

# **Community and Public Health Nutrition**

## Strategy Proposal

## Introduction

**Program summary statement:** This proposal is directed towards improving the situation of childhood obesity in the children between the age group of 2-17 at West Moreton area over a period of 3 year through nutrition based interventions as it has one of the highest childhood obesity rates in Queensland and Australia.

**Mandates for action:** To reduce obesity and overweight in adolescents and children aged 2-17 years by at least 5% by 2030.

**Community and problem/issue analysis:** It is estimated that at the Global level that around 224 million school age children are overweight. In Australia 25 percent of the children between the ages of 2-17 years were either obese or overweight. Australia has the 5<sup>th</sup> rank on OECD countries in terms of childhood obesity. In Queensland 26 percent of the children are either obese or overweight and this figure is 1 percent higher than the national average (**Queensland government, 2017**). The high prevalence of childhood obesity in Queensland is a major issue in the remote and disadvantaged areas like West Moreton. West Moreton is an area that has one of the highest childhood obesity rates (children aged 2–17) of 24.5 % during 2017-18 (**Health Queensland government, 2019**).

**Table 4. Measured weight status, crude prevalence by Primary Health Network, children, Queensland, 2017–18**

	Healthy weight	Under-weight	Over-weight	Obese	Overweight and obese
	%	%	%	%	%
Queensland (5–17 years)	65.5	9.9	15.9	8.3	24.6
Queensland (2–17 years)	65.2	10.8	15.4	8.7	24.5
Primary Health Network					
Brisbane North	66.2	10.9	14.1	9.4	23.5
Brisbane South	65.1	8.4	18.6	9.1	25.7
Central Qld & Sunshine Coast	#62.6	18.3	11.6	9.0	21.4
Darling Downs & West Moreton	#58.4	13.9	17.9	10.3	24.5
Gold Coast	77.4	10.2	13.8	9.5	22.0
Northern Queensland	#58.3	10.3	12.7	11.9	24.6
Western Queensland	#59.3	#6.4	#12.9	#22.9	#34.3

**Source: Health Queensland government, 2019**

This indicates that West Moreton is an area in Queensland that requires a special focus in order to reduce the high childhood obesity rates.

West Morton health jurisdiction covers around 6% of the population of Queensland with a large population of young children and adolescents (0-19 years). The community residing at West Moreton is economically, culturally, geographically and economically diverse as it contains both rural and metropolitan settings and people from various socio-cultural backgrounds like people from South Africa, New Zealand, India and England and so on. It has an aboriginal population of 4.1% and the area falls under socio-economic disadvantage as compared to Queensland as a whole (**West Moreton Health, 2019**).

**Determinant analysis:** There are three major determinants to the high prevalence of childhood obesity at West Moreton when analysed by using ecological approach. These are individual factors like lifestyle and food preferences like consumption of discretionary foods like snacks and other unhealthy fast foods, physical environments settings like less physical exercise and easy access to fast food and unhealthy eating items, and lastly the macro level environmental factors like the socio-economic disadvantage and inadequate government policies for prevention of child hood obesity (Alsharairi, 2018). Out of this, the factors like lifestyle and food preferences and lack of physical exercises are easily amenable to change through community interventions. On the other hand the macro level environmental factors like socio economic and physical factors like access to fast food are complex issues. Thus due to practical reasons lifestyle and food preferences are most probable to be amended through interventions like education and support hence will be the focus of this proposal. Childhood obesity because of lifestyle and food preferences issues can be dealt with the nutrition based interventions (Fornari *et al*, 2021).

**Stakeholder's analysis:** The following is a stakeholder's analysis using a stakeholder's grid grid

Stakeholder	Power	Interest
<b>Children</b>	low	High
<b>Parent</b>	High	High
<b>Community</b>	High	High
<b>Government</b>	High	Low
<b>NGO's</b>	High	High

### **Stakeholder's Grid**

In this scenario, the children are the stakeholders who have low power but high interest as they are main target of the interventions and hence they need to be kept informed about what is expected from them. Parents, NGO's and community have high interest and high power as they have to play a major role in the implementation of the interventions and their future is tied with the health of the children. Hence they need to be managed closely. Government have high power but low interest as they have a number of issues to resolve and hence they need to be kept satisfied in this situation.

