

Profile of dietary supplement consumers in the region of Rabat-Salé-Kénitra, Morocco

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ABSTRACT

Morocco's food traditions and customs encourage the increasing consumption of dietary supplements. This study aimed to explore the profile of dietary supplement consumers in Morocco, with a particular focus on the Rabat-Salé-Kénitra region. The results obtained following the analysis of our study made on 750 people, of which 36% use dietary supplements, show

that 45% of users were female and 55% male. Nearly 65% of the consumers of food supplements have a higher level of education, 35% have a secondary level of education, and 0% are illiterate. 45% of consumers were in the 15-25 age group. In addition, the results showed high consumption of multivitamins (80%), and 58% of dietary supplement consumers take them occasionally. As expected, the level of education plays a big role in the consumption of dietary supplements, so we notice that most consumers are young people. Despite our progress, the number of consumers of food supplements remains small compared to their benefits and our daily needs.

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Introduction

The consumption of dietary supplements (DS) is growing rapidly worldwide, and this trend is evident in Morocco, where eating habits are constantly evolving. As individuals seek to optimize their health and well-being, DS, defined as products designed to supplement the daily diet with specific nutrients (vitamins, minerals, amino acids, *etc.*), are becoming increasingly popular. However, their use raises questions about their efficacy, safety, and potential health effects, particularly in contexts where regulations and knowledge in this area remain limited.¹

In Morocco, few studies have explored the profile of DS consumers, yet this information is crucial to understanding their motivations and behaviors. Studies in other countries show that young adults and active people are often the most inclined to consume DS, influenced in part by social networks and online recommendations.^{2,3} However, the dynamics specific to Morocco, including the influence of socio-cultural and economic factors, are not yet well documented.

This study, therefore, aimed to explore the profile of DS consumers in Morocco, with a particular focus on the Rabat-Salé-Kénitra region. By examining the links between the consumption of these products and the demographic variables, our aim is to identify the main consumer groups and the motivations behind this practice in order to contribute to a better understanding of health and nutrition needs and expectations in this population.

Materials and Methods

Our survey included 750 participants from the Moroccan population over 9 months in the Rabat-Sale-Kenitra region from the beginning of June 2022 until February 2023. Data collection was based on a questionnaire called *Utilisation des Compléments Alimentaires* to establish the profile of DS consumers in Morocco.

The survey questionnaire consisted of two parts: i) first part: information on the socio-demographic status of the respondents; ii) second part: concerns various information on the consumption of DS, including consumption patterns (occasional, regular, frequent), the components (vitamins, minerals, plants, other).

We collected all the results obtained online *via* Google Forms, and then the data analysis was entered and performed using the SPSS (Social Science System Package) Statistics 25 software (IBM, Armonk, NY, USA).

Results

Socio-demographic characteristics of consumers

Gender and age

Figure 1 shows the percentage distribution between the genders using DS. We observed that 55% were male and 45% of participants were women.

The different age groups and the corresponding percentages of DS use are presented in Table 1. 45% of consumers were in the 15-25 age group. In the 26-40 age group, this

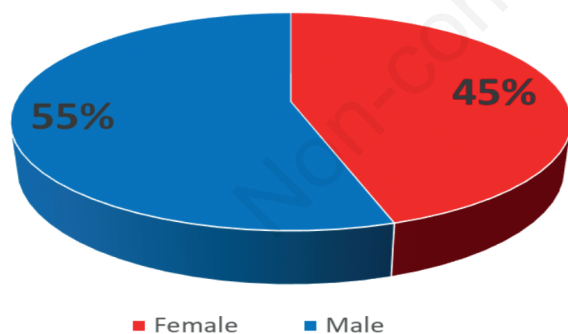


Figure 1. Distribution by gender.

Table 1. Percentage of survey participants by age.

Age	Percentage (%)
15-25 years	45
26-40 years	25
41-60 years	20
+ 60 years	10

percentage rises to 25%. For the 41-60 age group, the percentage of DS use is 20%. The +60 age group has the lowest percentage, with 10% using DS.

Education levels

Figure 2 shows the distribution of education levels among DS consumers. The results show that 65% of consumers have a higher level of education, while 35% of respondents have a secondary level of education. None of the consumers is illiterate.

Knowledge and use of dietary supplements

According to the survey results, 36% of those questioned use DS. On the other hand, 64% of those questioned said they did not use DS at all, including 39.2% who did not even know about DS and 24.8% who did know about DS but did not use them (Table 2).

Categories of dietary supplements most frequently used by participants

The percentage of DS most frequently used is presented in Table 3. The results showed high consumption of multivitamins (80%), proteins (60%), seaweed concentrates (50%), and minerals (41.8%), followed by omega-3 fatty acids (25%), fruit extracts (14.8%), and plant extracts (6%).

