



# Food, Our Common Ground: A Photovoice Study

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## OPEN ACCESS

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### Specialty section:

This article was submitted to  
Health Communication,  
a section of the journal  
Frontiers in Communication

**Received:** 04 April 2020

**Accepted:** 03 March 2021

**Published:** 25 March 2021

### Citation:

Malova E, Aerpati A, Mao B, Shah K,  
Tian S, Zhang Z and Harrison TR  
(2021) Food, Our Common Ground: A  
Photovoice Study.  
Front. Commun. 6:549105.  
doi: 10.3389/fcomm.2021.549105

Research shows that factors like campus food environment, food accessibility, and acculturation may shape students' eating patterns and influence their physical and emotional well-being. Although research has investigated factors that contribute to student food choices, few, if any, prior studies have examined this topic from the perspective of graduate students' own experiences. By utilizing Photovoice methodology, the current study aims to fill the research gap as well as supplement the current literature, providing insights from graduate students' everyday realities and feedback from policymakers. Three overlapping themes emerged across all images: (1) unhealthiness becomes the norm, (2) the convenience of food influences decisions, and (3) healthy food consumption a symbol of cultural identity. The feedback from University policymakers in relation to identified themes revealed two key issues. First, the information about dining options on campus is not visibly present anywhere on campus. Second, much of dining services is designed with undergraduate students in mind. The findings of this study suggested that universities should provide a better environment to promote healthy food consumption, improve students' awareness of healthy options, make healthy options convenient enough to consume, limit students' access to unhealthy food, and consider the needs of international students.

**Keywords:** photovoice, social change, food environment, health communication, graduate students

## INTRODUCTION

Photovoice as a methodology represents reality from various perspectives, serving as an effective tool, particularly in instances when social change is much needed. Additionally, it provides the opportunity to visually assess our health concerns, expand our depictions with narratives, and establish common themes as a class. This participatory research methodology is a team-based approach, allowing us to collaboratively evaluate our experiences, establish overarching themes, and move forward with our findings by presenting them at an organized event. Our approach to photovoice is unique in that we are both participants and authors of this manuscript, providing an unfiltered voice to an issue we all agreed was important – food. Specifically, we examine issues of diet, food choices, access, culture, and health through the visual narratives from the perspectives of graduate students on a college campus.

The rising trend of college students being overweight (with body mass index  $\geq 25.0$ ) is a focus of ongoing research (Vadeboncoeur et al., 2015). College students on campus are more likely to consume excessive fat and sugar, and are less likely to eat fruits and vegetables (Breitenbach et al., 2016). With prevalent unhealthy dietary patterns identified among (mostly undergraduate) college students, and the inevitable problems it leads to, it is important to understand how and why students make the dietary choices they do if we are to improve college students' dietary behaviors. This study uses photovoice to explore what individual and campus environmental factors may motivate dietary behavior change through the perspectives of graduate students' own experiences.

Environment plays an important role in influencing one's dietary pattern (Story et al., 2008). Since University students spend long periods of time living and studying on campus, their dietary behaviors are likely influenced by the campus food environment. Kapinos and Yakusheva (2011) confirmed that campus food environments relate to weight gain during the college year. Local, plus on campus groceries and convenient stores are jointly influential in creating the environment (Horacek et al., 2013).

Extensive studies have investigated what changes in the environment drive individuals to alter food options. The Food Choice Model identified availability, price, social and cultural factors as main reasons of food consumption (Shepherd, 2002). Food preparation skill and the availability of healthy foods on campus are closely connected, which in turn, are strongly related to college students' dietary patterns (Horacek et al., 2013). Compared to the limited ingredients in fast food, by having a wide range of available ingredients in terms of fruits, vegetables, whole grains, and other whole foods during grocery shopping, students who are more proficient at cooking tend to consume higher quality food than students who rely mostly on convenient purchases (Larson et al., 2006). Similarly, Yeh et al. (2008) reveals that the high cost of vegetables and fruit as well as the lack of preparation time prevented individuals from consuming the types of healthy foods they did at home.

