



## Executive Summary #1

# General healthy eating-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]. The Sultanate of Oman's NCD epidemic may be at least partially linked to the nutrition transition that occurred in the country during the past few decades, and its accompanying shifts in diet, lifestyle, and body composition. Available data in the Sultanate of Oman show an increase in overweight and obesity and highlight suboptimal dietary practices, characterized by high intakes of salt and sugar, energy-dense but nutrient-poor foods, and low intakes of cardioprotective nutrient-rich foods, such as fruits and vegetables [3–5].

Due to this public health issue in the Sultanate of Oman, there is a clear need for population-based interventions that encourage a decrease in the dietary intake of atherogenic nutrients, and an increase in the consumption of cardioprotective foods in the Sultanate of Oman. Prior to undertaking programs and policies, a thorough assessment of the knowledge, attitudes, and practices related to the consumption of specific foods is needed [6].

## OBJECTIVES

To assess the knowledge, attitudes, and practices of Omani adolescents and adults related to general healthy eating, the Nutrition Department of the Ministry of Health (MoH), Al-Jisir Foundation, and WHO conducted the Sultanate of Oman's 2023 Nutrition-Related Knowledge, Attitudes, and Practices Survey [7]. In addition to general healthy eating, the survey also examined knowledge, attitudes, and practices related to oil and fat, 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 general healthy eating among the Omani population aged between 14 and 60 years of age, 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 general healthy eating questionnaire, and

1375 adolescent and adult subjects were ultimately recruited yielding a response rate of 98%.

### *Data collection*

Data related to general healthy eating 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 general healthy eating-related KAP questions. The knowledge questions were based on the General Nutrition Knowledge Questionnaire [8]. Knowledge questions were categorized into three sections, each evaluating a distinct aspect of nutrition knowledge: 1) dietary recommendations from authoritative sources, including the World Health Organization and the MOH of the Sultanate of Oman, 2) food groups and the nutrients they contain, and 3) potential health problems or diseases related to diet.

The attitude and practice component of the general healthy eating questionnaire was developed based on published literature including the studies by Aung et al [9] and Saeidlou et al [10]. Attitude assessment was based on a set of four main questions inquiring about perceived risk of various health conditions; attitudes towards specific nutrition practices; exposure to various types of media and news programming; the best source of nutrition education; and the perceived importance, benefits, and barriers to adopting a healthier diet. The assessment

of practices was based on a set of 11 questions inquiring about the frequency of eating away from home; breakfast consumption; practices adopted to stay in good health; practices adopted to prepare healthy meals (if applicable); reading food labels; consulting information on food caloric content; and frequency of consumption of specific food groups, items, and beverages.

### *Data analysis*

Based on the questions in each questionnaire component, knowledge, attitudes, and practices indices related to general healthy eating were created. These indices enabled the categorization of individuals' knowledge, attitudes, and practices related to general healthy eating 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.

