achieve a unique insight into the housewives behaviours, characteristics and their perspective on obesity and it management. This is important to promote self-efficacy so as to increase their capability to reduce as well as to maintain their weight loss. Perceived self-efficacy influences how they will behave based on how they feel, think and also their level of motivation [9].

Qualitative research method is effective in exploratory study because it is able to give detailed information about a person's thoughts and to identify behavioural and social factors related to weight management [10]. Furthermore, the use of qualitative method allows the interviewer to deeply explore the respondent's feelings and perspectives about body weight and provides deeper understanding of the barriers and facilitators of weight reduction [9,11]. It provides insights into the problems or helps to develop ideas or hypotheses for potential quantitative research.

The aims of this study were to explore in-depth understanding on obesity problems and weight management, barriers and facilitators of weight reduction among overweight or obese housewives in Klang Valley, Kuala Lumpur, Malaysia. This is the first phase of the research project of "My Body Fit and Fabulous at Home" (MyBFF@home). The findings of this qualitative study will be used to develop and design a weight reduction intervention package specifically for the targeted housewives.

Methodology

Study Design

This study employed a qualitative approach using semi-structured face-to-face interviews to explore in-depth understanding on obesity

*Corresponding author: Nur Shahida Abdul Aziz, Centre for Nutrition Epidemiology Research, Institute for Public Health, Ministry of Health Malaysia, Jalan Bangsar, 50590 Kuala Lumpur, Malaysia, Tel : +603-22979400; Fax: +603-22823114; E-mail: nshahida@moh.gov.my

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problems and weight management among overweight or obese housewives. Their intention to lose weight was obtained by using Trans- theoretical Model of Change (TTM) Algorithm. Thus their opinion would then help the researchers to develop and refine the items for the intervention package for Phase II (intervention phase).

Interviews were conducted in any of the five languages Malay, English, Mandarin, Cantonese or Tamil depending on the understanding and preference of the respondents. A set of pre-determined open-ended questions interview guidelines were used including other questions that emerged during the interviews. Development of interview guideline was based on literature review and a qualitative study by Chang et al, (2007). Pre-test questionnaires have been done by researches among volunteers (women aged 18-59 years old) and questionnaires were finalized based on feedback prior to the actual interviews. This interview lasted between 20 to 60 minutes.

Setting

Respondents were recruited from three low cost flats in Klang Valley namely Cheras Baru, Bandar Tun Razak and Lembah Pantai. Besides that, active search and contact list from the State Health Department of Wilayah Persekutuan and Family Medicine Specialists at three Health Clinics located in Klang Valley (Cheras Baru, Cheras, Pantai) were done.

Subjects

Housewife was defined as a married/single/widowed female who has been staying at home for at least 6 months with no fixed income. Inclusion criteria were overweight and obese housewives aged 18-59 years old, living in apartments or low cost flats, and without any comorbidities of diabetes, severe hypertension, heart disease and renal dysfunction. Overweight was classified as Body Mass Index between 25-29.9 kg/m² and obesity was classified as Body Mass Index >30kg/m² (WHO1998). Housewives with BMI of 25.0 to 39.9 kg/m² were included in this study.

Recruitment

Research team members sought for potential respondents who were living in apartments or flats and filtered it through contact list provided. Researchers contacted the housewives, explained on the study and written consent was acquired prior to starting of the interview. Respondents were interviewed at the nearest health clinics or at their house based on their convenience. During the interview session, respondent were briefed on the onset that no opinion or ideas were considered right or wrong. All interviews were recorded using a tape recorder and then transcribed into the Malay language.