For international students, the adaptation process can be more challenging. Many scholars have addressed how the challenges to adapt to the new culture affects food consumption. To clarify, the transition to a new culture has negative effects on health and diet, such as altered dietary patterns, higher alcohol intake, weight gain, increased blood glucose levels, high blood pressure, and mental problems (Gordon-Larsen et al., 2003; Lara et al., 2005; McDonald and Kennedy, 2005; Alakaam et al., 2015). Research on dietary practices of international students found that international students consume more salty, sugary fast foods, and fewer fruits and vegetables after staying in the U.S. (Wu and Smith, 2016).

Alakaam et al. (2015) has identified that limited access, lack of time, and high costs were common barriers for international students while maintaining their eating habits after arriving in the US. In this case, fruit and vegetable consumption are strongly related to culture, which is influenced not only by food availability, but also by the cultural traditions (Schroeter et al., 2007). As U.S. universities have recruited more international

students in recent years, universities have employed nutrition professionals to provide "culturally sensitive and effective" (Brittin and Obeidat, 2011, 552) nutrition care and food services, because the traditional food habits of each ethnic group are substantially different from the typical American diet. Brown et al. (2010) suggested that the availability of culturally normative food was positively related to one's mental and physical well-being. Indeed, international students' preferences on culture-related food may influence their satisfactions with campus food services, with different cultural groups providing significantly different ratings of "food dislikes, drinks, and price" aspects of University food services (Ruetzler, 2008). Previous photovoice studies exploring food consumption patterns of international students name the availability of foods (Corcoran, 2018) and cultural identity maintenance (Amos and Lordly, 2014) among the strongest factors affecting students' diet.

While these studies provide important information, most of them draw conclusions from the perspectives of undergraduates. Few studies have examined the topic based on graduate students' perspectives, who usually do not live on campus and are less informed with University food services. Nevertheless, graduate students represent significant portions of students on college campuses. Additionally, limited number of studies stemmed from individuals' own experiences, rather they rely primarily on surveys (Pan et al., 2005; Simmons and Williams, 2007) and focus groups (e.g., Alakaam et al., 2015). While these approaches enable researchers to have access to a larger population, participants' communication of their views is guided by researcher questions and analyzed through the researchers' interpretations. Photovoice is a participatory research methodology that has been widely used in health promotion (e.g., Wang and Burris, 1997; Wang and Redwood-Jones, 2001). It allows community members to visually assess their health concerns for their communities, drawing on pictures and stories to communicate with policy makers in order to promote change (Wang and Burris, 1997; Wang and Redwood-Jones, 2001; Strack et al., 2004). In addition, photovoice provides opportunities for young people to improve their self-identities, social identities, and responsibilities (Strack et al., 2004). Taken all together, the current study thus adopts the photovoice methodology to provide richer insights from graduate students as a supplement of the current literature. Additionally, the participants in this study are also the authors and researchers, thus removing an additional level of filtering that occurs during the writing and analysis process.

## METHOD

In order to illuminate the importance of food, a photovoice project was conducted. This methodology asks participants to take photos of their communities surrounding a particular theme. In addition, it entails storytelling and narratives to reflect these lived experiences.

The application of the photovoice methodology in our project focused on the challenges at a midsize R1 southern University in finding healthy food that reminds us of home. Through

discussion of key questions and issues, we agreed on guiding questions: our depictions centered on conveying the importance of food and nutrition, as well as having healthy access to it. During our exploration of this theme, we highlighted our encounters with food, what food means to us, our search for resources, and our approach to finding potential solutions to these challenges. The study was classified as exempt by the IRB.

Six graduate students enrolled in a health communication course were trained to use photovoice as a research tool. Each participant took 6 photos in the process of data collection. A researcher experienced in photovoice methodology application supervised the team of graduate students and provided feedback throughout the process. Our task as participants was to capture images focusing on the importance of food both on campus and in the surrounding communities and create short narratives describing each scene. After approximately a 2-month period of taking photos, a facilitated session was conducted to discuss the photos, refine the narratives, and analyze the common themes across all participants. In order to further evaluate our experiences, we each reported both our individual and classroom findings in a reflection paper where we explored how our experiences were similar to or different from the existing research findings. In total, three in-depth analysis sessions were conducted where researchers collaborated to capture objective reality through a critical discussion of the photographs.