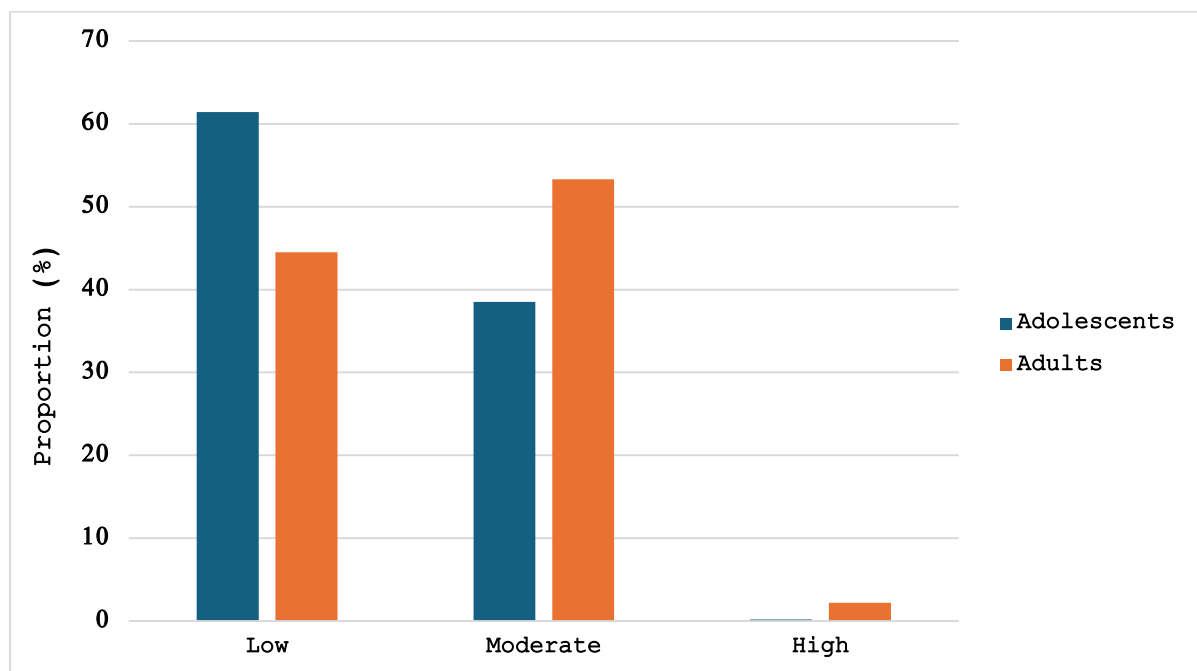
## **RESULTS**

The survey collected data from 287 adolescents and 1088 adults, with equal proportions being male and female in both population groups.

## Knowledge

Few adolescents (<1%) and adults (2%) had a high knowledge of general healthy eating (**Figure 1**). The combined prevalence of moderate and high healthy eating knowledge was 39% in adolescents and 56% in adults. In adolescents, the composite knowledge index score did not

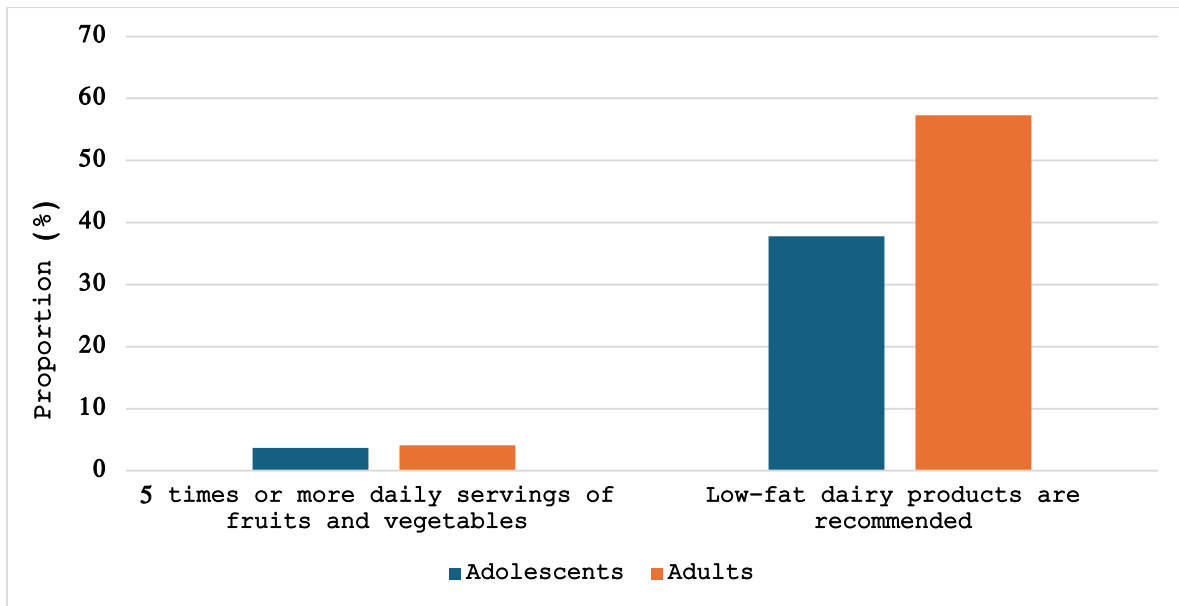
differ by various demographic variables. In contrast, in adults the prevalence of moderate and high knowledge scores were greater in women (64%), those with bachelor's degree or higher (82%), married persons (60%), those who had talked to a professional about nutrition (63%), and those who have tried to lose weight in the past (65%).



**Figure 1. General healthy eating-related knowledge scores in Omani adolescents and adults**

Only 4% of adolescents and 4% of adults could identify the Omani government-recommended number of daily servings of fruits and vegetables (i.e., 5 or more). In contrast, approximately 38% of adolescents and 57% of adults know that

low-fat dairy products are recommended over full fat or combination of low and full fat dairy products (**Figure 2**).