### **Aims and objectives of the program**

The aim of this program is to reduce the high prevalence of the childhood obesity in the children and adolescents aged 2-17 years at the West Moreton area in Queensland and to support the National obesity strategy. For this purpose the following will be the SMART objective on which this program will focus

1. To reduce the percentage of obese and overweight children and adolescents aged 2-17 years at the West Moreton area in Queensland by 2% by the year 2025 through a nutrition based intervention

This objective will be used as a metric to measure the success of this program.

## Evidence of intervention research

Reduction of the childhood obesity is one of the major challenges that are faced by the clinicians and the policy makers. Nutritional interventions can play an important role in the prevention and also treatment of the childhood obesity. **Fornari *et al* (2021)** in their research found that family and school based interventions that focussed on healthy diet are a promising option that can help in the reduction of the childhood obesity. Strategies like promotion of breast feeding and healthy eating habits in the families and schools can help in improving the situation. Also use of multidimensional approach play an important role in making such interventions successful. In another research by **Blake-Lamb *et al* (2016)**, found that the concept of “First 1000 days” which means implementing nutritional interventions for reducing childhood obesity during pregnancy to first 24 months can help in preventing childhood overweight/obesity in the children between 6 to 18 years. During the study 26 unique interventions were identified out of which interventions targeted at behaviour change at individual/ family level were found to be most effective. Thus targeting the behaviours of the parents and the children at an early age can help in the prevention of childhood obesity.

In a research by **Foster *et al* (2015)**, on the preschool age children in U.S established many observations that can be a guiding factor for the interventions that are aimed at reducing the childhood obesity. It was observed that earlier interventions and prevention of the childhood obesity can be both clinically effective as well as cost effective. It was found that multidisciplinary approaches were significantly effective in reducing childhood obesity. It was also established that the parental coaching and educating about the dairy rich diet also showed significant impacts on the reduction and prevention of the childhood obesity. **Mihirshahi *et al* (2018)** conducted a research that focussed on the contemporary approaches for prevention and management of the paediatric obesity in Australian context. It was found that overconsumption of the food items that were energy dense and poor in nutrients was a major behavioural risk factor that increased incidences of childhood obesity. The interventions in Australia to reduce childhood obesity are mainly focused on individual level interventions which have a limited impact and there is a need to reduce the environments that are obesity conducive. Thus from these findings it can be said that dietary habits are a major cause of the childhood obesity.