Data analysis

Data were analysed in two stages. The first stage of the analysis started during the data collection involving a combination of pre-defined codes and new codes, which emerged from each transcription. Based on the questions, each code was defined to indicate the detailed aspects of the code. Further analysis involved both 'coding up' (inductive) and 'coding down' (deductive) activities using all transcripts. All codes were defined as themes, subthemes and compiled into two key areas which include:

- Obesity problems and weight management
- Barriers and facilitators of weight reduction

In the second stage of the analysis, all themes that emerged from

the first stage of analysis were categorised and coded using NVIVO 10 software. The categories were obesity and its management as well as facilitators and barriers to weight loss. Based on the analyses, key data were analysed by the research team members who collected and transcribed the data. The researchers also rechecked the appropriate themes and subthemes through a peer review process. Potential biases were reflected and discussed to improve the credibility of the analysis.

Results

All 28 housewives aged 18 to 59 were interviewed, where the majority were Malays (64%) followed by Chinese and Indians (18%) respectively. Approximately 54% of them were obese with BMI above 30 kg/m² while the rest were overweight (BMI = 25 -29.9 kg/m²). Most of the housewives had achieved secondary level education at 71%, had 1 to 5 children and only 36% of all housewives had a part time job (Table 1).

Obesity problems and weight management

Five themes emerged from the analysis of the first six questions of part one of the semi-structured which were include personal feeling, lifestyle, beliefs and efforts to reduce weight and life issue (Table 2).

The perceptions and feeling of being overweight or obese are closely linked. The majority of housewives felt that they were too fat, their body sizes were big or too big and they did not like their body shape. Among the body parts that the housewives disliked were their stomachs, hips, thighs, arms and chest. Most of them reported that they gained a lot of weight after child birth, marriage or after taking contraceptive pills. They believe that some of their food, water, culture and fate make them being overweight or obese.

Some of the housewives commented that they have busy days and prioritize their family above their own. Besides that, there were a few life issues raised by respondents to reduce weight such as stress in term of family and friends as well as economic and health issues.

Majority of the housewives have tried losing weight before but but they did not successful due to inappropriate weight loss methods. Among the reasons for weight regained were lack of exercise, over-eating although some of housewives agreed that eating too much can lead to this obesity problems and discontinued use of traditional or

Table 1: Socio-demographic profile of the housewives.

Socio-demographic factors	N (N=28)	%	Number of respondents		
			Overweight (n=13)	Obese (n=15)	
Age	18-29	3	10.7	0	3
	30-39	9	32.2	5	4
	40-49	6	21.4	4	2
	50-59	10	35.7	4	6
Ethnicity	Malay	18	64.2	8	10
	Chinese	5	17.9	3	2
	Indian	5	17.9	2	3
Education level	Primary	5	17.9	3	2
	Secondary	20	71.4	9	11
	STPM/Diploma	2	7.1	1	1
	Degree & above	1	3.6	0	1
No. of children	0-1	5	17.9	1	4
	2-3	9	32.1	5	4
	4-5	14	50.0	7	7
Part-time jobs	Yes	10	35.7	5	5
	No	18	64.3	8	10

products for weight loss.

In general, the methods used for weight loss were fasting, exercising and taking weight loss products. Most of them were aware that excessive weight may lead to health complications such as diabetes and stroke while some mentioned that they were already experiencing knee pain due to their heavy weight. Besides health complications, other implications of obesity mentioned were poor self-image and self-esteem as well as poor quality of life.

However, there were some issues or barriers that prevent them from trying to reduce weight. A total of six main barriers which included time, attitude, safety, environment and life issues such as finance and health problems.

Barriers of weight reduction

Lack of time, support from family, friends and environment surrounding them was the most frequent barrier identified in this interview. Besides that, they also faced problems in managing their finances which most of them spend more on family rather than themselves. Some of them think for weight reduction they must spent their money to buy weight loss product. Although fewer housewives raised safety issue but it should be highlighted in this study. They perceived that it was not safe to perform outdoor exercise due to safety issues.

Facilitators of weight reduction

Most housewives agreed that strong facilitators of weight reduction include self-motivation, support from family members and friends, mind-set, image and beauty.

