



Executive Summary #2

Oil and Fat-related knowledge, attitudes, and practices among Omanis 14-60 years of age in the Sultanate of Oman

INTRODUCTION

Non-communicable diseases (NCDs) are responsible for 80% of all deaths in the Sultanate of Oman [1] and 36% of all deaths are from cardiovascular diseases (CVDs) [2]. Excess consumption of high-fat foods can increase blood cholesterol and triglycerides. According to the World Health Organization (WHO), diets with $\leq 10\%$ of total energy intake (i.e., calories) derived from saturated and trans fats help reduce cholesterol and the risk of cardiovascular diseases [3]. Furthermore, replacing saturated and trans fats with unsaturated fatty acids and carbohydrates lowers cholesterol and reduces the risk of all-cause mortality [3]. According to the Sultanate of Oman's 2017 STEPS survey, 36% of adults >18 years of age had high cholesterol, with higher rates found in women (40%) than men (32%) [4].

Due to this public health issue in the Sultanate of Oman, there is a clear need for population-based interventions that help the population reduce its intake of oil and fat. Prior to undertaking programs and policies, a thorough assessment of the knowledge, attitudes, and practices related to the consumption of specific foods is needed [5].

OBJECTIVES

To assess the knowledge, attitudes, and practices of Omani adolescents and adults related to dietary oil and fat, the Nutrition Department of the Ministry of Health (MoH), Al-Jisr Foundation, and WHO conducted the Sultanate of Oman's 2023 Nutrition-Related Knowledge, Attitudes, and Practices Survey [6]. In addition to oil and fat, the survey also examined knowledge, attitudes, and practices related to general dietary habits, salt, and sugar.

METHODOLOGY

Survey design and target population

The 2023 Nutrition-Related Knowledge, Attitudes, and Practices Survey is a cross-sectional survey of the Omani population. It was designed to derive prevalences of various knowledge, attitudes, and practices indicators related to oil and fat among the Omani population aged between 14 and 60 years, inclusive. Stratified cluster sampling by governorate was used to randomly select survey subjects from selected health centres.

The study protocol aimed to achieve a total sample size of 1406 survey subjects (i.e., both adolescents and adults) for the oil and fat questionnaire, and 1369 adolescent and

adult subjects were ultimately recruited yielding a response rate of 97%.

Data collection

Data related to oil and fat was collected using a questionnaire that was administered to adolescents and adults. The first module of the questionnaire was used to collect information about basic sociodemographic characteristics, such as age, sex, marital status, education level, and training or experience in a health-related field. The second module of the questionnaire contained oil- and fat-related KAP questions that were developed via a review of relevant literature related to oil and fat consumption, and questions used in other surveys [7–13]. The knowledge component of the oil and fat questionnaire is based on 14 questions that inquire about recommendations regarding consumption of oils and fats, cooking methods that may help in decreasing fat consumption, food choices to help decrease fat consumption, effects of fat consumption on health, and the fat content of various food items. The attitude component is based on 8 questions, the first of which contains six separate statements each of which is rated on a three-point Likert scale ranging from “disagree” to “agree”. These questions assess how important it is for the subject to reduce the amount of total fat and specific types of fat in the diet, how important it is to reduce the consumption of processed foods and evaluate the extent to which the subject agrees with specific statements about dietary fat. The practice component of the questionnaire includes a set of 11 main questions inquiring about the use of

fat during food preparation and food consumption, the addition of various types of fats to foods, whether or not the respondent is decreasing fat consumption, whether or not he/she checks food labels for fat, identification of foods containing saturated fat and trans fats, and the frequency of consumption of specific food items.

Data analysis

Based on the questions in each questionnaire component, indices of oil and fat knowledge, attitudes, and practices were created. These indices enabled the categorization of individuals’ knowledge, attitudes, and practices related to oil and fat as low, moderate, and high scores. These categorizations a) ensure that respondent’s knowledge, attitudes, and practices level is based on a set of comprehensive questions, and b) facilitate the interpretation of the survey’s findings.