A second, and equally important part of our photovoice method was a public exhibition of our work. Each of us created a photovoice poster. Additionally, we worked together as a team to accomplish a variety of tasks: compiling and creating a list of invitees who can both inform our ideas and work toward positive change, creating and issuing invitations, and organizing the event. Then, an invitation flyer was sent to leaders of the University dining team, the graduate school, the graduate student association, several student organizations, and the faculty and students at the School of Communication.

The photovoice presentation titled: “Food our Common Ground” was an opportunity to highlight our findings, engage in discussion and advocacy, and receive feedback from policymakers and other University members. Snacks and refreshments were provided through a potluck activity where we each brought food from our culture, contributing to our focus of access to healthy food and its contribution to culture. We had in person attendance from three key leaders of dining services, several faculty members, and students. The feedback, evaluations, and experiences from the audience members granted us with a deeper insight surrounding our health topic.

## RESULTS

Three overlapping themes emerged across all images: (1) unhealthiness becomes the norm (44% of the photos), (2) the convenience of food influences decisions (22% of the photos), and (3) healthy food consumption as a symbol of cultural identity (20% of the photos). In addition, feedback from University policymakers in relation to identified themes is presented.

## Unhealthiness Becomes the Norm

One common theme we found across the photovoice project is that unhealthy food consumption is welcomed among students. More specifically, due to the limited unhealthy food options in the U.S., behaviors such as eating potato chips or drinking Coca-Cola in the morning are considered the norm. This was depicted in photos where students were purchasing chips for breakfast or sitting around a table drinking coke for breakfast.

Several photos further argued that the limited access to healthy food across campus enhances these unhealthy norms. This was seen, for example, in a student’s photo of a vending machine consisting mainly of unhealthy food items, but the vending machine was often the only option that was close enough to get food between classes. Similarly, another student’s photo demonstrated challenges of access to healthy foods by capturing inconvenient, long lines for more desirable, healthy food options on campus (see **Figure 1**). In addition, although universities may have put a lot of efforts to provide healthy food on campus, this information is not easily available to students. For example, one photograph shows that limited dining options are shown listed on University maps, and that dining apps are not user-friendly. This impedes students looking for healthier alternatives. To save time and energy, they will still go to their usual dining places serving unhealthy food.

## Convenience of Food

The convenience of food is another common theme in the photos, and it includes two subthemes-home cooking vs. quick purchases, and leftovers vs. fast food.

### Home Cooking vs. Quick Purchase

Food choices are largely dependent on the time and the energy an individual is able or willing to spend. The results show that the students are usually faced with this dilemma – to cook or to buy – due to their tight schedules and purchase habits. On special occasions, the students are less concerned about the convenience of the food, and they are more willing to cook for their friends and themselves. For example, photos from participants show that the international students celebrate their festivals by cooking homemade dishes. When it comes to eating on campus, the students are less able to prepare meals and focus more on convenience. For instance, more than one photo indicates that the students buy food from vending machines between classes, but express concerns over its nutritional value.

### Leftovers vs. Fast Food

Price is an important determinant for student decisions about eating on campus. Fast food is considered to be a tasty and reasonably priced food option, but some students are concerned about its nutritional value. For example, four photos depict a queue of students waiting for a microwave oven to heat up their food brought from home (see **Figure 2**). While the queue for the microwave is long and inconvenient, fast food presents the same challenges – inconvenience during busy hours – with half of the photos showing students waiting in long lines to order as well.



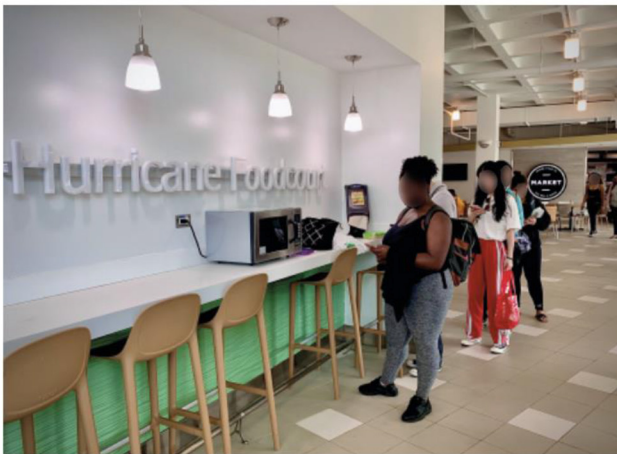


*Umbrellas in orange become a scene in University of Miami, which is a symbol of the school. However, a lot of the Coke bottles under those umbrellas are also a part of the scene. This is 10:30 in the morning, I passed by a couple of tables and I saw three groups of students sitting under the umbrellas with cokes. Coke is the most-easy-to-get drink on campus. Thus coke, along with snack, becomes the social connection during the breaks.*

