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Face-to-Face versus Online Agricultural Courses: An Analysis of Preferences, Challenges, and Non-Adaptability

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ABSTRACT

Short-term agricultural courses equip participants with marketable knowledge through an amalgamation of theoretical lectures and hands-on workshops. As time has progressed, many courses have transitioned heavily away from traditional classroom settings and into digital mediums. A survey was conducted at Convocation Expo during the Agricultural Clinic session at the UPM Bintulu Sarawak Campus. About 156 surveys were evaluated, and the results showed that, despite the potential challenges and lack of adaptability, our participants preferred online agriculture courses over face-to-face learning. Many respondents (34.88%) agreed they would not sign up for an online farming course because they didn't believe in the outcomes (34.88%), the fees were too high (30.23%), the learning platform was inefficient (16.28%), and there was a lack of relevance to current agricultural practices (16.28%). Moreover, the lack of hands-on sessions (61.54%), a preoccupation with marketing strategies (11.54%), and a lack of familiarity with the internet's functionalities (11.54%) were all cited as reasons for the inadaptability and impracticality of online learning. Nearly half (47.44%) of respondents indicated a preference for free face-to-face training, but just 37.18% would be willing to do so (provided the fee was less than RM100). The proliferation of online classes across several platforms has made education more accessible than ever before, so long as the recorded sessions are archived online. However, without the appropriate information or the referral to professional experts, their agricultural operations would continue to be plagued by technical difficulties.

Contribution/Originality: The study documents an important context for understanding the advantages and disadvantages of online and face-to-face learning environments. Problems with online agricultural courses, along with how those factors have impacted farmers. Participants' preferences for the delivery mode of agricultural courses may assist in enhance the learning experience in the future.

1. Introduction

Short-term agricultural courses have grown in popularity in Malaysia, as the program's objectives were to provide guidance on agricultural science as well as information on entrepreneurship, financial loans, and government support (Sri & Swastika, 2011). Training in fertigation, for instance, would entail learning the fundamentals of the concept, as well as participating in hands-on sessions covering assembly and field management of chilies. Participants who want to set up their own fertigation system or make adjustments to an existing one will find a wealth of useful information in this course. Fees for training may include the cost of handouts, fertigation kits or other agricultural inputs, and refreshments.

Distance learning (Joshi et al., 2020; Muthuprasad et al., 2021) describes the trend towards delivering agricultural courses through online platforms, especially during the COVID-19 pandemic (2019-2022). Social media sites like Facebook, Instagram, TikTok, and YouTube have spawned many content creators offering agricultural advice. In addition, internet platforms like Zoom, Google Meet, and Webex may be used for training purposes as a form of online broadcasting. If made accessible after the live session, the vast majority of online agriculture trainings may be downloaded by participants at no cost.

Online agricultural education presents certain potential difficulties, most notably the lack of hands-on exercises. It would lead to misunderstanding among the participants, which in turn might reduce agricultural output (Joshi et al., 2020). Further, most online agricultural courses focus on older generations who may not have sufficient education levels, despite the fact that deeper knowledge is necessary to aid participants in their day-to-day farming operations (Izzah & Wan Asrina, 2019). Other challenges may arise when more than 200 people watch a live stream at once, such as a large internet bandwidth utilization (i.e. 2.4 GB/hour). Online meeting streaming quality will suffer if participants' internet connections are slow owing to poor network coverage or bandwidth limits, even if they can save the video for offline viewing later. The high cost of internet data in the nation (for example, a prepaid plan from a mobile carrier costs RM35/month for 30GB of the internet) and the restricted capacity will have a negative impact on the quality and enjoyment of online course experiences.

In light of the dearth of data on the comparative efficacy of online agricultural trainings to their conventional counterparts, we deemed it important to assess the current state of the sector. Therefore, the purpose of our research is to determine whether or not participants prefer online agriculture education over conventional physical learning, as well as to identify any barriers to adaptation that may exist.

