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Getting ready to work: adventure tourism guide's eating and drinking behavior

Preparándose para trabajar: prácticas alimentarias en guías de turismo de aventura

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Abstract

The main challenge for adventure tourism guides' is group management in wilderness environments. Eating studies of mountaineers have linked physiological changes to environmental conditions. Research on tourist guides described their role in tourism activities and on tourist-guide, employer-guide or guide-guide interactions. Although studies on food and mountaineers have addressed issues such as the influence of food intake on hikers' bodies, guides' strategies to prepare themselves to work have seen little research. This qualitative study used in-depth interviews with six male professional mountain guides, on drinking and eating behavior prior to ascent to the Volcán Nevado de Colima National Park. Results indicate mountain guides avoid fatty foods and alcoholic beverages and stay hydrated days prior to any expedition.
Keywords: hiking, feeding behavior, national parks, adventure tourism guides

Resumen

El principal desafío para los guías de turismo de aventura es la gestión de grupos en entornos silvestres porque son responsables de la seguridad del grupo y de generar experiencias turísticas agradables para los visitantes. Tienen un rol relevante porque interactúan con turistas, empresas de servicios, con otros guías y con empleadores. Estudios sobre alimentación de montañistas se han enfocado en los cambios fisiológicos en las condiciones ambientales de montaña. Aunque los estudios sí han abordado la influencia de la ingesta de alimentos en el cuerpo de los excursionistas durante la expedición, existe poca investigación sobre las estrategias de los guías de aventura para prepararse para trabajar. Este estudio cualitativo utilizó entrevistas a profundidad a seis guías de montaña profesionales masculinos, sobre el comportamiento de beber y comer antes del ascenso al Parque Nacional Volcán Nevado de Colima. Los resultados mostraron que los guías de montaña evitan consumir alimentos grasos y bebidas alcohólicas y se mantienen hidratados días antes de cualquier expedición.
Palabras clave: senderismo, parques nacionales, comportamiento alimentario, guías de aventura

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Introduction

Although there has been an increase in research on tourist guides focused on guides' role in success of companies and tourism products (Ap & Wong, 2001), some aspects of their health at work still need more study (Chen et al., 2018) since their role is relevant to tourist quality of experiences. Most academic publications deal with key elements related to product quality and customer satisfaction (Räikkönen & Honkanen, 2013). Functions or roles that guides have are to educate, accompany, entertain, and provide site information. Guide's activities vary depending on the context where tourist activity happens and on type of tourism.

Specifically, for adventure tourism guides, the job they do is difficult, since it happens in a context that implies constant challenges or difficulties (Mackenzie & Kerr, 2013). Research has been carried out on topics that mainly refer to risks; for example, Buckley (2016) conducted interviews with guides, instructors, and professional experts such as boatmen, kayakers, mountaineers, climbers, surfers, kiteboarders, and snowboarders, on emotions and perceived risk during activities they perform. Mackenzie and Kerr (2013) state situations they are immersed in when their jobs are stressful, as interactions with their employers. On the other hand, Beedie (2003) recognized the responsibility of a general tourist guide; however, he acknowledged that mountain guides' job is harder.

Mountains have attracted tourist attention in recent years. Ascending to summit implies a series of challenges to face from climatological, physical, and emotional situations which guides have to face, first as a response for personal care and for the care of others. When boots and backpack are chosen as a means of transport, each gram counts (Crave et al., 1996). A challenge all hikers face is to transport all required food and equipment with them (Littlefield & Siudzinski, 2012). Expert hikers always strive to carry the minimum amount of material and the lightest possible equipment necessary for their survival (Crave et al., 1996). Therefore, walking on the mountain presents a nutritional challenge since it implies physical resistance, and eating an adequate diet is key for resistance (Stuchkl & Sojer, 1996, p. 39).

This research focused on mountain guides' feeding behavior (liquid and food intake) prior to any expedition where they guide tourists, that is, their preparation prior to going to work. This research was carried out from a feeding behavior perspective, which, according to López-Espinoza and Martínez (2012), refers to everything organisms do to feed themselves. Main studies on hikers or mountaineers eating on mountains have been done from a medicine or nutrition perspective and they refer mainly to tourists. Against this background, this research aimed to describe guides' eating and drinking behaviors, prior to ascent to the Volcán Nevado de Colima National Park in Mexico.

Literature review on tourism guides

There are different types of guides, which Chimenti and Tavares (2013) divided into regional tourism guides, excursion guides, and accompanying guides. These tour guides or companions are responsible for logistics and travel procedures, time management according to schedule and coordinating walks and tours with local guides. General tour guides show attention to quality of service; their main skills are interpretation of culture and heritage (Pazini et al., 2017). Local or regional guides convey local cultural message when groups arrive on tourist sites (Black & Ham, 2005).