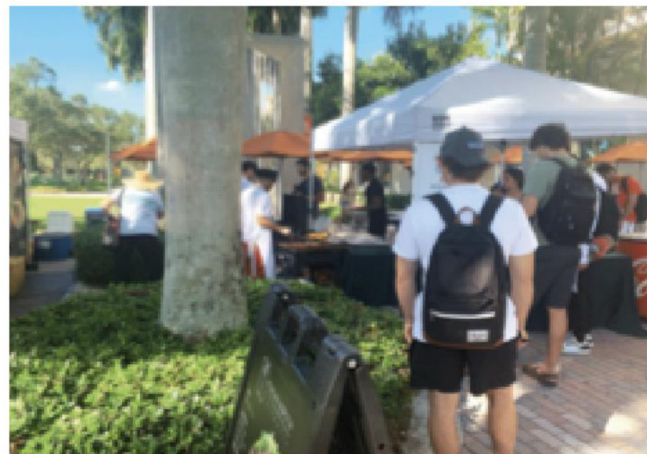


*Since not all parts of the campus are close to locations with healthy food, sometimes these vending machines are the only options to have a quick bite. They are mostly packed with chips and sugar-filled food.*

**FIGURE 1** | Unhealthiness becomes the norm.



*Although a wide range of choices are available to students at the food court on campus (e.g. Subway, Vicky, Sushi Maki, Panda Express, Pollo tropical, etc.), there is always a long queue waiting for the microwave. Students use the microwave to reheat their home cooked food.*



*This photo was taken at Farmers Market during lunch time. There was a long queue at this popular vendor that was selling grilled sausage. The only drink available was Coke.*

**FIGURE 2** | Convenience of food.

## Healthy Food Consumption as a Symbol of Cultural Identity

The third common theme represented by across our project is that people take healthy food consumption to show their cultural identity.

## Different Patterns of Food Consumptions

The patterns of food consumption are largely dependent on cultures. Photovoice reveals that many students tend to search for places where they can buy familiar products. For example, vegetables from Asian markets or sugar-free drinks. Additionally,



*The School of Business sponsored a moon festival party for Chinese students. Chinese families would reunite together during the moon festival though I'm alone here, it is great to celebrate this festival with other people through this opportunity. The authentic moon cakes and Chinese food made me feel at home.*



*Two pieces of bread and some pulled pork. A good example of American food. I had this when I went to my first football game in Hardrock. It didn't taste bad and felt right for the atmosphere there. In other words, this was exactly what I had seen in American TV series, which is a good representation of American culture.*

**FIGURE 3** | Healthy food consumption as a symbol cultural identity.

eating away from home has been associated with poor diet quality. Our photovoice demonstrates the same issue in the picture with a portion of food in the restaurant. However, there are many places with healthy eating options like acai and poke bowls. The question is: why do individuals tend to choose unhealthy options? One of the reasons can be that we look for comfort food or easily accept unhealthy food if it is more culturally relevant to us. Another reason we all shared in common is that eating away from home can be considered a 'splurge' or an opportunity to enjoy foods other than our usual diet.

### A Sense of Belonging to Foreign Culture vs. Home Culture

In addition to the connection with physical well-being, foods are important to one's psychological well-being. On one hand, results showed that international students experience some changes of food consumption to assimilate to host societies. There were two photos that showed that the authors were eating a hotdog/cheeseburger while watching a sports game. Even though they knew that it was not healthy and did not meet their taste, they still had it because it is a typical American custom. In these examples, they wanted to connect themselves with American culture through food. On the other hand, several photos indicated that foods provide a sense of belonging. Celebrating weekends and traditional festivals from their traditional culture are all understandable reasons to get together and eat out. For

example, one photo shows the Moon Festival Party sponsored by the Business School (see **Figure 3**). This illustrates that participating food practices from home culture are important to international students' identities and sense of belonging.

