CHAPTER-V

CONCLUSION AND RECOMMENDATION

5.1 Conclusions

Obesity is a ticking time bomb that poses a serious threat to global health and healthcare systems as well as economic productivity. Despite renewed efforts to prevent obesity current prevalence rates will continue to rise, leading to an exacerbation of obesity-related morbidities such as diabetes, heart disease, stroke and ultimately to an increase of the associated healthcare costs to unsustainable levels.

To know the prevalence of overweight and obesity and factors influencing it in school children of Aurangabad (M.S.) India the study was carried out in different steps and specific conclusions are drawn based on the findings:

- The prevalence of overweight among studied sample was 7% where as prevalence of obesity was 3%. Together prevalence of overweight and obesity was found to be 10%.
- The combined prevalence of overweight/obesity was more in the age group of 13-15 years (11.57%) as compared to 10-12 years (8.35%).
- The magnitude of overweight/obesity in boys and girls was 10.02% and 9.95% respectively.
- The combined prevalence of overweight and obesity in private schools was higher (11.43%) as compared to government schools (8.14%).
Overweight and obesity was found to be significantly high in children with birth order first and children studying in 8th standard.

The problem of overweight and obesity was found more in children belonging to Hindu religion, with family member count 4-6, studying in private schools and taking education in English medium.

Overweight and obesity was significantly higher when father’s education was at graduate and post-graduate level. In case of mother’s education, a non-significant association was observed with overweight and obesity.

A non-significant association was also observed in case of overweight/obesity and type of family. Obesity and overweight was more common in nuclear families.

When occupation of parents was observed there was a non-significant association between child’s overweight/obesity and father’s occupation whereas a significant association was present with mother’s occupation to child’s overweight and obesity.

Parental obesity was found to be significantly associated risk factor of overweight and obesity in children.

The problem of overweight and obesity was significantly higher among children with family monthly income Rs. 15,000-30,000, living in middle class area and had lower-middle class socio-economic status.
• The risk of becoming overweight and obesity was significantly higher in children who were vegetarians, following 3 meals/day and had habit of skipping breakfast.

• Habit of watching television while eating and eating outside home were proved to be important risk factors in the development of overweight and obesity among children.

• In present study, habit of skipping breakfast, watching television while eating and frequently eating outside home—all these factors were considered as unhealthy food behaviour and found significantly associated with overweight and obesity.

• Food consumption pattern of children, revealed that consumption of sweet foods, bakery items, fried foods and junk foods were more in overweight/obese children as compared to normal weight children. Consumption of vegetables, fruits, milk and milk products was higher in all children for daily, weekly and occasional consumption irrespective of weight categories.

• Children from both groups, experimental and control group recorded favourite taste as main reason for eating outside home.

• Most of the overweight and obese children follow sedentary lifestyle as 58.3% not participated in regular sports, 68.9% not participated in outdoor activities, 45.4% spent 1-2 hours/day on computer, 49.6% spent 2-4 hours/day watching television and 62.7% used fuel mode as conveyance to school.

• 67.18% children and 55.40% parents reported weight perception of selected overweight and obese children incorrectly.
• A significant association between weight perception of respondents (parents and children) and overweight/obesity among children was observed.

• Major psycho-social problems faced by overweight/obese students were body pain (41.89%), stress (38.22%), body image dis-satisfaction (36.48%) and fatigue (36.29%).

• Food habits and sedentary lifestyle were most commonly reported reasons by parents for child’s overweight and obesity.

• Out of 518 parents, 44.59% parents adopted remedial measures to overcome overweight and obesity and only 11.68% were fully satisfied from the remedial measures adopted. Dieting, increasing physical activity, skipping meals were common procedures tried to reduce weight. As many parents are unaware about ill-effects of overweight and obesity there is need for counselling to them.

• After multiple regression analysis, it was noticed that, all the models were statistically significant. Type of school, mother’s occupation, family income, socio-economic status, participation in sports and outdoor activities, conveyance to school and dietary habits were found to be important risk factors for overweight and obesity.

• After counselling, BMI status of surveyed 100 children was found to be lowered than before counselling. A significant difference was noticed in BMI status after counselling.
5.2 Recommendations

Today’s healthy children are tomorrow’s future of a developed India. Children are often considered the priority population for intervention strategies because it is difficult to lose weight in adulthood. Concept of obesity prevention is not only limited to development of overweight in normal weight individual but also preventing the progression of overweight to obesity. Struggling for good health is not a task of one individual but it is a task of a team. Hence collaborative efforts from government, schools and families are expected. From the present study following recommendations can be suggested at different levels:

At family level:

Family environment exerts the most influence on children’s energy balance related behaviour. Family is considered as school of social life as socialization starts in family. Research indicates that obesity aggravates within families. Parents and siblings play a pivotal role in the development of a child’s food preferences, dietary intake and activity pattern. Effective interventions in a family setting can be beneficial to change child’s behaviour of overeating and unhealthy food choices. As parents establish both social and physical environment of their children, obesity prevention programmes must include the family as an important intervention component to help in modelling, encouraging and practising the healthy behaviours. Hence following recommendation are suggested at family level.
1) It is prime responsibility of parents to take care of their child’s health. In today’s competitive world, every child should be physically, mentally and educationally strong. To achieve this status, parents must take proper care of their child’s health.