RESULTS

The survey collected data from 288 adolescents and 1081 adults. Among adults about equal proportions were male and female. In contrast, among adolescents 55% were male and 45% female.

Knowledge

The composite index score for knowledge of oil and fat was low in both adolescents and adults (**Figure 1**). Among adolescents, 88% has low knowledge scores and less than 3% had high knowledge scores. Among adults, nearly 73% had low knowledge scores and approximately 3% had high knowledge scores. Higher knowledge scores were found among adults with a bachelor's degree or higher

(53% moderate or high scores) and among adults residing in households with a monthly household income greater than 1000 OMR (47% moderate or high scores). Overweight or obese adults had higher knowledge scores (34% moderate or high scores) than those with a normal weight (26% moderate or high scores). In contrast, non-hypertensive adults had higher knowledge (29% moderate or high scores) than their hypertensive counterparts (13% moderate or high scores).

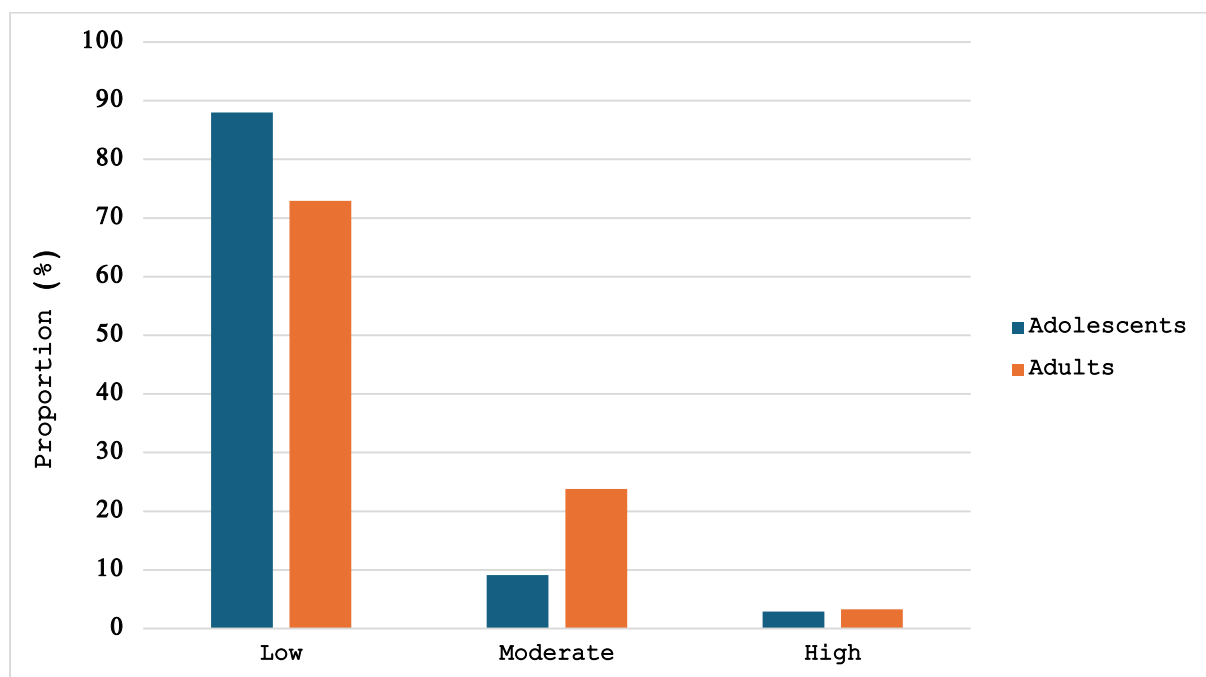


Figure 1. Oil and fat-related knowledge scores in Omani adolescents and adults

The vast majority of adolescents (94%) and adults (97%) reported that consuming of too much fat is bad for one's health, and the majority of adolescents (66%) and adults (87%) correctly identified high blood fat, cholesterol, and heart disease as potential consequences of high fat consumption. Fewer individuals identified hypertension (36% adolescents; 53%

adults) and stroke (19% adolescents; adults 33%) as consequences of high fat consumption. Only 6% of adolescents and less than 1% of adults identified obesity as a health consequences of a high fat diet (**Figure 2**).