Discussion

The in-depth interviews were able to gain deeper insight about the obesity problems and associated factors that influence individual housewives to reduce weight. Most of them have raised multiple issues regarding obesity problems and perceived that problems were caused by several factors related to their personal feeling, level of

knowledge and behavioural factor of housewives.

Personal feeling

Based on the finding, they expressed their feeling, they were not confident with their body size. They did not like their body shape because it was not attractive. Among the body parts that the housewives disliked were their stomach, hip, thigh and chest. The changes of body shape were expressed in terms of difficulty in choosing appropriate clothes. Obese/overweight housewives in the rural area of Kelantan, Malaysia also expressed dissatisfaction of their body shape [12]. Other studies, also showed that many of adult overweight or obese feel ashamed and frustrated with their altered body shape as they perceived as being ugly [13-14]. However this finding was in contrast with a study among the African women. They accepted and perceived large body size as healthy and attractive. Some of them related the attractiveness with self-esteem and even though they knew they were obese but they can still be positive about themselves [15]. Other study also expressed that being healthy did not associate with overweight/obese, in fact they mentioned being underweight also can be unhealthy [15]. Interestingly, most of the overweight/obese women thought that they were in a great health condition, and did not have problem with their body weight [12]. Other studies also expressed that being healthy does not depend on certain body size in fact they also mention being underweight also can be unhealthy [14]. Some overweight women was proud of their body curve but other people see it in different way and it make them feel confusion and frustrating with what other people said [15]. Although there were different perspective in different culture but most of the women were aware of effect being obese to their health.

Attitude

As shown in the result section, most of them expressed negative attitudes towards their own body and regular exercise. Based on the findings, they reported negative behavior at home, such as less likely to be active and love to spend free time by sitting in front of television. This condition was also highlighted in other studies.

Table 2: Obesity problems and weight management.

Theme	What informants say (quotation)
Personal feeling	<ul style="list-style-type: none"> • "I'm already too fat, don't want to be too fat." • [H-18; 53 yrs; 31.3 kg/m²; Chinese] • "I felt too embarrassed with my body" • [H-02; 25 yrs; 30.8 kg/m²; Malay]
Beliefs	<ul style="list-style-type: none"> • "Obese, other people said, gain weight due to accumulation of water in the body". • [H-09; 36 year old; 25.3 kg/m²; Malay] • "If it's already obese. It is already destined to be obese". • [H-22; 59 year old, 30.3 kg/m²; Malay] • "Indians eat more and become obese. was already destined to be obese." • [H-12; 53 year old; 27.8 kg/m²; Indian] • "I drink omega plus milk and after i drank that milk i put on weight...emm" • [H-03; 50 year old; 27.7 kg/m²; Malay]
Lifestyle	<ul style="list-style-type: none"> • "I'm busy with kids, house work and part-time job" • [H-16; 42 yrs; 37.2 kg/m²; Indian]
Life issues	<ul style="list-style-type: none"> • "sometime it hard to walk because of my pain" • [H-06; 53 year old; 32 kg/m²; Malay] • "Stress environment intense me to eat more" • [H-06; 53 year old; 32 kg/m²; Malay] • "If I have a money normally i will take less food ..." • [H-06; 53 year old; 32 kg/m²; Malay]
Effort to reduce weight	<ul style="list-style-type: none"> • "I eat a lot of rice right. I have no worked to do. Lack of exercise." • [H-22; 59 yrs, 30.3 kg/m²; Malay] • "I have taken a weight loss product before" • [H-24; 39 yrs, 36.3 kg/m²; Chinese] • "I do sit-ups for about a month; I do not eat at night" • [H-17; 19 yrs; 37.2 kg/m²; Indian]

Table 3: Barrier of weight reduction.