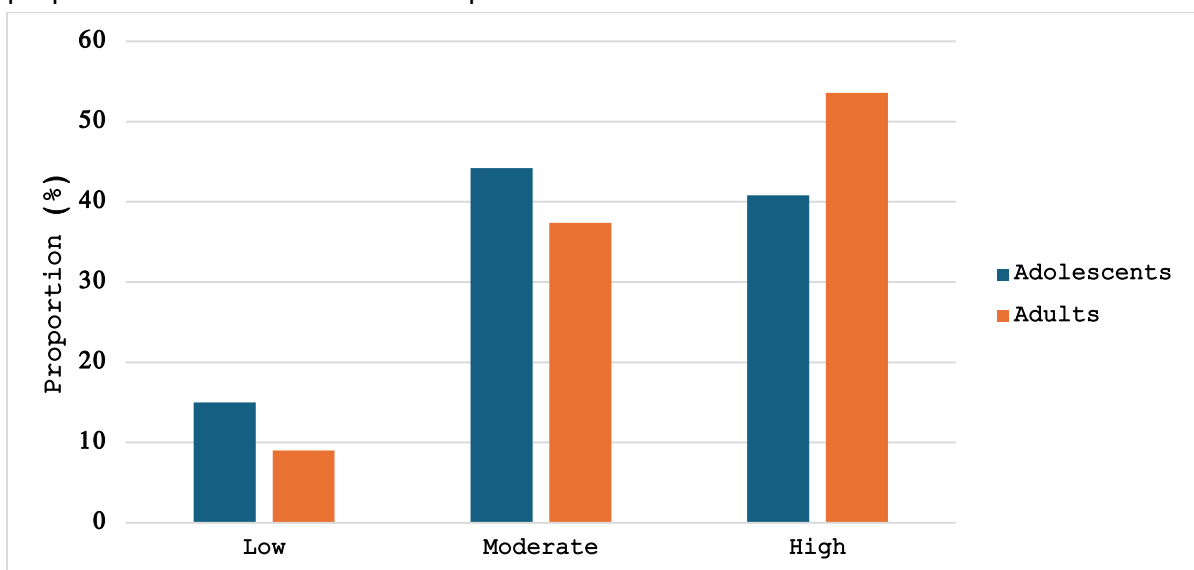


**Figure 2. General healthy eating related knowledge among Omani adolescents and adults**

### Attitudes

The composite attitudes index showed that a large proportion of adolescents and adults had high attitudes towards general healthy eating, with high attitudes found in 41% of adolescents and 54% of adults (**Figure 3**). In addition, a substantially larger proportion of adults who had attempted to

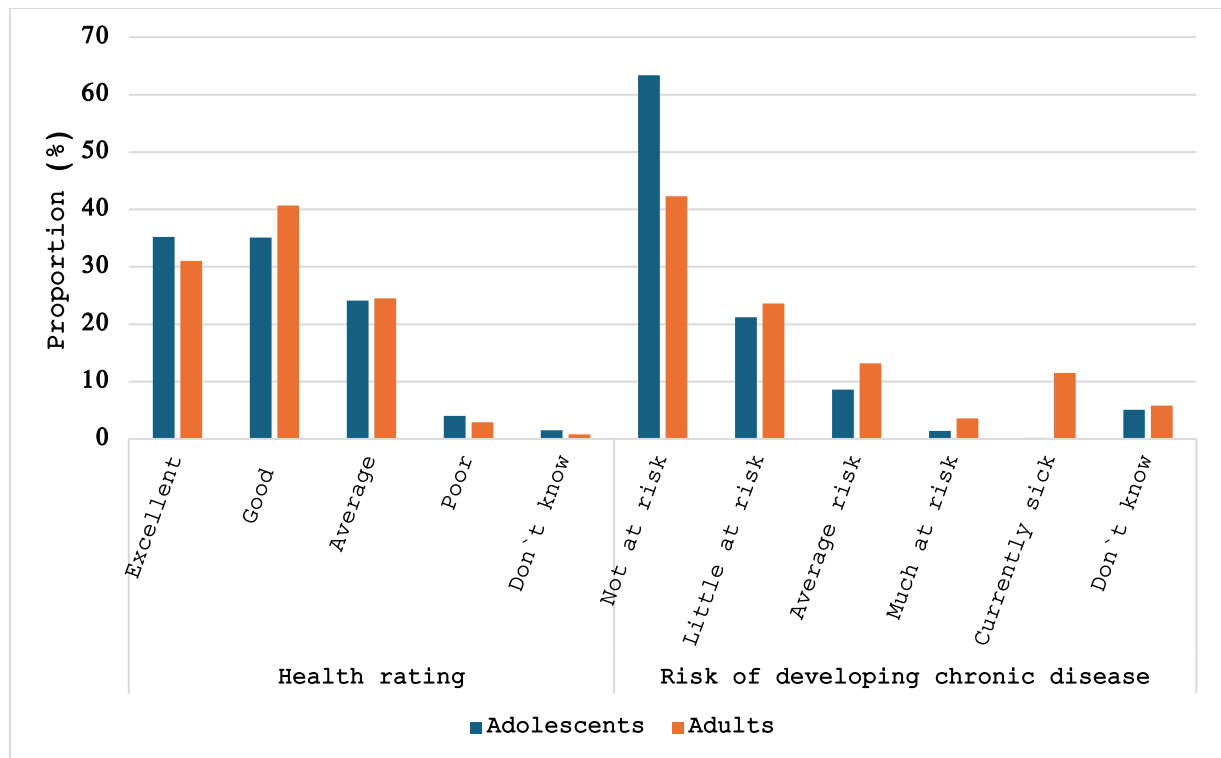
lose weight in the past (61%) had high attitudes. The largest prevalences of high attitudes scores were found in Ash Sharqiyah North (74% adolescents, 76% adults), Ad Dakhliyah (37% adolescents; 63% adults), Ash Sharqiyah South (48% adolescents, 61% adults), and Al Batinah North (50% adolescents, 61% adults).



