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Dietary supplements utilization: an explanatory survey among Swiss consumers

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Dietary supplements utilization: an explanatory survey among Swiss consumers

Original article

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Summary

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Introduction
Dietary supplement (DS) use increased rapidly over the last years. However evidence of benefits of many DS for healthy users are scarce and may not equate known risks of overdose, drug interaction and recently discovered negative long-term effects. Therefore this study aimed to investigate perceptions and motivations of DS users in Lausanne, Switzerland.
Method
A convenience sample was recruited at the entrance of local sales points. Data were collected in on-site semi-structured interviews to assess dietary supplementation habits.
Results
The 119 participants provided information on 147 users. Among 273 declared products, the majority were mixed products, containing minerals and vitamins (78), mineral products (69), and herbal products (28). 55% of DS users took more than one product simultaneously.
Seventy five percent of participants indicated that DS use presents no risk or nearly no risk and about half (49%) of participants did not inform their physician about their consumption. Male participants reported to share this information with their physicians significantly less frequently than female participants ($p = 0.008$). About half of participants looked for information on potential risks of DS, men significantly more often than women ($p=0.001$).
Discussion
According to other studies in the US, our study shows that, in Lausanne (Switzerland), DS are commonly used as mixed products. Risk perception seems generally low among DS users.
Implications
Physicians should be trained to evaluate patients' health behaviour and needs in order to provide good evidence based information or propose alternatives to DS use.

Introduction

Dietary supplement use increased rapidly over the last years [1, 2] and reached a prevalence of 56.5% in the United States general population in 2001 [3] and 25.7% in Lausanne, Switzerland in 2007 [4]. In the meantime general nutriment intake from food augmented notably due to a significant extension of enriched food products [5-7]. Thus, nutritional deficiency does not seem to be the main reason for dietary supplementation especially as dietary supplement consumers have usually enhanced nutritional intakes and healthier lifestyles than non-consumers [8, 9]. For healthy subjects without nutritional deficiency there is little evidence of a positive short-term effect from most dietary supplementation. For long-term usage, some studies showed a slight reduction of cardiovascular disease or cancer incidence with few substances like selenium for example [10].

However there are risks. Dietary supplementation can involve adverse events [11, 12] and interaction with medication [13], which may be especially problematic as 30-50% of nutritional supplement users declare not to inform their physician about their consumption [14, 15]. Recent studies, like the Iowa women's health study, also question long-term safety of dietary supplementation revealing increased cancer incidence [16, 17] and overall mortality [18] for supplement users.

One study conducted back in 1999 by Neuhouser [19] questioning 104 users of supplements about their motivations and believes showed that only 21% used supplements on advice from health professionals and 41% used supplements because they made them feel good. A few people thought that supplements prevented cancer or heart disease. Up to 60% of users stated that a balanced diet did not contain enough nutriments. Given the scarcity of information in this area, especially in Switzerland, our aim was to set up an exploratory study to get an insight of the awareness, representations and motives of consumers in the region of Lausanne.

Our hypotheses was that users of supplements were unaware of short- and long-term risks and that most of them did not take a specific supplement for a known deficiency, but rather one or more products with a mixture of nutrients for vague reasons.

Methodology

We used the definition published by the National Center for Complementary and Alternative Medicine (NCCAM) [20], referring to the Dietary Supplement Health and Education Act (DSHEA). Participants were recruited at the entrance of pharmacies, supermarkets and sports centers in different regions of the City of Lausanne (Switzerland) and inclusion of participants with different socio-economic backgrounds was ensured *according to the official statistic database.* During short periods of 1-3 hours randomly spread between June and August 2011 all French-speaking customers were invited to participate in the study.

Data were collected in on-site semi-structured interviews lasting a few minutes each. The first part of the questionnaire recorded demographical data. The second part of the questionnaire consisted in open-ended questions on product identification (name, content or similar), indication of use, sources of information and a closed question on subjective estimation of effects (Yes, No, Don't know). The third part of the questionnaire screened the perception of risks asking the participants' agreement to the following sentence: "The use of dietary supplements presents no risk". This was a closed question with the following possible answers: agree, rather agree, rather disagree or disagree.

Participants were asked if and where they looked for information about possible risks and if they informed their physicians of their DS use. They were also asked to estimate the monthly expense for their supplement consumption. Participant's responses to open questions were coded and regrouped during data analysis.

Statistical analysis was conducted using SPSS Statistics 19 for Macintosh OS X (IBM). Quantitative variables were expressed as mean +/- SD. Comparisons between groups were made using Student's t-test for quantitative variables and *chi-square test for qualitative variables*. Statistical significance was assessed for $p<0.05$.