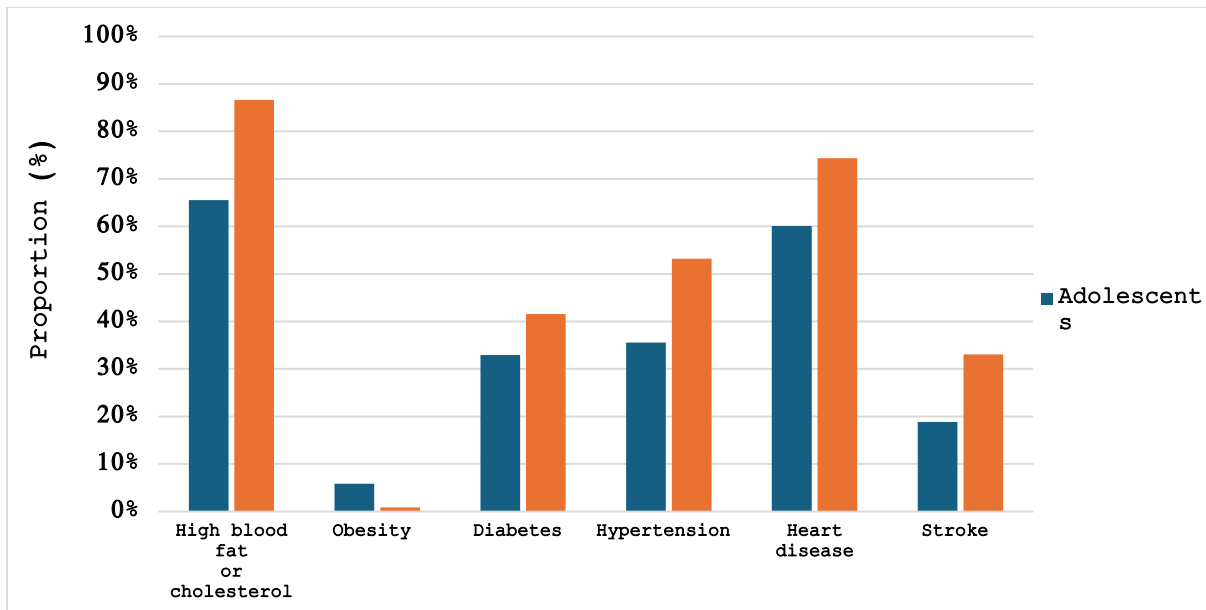


Figure 2. Knowledge of oil- or fat-related health consequences among Omani adolescents and adults

Attitudes

The composite attitudes index showed that a large proportion of adolescents and adults had moderate to high attitudes towards oil or fat (**Figure 3**). In adolescents, the attitude score was higher among those that reported trying to lose weight (87% moderate or high) compared to their counterpart not trying to lose weight (68% moderate or high). In adults, the attitudes score was relatively high in all age groups; 88% of adults 19 to 29 years had moderate

or high attitude scores, which was the lowest prevalence of any age group. Attitude scores also increased consistently as household income increased, with moderate or high scores found in 91% of adults residing in households with monthly income greater than 1000 OMR. In addition, adults who had consulted a professional about nutrition (96% moderate or high) and adults who reported trying to lose weight (96% moderate or high) had higher scores than their counterparts.