### Discussion With Policymakers

The findings from our discussion with the University policymakers indicate that some of the issues raised in this Photovoice study are already being addressed on campus. For example, a smoothie and sandwich counter in the University wellness center provides access to cost-effective and nutrient dense options like acai bowls, a new tea room will be opening soon on campus, and additional microwaves have been placed at the University food court to reduce waiting time.

However, our results suggest that not all food-related concerns on campus can be easily solved. The problem of vending machines packed with unhealthy food options is vividly presented throughout the current photovoice study. The University policymakers confirmed that there are healthy food options only in the top first row of every vending machine on campus. The products in the middle rows have been the most welcomed ones, according to the students' choices, over a long period of time. Therefore, the current options available in the vending machines are the result of careful evaluation of students' needs and wants. Similarly, food court closing time is determined by the observation of students' purchase patterns, and a weekly schedule for the farmers market is considered to be the most



profitable approach – previous attempts at daily stands resulted in drop-offs over time.

Finally, another major issue established by this photovoice study and confirmed by the University policymakers is the lack of efficient communication between graduate students and the University food service management. Two key issues came up in discussion. First, while information about dining options on campus is not visibly present anywhere on campus, the University dining website provides ample information to help students meet their dietary needs and address any dietary restrictions. However, the University policymakers refer to the dining website as “a hidden gem,” emphasizing the gap between high quality information about dining services provided online and lack of knowledge about it among graduate students. Second, much of dining services is designed with undergraduate students in mind, from meal plans in the dormitories, to hours for on-campus dining. Our policy makers were very open to discussion, and recognized that they were learning new information.

Based on our findings, the University policymakers plan to take further steps to improve well-being of graduate students. They aim to adjust communication with graduate students by cooperating with the Graduate Student Association and participating in future graduate student orientations. In addition, although requiring much time and resources, the University food service management plans to diversify food options on campus to address dietary needs of international students.

## DISCUSSION

This photovoice study provides insight from graduate students by examining how their food consumption patterns impact their well-being and sense of belonging. Our photovoice revealed three overlapping themes: (1) unhealthiness becomes the norm, (2) the convenience of food influences decisions, and (3) healthy food consumption as a symbol of cultural identity. Throughout these themes is an inherent tension between environment and choice.

First, the adaptation process can be challenging for a student who moves to another country, including dietary patterns defined by culture. The findings indicated that many international students tend to search for places where they can buy familiar products, for example, vegetables from Asian markets. This is consistent with Schroeter et al. (2007) study that fruit and vegetable consumption is strongly cultural and influenced not only by food availability but also by the cultural traditions. However, previous research also showed that when individuals move to a foreign country, they may inevitably change their dietary patterns (Simmons and Williams, 2007; Wandel et al., 2008; Wu and Smith, 2016). Our findings similarly indicated that international students in the US, going through an adaptation process, tend to consume more high-calorie and high-sugar food typical of American culture.

The present photovoice study is a good supplement to the current literature on culture and food choices as it provides some insights that were previously ignored in the literature. Although past literature recognizes the power of culture, most of them

only focused on food shock and altered meal patterns (Gordon-Larsen et al., 2003; Lara et al., 2005; McDonald and Kennedy, 2005; Alakaam et al., 2015). Our findings highlight the important role of food in contributing to the attainment of belonging for international students. As individuals need to maintain a sense of belonging and identity while adapting to host countries, the importance for international students to have access to cultural traditions surrounding food should be acknowledged. Similar to existing literature on the importance and influential role of food (Pi-Sunyer, 1993), this photovoice project also stresses that food has both physical and contextual influences. Furthermore, significance is not only placed on having healthy access to food, but also on the positive individual, social, and cultural life experiences shaped by healthful eating. While it is easy to blame the environment for poor eating habits, individuals still choose unhealthy options for a variety of reasons. While maintaining a sense of culture may lead to a desire for healthier foods, understanding and belonging to a new culture leads to unhealthy decisions for a cultural experience. The combination of environment and choice often lead to new patterns of behavior where the unhealthy choices become the norm, even when healthy options exist.