Various authors have studied roles performed by guides. Tourism companies evaluate guides' roles related to social and environmental responsibility, abilities to convey specific messages while entertaining tourists, and skills in building a friendly environment within the group (Min, 2012). Guides are key elements that influence customer satisfaction. Another perspective to evaluate is the tourists' perspective, which assess guides' performance by the ability to solve problems and unforeseen circumstances, the ability to foster social interaction among tourists and local populations, their communication skills, knowledge of particular sites, cultural interpretation, and charisma. Leme (2010) pointed out that guides are interpreters, mediators, organizers, and teachers and they sometimes become social agents. Other functions are to provide necessary information on aspects such as culture, restaurants, or other sites of interest.

Research shows diverse challenges faced by guides. Ap and Wong (2001) for example, mentioned that, although science recognizes guides' relevance and the level of workload demanded from them, it is a profession with little prestige, which is not recognized by society, and, consequently, offers low wages. Caber et al. (2019) studied in Turkey unhealthy practices when guides were forced to take tourists shopping, in addition to serving their main function. Income for guides was approximately 44% from commissions, while 38% corresponded to salary. Then, tourist's guides were evaluated by employers based on commissions they got and not by the quality of service they provided. This affected tourists' perception of guides, who they view as having a main objective to sell.

Another challenge is guides' lack of professionalization due to low availability of certifications (Mak et al., 2011). Guides perceive continued improvement and preparation as an advantage; it helps them obtain better salaries. On the other hand, tourism businesses feel threatened by having better trained guides, which means having to pay better wages. Ap and Wong (2001) noted a lack of a code of ethics for professionals and legislation favoring guides' rights. The role of guides faces challenges of tourism industry's survival economy. The guide's job is seasonal, part-time, and with low visibility. Ap and Wong (2001) proposed to carry out programs to disseminate their professional work and improve the social image of guides, which would require the participation of various actors, such as government and tour operators.

Problems are not only present in the labor field; in research literature there are still gaps to be addressed. Chen et al. (2018) reviewed the literature on the evolution and development of research on tourist guides from 1989 to 2015, with 140 empirical studies. An interesting fact was that only one study was done in South America.

Sites for studies were mainly in Asia, Oceania, North America, and Europe. This work indicated that there is a greater tendency to use qualitative methodologies, followed by quantitative methods, and that few studies used mixed methodologies. There was more research on nature ecotourism guides and heritage guides.

Adventure/mountain guides

Mountain guides are responsible for the safety and well-being of clients, whose level of experience can vary from beginner to competent mountaineer. Some of a guide's duties are making decisions about moving a group up or down the mountain, judging if people are able to continue, reading or identifying dangerous weather conditions, and preventing accidents due to tourists' fatigue. Countless decisions imply choices where challenges might involve bodily harm or death. Working in a complex and constantly changing environment, where altitude is an important factor in the performance of activities, they should not only take care of the client, but also themselves. Guides must be in optimal condition and develop their skills to have the ability to respond to needs and unexpected situations that may arise. The relevance of a mountain guide's decision-making process is that each decision, however small it may seem, can irrevocably alter the course of the excursion (Walker & Latouso, 2016).

Eating on the mountain

Food consumption in hikers has been related to physiological changes that individuals experience, due to the physical effort demanded by the activity, the weather conditions to which they are exposed, and hypoxia (oxygen decrease) in high-altitude areas. From medicine and nutrition perspectives, several researchers report problems such as imbalance of food intake, increased energy expenditure, digestive problems, constipation, loss of appetite and consequently, loss of body weight, muscle mass, and body water, symptoms of acute mountain sickness (Fenn, 1944; San et al., 2013; Urdampilleta & Martínez- Sanz, 2012). Therefore, dietary planning is important (Urdampilleta & Martínez-Sanz, 2012); at an altitude higher than 4,500 meters there is an increase in catabolism, that is, more energy is consumed by making the same effort and intake of more food and calories is necessary. In this situation carbohydrates are easier to metabolize and appetizing (Reinoso, 2011).

Acute mountain sickness (AMS) is one of the main topics studied. Symptoms that occur are headache, dizziness, and nausea. These inconveniences occur in hikers as they ascend the mountain. AMS has repercussions on activities performed, food intake, and health problems that can be serious if ignored, including the possibility of triggering pulmonary or cerebral edema and lead to death (Drew et al., 2011). Ziaee et al. (2003) mentioned several of the possible factors that predispose a person to the occurrence of AMS: water balance, inexperience, residence at low altitudes, diets high in lipids or salt, low carb diet, lack of fitness, and rapid ascent.