**Figure 3. General healthy eating-related attitudes scores in Omani adolescents and adults**

Respondents' rating of their current health status as excellent or good was similar in adolescents (70%) and adults (72%). Few adolescents (10%) were sick or felt they had an average or high risk of developing a chronic disease. In contrast, approximately 28% of adults were either sick or felt that

they had an average or high risk of developing a chronic disease (**Figure 4**). Among adults, a notable proportion reported not exercising (18%), having weight gain (17%), or an unhealthy diet (45%).

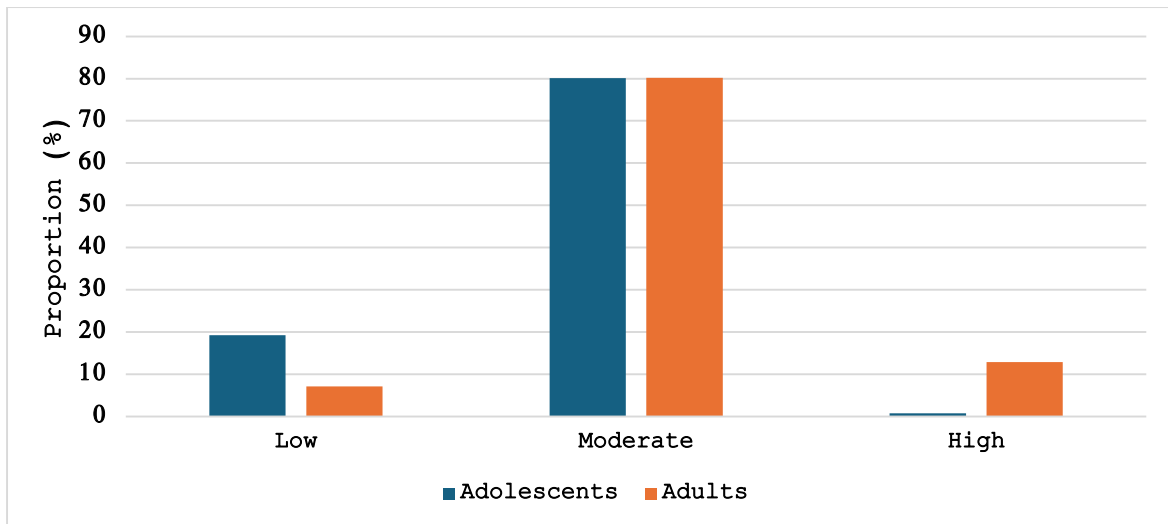


**Figure 4. Attitudes related to general healthy eating among Omani adolescents and adults**

### Practices

While few adolescents (<1%) and adults (13%) have high healthy eating practice scores, the vast majority of adolescents (80%) and adults (80%) have moderate healthy eating practices (**Figure 5**). The composite scores in adolescents did not differ substantially by various demographic variables. In contrast, the proportion of