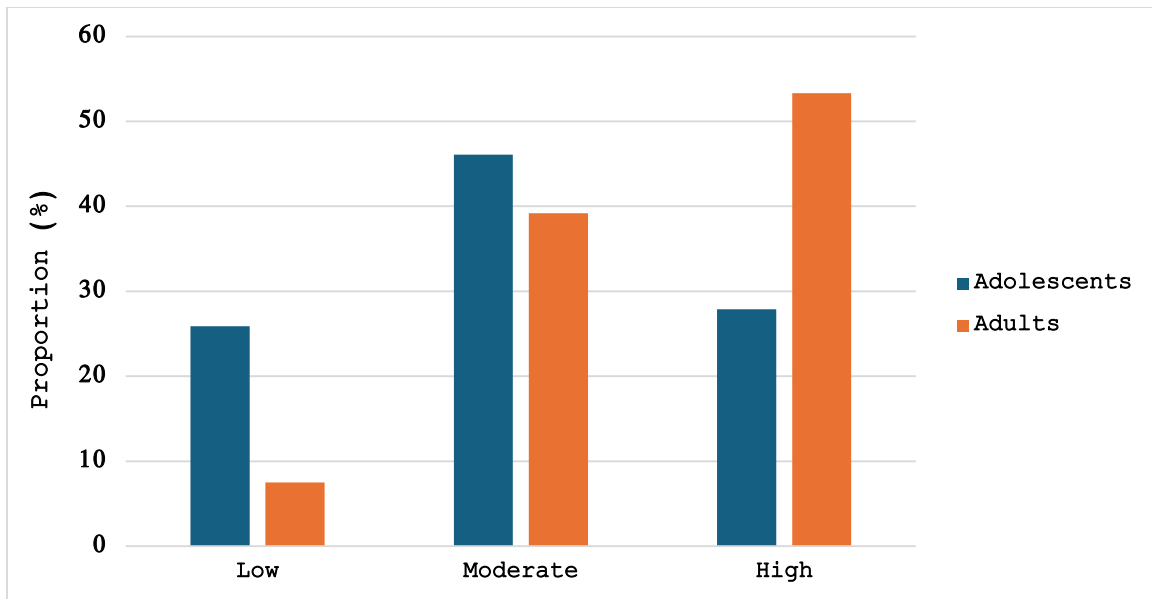


Figure 3. Oil and fat-related attitudes scores in Omani adolescents and adults

Among adolescents, nearly 87% reported that “reducing fat in their food was very important”, however, 38% also reported that “reducing fat intake is difficult”. Nearly 70% of adolescents said that they intended to reduce the fat in their diet (Figure 4). Nearly all adults (96%) reported that

“reducing fat in their food was very important”, and 89% of adults said that they intended to reduce the overall dietary fat as well as dietary saturated fat and trans-fat in their diet. However, 25% of the adults noted that that reducing fat intake is difficult (Figure 4).