Food consumption was studied as a factor that influences AMS. Experimental studies were conducted in order to better understand the effects that food consumption has on the human organism. For example, Hennis et al. (2016) researched the base camp of a group of young people at Mount Everest, where physiological responses were observed after the consumption of beet juice during a period of seven days. Although the proposed hypothesis assumed that the amount of nitrate contained in beet juice could interfere with decreasing the onset of mountain sickness, findings did not show enough evidence. Another study by Zamboni et al. (1996) compared food intake in two groups: one group received a diet of milk, fish, eggs, and vegetables and the second group was given an omnivorous diet. They ascended more than 5,000 meters above sea level and spent the night at the base camp. Results showed a decrease in food intake, low interest in food, and weight loss in both groups.

Eating in natural protected areas

Information in specialized books on outdoor activities advises on how to plan an expedition diet, based on the place to visit, walking time, and distance. Main considerations are nutritional value, necessary kitchen utensils, and weight generated (Craven et al., 1996). Number of meals and number of people should also be considered when packing. For single-day walks, it is enough to cover the energy expenditure required in the activity. However, bringing snacks and extra provisions helps in case of emergencies. For several days of walking, it will be essential to have at least one more elaborate meal per day. Creating shared menus helps to have varied foods and to share kitchen utensils, reducing the load. Finally, it is recommended to avoid making hasty purchases (Anderson et al., 1996). Saving food in a backpack means choosing how to wrap or transport it, considering weight and space, and removing unnecessary wrapping. It is suggested to organize food in different bags for breakfast, lunch, dinner, and snacks (Anderson et al., 1996) or organize the food in two bags: one for immediate consumption and easy access and another to be saved until reaching the meeting or resting point (Littlefield & Siudzinski, 2012). Environmental recommendations include not cooking or washing utensils with detergent "within 60 meters of water sources to reduce the risk of contamination" (Anderson et al., 1996, p. 76); reducing fire use, and placing garbage in designated places or taking it back home (Anderson et al., 1996). Anderson et al. (1996) mentioned that carbohydrates are the basis of a hikers' diet. While complex carbohydrates provide more fiber and energy (Anderson et al., 1996; Stuchkl & Sojer, 1996), proteins keep muscles in good condition, provide heat when resting, and are digested more slowly than carbohydrates. Lipids are metabolized slowly but produce more energy than carbohydrates and proteins; it is desirable to increase their consumption. However, fats ingested at high altitudes can cause indigestion (Anderson et al., 1996). Dehydrated foods, energy bars, and cereals are good options for minimizing the weight and space occupied in the backpack. Energy can also be obtained from the collection of wild foods, but it is important to investigate whether fruit extraction is

allowed and to be aware of what can be edible (Anderson et al., 1996).

Hydration in hikers

During the ascent to the mountain, the body begins to deal with physiological changes, such as adapting to low oxygen. One tends to breathe faster and more water is lost; there is also direct exposure to sunrays, which causes burns and loss of body water, air dryness, dehydrated food consumption, and other factors that can dehydrate the body (Urdampilleta & Martinez- Sanz, 2012). In addition, due to weather conditions, sweat and heat are not easily perceived (Reinoso, 2011, p.24; Urdampilleta & Martinez- Sanz, 2012)

Dehydration is dangerous during hiking regardless of the altitude, as is excessive water consumption, so hikers should have intake control and organization for food and water intake (Basnyat et al., 2000). Water consumption should be mediated to avoid possible dehydration or hyponatremia (which causes fluid retention). Basnyat et al. (2000) documented the case of a woman in eastern Nepal who drank about 10 liters of water, causing hyponatremia, due to the excessive consumption of water and lack of food intake. Myers and Hoffman (2015) documented a similar case of a female hiker who died after consuming large amounts of water at the end of a five-hour walk. On the other hand, drinking little has consequences such as decreased sweating (necessary for body cooling), thickening of the blood (which can cause damage to some vital organs) and loss of salts and minerals essential for peak performance (Stuchkl & Sojer, 1996). Altitude and low fiber intake can cause constipation (Reinoso, 2011, p .25).