2. Methodology

The study was undertaken at the UPMKB Agricultural Clinic during the 2022 Convocation Expo in October. Approximately 200 surveys were given out to attendees above the age of 18. The collected forms were pre-evaluated and given to non-UPMKB students who were guests at the Agricultural Clinic. Only 156 responses with all mandatory fields were kept for further analysis. Participation in the survey was completely voluntary and it was written in the Malay language, with four distinct parts; section A (demographic backgrounds), section B (source of obtaining agricultural information), section C (preferences and challenges related to online agricultural

courses), and section D (preferences and willingness to pay for face-to-face agricultural courses). A careful translation of the questionnaire into the English language preceded the drafting of this written piece.

Thirty undergraduates took part in pilot research to test the questionnaire for clarity and consistency before it was widely distributed and collected. Any problems that arose during the trial run were addressed and rectified in the best way possible. After the survey period ended, we used SPSS version 23.0 to run some basic statistical tests on the data we had obtained, examining variables like frequency and percentages to draw conclusions.

3. Results and Discussion

3.1. Demographic background

Table 1 summarises the demographics of this study's participants, the vast majority of whom are male (N=86, 55.13%) and of prime working age (N=88, 56.41%).

Table 1: Participants' demographic profiles

Variables	Total (N)	Frequency (%)
Age classification		
Early working	26	16.67
Prime working	88	56.41
Mature working	32	20.51
Elderly	10	6.41
Gender		
Female	70	44.87
Male	86	55.13
Marital status		
Divorced	11	7.05
Married	107	68.59
Single	38	24.36
Education level		
No education	3	1.92
Primary	13	8.33
Secondary	44	28.21
Vocational	24	15.38
Tertiary undergraduate	71	45.51
Tertiary postgraduate	1	0.64
Employment status		
Employed	103	66.03
Unemployed	53	33.97
Employment sector		
Government	30	19.23
None	53	33.97
Private	73	46.79
Salary range		
<RM1,000	34	21.79
RM1,001-RM3,000	65	41.67
RM3,001-RM5,000	29	18.59
RM5,001-RM7,000	17	10.90