Theme	What informants say (quotation)
Lack of Time	<ul style="list-style-type: none"> • "He was told to go jogging in the evenings, but I do not have time to go in the evenings, I'm tired to go down stair and climbs back up stair." • [H-07; 35 yrs; 27.9 kg/m²; Malay] • "I would say that, indeed all in this world, to say there is no time, most of us will feel not enough time to do exercise. Sitting at home watching TV 24 hours was still said do not have time. ". • [H-13; 42 yrs; 27.1 kg/m²; Indian]
Lack of support	<ul style="list-style-type: none"> • "A lot of obstacles i have to manage the house, cooking and children, i have to send and fetch them at school ..." • [H-02; 25 yrs; 30.8 kg/m²; Malay]
Safety	<ul style="list-style-type: none"> • "She always do exercise at home, seldom she going outside to the park in the morning as the environment is not safe for her" • [H-18; 53 yrs, 31.3 kg/m²; Chinese]
Attitude	<ul style="list-style-type: none"> • "Sometime I feel lazy to get out for exercise.." • [H-13; 42 yrs, 27.1 kg/m²; Indian] • "Sometime not enough time to exercise, but will that matters is our attitude, our mind set...." • [H-14; 34 yrs, 30.8 kg/m²; Indian]
Life issues	<ul style="list-style-type: none"> • "To reduce weight....emm... we must have a lot of money right...." • [H-08; 43 yrs; 25.6 kg/m²; Malay] • "Err....maybe financial factor also.....not enough money to buy this products...(weight loss product)....." • [H-22; 59 yrs, 30.3 kg/m²; Malay]
Environment	<ul style="list-style-type: none"> • "We don't have facilities for exercise here, even we have that facilities it can't be used, so what we can do.." • [H-18; 53 yrs, 31.3 kg/m²; Chinese]

Table 4: Facilitator of weight reduction.

Theme	What informants say (quotation)
Self-motivation	<ul style="list-style-type: none"> • "My body shape is not beautiful, big. Its pain, going down and go up the stairs haa.. tired. That's why I want to lose weight by jogging in the morning and afternoon ..." • [H-06; 53 yrs; 32 kg/m²; Malay] • "My husband sometimes supports me, encourage me to think for myself, I'm putting on my weight, must reduce weight. I have to start slowly, if I do not do, I will get sick." • [H-13; 42 yrs, 27.1 kg/m²; Indian] • "Sometime my friends also give support ,but most of the time I rely on myself, more on giving motivation to myself" • [H-24; 39 yrs, 36.3 kg/m²; Chinese]
Mind set	<ul style="list-style-type: none"> • "Then, our mental attitude, to do exercise, we need to set our mind, do not be lazy and start now do not suspend our activities. " • [H-14; 34 yrs; 30.8 kg/m²; Indian] • "I think ... I have to change as well. I do not want to look ugly ... I know I'm pretty but I have to reduce my weight. " • [H-17; 19 yrs, 33.8 kg/m²; Indian]
Lifestyle	<ul style="list-style-type: none"> • "Exercise and well balance diet were most important " • [H-11; 38 yrs, 25.3 kg/m²; Malay] • "Maybe we need to take a balance diet , variety , do not take too much of food, eat at proper time with correct portion in oder to reduce and maintain weight" • [H-22; 59 yrs , 30.3kg/m²; Malay]
Support	<ul style="list-style-type: none"> • "My daughter always there to encourage me. Mama, try to do something to look slim..." • [H-07; 35 yrs; 27.9 kg/m²; Malay] • "My family member encouraged me to lose weight. My husband, myself, my children must have exercise at least once a weeks. " • [H-13; 42 yrs; 27.1 kg/m²;s Indian] • "If done activities together with my friends , feel more excited and motivated" • [H-16; 42 yrs, 37.2 kg/m²; Indian]
Image and Beauty	<ul style="list-style-type: none"> • "When we see people wearing beautiful clothes , it inspired me, so this year i was determined to reduce weight because i wanted to wear 'baju kebaya'...." • [H-06; 53 yrs; 32.0 kg/m²; Malay]

Housewives demonstrated attitude towards physical inactivity to be the most reason for weight gain, beside time constraint and support to reduce weight [14,16]. It appeared that lack of time was the most popular barrier highlighted by the respondent to performed exercise in their daily life. Besides that, other reasons such as not having fun with exercise and not quick result also have been expressed by some of the women [16]. This important finding need to be considered in planning a good health intervention for reducing weight related to housewives.

