

# Sahtak bi sahnak. Your health on your plate

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## Impact paragraph

Johann Wolfgang von Goethe once said that “knowing is not enough, we must apply. Willing is not enough, we must do”. When it comes to paediatric obesity, we do *know* for sure that it is a serious health problem affecting 12.2% of Lebanese adolescents aged 10 to 19 years, and over 340 million children and adolescents worldwide (1). Yet, few national efforts were undertaken in the Arab world, and the problem is still not resolved. The aim of this dissertation was to develop, implement, and evaluate of the first nutrition intervention targeting Lebanese adolescents enrolled in secondary schools. Sahtak bi Sahnak is a theory-based, school-integrated, comprehensive, culturally appropriate, and low-cost intervention. Its primary objectives are to improve dietary knowledge, adherence, and consequently prevent paediatric obesity among 15-18-year-old adolescents living in urban and rural regions in Lebanon and enrolled in public and private secondary schools. Sahtak bi Sahnak was developed using the Intervention Mapping framework and implemented by a research dietitian. In addition, dietary knowledge and adherence questionnaires were developed as assessment tools to evaluate the outcomes of the intervention and the correlation between the parental and adolescents’ dietary knowledge and adherence levels, as well as to detect clustered behaviours.

For the current research project, 16 secondary schools located in Beirut, Baalbeck, and Rayak have participated. The schools were divided into two groups: intervention and control. The study showed that the developed intervention significantly increased both dietary knowledge and adherence levels of the intervention participants, compared to the control group. Such positive outcomes should be considered as a starting point to further integrate similar nutrition programmes in school settings to improve eating habits of children and adolescents, and consequently take a step forward in battling paediatric obesity.

This dissertation has both scientific and practical value, and the lessons learned from Sahtak bi Sahnak may help future researchers and health promoters in improving the overall health of Lebanese adolescents. First, the current intervention is the first nutrition intervention for secondary schools in the Arab world, and the first nutrition intervention based on the IM framework applied in an Arab country. The dissertation provided an insight in the role of IM in developing nutrition intervention implemented in school settings. Researchers and health promoters may consider applying Sahtak bi Sahnak in other Arab countries to improve the eating habits of adolescents and further test its application across the border. Sahtak bi Sahnak resulted in positive outcomes on both dietary knowledge and adherence levels of Lebanese adolescents aged 15 to 18 years old. This intervention represents the cornerstone for future dissemination of nutrition interventions targeting secondary schools in Lebanon and potentially in the region as the material and instruments were culturally adapted and are fully available online in both English and Arabic.

## Impact paragraph

Additionally, the programme can be easily integrated into the Lebanese school setting within the context of the adolescents' natural environment (210). The elaborate protocol and methodology of the intervention development and implementation following all the six steps of Intervention Mapping are published in an open access journal, making them available to researchers and to the general public. Health promoters from other countries may easily modify, duplicate, or adapt the intervention according to the desired setting and context.

Second, the programme was planned to suit Lebanese adolescents living in both urban and rural regions, and enrolled in both public and private schools (reflecting individuals with different socioeconomic statuses) (73). Furthermore, it suits children and adolescents with different nutritional statuses as 18.5% of children and adolescents aged 5 to 19 years were underweight in 2015 (269).

Third, the project resulted in two dietary assessment tools: DKQ and DAQ. Both questionnaires may be used to evaluate the outcomes of nutrition intervention among adolescents and adults, as well as by nutrition professionals and dietitians to evaluate levels of dietary knowledge and adherence. The questionnaires are inexpensive, timesaving compared to other dietary assessment methods such as the 24h recall, and present a low burden on both the participant and interviewer as they do not take more than 20 minutes to complete.

Fourth, as dietary knowledge is a broad topic, the DKQ's sections may help in identifying the areas to focus on and this can guide future nutrition intervention and education strategies, and save time and resources. Similarly, the DAQ can be also used by health promoters and researchers to assess current nutrition adherence for adolescents (and potentially adults) by checking the overall dietary adherence index, looking at the healthy and unhealthy items score, or evaluating the separate DAQ items. This can help in evaluating the overall changes in dietary knowledge and adherence, as well as identifying the concrete problem.

Overall, Sahtak bi Sahnak represents a small step in the thousand miles' journey. It may not end the paediatric obesity in Lebanon overnight, but it is a starting point towards the right direction. The programme empowered adolescents by providing them with the necessary knowledge to make the right food choices and contributed to the general wellness of the society as a whole, knowing that today's adolescents are tomorrow's adults. We hope that the knowledge gained from this research project, in addition to the existing literature and suggested recommendations, helps researchers, health promoters, policy makers, and the Lebanese youth in improving health in the future.