To be well hydrated, it is important to establish strategies prior to carrying out the activity, such as consuming plenty of fluids and avoiding drinking alcoholic beverages one or two days before the hike. Alcohol is a liquid that, consumed in excess, decreases good judgment, sense of balance, coordination, and appetite (Anderson et al., 1996). The optimal organization of liquid consumption consists of taking small sips at least every 10 minutes. Urdampilleta and Martinez-Sanz (2012) recommended drinking at least one liter of water two hours before the activity. During the walk, Molina-Campillo (2016) recommended the consumption of 200-300 ml of liquids every 15-20 minutes. The next day, it is advisable to continue with the controlled consumption of water for a speedy recovery. If the walks require more than one day, it is suggested to include drinks that contain sugar and salt, use commercial or homemade whey, or are based on fruit juices or electrolyte drinks (Bean, 2012; Stuchkl & Sojer, 1996).

Methods

Face-to-face semi-structured interviews were conducted with six male professional guides working in the Volcán Nevado de Colima National Park, during May 2018 and July 2019. All guides working at the National Park were invited to participate. All six participants were professional, experienced, and worked as guides in the park regularly. Interviews lasted around 40 minutes each. An interview guide was developed; voice recorded and verbatim transcribed for content analysis, following ethical principles. Written consent, right to confidentiality and data protection was respected, names were omitted and codes were used. Participation was voluntary and no economic incentives were used. Guides worked through a company or independently, and personal interviews were made on an appointment basis.

Before starting the interviews, the researcher explained the main objective of the study, which aimed to describe eating and drinking behaviors and the way guides prepare to climb the mountain when working. It was clear that the goal was not to carry out nutritional analysis, with the intention of making the interviewees feel comfortable and avoid possible biases. The first part of interview aimed to describe eating and drinking behavior prior to guiding groups to the summit. Given that the semi-structured interview guide does not limit respondents to talk about specific topics and allows them to express their experiences and knowledge, all sorts of information was obtained. However, for this paper, only information about how they prepare to work was included. All interviews were transcribed in their entirety. The data were analyzed by three researchers. Content analysis and an open coding approach were used, where relationships between topics and concepts that emerged in the interviewees were sought. In addition, triangulation of data was carried out by observing the themes that were expressed by participants.

This study obtained ethics approval (#201903) by the Psychology Review Board at Universidad Veracruzana, Mexico (*Comité de Ética en Investigación del Instituto de Investigaciones Psicológicas*).

Results

All participants were male, characteristic of this sector, which is male dominated (Jeff, 2018). Participants' ages were as follows: G1, 36; G2, 28; G3, 33; G4, 56; G5, 25; G6, 36. They practice climbing and mountain biking as hobbies during their free time. Most guides began mountain hiking during childhood, when they were around 7 or 10, guided by their parents' influence. *"My family really likes to go out in nature, I started to walk in the mountains when I was 7 or 8 years old"* (G1). *"My father used to go mountain climbing, after that we went to the Nevado de Colima summit and then camping"* (G2). *"My dad used to work in the hills and he used to take us with him, all of my family members love sports and we all are very sportive persons"* (G4). *"For me it is a habit to go to the mountain since I was very young, my parents are athletes"* (G5). *"I was very young, in Tuxpan the tradition on December 12th is to hike up the hills and camp there, I used to look forward to that every year, I was 10 years old"* (G6). One participant reported having done these activities with scouts: *"I started doing these activities in my childhood, because I belonged to a Scout group"* (G3). All the participants participated in expeditions to other mountains in Mexico, not only at the Volcán Nevado de Colima National Park (PNVNC), such as: La Chupinaya, Toluca National Park, Paricutín Volcano, Tacaná Volcano, Popocatépetl and Iztaccíhuatl Volcanoes, Cumbre del Ajusco National Park, Sierra Laguna, Sierra San Pedro

Martir National Park, Tancítaro Mountain, Quinceo Hill, Eagle Hill, Tlaloc Hill, Telapón Hill, Cofre de Perote, Sierra Negra, La Malinche National Park, and Pico de Orizaba or "Citlaltépetl". They all had diverse skills and experience in outdoor recreational activities. Regarding experience in professional tour guidance at the PNVNC, the least experienced guide reported 3-year experience: *"Three years ago I started professionally, looking for a way to generate an income and have a formal job"* (G2); the most experienced reported 10-year experience: *"I have been a guide for many years, I started around ten years ago"* (G4). Only two of the interviewees said that being a guide represented their main source of economic income and formal work. The others had other jobs such as teachers, government agency workers, and guides in ecotourism centers in the region. For these interviewees, guiding in the mountains was their second source of income and temporary or weekend job. Three of them had professional academic training in tourism; however, all received training, courses, diplomas, and certifications in adventure activities and first aid in wilderness areas.