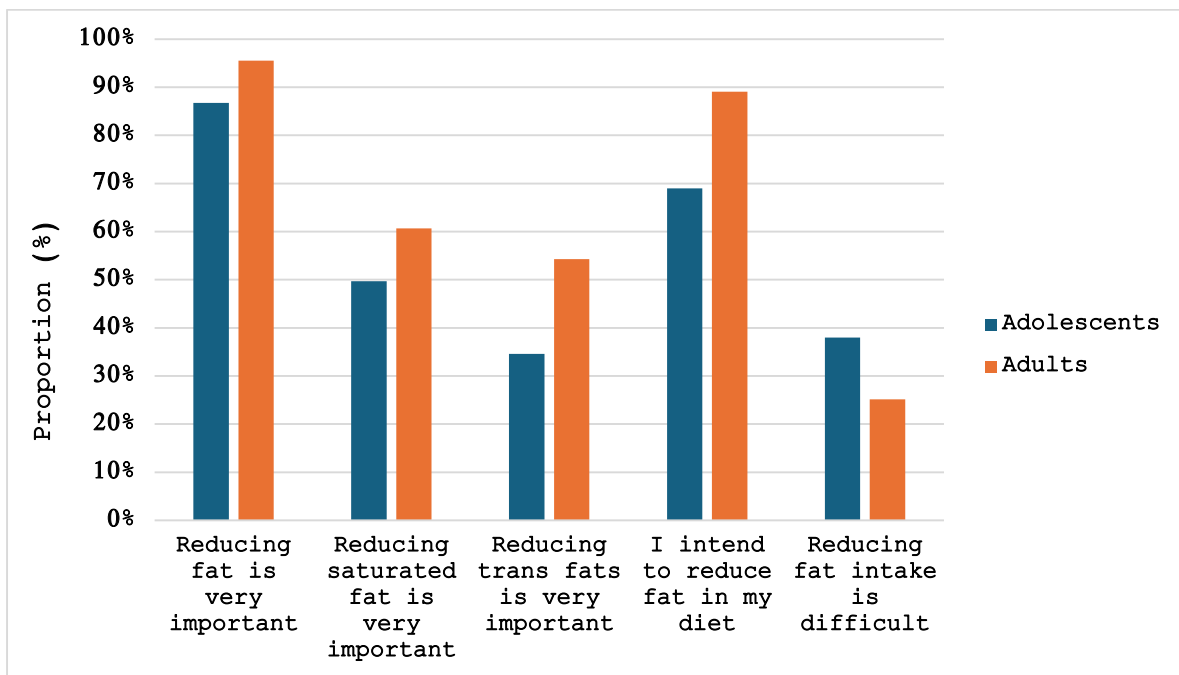


Figure 4. Attitudes related to reducing oil or fat consumption among Omani adolescents and adults

Practices

Among adolescents, the index score for oil and fat practices was very poor, with 94% having a low score. Among adults, the index score for oil and fat practices was also very poor, with <5% having a high practice score (**Figure 5**). Oil and fat practices were

higher among adults with diabetes (30% moderate or high in diabetics; 17% moderate or high in non-diabetics), but no significant differences in oil or fat practices were observed for adults with other NCDs (e.g., hypertension, heart disease, overweight or obesity).