Lifestyles

Majority of the housewives have tried losing weight before but they gained it back. Low physical activity, having a heavy meal at night , unhealthy cooking methods, stress with too much house work and discontinued use of traditional supplement or products

for weight loss were the most common reasons for being overweight or obese among housewives. According to study done among the African American women, many of the women perceived that bad eating behaviour and, lack of physical activity were also causes of weight gain [14]. Hence it is very important to increase knowledge regarding healthy eating habits and how to lead a healthy and active lifestyle. Other study also reported similar findings those being knowledgeable and confident with what they eat and practice in their daily life seem to be more helpful in body weight management [18].

Despite various issues raised by the housewives, other barriers identified in this study were lack of time to perform exercise and to get support from family members and friends. Housewives were occupied with house works and responsibility to the family is the most important thing for them. Other study also showed similar

result of external barriers such as lack of time to be physically active, burden of housework, no support from relative and friends, and too old to do exercise [17,19-21]. Other barrier raised in this study that should be highlighted was safety to perform outdoor exercise. Fear of crime and feel unsafe were the reasons not to be physically active. Safety during an exercise activity was the most important factor effect on community level of physical activity [20]. These important finding needs to be highlighted for any weight intervention program related to housewives especially women.

In general, the methods used for weight loss were fasting, exercising and taking weight loss supplement. Although there were similarities in opinions but the Singaporean Malay housewives did not agree with spending money in a weight loss centre or consumed weight loss supplement. They commented of a few friends or relatives of those who have tried to lose weight by going to the weight management center or consuming weight loss products but did not get optimum results [16,20]. Most of housewives agreed that consistently exercise will increase their stamina and these will help them in managing routine housework. Many studies have shown that exercise will increase our basal metabolic rate (BMR), which will be increase our fat-free mass and decrease fat mass [22]. In addition, exercise also has inversely related to body weight and body mass index (BMI) [23]. Therefore, this should be highlighted to motivate overweight and obese housewives in regular exercise consistently.

There were several factors that influence or facilitate them for reducing weight and most often factor were strong self-motivation, more support from other family member and friends, body image and beauty. Previous study also documented that strong social support from family and friends and positive mindset of their weight status or their effort to lose weight was most common facilitator [14-15].

The present study has its own limitations. One of the limitations is that the majority of the respondents were Malay compared than other ethnicity group. Some information among the other ethnic group on barriers, facilitator and also strategies to reduce weight among housewife could not be captured in detail. Other limitation in this study is that we do not have specific question on the role of the spouse or family member of the respondent in supporting the weight reduction program. This aspect can be exploring in the future research.

Conclusion

The objectives of the study were met. The housewives in Klang valley have arisen many issues, with the personal attitude toward exercise and maintaining the momentum and lifestyle modification as their main concern. They also identified lack of self-motivation and discipline as their main problem in reducing body weight. Others also expressed lack of time and lack of support from family members and environment as the reason they were less likely to do regular exercise to reduce their body weight. They perceived their role as housewife in doing housework chores and manage child as their utmost priority, hence neglecting their health. The present study mainly explored their feelings and opinions; therefore more research is needed to narrow the knowledge gap on their family members and social perceptions toward obesity problems especially among women. Future study should also consider the psychology component in motivating and maintaining them to achieve healthy body weight.