The study has been submitted to the University of Lausanne ethics committee.

Results

Out of a total of 483 contacted people, 259 rejected participation and 105 were excluded for not recently taking dietary supplements. The 119 included participants provided information on 147 users within their household (Table 1). The acceptance rate was lowest in supermarkets (28%) and highest in sports centers (59%). Men refused participation more often than women (63%; 48%).

The most consumed products (n=273) were all-in-one products containing a mixture of minerals and vitamins (78) and products containing only minerals (69), followed by herbal products (28), proteins, and essential fatty acids. Only 66 subjects used one single product. 54 used two and 26 people regularly combined three supplements or more. There are numerous combinations of products (Table 2). Most products were used once daily. Estimated expenses went from 2 CHF to 200 CHF monthly per person with a mean estimation of 36.70 (± 30.40 SD).

People became aware of those products primarily from health professionals (102) and peers (62). Less often, people got to know them from print media (30) or sales points (28). Internet was only mentioned as primary source in 8 cases. 58% of product consumers stated to feel positive effects. There was no significant gender difference to this subjective question.

75% of participants indicated that dietary supplementation presents no or hardly any risk. 39% stated that they looked for potential risks of used products. There was a significant difference between male and female participants. While men did search more often for potential risks ($p=0.001$), they turned less frequent to health professionals to get this information ($p=0.01$). Raised concerns were limited to misuse and overdose. Nobody questioned short- or long-term safety of a correctly used product.

About one half of participants (44 women; 14 men) stated that their physicians were informed about their consumption. Male participants shared this information significantly less frequently with their physicians than female participants ($p = 0.008$).

People used dietary supplements for a variety of reasons. Most commonly cited reasons were to improve general health and well being as well as fitness or medical reasons. For 42 of 273 products, consumers could not say what they were used for. Other common concerns were fatigue (23) and beauty (30). Only 18 people clearly stated that they take their nutrition supplement to prevent an illness.

Mixed products containing minerals and vitamins were popular for most of the reasons, while proteins were nearly exclusively used for improved fitness and products containing only minerals were especially often used for medical reasons. *Among people interviewed at sports centers, most men (17 out of 21) took proteins or other sports supplements, while only 3 out of 23 supplement-using women declared to take sports supplements ($p < 0.001$)*.

Discussion

As far as we know, this study is the first that explores the motivations for dietary supplement use in Switzerland. As in other studies [21-23], the majority of respondents use products containing a variety of substances. Our study shows that especially all-in-one users do not know what their supplement contains. They just want a supplement and do not care about its exact content. A person using a vitamin supplement simply stated: “It just feels good in the morning [to take my vitamins]”. Several respondents over 50 years old were perceived to feel obliged to take dietary supplements due to their age. Surprisingly more than a half of supplement users states that they felt positive effects from nutrition supplements.

As shown in other studies that explore risk perception of dietary supplements among specific populations [14, 24], our study also shows that risk perception is generally low. This leads to positive risk-benefit evaluations [25, 26] even if benefits for many DS are unclear. Often supplements are used on a “if it doesn’t help it won’t harm” basis ignoring potential risks.

There are some limitations to our study. First, our convenient sample was relatively small and did not allow us to define specific profiles of users. *Answers to open questions were regrouped during coding, which involves a potential bias.* We made no distinction between prescribed supplements linked with medical conditions (for example calcium supplementation)

and other types of supplements, as subjects sometimes did not know whether a supplement was prescribed by their physician or not.

Implications

Dietary supplement consumption is common in nowadays society. Physicians should be trained to actively assess the use of supplements of their patients not only to prevent interaction with medication but also to individually evaluate the patients' health behavior. In many cases the benefit of some moderate exercise [27] probably be higher than the one of dietary supplementation.

Also, due to concerns regarding the long-term safety of such products [16-18] physicians should warn their patients about the potential negative impact of a regular consumption of high doses of products containing multiple components, whose effects are not well understood. Also, health authorities may have a responsibility in taking adequate measures to ensure public awareness about potential side effects or pharmacologic interactions of some of the substances used.

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Table 1: Description of study collective

	N = 147
Sex	
Male	58
Female	89
Age	
< 18 years	8
18 - 30 years	26
31 - 45 years	39
46 - 60 years	26
> 60 years	48
Interview location	
Pharmacy	49
Supermarket	54
Sports center	44

Table 2. Product combinations N = 147