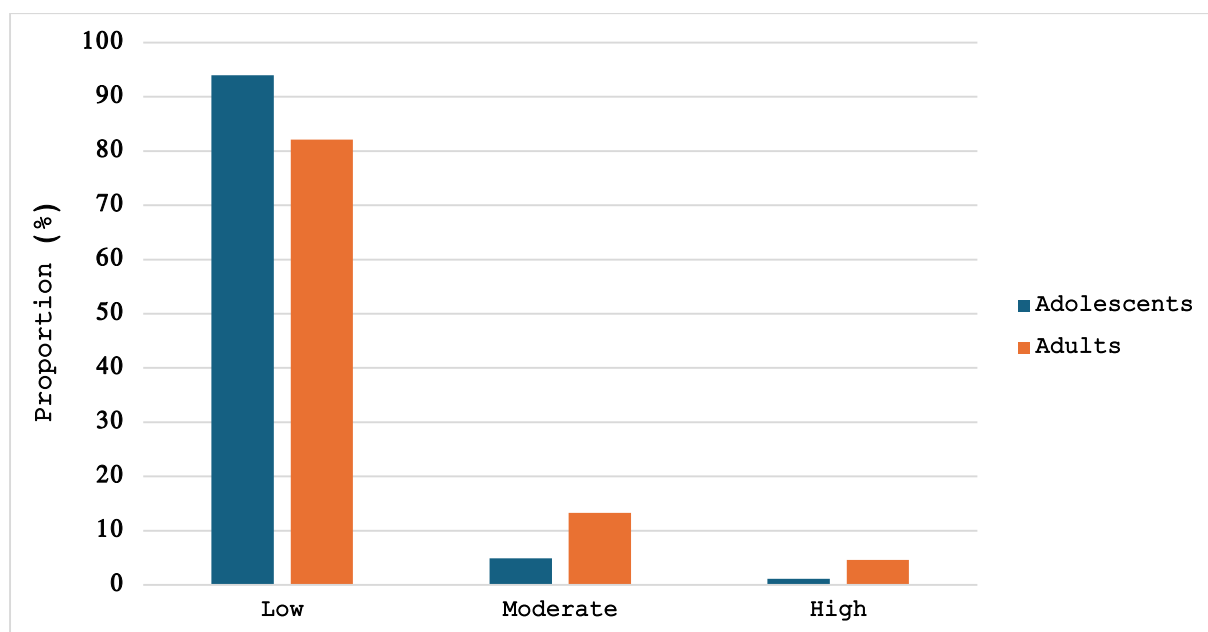


Figure 5. Oil and fat-related practices scores in Omani adolescents and adults

Approximately 39% of adolescents reported not preparing meals, and 51% reported adding oil sometimes, often, or always during cooking. In contrast, less than 23% of adults reported not preparing meals, and more than 66% reported adding oil sometimes, often, or always during cooking (**Figure 6**). Among both population groups, olive oil or another vegetable oil were the most common oils used when cooking.

Approximately 54% adolescents and 48% adults reported never adding oil or fat to

food at the time of consumption (**Figure 7**). Of those that did add oil or fat, the most common method was directly from the package. Fewer than one-quarter of adolescent respondents often or always try to reduce dietary fat while eating. Nearly 63% of adolescents and 50% of adults never or rarely checked ingredients on food package labels, and approximately 52% and 45% respectively checked nutrition labels for total fat content.

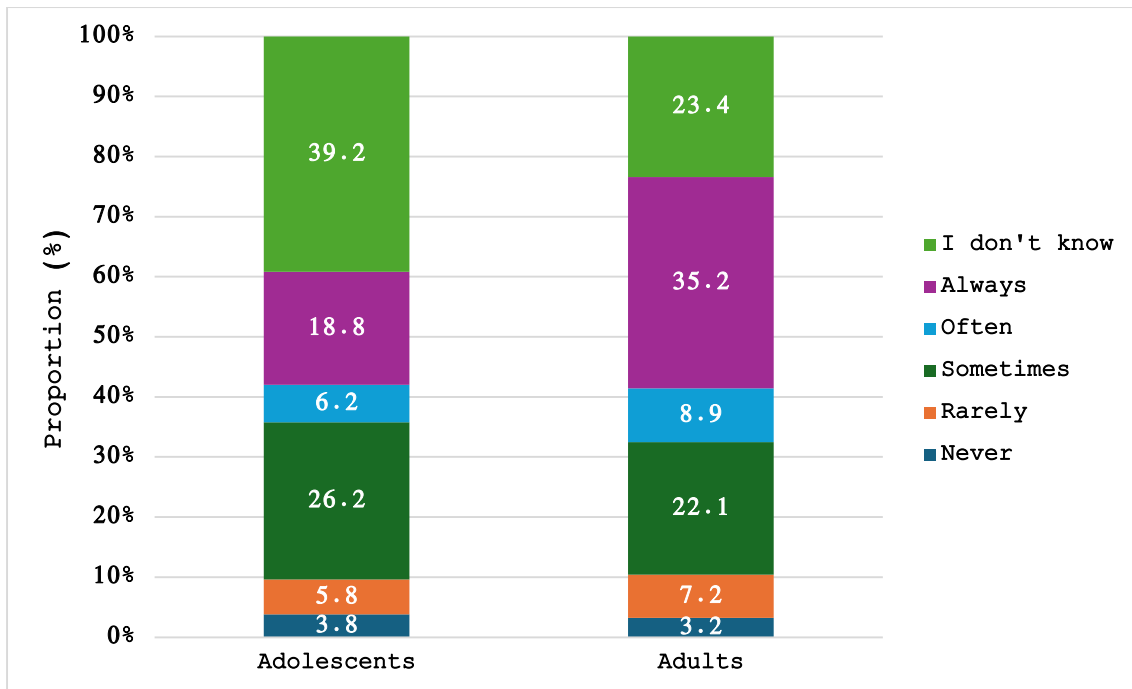


Figure 6. Respondents' reported frequency of adding oil or fat to food during cooking