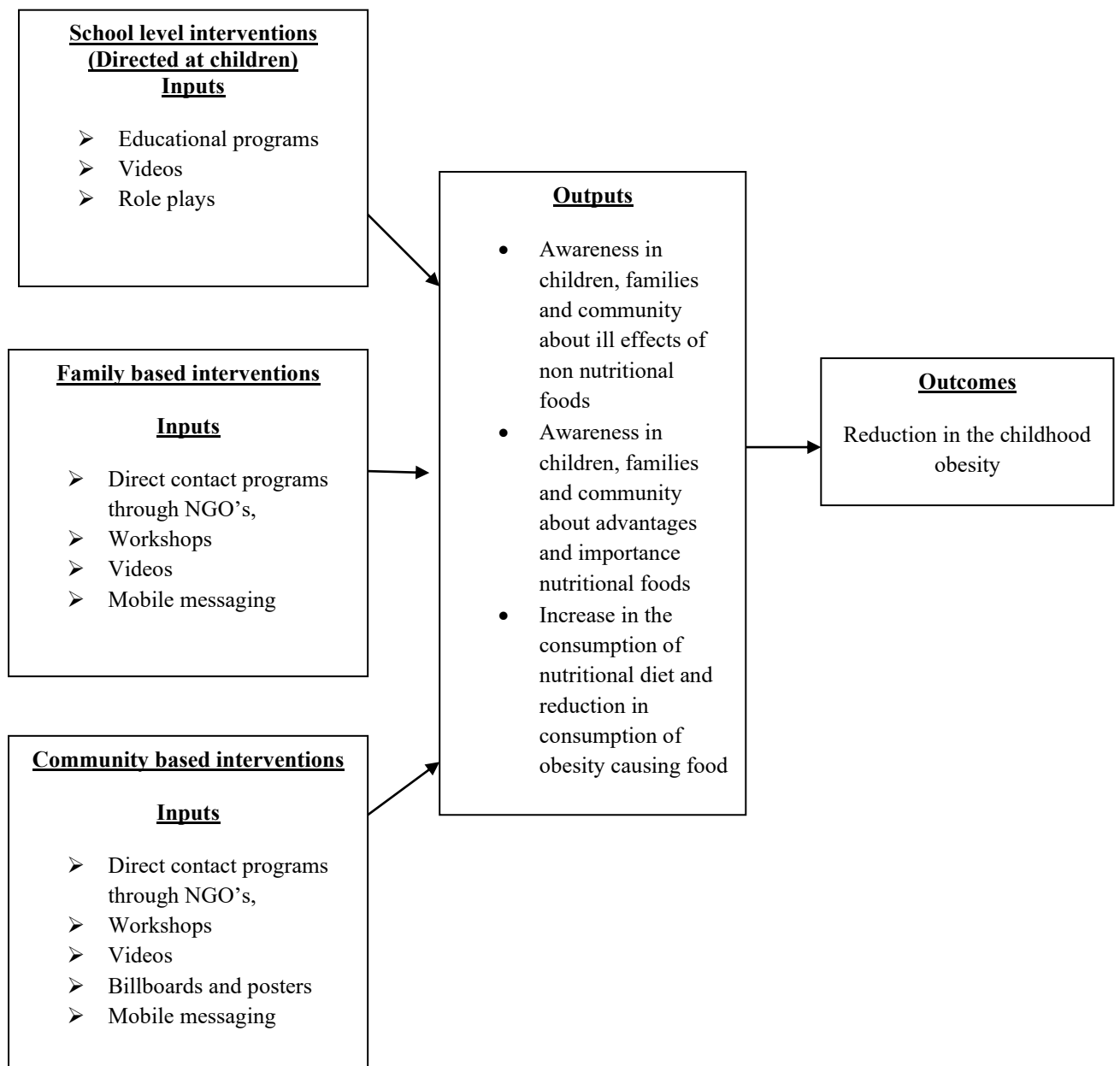
Childhood obesity is a serious problem at the global level. It generally begins in the early age during the preschool years and then it gets carried in the childhood and even adult life. It is not easy to control or reverse childhood obesity once started, and it can result in the poor health outcomes on both short and long term. Hence it is important that the evidence based interventions for preventing and controlling the childhood obesity should be developed and implemented. Ideally these interventions should target the young children and their family and should be evidence based (**Lanigan *et al*, 2019**). The effective and successful interventions for preventing childhood obesity are multi component and are based on the behaviour change strategies and involve the parents and the family. The practices like involving the parents in the goal setting, creating shared values and motivational counselling can help in bringing the positive dietary behaviour change in the children. Hence these factors can be used for the development of the treatment interventions that are focussed on the reduction of the childhood obesity (**Enright *et al*, 2020**). Thus there is a need to develop effective and evidence based intervention strategies for reducing the childhood obesity.

**Kim & Lim (2019)**, in their research established that developing healthy eating habits and behaviours is essential for the reduction and prevention of the childhood obesity. A multi component approach that involves education and counselling regarding nutrition, nutritional food selection and a Mediterranean style hypo caloric diet can be effective in reducing childhood obesity. But it is not easy to identify the effectiveness of the nutrition management interventions mainly because the complex and interacting components of such multi component approaches. Still, the interventions that promote healthy nutritional intakes can be effective in dealing with this issue. **Homs et al (2021)**, in their study found that majority of the obese children is from the low socio economic status (SES) from the high income countries. The family based interventions have been found to be effective in the prevention of the childhood obesity. Interventions like educating the parents through family workshops about healthy lifestyles, educational materials like videos and mobile messages about the importance of nutritional diet can prove to be effective. Thus there is a need to develop and implement innovative strategies that are focussed on reducing obesity risk behaviours in the SES that involve the families.