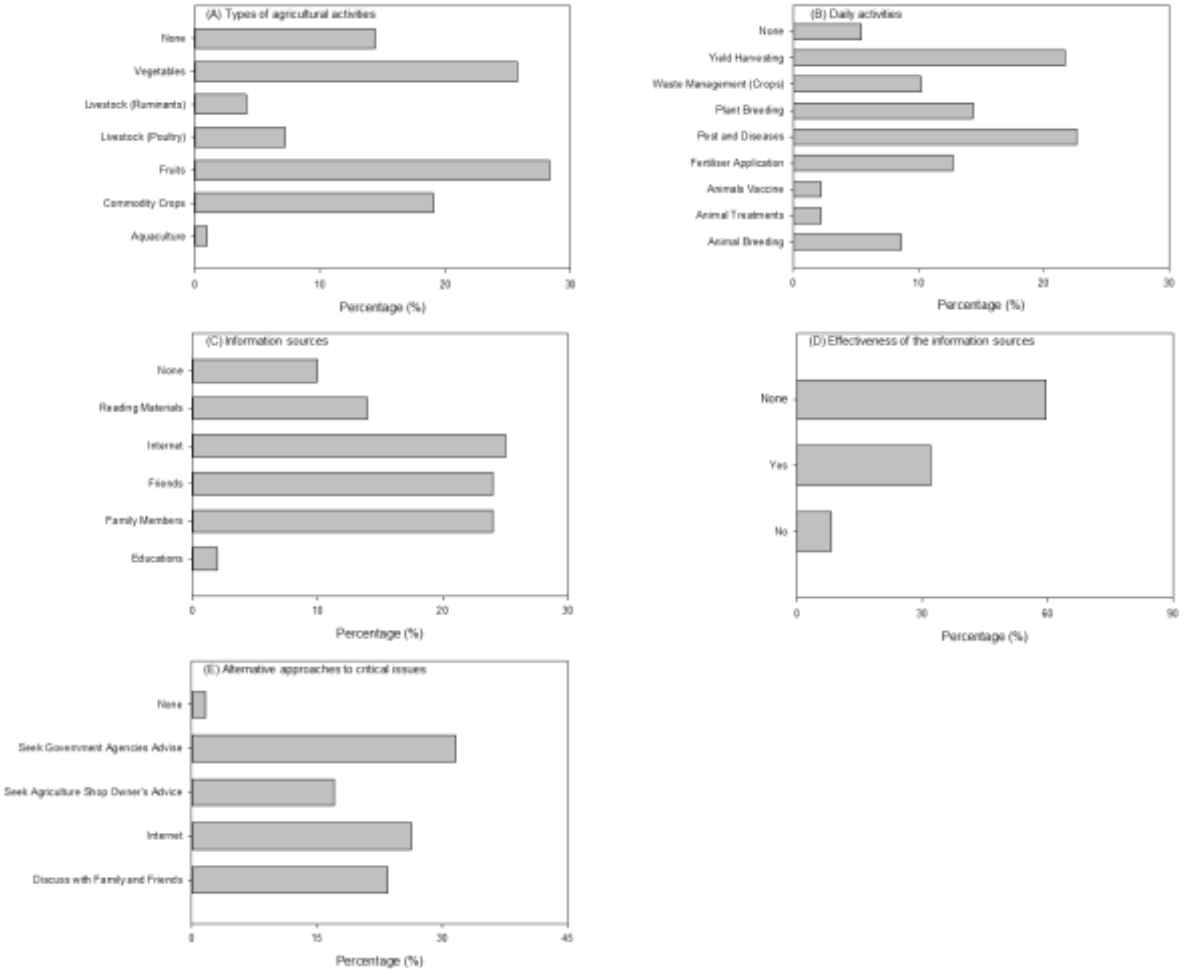
RM7,001-RM9,000	6	3.85
>RM9,001	5	3.21

Of the total N=156 participants, 68.59% are married couples, who are currently enrolled in an undergraduate programme at a post-secondary institution (N=71, 45.51%). Meanwhile, 66.03% (N=103) of our sample have steady employment, 46.79% (N=73) hold positions in the private sector, and 41.67% (N=65) of them earn between RM1,000 and 3,000 per month.

3.2. Acquiring the source of information

Participants ranked fruit cultivation (28.35%), vegetable cultivation (25.77%), and commodity crop production (19.07%) as their top three agricultural activities (see Figure 1A).

Figure 1: At-home agricultural activities and respondents' favoured source for resolving agricultural issues



The majority of their workdays (Figure 1B) were spent dealing with pests and diseases (22.61%), yield harvesting (21.66%), and fertiliser application (12.74%). Figure 1C shows that the majority of our respondents (25.47%) relied on online resources to learn about agriculture, while a similar percentage (24.06%) relied on word-of-mouth from friends and family. Their evaluation of the efficacy of sources of information preference

(Figure 1D) was deemed effective, with a "yes" response representing 32.05% compared to 8.33% for a "no" response. Technical issues, such as those related to pest identification and soil fertility, remain unresolved (Figure 1E). The highest percentage of our participants (31.58%) reported consulting government bodies for advice, followed by conducting an in-depth online search (26.32%) and consulting with friends and family (23.48%) who encountered similar issues.