Training

Hiking in mountains requires physical and mental preparation to achieve a good performance. It implies performing specific activities, and stopping doing others; for example, resting is a behavior mentioned in interviews. As a guide referred: *"A week before I do a similar tour, in strong training mode. If I go up to the mountain on a weekend, on Thursday I rest, two days I don't train at all, I just rest, since work is physically very demanding. When tours are here in Volcán Nevado de Colima or Volcán Tequila, I can still do some activity a day before, but I try to relax my muscles. I live as healthy as I can, I sleep early, or at least I try to go to bed early"* (G6).

Equipment

When talking about equipment, guides mentioned clothing, footwear, and other necessary utensils. All guides agreed that basic equipment when they go up the mountain are *"boots, backpack, lamp, waterproof jacket, cap, first aid kit"* (G1; G2; G3; G4; G5; G6). However, there were those who emphasized a particular object, mentioning that *"first a suitable, comfortable footwear, that is not going to slip, because you encounter all weather conditions, there may be rain or a lot of sun"* (G3). Another pointed out that *"with experience you realize which is the right footwear and which one is not"* (G2). For clothing, a factor that influences the selection of what they will wear was temperature changes in mountains. *"I usually wear dual-use pants that take off the bottom and you can use them as shorts for temperature changes; thermal shirts; jackets; depending on the weather you decide if you wear first layer, second layer and third"* (G5).

The guides also consider the weight of clothes, so it is necessary *"not to wear a heavy jacket"* (G3; G2). Another consideration is *"waterproof pants and a waterproof jacket"* (G3; G2). However, a guide mentioned the backpack as part of basic gear where he carries items that facilitate his job in the mountains: *"I wear gloves, hat, dark glasses, food, a thermal blanket, an envelope to prepare oral serum, lip ointment to prevent dryness, sun blocker, a knife, sugar sachets because sometimes if you eat a candy it takes longer to assimilate and those envelopes you can put them in a water bottle and it gives you more energy"* (G2).

In relation to kitchen utensils, guides commented that they try to carry only what is necessary due to the weight: *"Always remember the importance of weight, the lighter you go the better, I try to supply utensils in some way, if I cook soup, I eat it directly from my pot that I take to prepare it, or for example, chopsticks can be made with two twigs. I carry a container to heat water, because somehow you have to boil the water before drinking it. If you run out of water you have to get it from somewhere. I always carry a knife, that is survival item, for anything, it is useful for everything. I am used to reduce the weight I carry on"* (G6). Finally, as part of the gear, although it is not for personal use, guides mentioned that a first aid kit cannot be missing since it is essential and *"it is always there, if I go on a tourist service or if I go on my own or with my family, I always carry a first-aid kit"* (G6).

Alcohol/Hydration

Hydration worries guides the most, due to the physical wear and tear that comes when reaching summit. In addition, they are exposed to various factors such as altitude that lead to increased consumption of body water and to dehydration: *"If you go to the mountain when dehydrated you will have a bad time. If alcohol is consumed, it should be at least one week before going to the mountain. It is advisable not to drink alcohol or to stay awake late, I do avoid those two things"*(G6); *"What I place most emphasis on is hydration. One of the most predominant factors in the mountain is being poorly hydrated, it triggers factors related to mountain sickness or not metabolizing food properly due to lack of enough water. So a day before I drink enough liquids to stay hydrated"* (G6).

Guides constantly confirmed how important hydration is for them. Therefore, they avoid alcohol consumption, *"I avoid alcohol days before"* (G6; G1; G5; G2), *"alcohol greatly depletes you in performance, it dehydrates you"* (G6). In addition, they present preventive behaviors, such as consuming plenty of water days before: *"At night I drink water to avoid carrying extra weight and go hydrated beforehand, in the morning I also drink water before drinking coffee to avoid dehydration, coffee will give you a period of dehydration"* (G2); *"I also choose to consume drinks with electrolytes, a day before I am already recharged with salts"* (G4). Being well hydrated affects performance *"if dehydrated, the next day you cannot feel in optimal conditions to climb the mountain"* (G2).

Regarding water transport behaviors, two themes arose: the type of container or method to transport liquids and the amount of water carried on their journeys to the PNVNC. *"I carry a liter water bottle. Before I used to carry a camel bag, but using a liter bottle is more hygienic, comfortable and more resistant and easy to wash. If I run into a stream or a spring I can wash it, while the hydrating bag tends to make it complicated"* (G3); *"I adapt to the equipment I have. I can drink from thermos, load water in a camel bag (bags or bladder bag) or use plastic bottles. I sometimes use liter thermos, if I know in advance that the route will be long, then I will require more hydration, I use the hydration bag that is for 2 liters. Food is separated from water, and some products come directly in bags such as soups or rice"* (G5).