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References

1. National Institutes of Health and Clinical Excellence (2006) Obesity—Guidance on the prevention, identification, assessment, and management of overweight and obesity in adults and children.
2. Malaysian Association for the Study of Obesity (2005) Strategy for the prevention of obesity-Malaysia.
3. Felson DT, Anderson JJ, Naimark A, Walker AM, Meenan RF (1988) Obesity and knee osteoarthritis: the framingham study. *Ann Intern Med* 109: 18-24.
4. Coggon D, Reading I, Croft P, McLweren M, Barrett D, et al. (2001) Knee osteoarthritis and obesity. *Int J Obes Relat Metab Disord* 25: 622-627.
5. Institute for Public Health. Ministry of Health, Malaysia (1996) The national health and morbidity survey.
6. Institute for Public Health, Ministry of Health, Malaysia (2008) The third national health and morbidity survey (NHMS III) 2006: nutritional status of adults aged 18 years and above.
7. Institute for Public Health (2011). National health and morbidity survey 2011. Methodology and General Findings.
8. Institute for Public Health (2015) National health and morbidity survey 2015. Non-Communicable Diseases, Risk Factors & Other Health Problems.
9. Bandura A (1994) Self-Efficacy. *Encyclopedia of human behaviour*. Academic Press, New York, USA.
10. Marlene A (2008) Taking charge one's life: A model for weight-management success. *The Qualitative report* 13: 30-52.
11. Chang CT (2007) Applicability of stages of change and weight efficacy lifestyle questionnaire with natives Sarawak, Malaysia. *Rural Remote Health* 7: 864.
12. Muda WA, Kuate D, Jalil RA, Nik WS, Awang SA (2015) Self-perception and quality of life among overweight and obese rural housewives in Kelantan, Malaysia. *Health Qual Life Outcomes* 12: 13-19.
13. Chang CT, Chang KH, Cheah WL (2009) Adults' Perception of being overweight or obese: a focus group study. *Asia Pac J Clin Nutri* 18: 257-264.
14. Befort CA, Thomas JL, Daley CM, Rhode PC, Ahluwalia JS (2008) Perceptions and beliefs about body size, weight and weight loss among obese African American women: a qualitative inquiry. *Health Educ Behav* 35: 410-426.
15. Sand AS, Emaus N, Lian O (2015) Overweight and obesity in young adult women: A matter of health or appearance? The Tromsø study: fit futures. *Int J Qualitative Stud Health Well-being* 10: 29026.
16. Cindy Ng LW, Malhotra R, Lai D, Tai ES, Østbye T (2013) Perceived barriers to and ideas for weight control intervention in malay homemakers: result from focus groups. *Asia Pac J Public Health*.
17. Leske S, Strodl E, Hou XY (2012) A qualitative study of the determinants of dieting and non-dieting approaches in overweight/obese Australian adults. *BMC Public Health* 12: 1086.
18. Baruth M, Sharpe PA, Parra-Medina D, Wilcox S (2014) Perceived barriers to exercise and healthy eating among women from disadvantaged neighbourhoods: Results from a focus groups assessment. *Women Health* 54: 336-353.
19. Sharifi N, Mahdawi R, Ebrahimi-Mameghani M (2013) Perceived barriers to weight loss programs for overweight or obese women. *Health Promotion Perspect* 3: 11-22.

20. Harrison RA, Gemmell I, Heller RF (2007) The population effect of crime and neighbourhood on physical activity: an analysis of 15 461 adults. *J Epidemiol Community Health* 61:34-39.
21. Garip G, Yardly L (2011) A synthesis of qualitative research on overweight and obese people's views and experiences of weight management. *Clinical Obesity*. 1: 110-126.
22. Finelli C, Gioia S, La Sala N (2012) Physical activity: an important adaptive mechanism for body- weight control. *ISRN Obesity* 2012: 5.
23. Finelli C, Gallipoli P, Celentano E, Cacace G, Saldalamacchia G, et al. (2006) Assessment of physical activity in an outpatient obesity clinic in southern Italy: Results from a standardized questionnaire. *Nutr Metab Cardiovasc Dis* 16: 168- 173.

Author Affiliations

[Top](#)

Institute for Public Health, Ministry of Health Malaysia, Kuala Lumpur, Malaysia

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