OBESITY INTERVENTION AT SCHOOL SETTINGS, SOCIAL MOBILIZATIONS, FAMILY ENGAGEMENT AND BEHAVIOURAL APPROACH

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ABSTRACT

Background: Obesity and overweight are recognized as global public health phenomena. Its long term consequences are many chronic conditions like hypertension, Diabetes mellitus, and many more. Childhood obesity is complex and multidimensional, which has been identified as a public health priority.

Objective: To assess the impact of a multi-approach population-based childhood obesity intervention over three years at school population in Dubai.

Methods: Follow up was conducted on about 260000 students in the age range of 5-18 y (grades 1–12) over about 180 private schools in Dubai, United Arab Emirates in three consequence academic years 2014-2015, 2015-2016 and 2016-2017. BMI measurement as per WHO growth charts was used at the beginning of each academic year (September). Wide variety of interventions have been designed an applied like health promotion, school nutritional education activities, Food labelling, happy school initiatives, 10-10 initiative physical activity platform, parents awareness, students health file initiative, City Makers (blue team initiative), community participation (private–public partnership, Governmental stockholders intersect oral collaborations school canteen policy and guideline.

Results: The current study revealed that about 10.1% of the total students in private schools in Dubai in the academic year 2014-2015 were obese. Obesity prevalence during the academic year 2015-2016 was 9.88%. The study reflected that prevalence of obesity among student population at private schools in Dubai during the academic year 2016-2017 was 8.9%. The study revealed that the trend of obesity prevalence among students population at private schools in Dubai is declining over that last three academic years (2014-2015, 2015-2016 and 2016-2017) showing that about 1.2% total reduction during the three year period of applying effective intervention program.

Conclusion: Multi approach public health intervention for childhood obesity is significant. Maintaining intervention need to be revised, re-assessed, monitored and there is a need for strengthening sustainable long term approach through governmental and nongovernmental accountability.

Keywords: Obesity, Intervention, Population based, School setting

INTRODUCTION

One of the major public health concern worldwide is obesity and overweight which considered as global public health phenomena [1, 2]. The end result of obesity and overweight are number of serious chronic disease like hypertension, diabetes mellitus and many more [3] that has significant cost healthcare spending, and leading to disability, and deaths [4, 5]. It has been shown that significant difficulties usually associated with treating obesity once started [4, 6]. Evidences showed [2, 7] that, childhood obesity is a serious problem and has multiple factors to take care for its management [8, 9]. Decline of quality of life has been also recognized and life expectancy as well as it will be a huge economic problem with the management usually concerned with obesity [4, 8]. Childhood obesity is still recognized as is complex and multidimensional issue which needs to be addressed through applying various control measures. The social context of obesity management assuming that, there should be a strong participation from the side of the community as well as family [10]. More to note that, basic measures should start from the family itself which will

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then aid to shape the child behaviors daily [11, 12]. Controlling of early childhood and adolescent overweight and obesity should be considered for different aspects. Experts recommend encouraging specific eating and physical activity behaviors through multiple approach interventions [13-23].

The purpose of this study is to assess the state of overweight and obesity in the light of the application of a wide range of interventions targeting childhood and adolescent overweight. To study the effect of intervention of multi-approach population oriented obesity among childhood over three years at school population in Dubai, United Arab Emirates.

Methodology

Follow up was conducted on about 260000 students in the age range of 5-18 y (grades 1–12) over about 180 private schools in Dubai in three consequence academic years 2014-2015, 2015-2016 and 2016-2017. BMI measurement as per WHO growth charts was used at the beginning of each academic year (September). Wide variety of interventions have been designed an applied like health promotion, school nutritional education activities, Food labelling, Happy Schools initiatives, 10/10 initiative physical activity platform, parents awareness, students health file initiative, City Makers (blue team initiative), community participation (private–public partnership, Governmental stockholders intersect oral collaborations school cantin policy and guideline.

RESULTS

The current study revealed that about 8.7% of the total student population in private schools in Dubai in the academic year 2014-2015 were obese, and about 1.4% of the total students were morbid obese. A total of 10.1% of all students were obese of different severity as reflected by table (1).

The study showed that the prevalence of obesity among student population at private schools in Dubai during the academic year 2015-2016 was 9.05% and about 0.83% of the total students were morbid obese. A total of 9.88% of all students were obese of different severity as reflected by fig. (1).