However, there are those who choose to carry both options, bottle and hydration bag, a choice that depends on the kilometers to travel or the terrain where the

activity is performed. *"Sometimes I carry both, a liter bottle and a hydrating bag. I can use the hydration bag for the Volcán Nevado de Colima"* (G6); meanwhile others opt for using thermos: *"I use a liter container; I don't use hydrating bags"*. And some guides agreed that hydration bags are more functional for cycling. *"I have used hydration bags on two-day expeditions or when I go cycling"* (G6), other guides mentioned *"but not here, I usually take a liter water container, depending on the length of the expedition, if it becomes longer, we have the advantage that there in the National Park, there is a spring in the shelter named La Joya"* (G2).

The amount of water they carry with them to hike the mountain depends on the amount of kilometers they will walk, in addition to the weight they can generate: *"I do not carry much water because it is also very heavy"* (G3); *"I consume 2 liters of water, here in Nevado de Colima I can drink a liter, a liter and a half, or up to 2 liters. To the Tequila Volcano I take a liter and a half, it is enough. To the Iztaccíhuatl I drink minimum 2 liters and to Pico de Orizaba minimum 2.5 liters if I need it"* (G6).

The backpack

All participants indicated how important it is for them to prepare the backpack. It is an activity they dedicate time to, in order to select the right amount of things, because it affects the weight they will carry during the walks, *"Logically what I am looking for is the lowest possible weight, then I eliminate things that could add weight"* (G5); *"Sometimes it takes up to two days to prepare the backpack, I take utensils we are going to need and I fill in the backpack, practically with what I assume we are going to use, we are not always successful, the day before I check the list. I choose clothes depending on the weather. I calculate food amounts depending on the hiking time"* (G4).

Guides also talked about priorities on what they carry in their backpack: *"in my backpack the first thing I keep is the water bottle, I always carry a liter of water, I also keep my gloves"* (G2); highlighting indispensable actions *"when I prepare my backpack I always carry water. I usually carry a sachet of oral electrolytes powder for caution, although I do not always use it, to avoid dehydration due to excessive sunshine"* (G2). Another reason why guides take care of the weight they carry in their backpacks is because they are committed to customers' well-being and enjoyment: *"I leave space because sometimes customers wear equipment or a jacket and I like to give them the option to put it in my backpack. I also carry an extra Buff, in case anyone is cold I can lend it"*(G3). They mentioned some other tips to be more effective when packing: *"At home one can reduce backpack volume. When using canned food one buy things that cannot lose their shape, you have to find a suitable place, however, if you carry dried meat, you can store it anywhere and take advantage of the space you have in your backpack to carry something of greater importance"* (G5).

Food intake

This section describes knowledge and skills related to the guides' diet in their daily lives, in which healthy habits were perceived. It was relevant to eat well and to feel healthy; they recognized that their physical state is relevant for job performance. In addition to the environmental conditions in which they work, *"feeling healthy helps me have a pleasant experience and hiking can be perceived as easy and quiet. Digestion works very differently with height, pressure, place and low temperature"* (G6). Here he described how they choose what to eat and what to avoid: *"I have learned from my own experience. I eat what I think is good, then I pay attention to how I feel and if it makes me feel fine I keep eating it, that is how I learn. Nowadays there is a lot of available information on food for hikers, especially on the internet. When I started to take better care of myself I realized how important it is for my performance. There are people and books who tell hikers and mountaineers what to eat, but not everyone´s body is the same, there are people who can eat anything"* (G6).

Portions

Guides also described aspects about portions of food they carry: *"I calculate portions of food according to the number of hours on the road, that is how I get an approximate of what I am going to eat in food and water"* (G5); other interviewee added *"it is necessary to think about what I have in stock, what I can carry, if the route is going to be done from base camp or if I will have access to buy food or not"* (G6). Guides avoid overloading, however, being a guide implies being prepared, so a guide declared: *"When I go for a walk I always think about what can happen, therefore, I take an extra portion either to share or for some setback, unplanned events where I might have to ingest and meet my needs, that's why I always have to carry a little more portions"* (G5).

About the type of food they consume, a guide declared the reasons that influence their decisions: *"I choose foods easily assimilated to my body, food that gives me energy, calories and protein"* (G2). Food's weight is a factor to consider when choosing what to carry in the backpack: *"I do not carry much foods in the backpack"* (G4); *"I try not to carry so many things so that my backpack is not so heavy"* (G3). Another guide commented that food is necessary: *"the food I pick up is not heavy, it is something I carry and eat throughout the process"* (G5). When *"there is vehicle support in the ascent it is not a big problem because I can take extra food and I can select something else and I alternate the type of food, it is an advantage to bring diversity of food in a vehicle"* (G2).

