

ABSTRACT

Background: Overweight and obesity are rising burden in the world. However, more women are affected by obesity than men. The gender disparities in prevalence of overweight and obesity are more evident in developing countries.

Objectives: To explore the barriers and self-efficacy for weight reduction, to determine the prevalence of overweight and obesity and to determine the effectiveness of a community based lifestyle modification intervention on selected cardiovascular risk factors among the overweight and obese 35-44 year old women in Medical Officer of Health areas of Bandaragama and Horana.

Methods: The study consisted of three components.

Component I: The present study validated two study instruments, which have been widely used internationally and validated in several languages. Eight Item WEL-SF tool assess self-efficacy levels of controlling overeating while 18 –item ESE tool assess confidence in doing exercise three or more times per week. Both Instruments were translated, culturally adapted and validated in Sinhala language and assessed for psychometric properties in MOH-Panadura. The WEL-SF validated among 100 females who were attempting to reduce their weight through self-monitoring diet control (non therapeutic), while ESE validation among 225 females who were attempting to reduce their weight by engaging in physical activity two or three days per week.

Component II: A community based descriptive cross sectional study was conducted to determine the prevalence of overweight and obesity among 35-44 years old women in MOH-areas, Bandargama and Horana, with 770 selected from each MOH area. The prevalence of overweight and obesity was assessed on Asian cut off values recommended by the WHO based on BMI. The prevalence was estimated with the 95% CI.

Component III: Based on findings of a qualitative study conducted to identify perceived barriers for healthy lifestyle a lifestyle modification intervention was developed in

consultation of experts in public health to improve healthy diet and physical activity levels of overweight and obese women. It is comprised with series of interactive lecture sessions on diet, self-efficacy, stress relief, home gardening, practical sessions of exercise and group counselling sessions. The intervention was conducted in MOH area, Bandaragama for 253 overweight and obese females for six-month duration by a multidisciplinary team. The control group (n=246) from MOH area, Horana received usual care. The primary outcome was change in mean BMI value at six months. Effectiveness of the intervention was assessed as a quasi-experimental study.

Results:

Component I: The eight item WEL-SF showed a one factor solution by exploratory factor analysis. All the items in the scale were retained. The model explained a total variance of 59.35%. The Cronbach's alpha was 0.905. The construct validity of the 18 item ESE scale was tested by exploratory factor analysis. All the items retained in the scale. The scree plot in the study showed three factors, which explained a variance of 70.59%. The three factors were: Interpersonal, situational and Internal feeling. The eigen values of the three factor model ranged from 1.392-9.409. The Cronbach's alpha was 0.926.

Component II: The prevalence of overweight in MOH area Bandaragama and Horana was 41.35% (95% CI =37.9-44.81) and 39.7% (95% CI =36.3-43.2) respectively, while obesity was 36.1% (95% CI =32.8-39.6) in MOH-Bandaragama and 26.6% (95% CI =16.4-39.1) in MOH- Horana.

Component III: At six month, the Intervention group showed a statistically significant mean weight reduction of 690 g ($p=0.0001$), while control group had statistically significant ($p=0.0001$) mean weight gaining of 1.04 Kg from their mean baseline weight. Comparison of mean weight changes between two groups were statistically significant ($p=0.0001$).

At six months, eating self-efficacy scores, total MET minutes of physical activity and walking and leisure time activities in the intervention group had improved significantly compared to the control group. Sitting time on weekdays, systolic blood pressure and energy intake had reduced significantly in the intervention group compared to the control group.

Conclusions and recommendations: The prevalence of overweight and obesity is high in the target population and the intervention is effective for mild weight reduction at 6 months. The instruments validated to assess self-efficacy levels for weight reduction appear to be psychometrically valid with high reliability. These instruments can be recommended as a basic screening tool to assess self-efficacy levels of adult women who are trying to achieve a healthy weight. The intervention should be conducted considering barriers for weight reduction and using low cost innovative strategies.

Key words: Overweight, obesity, women, cardio vascular diseases, self-Efficacy, Life style modification