### Intervention plan (Action)

**Proposed strategy:** Based on the analysis of the community problem, determinant analysis, stakeholder analysis and the evidence of intervention research a multidimensional strategy will be implemented in this proposed program. This will target three broad stakeholder groups namely the children and adolescents at individual level, community and the family. This strategy will aim at bringing two nutrition related behavioural changes across all the three groups namely reduction in the consumption of unhealthy food items like the one with high energy, sugar and salt contents and encouraging the consumption of healthy food items like fruits, vegetables, dairy products and hypo caloric diet (**Kim & Lim ,2019**). The children will be directly targeted through the educational programs at school level that will aim at educating them about the harm of obesity and non nutritional diet and the benefit of nutritional diets. These programs will include animated videos, role plays and education at class room level about the issue of childhood obesity and importance of nutritional diet (**Foster, 2015**).

The families will be the next important part of this intervention and they will be educated about the harm from childhood obesity and importance of nutritional diet in children since the early years. A special focus will be on educating the pregnant women and women in general about the importance of breast feeding and nutrition during first 24 months of age. The families will also be helped by coaching them about how they can give a nutritional diet to the children and avoid giving them high energy food. For this purpose help of direct contact programs through NGO's, workshops, videos and mobile messaging will be used (**Blake-Lamb et al, 2016**). At the community level again the same strategy will be followed and the community leaders like the local opinion leaders, elected representatives and so on will be informed about the harm from childhood obesity and importance of nutritional diet in children since the early years. The use of posters and billboards will also be made for this purpose. In the entire program, government agencies like local councils will be involved along with the NGO's (**Homs et al, 2021**). The overall aim will be to reduce the consumption of non nutritional food and encourage consumption of nutritional food in order to reduce childhood obesity.



### **Logic Model for the project**

## Evaluation plan

It is important for the success of any intervention plan that a proper evaluation of the intervention is carried out in terms of process, impacts and outcomes. The following is an evaluation matrix for the evaluation of this program.

Process/Activities	Exposure	Reach	Delivery	Satisfaction	Impact	Outcome
School based						
➤ <b>Educational programs</b>	Number of schools exposed to any one intervention	Number of children exposed to any one intervention	Number of activities carried out in each category	Percentage of target audiences who found the activities interesting	Percentage of children who modified their eating habits	Percentage of obese/overweight children at school
➤ <b>Videos</b>						
➤ <b>Role plays</b>						
Family based						
➤ <b>Direct contact programs through NGO's,</b>	Number of Families exposed to any one intervention	Number of families exposed to any one intervention	Number of activities carried out in each category	Percentage of target audiences who found the activities interesting	Percentage of families who modified their eating habits	Percentage of obese/overweight children in families
➤ <b>Workshops</b>						
➤ <b>Videos</b>						
➤ <b>Mobile messaging</b>						
Community based						
➤ <b>Direct contact programs through NGO's,</b>	Number of areas exposed to any one intervention	Number of community members exposed to any one intervention	Number of activities carried out in each category	Percentage of target audiences who found the activities interesting	Percentage of community leaders who joined the promotion of the program	Percentage of obese/overweight children in the community
➤ <b>Workshops</b>						
➤ <b>Videos</b>						
➤ <b>Billboards and posters</b>						
➤ <b>Mobile messaging</b>						

**Project sustainability:** The projects that are sustainable are not only successful but they can also be scaled up in order to benefit a larger number of people. In order to develop sustainability in this project there will be five steps that will be taken. Firstly, a proper resource analysis will be carried out and the arrangements will be made to ensure that all such requirements are fulfilled so that the program does not faces resource shortages. The second step will be partnerships. Partnerships will be the base of this project (**Hailemariam *et al*, 2019**). Partnership will be created with NGO's, Volunteers, schools, government organizations, families and the community leaders. These partnerships will not work for this particular area but later with their help, this program can be extended to other areas as well where there is such requirement. The third step will be flexibility; the program will be made flexible so that it can be adjusted as per the changes that may take place in the environment. The fourth step that will be taken is of involving latest technologies in the project. The use of the latest internet and web based technologies will be made for the delivery of the program. This will help in scaling up of this program at the later stage with the help of the information communication technologies (ICT) (**Scahill & Bligh, 2022**).