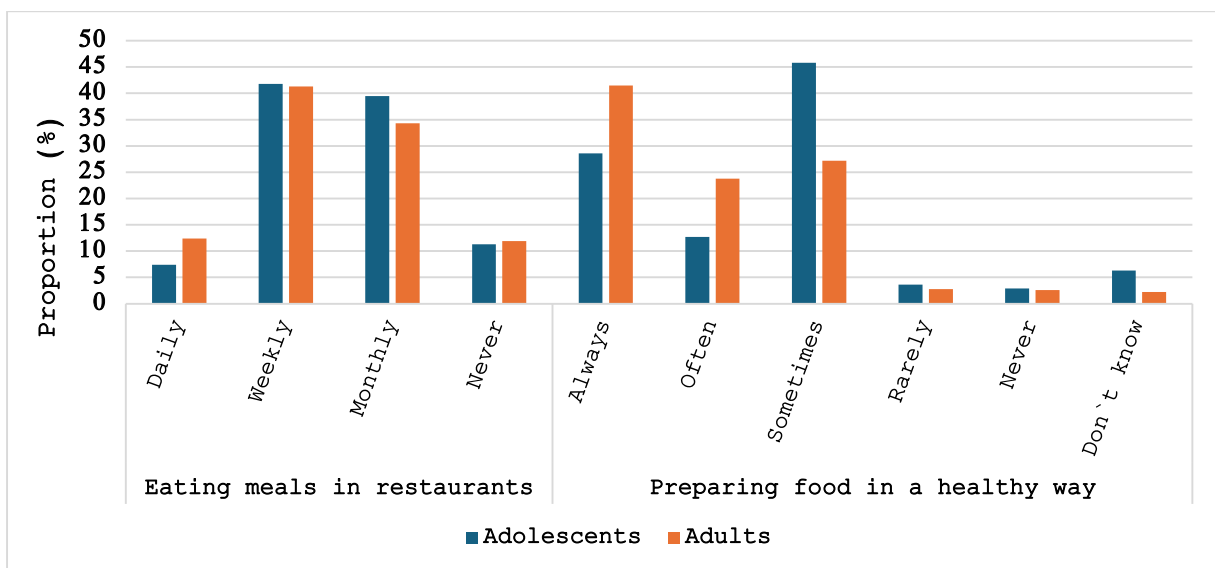
adults with high practice scores was greatest in those 50-60 years old (24%), in married persons (14%), among retirees (25%), in those who had talked to a professional about nutrition (19%), and in those who had tried to lose weight in the past (18%). At the governorate level, high practice scores were rarely found in Dhofar (2%), Al Wusta (5%), Al Buraymi (6%), and Adh Dhahirah (9%).



**Figure 5. General healthy eating-related practices scores in Omani adolescents and adults**

Approximately half of adolescents (50%) and adults (54%) reported eating in restaurants daily or weekly (Figure 6). The vast majority (85%) of adolescents identified fast food restaurants as the most common type of restaurant frequented. More than 40% of adolescents and 65% of adults reported to always or often prepare healthy meals (Figure 6). Few adolescents (12%) and some adults (32%) reported