Figure 1A shows that most of the study's respondents (85.57%) live in rural regions, where they grew mostly fruit trees for their valuable fresh fruits, which included dabai (*Canarium odontophyllum*) and durian (*Durio zibethinus*). Vegetable farming (25.77%) was the second activity undertaken by participants subjected to high demand and fast-yielding crops, with midin (*Stenochlaena palustris*), various types of paku (*Athyrium esculentum*, *Blechnum orientale*, and *Nephrolepis chlorosticia*), and ensabi Iban being the most common varieties. Few of the species are found in their wild-grown environment which was subsequently collected by our participants. Table 1 shows that people of all ages engaged in a variety of agricultural pursuits, either for their own use or to sell at a local market (Awang, 2015; Sakai et al., 2016; Izzah & Wan Asrina, 2019). This is due to the strong demand for speciality products, such as the RM30-RM120-per-kilogram Sarawak olive (dabai) and the ensabi Iban, a spicy herb with a flavour reminiscent of Japanese wasabi.

Pests and diseases management (22.61 %), harvesting (21.66 %), and fertiliser use (12.74 %) topped the list of topics participants researched. This data was crucial for preserving farm health and output by reducing losses of blooms and fruits and guaranteeing the largest possible harvest from each tree. As a result, it is imperative that all farmers, regardless of access to the internet (25.47%; Figure 1D), actively seek out useful agricultural information. This data is easily accessible in multiple languages, and its usefulness is beyond dispute (Safitri & Arif, 2021; Suratini et al., 2021). In fact, several social media sites have Q&A rooms where users can ask and answer questions, making it easier to find solutions to agricultural issues.

Figure 1D shows that the percentage of "yes" responses to the question of whether or not internet searches for agricultural information are successful is 32.05%, with the highest number being "none" (59.56%). Search engine results have a number of unintended consequences, such as making agriculture seem too complicated for the average person and presenting an inaccurate picture of life on the farm. Since our participants had little success in locating reliable agricultural information via their own online searches, they sought official guidance from a variety of Malaysian farm groups.

3.3. Preferences for distant agricultural education and challenges with adaption and practicality

Figure 2 displays the level of participant engagement and the challenges encountered by those taking agricultural courses online. About 56.41% have answered "yes" (Figure 2A) and enrolled in the available online agriculture courses, while 57.32% are active on social media websites (Figure 2B), most notably Facebook and YouTube. A quarter of respondents (23.17%) found "none" to be the most interesting option, followed by those who selected "other online courses," which included reading E-books (10.37%) and Blogspot (9.15%). Figure 2C displays the percentage of course registrants who responded "yes" and were pleased with the online course's efficacy. Others, nevertheless, pointed up a few concerns (Figure 2D), including that the course was too theoretical

(37.14%), that there was a lack of two-way communication (35.71%), and that insufficient materials were being discussed. Online agricultural courses have been reported to avoid answering questions when they are too technical, too specific, use unfamiliar terminology, or are outside of the instructor's areas of expertise (Prayoga, 2017; Hafifi & Din, 2021).

Figure 2: The limitations of the online agricultural education platforms in terms of applicability to real-world farming settings