## References

1. Queensland government, 2017. “An integrated approach for tackling childhood overweight and obesity in Queensland”. Retrieved from <https://www.growinggoodhabits.health.qld.gov.au/wp-content/uploads/PDF/health-professionals/An-integrated-approach-for-tackling-childhood-overweight-and-obesity-in-Queensland-model-of-care.pdf>
2. Health Queensland government, 2019. “Changes in of weight status children and adults in Queensland and Australia”. Retrieved from [https://www.health.qld.gov.au/\\_data/assets/pdf\\_file/0026/842039/weight-status-nhs-2017-18.pdf](https://www.health.qld.gov.au/_data/assets/pdf_file/0026/842039/weight-status-nhs-2017-18.pdf)
3. Alsharairi, N. A. (2018). Current government actions and potential policy options for reducing obesity in Queensland schools. *Children*, 5(2), 18.
4. West Moreton Health, 2019. “Community Profiles Report”. Retrieved from <https://www.westmoreton.health.qld.gov.au/sites/default/files/inline-files/Community%20profile%202019.pdf>
5. Partridge, S. R., Sim, K. A., Armaghianian, N., Steinbeck, K. S., & Cheng, H. L. (2022). Adolescence and young adulthood: an untapped window of opportunity for obesity prevention. *Public Health Research & Practice*, 32(3), 3232223-3232223.
6. Lanigan, J., Tee, L., & Brandreth, R. (2019). Childhood obesity. *Medicine*, 47(3), 190-194.
7. Enright, G., Allman-Farinelli, M., & Redfern, J. (2020). Effectiveness of family-based behavior change interventions on obesity-related behavior change in children: a realist synthesis. *International Journal of Environmental Research and Public Health*, 17(11), 4099.
8. Fornari, E., Brusati, M., & Maffeis, C. (2021). Nutritional Strategies for Childhood Obesity Prevention. *Life*, 11(6), 532.
9. Blake-Lamb, T. L., Locks, L. M., Perkins, M. E., Baidal, J. A. W., Cheng, E. R., & Taveras, E. M. (2016). Interventions for childhood obesity in the first 1,000 days a systematic review. *American journal of preventive medicine*, 50(6), 780-789.
10. Foster, B. A., Farragher, J., Parker, P., & Sosa, E. T. (2015). Treatment interventions for early childhood obesity: a systematic review. *Academic pediatrics*, 15(4), 353-361.
11. Mahrshahi, S., Gow, M. L., & Baur, L. A. (2018). Contemporary approaches to the prevention and management of paediatric obesity: an Australian focus. *Medical Journal of Australia*, 209(6), 267-274.
12. Kim, J., & Lim, H. (2019). Nutritional management in childhood obesity. *Journal of obesity & metabolic syndrome*, 28(4), 225.
13. Homs, C., Berrueto, P., Según, G., Estrada, L., de Bont, J., Riera-Romaní, J., ... & Gómez, S. F. (2021). Family-based intervention to prevent childhood obesity among school-age children of low socioeconomic status: Study protocol of the FIVALIN project. *BMC pediatrics*, 21(1), 1-14.



14. Hailemariam, M., Bustos, T., Montgomery, B., Barajas, R., Evans, L. B., & Drahota, A. (2019). Evidence-based intervention sustainability strategies: a systematic review. *Implementation Science*, 14(1), 1-12.
15. Scahill, J., & Bligh, B. (2022). Developing Stakeholder Agency in Higher Education Sustainability Initiatives: Insights from a Change Laboratory Research Intervention. *The Wiley Handbook of Sustainability in Higher Education Learning and Teaching*, 99-131.