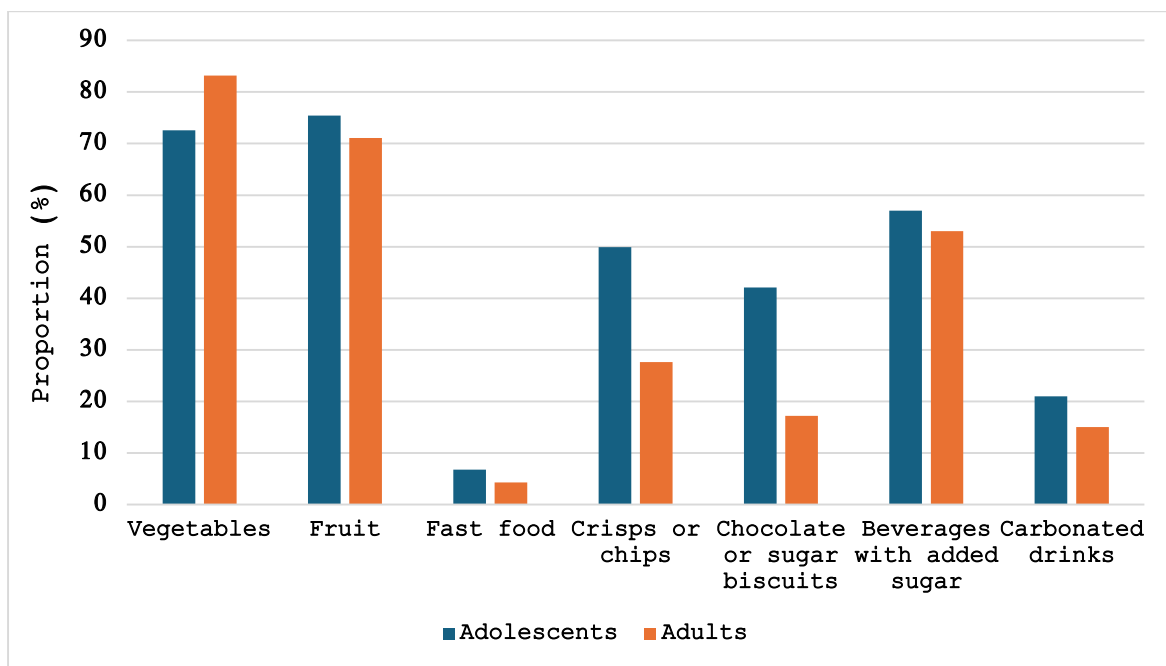
often or always reading nutritional information of food items when purchasing food. A substantially larger proportion of adults (53%) than adolescents (17%) reported that, if they read nutritional information, it often or always affects their purchase of food items. In addition, a larger proportion of adults (22%) than adolescents (9%) reported often or always knowing the calories of the food they eat.



**Figure 6. General healthy eating-related practices in Omani adolescents and adults**

Large proportions of adolescents and adults reported daily consumption of fruits (75% adolescents, 71% adults) and vegetables (73% adolescents, 83% adults). In contrast, the consumption of sweetened beverages is concerning. The proportions of adolescents and adults that reported daily consumption of “sweet drinks” (31% adolescents, 13% adults) or “carbonated drinks” (21% adolescents, 15% adults) is

relatively high. Moreover, 57% adolescents and 53% adults reported consuming Karak tea with sugar on a daily basis. A notable difference in consumption practices was that adolescents’ daily consumption of potato chips (50%) and chocolate or sugar biscuits (42%) was higher than adults’ daily consumption (28% potato chips, 17% chocolate or sugar biscuits) (**Figure 7**).



**Figure 7. Respondents’ daily consumption of selected foods and drinks**

### CONCLUSION AND RECOMMENDATIONS

These findings indicate that general healthy eating knowledge among Omanis is low, especially among adolescents. There are also gaps in specific dietary knowledge, such as expert recommendations for fruit, vegetable, and dairy intake. Although health messages are publicized, they may not effectively reach individuals, with adolescents scoring particularly low on awareness of dietary guidelines. Some adults, especially women, those with higher education, and individuals who have

consulted health professionals, show better knowledge scores and healthier attitudes.

Adolescents’ scores in dietary practices showed limited variation across demographic factors, unlike adults, whose scores improved with age, education, and prior attempts at weight loss. Despite this, adolescents and adults frequently eat in restaurants, with fast food being a common choice. Around 40% of adolescents and 33% of adults eat fast food weekly or daily. Although more adults than adolescents

report reading food labels or counting calories, only a minority base their food choices on this information, particularly those with higher education. Regular breakfast consumption is more common among adults (two-thirds) than adolescents (half). Moreover, providing important information on food labels may not be the most effective and efficient way of transferring important dietary information to the general Omani public unless health education can substantially increase the proportion of the Sultanate of Oman population who consistently read and act on this information.

In both groups the consumption frequency of fruits and vegetables was suboptimal and too many consumed sweetened drinks and snacks on a daily basis. Adolescents, in particular, frequently consume high-salt and high-sugar snacks like chips and biscuits, highlighting the need for targeted health education on the effects of these dietary habits.

Promoting healthy eating in the Sultanate of Oman requires a comprehensive and multi-faceted approach. By implementing these detailed policy recommendations, the Sultanate of Oman can effectively address the public health challenges posed by unhealthy dietary habits, leading to improved health outcomes and a higher quality of life for its population. Key policies and strategies include:

1. Conduct public awareness campaigns about general healthy eating
2. Improve school policies related to general healthy eating
3. Promote physical activity among adolescents in school
4. Incorporate nutrition counselling into primary healthcare interventions
5. Monitor public health metrics and dietary practices
6. Engagement and partnership with nutrition stakeholders

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## ACKNOWLEDGEMENTS

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## RECOMMENDED CITATION

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