Particular food preferences are noted, for example, one of the guides mentioned: *"many carry dry meat, but it is not something I want to eat up there"* (G2); another guide added: *"I like to eat Snikers because it has 'cajeta' and peanuts, I bring food that contains seeds (peanut oats, hazelnuts, sunflower seeds, nuts, almonds)"* (G3). *"I usually try to buy cookies or bring bars that give me energy such as amaranth bars, or it can be something similar. I try to consume things that are a bit more local, things that are not processed, that do not have so much manufacturing"* (G2).

However, it is not just about preparing what is needed to hike the day before. Preparing food also involves organizing with a healthier diet, where we find different habits that guides promote, such as maintaining a number of episodes of food consumption: *"Prior to my job, I try to make three meals per day, if I can make four or five I do them. Days before going to the mountain I drink oral serum. I do this on previous days so I am already recharged with salts"* (G4).

On the food habits of previous days, a guide said: *"When the walks are very demanding, I try to have a good hydration from days before, not to consume alcohol, nor heavy foods"* (G5). Some guides maintain the habit of taking care of their diet, in addition, they generally have

healthy habits in such a way that they normalize these personal self-care behaviors and they did not report it as something extraordinary: *"Since my preparation a day before, I do not make a specific meal, but I try to eat vegetables, fruits, and drink a lot of water"* (G1). Another guide mentioned: *"I try to consume carbohydrates, not hamburgers or anything like that, but fruit fibers, vegetables, not to go heavy, but I take more care of hydration"* (G5).

When questioned about the issue of avoiding any food, all the guides described in more detail: *"Yes, I definitely avoid foods with excess fat and if I can, I make myself a light integral bread sandwich, drink milk or plain water"* (G3). Another guide agreed that he avoids fats, mentioning, *"I start to eat more, let's say I start removing difficult-to-digest fats"* (G6). Some guides stated that it is from experience that they identify what to eat and what not, for example one of them stated: *"Pork is extremely heavy to digest for me, so I avoid it. I also reduce alcoholic beverages to zero"* (G4). *"For many years I've avoided alcohol and I am avoiding it"* (G4). A guide declared the following regarding spicy meals: *"I don't eat much spicy food, to avoid having stomach problems and not being able to travel"* (G1).

Discussion

Due to the lack of research on tourist guides' feeding behavior, results are discussed in light of other studies that refer to guides and feeding in the mountains. Therefore, the main objective of this study was to describe eating and drinking behaviors, as well as previous care mountain guides take when they ascend the mountain.

Beedie (2003) pointed out that mountains are dangerous places that require care; in case of adventure tourism, there needs to be a guided tour. Despite this, going to the mountain is no longer just for experienced climbers – there has been an increase in rookie visitors (Urdampilleta & Martínez- Sanz, 2012). That is why guides need to maintain leadership and to be in optimal conditions to provide quality service. Findings show that guides evince behaviors aimed to prevent them to feel weak, ill or tired; it was observed that mountain guides pay special attention to their hydration, avoid foods that can harm them and take care of the weight to carry during the walk. We acknowledge the relevance of experience in carrying out mountain activities. All participants showed a high level of experience in the field and all had professional training, including three of them who had academic training in tourism.

Literature constantly refers to experience as a determinant to influence people decision making on visiting the mountains. First the weight is approached; the guides constantly seek to load as little as possible, as the interviewees stated. Weight influences the amount of water that is willing to be carried, the food to be consumed, and the clothing or items necessary for the expedition. This is consistent with research carried out by Littlefield and Siudzinski (2012), who studied the Appalachian Mountain trail that runs from Georgia to Maine. Results showed that experienced hikers carry less equipment since they optimize most the material they carry on. In a study by Pearce et al. (2019), the authors noted that it is the most experienced walkers who have a greater perspective on trail challenges, so they constantly train and prepare. These behaviors were also observed in our interviewees, who perform physical activity regularly. Wall-Reinius and Bäck (2011) stated that, as hikers gain more experience, natural areas are experienced in a different way and a greater perspective is acquired to face challenges (Pearce et al., 2019). Guides constantly ascend mountains that allows them to know diverse physiological aspects that occur in their body, such as the process of digestion, as one of the interviewees acknowledged when he pointed out how his own digestion changes. On this subject, we find in the literature that physiological disorders, cognitive and motor performance, mood swings and anxiety (San et al., 2013) can occur at more than 3,000 meters above sea level.