Regular consumption of dietary supplements

The regular consumption of DS is presented in Figure 3. Most consumers use DS occasionally (58%), 26% regularly, and 16% frequently.

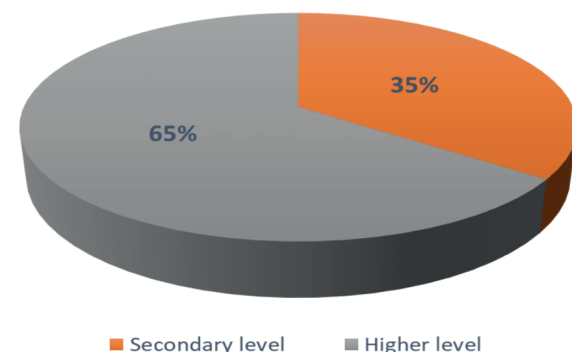


Figure 2. Distribution of dietary supplements consumers by level of education.

Table 2. Percentage of survey participants according to consumption of dietary supplement.

Questions	Percentage (%)
People who don't know about dietary supplements	39.2
People know about dietary supplements but don't use them	24.8
People who use dietary supplements	36

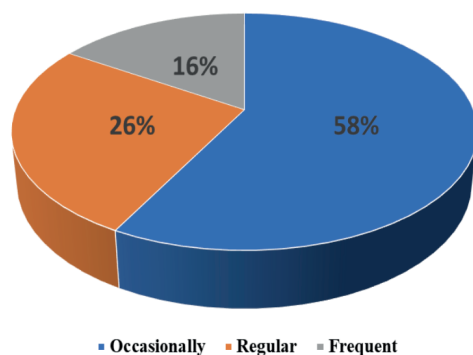


Figure 3. Distribution by regularity of dietary supplement consumption.

Table 3. Percentage of dietary supplements most frequently used.

Components	Percentage (%)
Multivitamins	80
Proteins	60
Seaweed concentrates	50
Minerals	41.8
Fatty acids, omega-3	25.1
Fruit extracts	14.8
Plant extracts	6

Discussion

Given all the results obtained in this study, of the 750 people surveyed, 36% are consumers of food supplements in the Rabat Salé Kenitra region. In 2015, out of 504 people surveyed, 232 (46%) consumed DS,⁴ and in the Fes-Meknes region, 68.88% reported consuming DS (343 subjects).⁵

Our survey also revealed that 55% of DS users were men and 45% were women. Other studies have shown that women consume DS more than men.^{6,7} Studies carried out in various European countries have shown that the level of DS consumption varies (from 8% to 60%). DS were most frequently taken by Danes (51% of men and 60% of women). Supplementation was also common among adults in Finland (32% of men and 58% of women, respectively), Italy (41% of men and 56% of women, respectively), and Germany (38% of men and 48% of women, respectively); Spain had the lowest percentage of adults using supplements (8% of men and 10% of women).⁸⁻¹⁰ However, the results obtained by Naqvi, who analyzed DS consumption in the public and private sectors of pharmaceutical teaching universities in Karachi (Pakistan), found that 51% were men and 47.3% women.¹¹

Age also influences the consumption of DS, as it was found that young people consume DS (45% are young) more than older people. Older people are low consumers, as they eat a traditional diet.⁴ Sossa *et al.* found that the prevalence of undernutrition risk is high among retired people in the town of Abomey-Calavi.¹²

As might be expected, the level of education plays a big part in the consumption of DS. We found that illiterate people are not aware of DS. This is due to a lack of access to written information, basic priorities that take precedence over the search for nutritional information, economic issues, and cultural differences in awareness of the importance of DS.

The results of our survey found that multivitamins are the most widely used DS, with a share of 80%, and proteins, algae concentrate, minerals, fatty acids, and omega-3 represent, respectively, 60%, 50%, 41.8%, and 25%. In the USA, multivitamin and mineral products were the most commonly reported type of DS.³

Mestaghanmi *et al.* showed that 40.6% of Moroccan university students prefer vitamin and mineral supplements.¹³ Our study also showed that 58% of DS consumers take them occasionally. In 2018, Khalfaoui found that 79.5% of DS consumers took them occasionally, 14.6% regularly, and 5.9% frequently.¹⁴ It is important that any supplementation should take place under the supervision of a healthcare professional, as any unsupervised intake may present health risks (overdosing, overconsumption, or concomitant intake of several DS).¹⁵

Conclusions

DS can play an important role in filling temporary nutritional gaps, supporting specific health goals, or helping during periods of stress or life change. However, it is essential to bear in mind that these products should not replace a balanced and varied diet. Consultation with a healthcare professional can help determine whether DS is necessary, as well as the appropriate types and doses to use. Ultimately, a responsible and informed approach to the use of DS contributes to better health and more effective use of these products.

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