2) To get appropriate environment for better development is primary right of child. So every parent should try to provide healthy environment as per their economic status.

3) Mother, who takes responsibility of feeding, must be aware about knowledge of foods and nutrition. Excessive consumption of unhealthy foods (sweets, junk foods, fatty foods) for which children are usually crazy should be replaced by traditional nutrient rich diet, milk and milk products and seasonal fruits and vegetables.

4) Diet planning and preparation for these children require special skills. Frequent use of baked, boiled and steamed products is recommended. Inculcating habit of eating all types of foods and use of mixed diet with regular meal timings are the key factors to achieve proper weight status.

5) The best way for parents to encourage healthy eating in children is always eat a balanced diet. They should share at least one meal with children.

6) Restricting eating out at weekends and availability of junk foods at home should be encouraged. Do not overload fridge and containers with unhealthy snacks.
7) Due to academic pressure and insufficient time for sleep and rest, most of children are victims of hunger, depression, so special care should be taken for preparing their diets.

8) Expenditure of pocket money given to children for food should be checked carefully.

9) Avoid rewarding children with foods specially, with sweets and beverages.

10) Proper discipline, guidelines and counselling is essential to keep child emotionally stable as during stress child may divert his attention towards unhealthy foods.

11) Many adolescents specially girls become weight conscious at this age and start practicing unhealthy procedures for weight reduction such as dieting, fasting and bullying. Such target groups should be identified and properly guided by experts.

12) Try to make children busy in household chores as it will help them to burn calories.

13) Parents should restrict screen time as most of the time children spend watching television, using computer and mobile for games. All these activities make them physically inactive.

14) Parents must encourage their children for exercise, sports, hobbies and other outdoor activities.

15) Parents should guide to children about making the right food choices and planning a balanced meal. When shopping for groceries, children should be asked to check food labels to gain understanding what they are looking for. They can be involved in age-appropriate tasks in the kitchen.
16) Parents of overweight/obese students must consult doctors and dieticians.

17) Along with children parents themselves should be aware of their health regarding obesity and must follow healthy lifestyle.

18) Always give children information, about healthy and unhealthy foods. Inform them ill effects and suggest substitutes for their active participation in obesity prevention.

At school level:

Importance of school in one’s life can not be ignored. Children spend a large part of their lives in school. School plays a critical role by establishing safe and supportive environment. Schools provide opportunities to get regular exercise, and can offer courses on health maintenance, including proper diet and exercise. They can encourage healthy eating habits and active participation in sports with the help of parents. School teachers are the role models for children. The following are the recommendations at school level:

1. Regular health checkup to maintain record of anthropometric measurements at school level is essential.

2. School management must emphasize importance of sports by providing safe play area and other outdoor games facilities.

3. A regular class hour on healthy food habits, nutrition, healthy lifestyle, behavior modification and health hazards of eating faulty food must be made compulsory.

4. School canteen should provide low cost, conventional, balanced diet instead of fast food items. Sale of unhealthy foods near school campus must be strictly banned.
5. Children should be encouraged for walking, cycling and other outdoor games and activities.

6. Regular lectures, demonstrations, workshops, seminars, parent teacher meeting regarding health and nutrition should be organized to develop awareness.

7. Proper care should be taken by teachers so that overweight/obese children should not get emotionally disturbed by peer teasing.

8. Arranging school level activities such as healthy food festival, food quiz, cooking competitions of healthy food items, salad decoration demonstrations, celebrating World Food Day etc. can help to motivate children for adoption of healthy lifestyle.

At government level:

Several countries are adopting different policies to prevent obesity from spreading further. Most of the government strategies include awareness raising, healthcare, regulatory and fiscal measures.

Following are some recommendations at government level:

1) Maintain a nationwide database on secular trends in overweight and obesity among children.

2) Creation of national task force for obesity prevention.

3) Community awareness programmes on food, nutrition and health should be organized frequently.

4) Encouraging companies to manufacture healthy snacks and food outlets/restaurants to serve healthy food choices.

5) Prohibition of promotional gifts with junk foods.
6) Ban on sponsorships of youth festivals by cola companies.

7) Legislation on food labelling and food advertisement must be followed.

8) Restriction on advertisement of commercial foods on television at prime time and during children’s programmes. Ban on unfair nutrition claims for commercial products.

9) Consideration of tax on ‘fatty food’ or alternatively reduce tax and promote production and sale of fresh fruits and vegetables.

10) To promote physical activity, provision of safe walk/bicycle routes to schools.

11) Organizing social events like healthy food festivals and harvest festivals.

12) Imparting knowledge and encouraging people for healthy living by organising campaigns, rallies and exhibitions.

**For Researchers and Scholars:**

Some important research topics related to present research may include:

- State level research to know problems regarding nutritional status assessment methods.

- Critical studies on effect of changed life styles and obesity in adolescents.

- Dietary and behavioural problems of school children and adolescents.

- Impact of overweight and obesity on learning behaviour of children.
• Study on food and health habits of children.
• Preventive and curative techniques to combat obesity among adolescents.
• Food consumption patterns (street food, junk food related) of urban and rural adolescents.
• Effect of mid-day-meal program on nutritional status of children.
• Effectiveness of intervention programme on obesity at personal, family and community levels.
• Clinical studies related to overweight and obese children.
• Weight perception and factors influencing it among overweight and obese children.