Second, college students previously reported that they did not have sufficient time for healthier dietary habits, and thus increased their takeaway and fast food consumption (Silliman et al., 2004; Janssen et al., 2018). However, our findings showed that when convenient healthy options are provided, some college students still go for the convenient unhealthy ones, indicating that lack of time is not the only factor impacting their food choices. In addition to purchasing reasonably priced fast food on campus, students also tend to bring home-made food for lunch. In the literature, home cooking fostered personal relationships by encouraging connections with others and emphasized the influential role of cooking and eating patterns (Mills et al., 2017). Our results elaborate previous findings by showing that even though home cooking is beneficial for one's health (Larson et al., 2006), the college environment may negatively influence students' ability and willingness to bring their own food due to limited resources, such as microwave ovens available on campus.

Additionally, we found that unhealthiness becomes the norm among students. This was depicted in photos where students were purchasing chips early in the morning or sitting around a table drinking coke for breakfast. Several photovoice images also showed that even though college canteens provide nutrition recommendations to help customers choose healthier meals, students tend to ignore nutrition labels. This theme is consistent with previous findings that only consumers already in low-fat diets or consumers with chronic diseases attend to nutrition labels (Kreuter et al., 1997; Miller and Cassady, 2015), and college students do not refer to nutrition profiles of meals in their food choices (Hoefkens et al., 2011). We argue that the reason for such behavior could be one's self-efficacy, conveying that there may be personal factors interfering with one's decision to engage in a healthy diet. While it is difficult to find information on healthy eating options on campus, those options do exist, but they are often more difficult and expensive to access. However, even when they are available, sometimes we still choose the

unhealthy option. Our findings contribute to existing literature by highlighting that culturally related food options decrease international students' self-efficacy in a way that unhealthy food would be accepted as long as it is culturally relevant and comforts them. Efforts to improve eating and dietary behaviors must also examine individual decisions in addition to design and access issues.

Finally, compared to previous findings, this study presents insights on dietary habits from college students themselves. These insights provide policymakers references on how to make more effective changes. That is, universities are expected to provide a better environment to promote healthy food consumption, including making students aware of healthy options, making these options convenient enough to consume, limiting students' access to unhealthy food, and considering the tastes of international students. This process is not without barriers. The policymakers shared similar concerns to a campus catering officer who stated that University food services officials could expect a significant drop in business if the cafeteria stopped serving pizzas and hamburgers (Levi et al., 2006). However, after attending the photovoice presentation, University policymakers plan to establish an open line of communication with graduate students and take further steps to address their concerns and dietary needs.

The current study only focused on graduate students. Unique circumstances of distinct student groups may affect their eating behaviors in different ways. It would thus be worthwhile for future research to investigate how unique circumstances (i.e., domestic vs. international students; on-campus vs. off-campus residents), influence the eating behaviors and experiences of students in different ways. Additionally, we recognize the photovoice is not designed to provide generalizable findings, but rather to give voice to those who do not normally participate in decision making. As such, we see great opportunity for future studies to engage in more traditional social science approaches such as surveys and focus groups to refine and validate the findings of this study.

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Our findings from the various themes presented in this project highlight the importance of food, as well as the valuable role it plays in providing students with a sense of belonging. The application of photovoice for positive social change is based on the idea that individuals participate in creating the images that shape their reality. We not only identified major photovoice themes but also brought University policymakers to the table, since their decisions govern students' life and well-being. Through sharing our findings and concerns, we realized that their perspectives differed from those reflected in our photovoice project. Hence, photovoice played a vital role in identifying students' perspectives, conveying them to University policymakers, and securing future change.

## DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the participants OR participants legal guardian/next of kin was not required to participate in this study in accordance with the national legislation and the institutional requirements.

## AUTHOR CONTRIBUTIONS

EM, BM, AA, ZZ, KS, and ST: participated in photos, research, exhibition, and analysis. TH: taught the method, guided discussion and analysis, structure, and content editing/suggestions. EM, BM, AA, ZZ, and KS: writing process. EM and ST: editing. All authors contributed to the article and approved the submitted version.

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**Conflict of Interest:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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