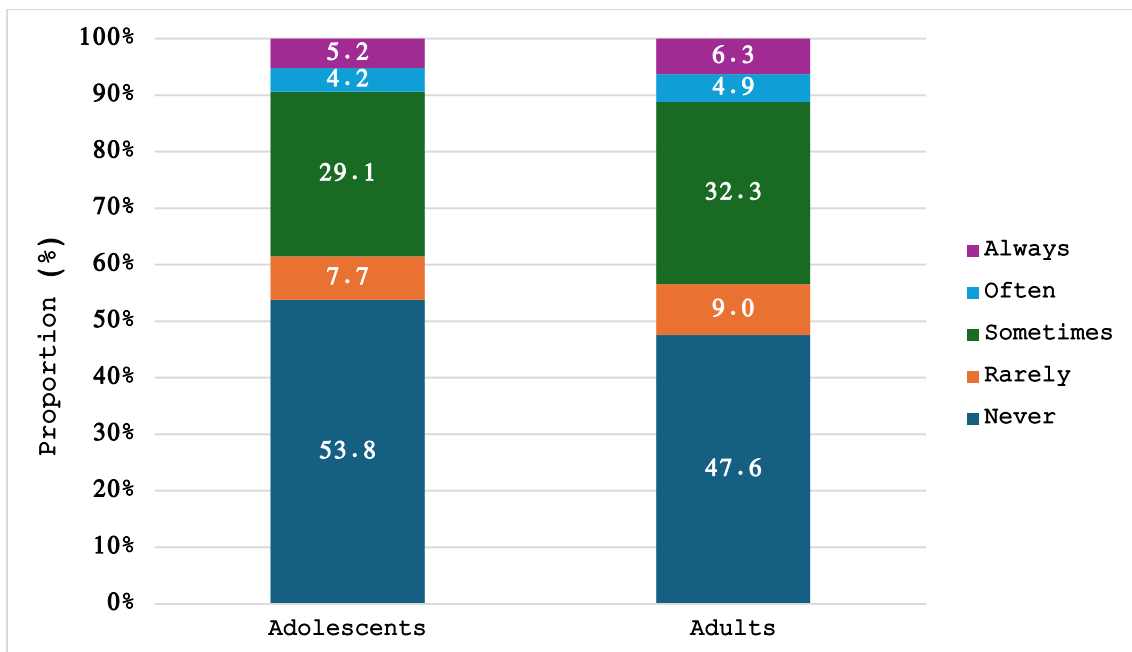


Figure 7. Respondents' reported frequency of adding oil or fat to food during eating

CONCLUSION AND RECOMMENDATIONS

These findings indicate that although many Omanis understand the health risks of

excessive oil and fat intake, this knowledge does not consistently result in healthier practices. This is especially true among adolescents, who scored poorly on dietary knowledge and practices. Adults with

higher education or health conditions like diabetes showed slightly better knowledge and practice scores.

Although reducing fat is widely seen as important, respondents found it challenging. This may explain the discrepancy between high knowledge yet poor practices related to fat and oil. Adding oil and fat to food when cooking is commonplace in the Sultanate of Oman, as is the frequent consumption high-fat foods. Thus, despite many adolescents and adults reporting that there are no barriers to reducing their fat content, the widespread consumption of high-fat foods may limit individuals' ability to improve their diets as healthier foods are less ubiquitous.

Based on the findings, it is clear that a multisectoral approach is needed to reduce the consumption for oil and fats in the Sultanate of Oman. The continuation of

the existing public health programs and the implementation of additional policies is needed to increase the awareness of the public to excess oil and fat consumption and enable consumers to identify and access alternatives to foods high in saturated fats. Key policies and strategies include:

1. Increase knowledge about oil and fat with awareness campaigns
2. Implement nutritional counselling in health institutes
3. Reformulate the composition of processed foods to reduce the oil and fat content
4. Conduct awareness campaigns to improve overall diet, limit saturated fats in foods, and increase physical activity
5. Enhance and expand sports facilities
6. Continue screening adults for NCDs

ACKNOWLEDGEMENTS

This Executive Summary has been produced as part of the 2023 *Survey of nutrition-related knowledge, attitudes, and practices in the Sultanate of Oman*. This survey was undertaken by the Nutrition Department of the Ministry of Health with support from the World Health Organization and the Al Jisr Foundation. Special thanks are given to the adolescents and adults that participated in this survey, and the field staff that collected the data from all governorates in the Sultanate of Oman. This Executive Summary was prepared by Dr. Salima Almamary, Dr. Halima Alghannami, Mr. Saleh Al Shammakhi, Mrs. Ibtisam Al Ghammari, Dr Nicolai Petry, and Dr. James P Wirth.