About the type of food, literature identifies carbohydrates as the necessary basis in hikers and mountaineers' diet (Anderson et al., 1996; Reinoso, 2011). Guides said they prefer carbohydrate consumption and avoid fatty foods. Regarding backpack preparation, they expressed how important and significant it is, considering reducing the greatest possible weight. However, Littlefield and Siudzinski (2012) analyzed ways of packing and transporting materials, and observed that tourists should carry two bags for food, one for immediate consumption with ease of access and another packed for later use. Regarding portions, this study shows that guides determine the amount of food in relation to walk duration and considering any unforeseen events that may arise. This is consistent with recommendations made by other authors, considering the relevance of having intake control (Anderson et al., 1996; Basnyat et al., 2000; Stuchkl & Sojer, 1996).

Reinoso's (2011) studies in Ecuador stressed that it is essential for tourists and visitors to pay more attention to food quality, due to health implications that interfere with performance on summit climbing and in simple park enjoyment. In relation to hydration-related behaviors, respondents stated that they followed alcohol avoidance and water consumption behaviors to hydrate beforehand. The amount of water consumed by guides is between one to two liters, and they use thermos as a way of transportation. Hydration bags are more functional in case of cycling. These findings differ from those of Pearce et al. (2019), who observed a greater use of the hydration bag, however, it is important to note that their study was carried out on hikers and not on mountain guides, so the study context had different characteristics. Regarding previous hydration, Urdampilleta and Martinez-Sanz (2012) recommended to drink at least one liter of water two hours before the activity. Anderson et al. (1996) mentioned that it is necessary to avoid alcohol consumption, since it can cause dehydration the next day. Ziaee et al. (2003) mentioned that possible factors that predispose acute mountain sickness to occur include water balance and dehydration. All aspects are empirically recognized by guides since it is crucial to be well hydrated to climb mountains due to the fact that it is a factor that influences their performance. For this reason, the previous behaviors were consuming abundant liquids, including electrolytes, and avoiding

alcohol consumption.

In mountaineering, the participation of women has increased in recent years, but it is still an activity practiced mainly by men (Borm et al., 2011; Moghimehfar et al., 2014; Raya et al., 2017; Wöran & Arnberger, 2012). In studies carried out with adventure guides, a greater participation of males is also observed (Rokenes et al., 2015). In the case of this study, there is no knowledge of female guides who work in the area regularly, therefore our sample only included men. Although the role of tourist guides in the development of activities has been constantly studied, it is important rethink it. Min (2012) considers guides' performance to be perceived by tourists in the ability to solve problems and unforeseen events, in the ease of the social interaction of tourists and local people, as well as in their communication. Walker and Latouso (2016) acknowledge the relevance of mountain guide's decision-making process – every decision, however small it may seem, can irrevocably alter the course of the excursion. Ap and Wong (2001) state that leadership and guide's capacity to solve field problems are essential to be an educator. Results show that guides are committed to their profession and to do their jobs beyond reaching the summit, and that there is a constant concern for their own wellbeing in order to be able to care for the tourists. They recognize the relevance of being in the best condition for personal wellbeing; this means that they recognize and admit that tourists observe their performance and decision-making all the time.

Although it was not the main topic, it is necessary to express the lack of a code of ethics for the profession and legislation to address guides' working rights. For Volcán Nevado de Colima, this situation influences the lack of recognition of the difficulties the ascent implies, due to the physical effort it represents and the exposure to low oxygen. Although it is not the highest mountain in Mexico, the fact that there are various trails and a lack of tourists' willingness to pay for professional guiding services causes people who are not professionals to become improvised guides. This research opens a research field on mountaineers' feeding behavior, not only on food as energy provision and nutrients to the body, but on a very specific eating culture and on how this process is lived by hikers. Recognizing mountain guides' relevance, not only as a companion who manages and motivates tourists to reach summit, but to reevaluate their hard work each time they ascend, highlights the complexity of feeding on the mountain first as a need for staff wellbeing, and then to state good practices and proper conduct within the job. It is necessary to emphasize and promote healthy eating habits, a space to do physical activity, and to face current health challenges such as obesity and sedentary lifestyle. The role of guides can go beyond simple service provision and they can become social agents for change and health promoters (Leme, 2010).

Thus, future behavioural studies may propose behaviour modelling programs, relying on guides as models of healthy eating behaviours to take advantage of natural landscape opportunities. Experimental studies on food and beverage intake where regular recreationist visitors to Volcán de Colima National Park are included, could explain behaviors of eating and drinking in the mountains. This study contributes to the knowledge of the diet of male adventure tourism guides in Mexico. We insist on the need for future studies on both male and female adventure guides with physiological and nutritional approaches, as well as from the field of social sciences, for a better understanding of hikers' diet in natural areas.

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