Table 1: Obesity and overweight among students population in private schools in Dubai in th academic year 2014-2015

<table>
<thead>
<tr>
<th>Grade</th>
<th>Gender</th>
<th>Natioality</th>
<th>Underweight</th>
<th>Normal</th>
<th>Overweight</th>
<th>Obese</th>
<th>Morbid obese</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>G 1-4</td>
<td>M</td>
<td>UAE</td>
<td>521</td>
<td>10</td>
<td>3613</td>
<td>69.4</td>
<td>611</td>
<td>11.7</td>
</tr>
<tr>
<td></td>
<td>Ex.</td>
<td></td>
<td>2943</td>
<td>8.3</td>
<td>25259</td>
<td>71.9</td>
<td>4325</td>
<td>12.2</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>UAE</td>
<td>433</td>
<td>10.1</td>
<td>2959</td>
<td>68.9</td>
<td>569</td>
<td>13.2</td>
</tr>
<tr>
<td></td>
<td>Ex.</td>
<td></td>
<td>2892</td>
<td>8.5</td>
<td>25292</td>
<td>74.7</td>
<td>3780</td>
<td>11.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>6789</td>
<td>8.6</td>
<td>57393</td>
<td>72.8</td>
<td>9285</td>
<td>11.8</td>
</tr>
<tr>
<td>G 5-8</td>
<td>M</td>
<td>UAE</td>
<td>222</td>
<td>5.1</td>
<td>2756</td>
<td>63.9</td>
<td>794</td>
<td>18.3</td>
</tr>
<tr>
<td></td>
<td>Ex.</td>
<td></td>
<td>1411</td>
<td>5.2</td>
<td>18465</td>
<td>67.8</td>
<td>4241</td>
<td>15.6</td>
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<tr>
<td></td>
<td>F</td>
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<td>210</td>
<td>5.8</td>
<td>2313</td>
<td>63.5</td>
<td>646</td>
<td>17.7</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>1236</td>
<td>4.8</td>
<td>18945</td>
<td>73.1</td>
<td>3619</td>
<td>13.9</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>3079</td>
<td>5</td>
<td>42488</td>
<td>69.5</td>
<td>9300</td>
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</tr>
<tr>
<td>G 9-12</td>
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<td>UAE</td>
<td>151</td>
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<td>2913</td>
<td>15.3</td>
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<tr>
<td></td>
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<td>65.5</td>
<td>406</td>
<td>16.2</td>
</tr>
<tr>
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<td>14173</td>
<td>75.3</td>
<td>2615</td>
<td>13.9</td>
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<td>3.6</td>
<td>30862</td>
<td>71.4</td>
<td>6415</td>
<td>14.8</td>
</tr>
</tbody>
</table>

![Fig. 1: Prevalence of obesity among students population at private schools in Dubai for the academic year 2015-2016](image-url)
The study showed that the prevalence of obesity among student population at private schools in Dubai during the academic year 2016-2017 was 8.2% and about 0.7% of the total students were morbid obese. A total of 8.6% of all students were obese of different severity as reflected by fig. (2).

The study revealed that the trend of obesity prevalence among students population at private schools in Dubai is declining over that last three academic years (2014-2015, 2015-2016 and 2016-2017) showing that about 1.2% total reduction during the three years period of applying effective intervention program as shown in fig. (3).

**DISCUSSION**

Prevalence of obesity in this study was less in comparison to some other study results carried out in Saudi Arabia, that revealed obesity for the age groups 5 to 18 y 11.3%. As for 5-12 y group, the obesity was 11.0% in females and 7.8% in males. 13-18 y group, prevalence was 12.1% in female and 13.8% in males. Schools environment considered to act as a platform for monitoring obesity through adopting a multi approach strategy from home which includes raising the education of parents relevant to obesity. There should be obvious action plans for healthy diet and active physically [24, 25].

The study showed that reduction in the prevalence of childhood obesity among student population at private schools in Dubai was 1.2% over three year of comprehensive intervention program implementation. Some other studies showed that there are no effects on anthropometric index [26-33]. On reverse there was noticed reduction in this study telling that the multi approach intervention may be more effective than individual approach.

The current study showed that the multi intervention approaches through applying different intervention strategies was significantly effective in prevention and management of childhood obesity which managed to reduce obesity prevalence in 1.2% among study population over three successive years. This results were similar to many other results reflected by different international studies [34-38]. Our research uncovered that school-based weight avoidance and control programs are proposed to be
doable and successful; on the grounds that understudies spend a significant piece of their opportunity in school, also instructors and associates can be occupied with such projects. They are described by healthful instruction and changes in dietary habits, and also increment in physical action through organized projects [39, 40].

CONCLUSION

Multi approach public health intervention for childhood obesity is significantly successful in producing weight reduction in the short and long term, by bringing stakeholders on board and implementing effective intervention program with wide variety of tasks. Maintaining intervention need to be revised, re assessed, monitored and there is a need for strengthening sustainable long term approach through governmental and nongovernmental accountability.

CONFLICT OF INTERESTS

The authors declare that they do not have any conflict of interest

REFERENCES