RECOMMENDED CITATION

Nutrition Department of the Ministry of Health – Sultanate of Oman, Al Jisr Foundation, GroundWork. Executive Summary #2 – Oil and Fat-related knowledge, attitudes and practices among Omanis 14-60 years of age in the Sultanate of Oman. Muscat, Sultanate of Oman; 2024.

REFERENCES

1. WHO. Noncommunicable diseases progress monitor 2022. Geneva, Switzerland; 2022. Available: <https://iris.who.int/bitstream/handle/10665/353048/9789240047761-eng.pdf?sequence=1>
2. Ministry of Health - Oman, United Nations Development Programme, Gulf Health Council, World Health Organization, Secretariat of the UN Inter-Agency Task Force on NCDs. The case for investment in prevention and control of non-communicable diseases in Oman. Muscat, Oman; 2023.
3. World Health Organization. Saturated fatty acid and trans-fatty acid intake for adults and children: WHO guideline. Geneva, Switzerland; 2023. Available: <https://iris.who.int/bitstream/handle/10665/370419/9789240073630-eng.pdf?sequence=1>
4. Ministry of Health (Oman), World Health Organization. National Health Survey of Non-communicable diseases risk factors - 2017 STEPS Report - Sultanate of Oman. Muscat, Oman; 2019.
5. USDA - Dietary Guidelines Advisory Committee. Scientific report of the 2015 Dietary Guidelines Advisory Committee: advisory report to the Secretary of Health and Human Services and the Secretary of Agriculture. Washington, D.C.; 2015. Available: <https://health.gov/sites/default/files/2019-09/Scientific-Report-of-the-2015-Dietary-Guidelines-Advisory-Committee.pdf>
6. Ministry of Health - Oman, Al Jisr Foundation, GroundWork. Ministry of Health, Al Jisr Foundation and GroundWork. Survey of Nutrition-Related Knowledge, Attitudes and Practices in Oman 2023. Muscat, Oman; 2024.
7. Parmenter K, Wardle J. Development of a general nutrition knowledge questionnaire for adults. *Eur J Clin Nutr.* 1999;53: 298–308.
8. Nasser R, Cook S, Bashutski M, Hill K, Norton D, Coleman J, et al. Consumer perceptions of trans fats in 2009 show awareness of negative effects but limited concern regarding use in snack foods. *Applied Physiology, Nutrition, and Metabolism.* 2011;36: 526–532.
9. Dobson AJ, Blijlevens R, Alexander HM, Croce N, Heller RF, Higginbotham N, et al. Short fat questionnaire: a self-administered measure of fat-intake behaviour. *Aust N Z J Public Health.* 1993;17: 144–149.
10. Kinlay S, Heller RF, Halliday JA. A simple score and questionnaire to measure group changes in dietary fat intake. *Prev Med (Baltim).* 1991;20: 378–388.
11. Ellis S, Glanville NT. Trans fat information on food labels: consumer use and interpretation. *Canadian Journal of Dietetic Practice and Research.* 2010;71: 6–10.
12. Eckel RH, Kris-Etherton P, Lichtenstein AH, Wylie-Rosett J, Groom A, Stitzel KF, et al. Americans' awareness, knowledge, and behaviors regarding fats: 2006-2007. *J Am Diet Assoc.* 2009;109: 288–296.
13. Jasti S, Kovacs S. Use of trans fat information on food labels and its determinants in a multiethnic college student population. *J Nutr Educ Behav.* 2010;42: 307–314.