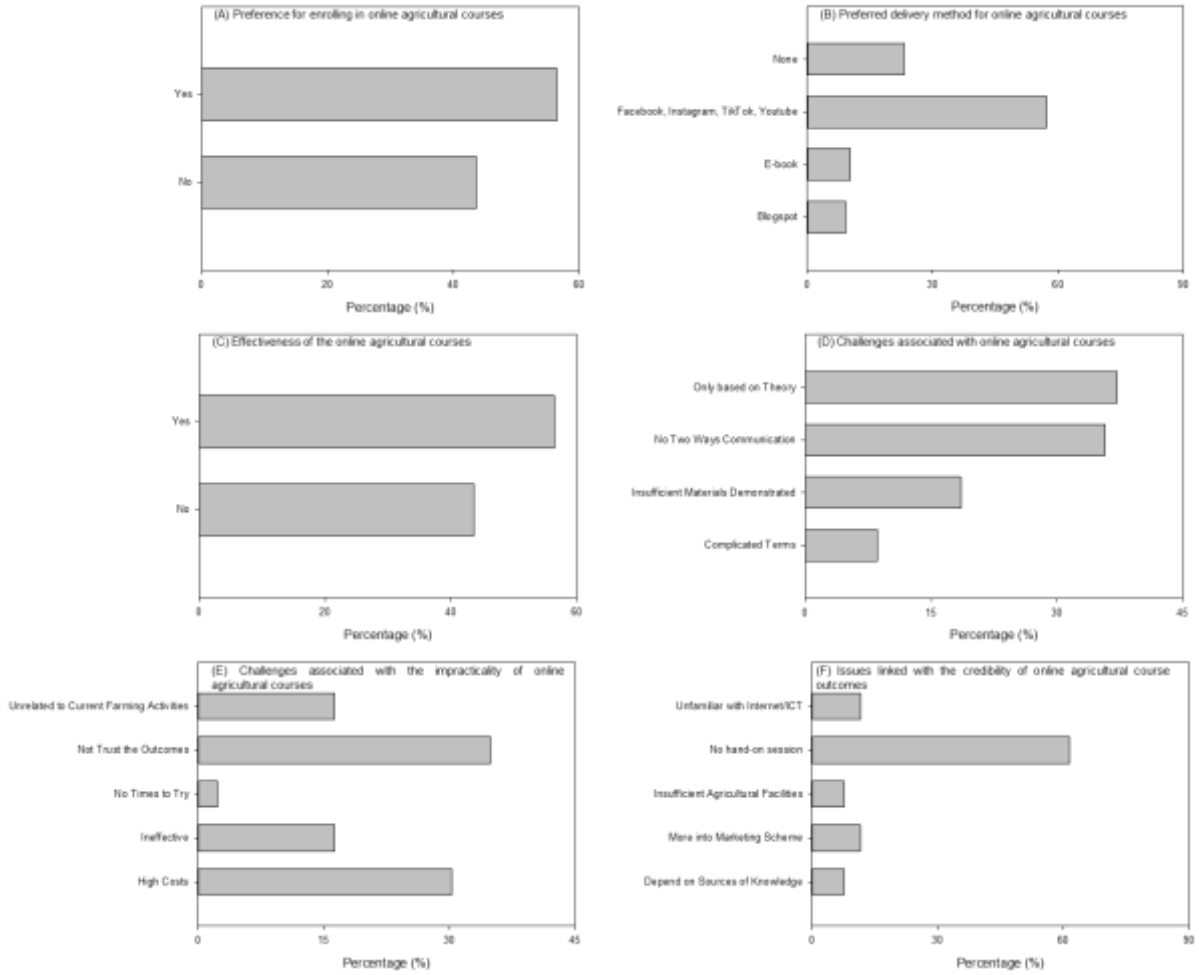


Figure 2E shows that our participants agreed that online courses are impractical because they lack confidence in the outcomes (34.88%), are expensive (30.23%), are seen as an inefficient learning platform (16.28%), and are irrelevant to their daily agricultural operations (16.28%). In addition, our respondents highlighted the impracticality and inapplicability of online agriculture courses (Figure 2F) owing to the lack of hands-on sessions (61.54%), an emphasis on marketing strategies (11.54%), and a lack of familiarity with the internet/ICT functions (11.54%).

We have expanded the use of online search in the context of enrolling in Malaysia's many available online agricultural courses (section 3.2) since it is the preferred method for finding agricultural information (Chhachhar et al., 2014; Evans, 2018). Thanks to the most popular social media sites, 56.41% of all interested parties have enrolled in this sort of course. In addition, online agriculture courses are becoming increasingly prevalent in Malaysia in the wake of the COVID-19 pandemic, and they have great

potential to attract audiences from all around the nation. As we had anticipated, however, the least popular formats for online agriculture courses are E-books and Blogspot. Reasons for fewer responses included the length of time required to read the content, the need of paying access fees, and the strain on the eyes caused by staring at the tiny mobile screen for an extended period of time (Jaiswal et al., 2019; Lee et al., 2021).

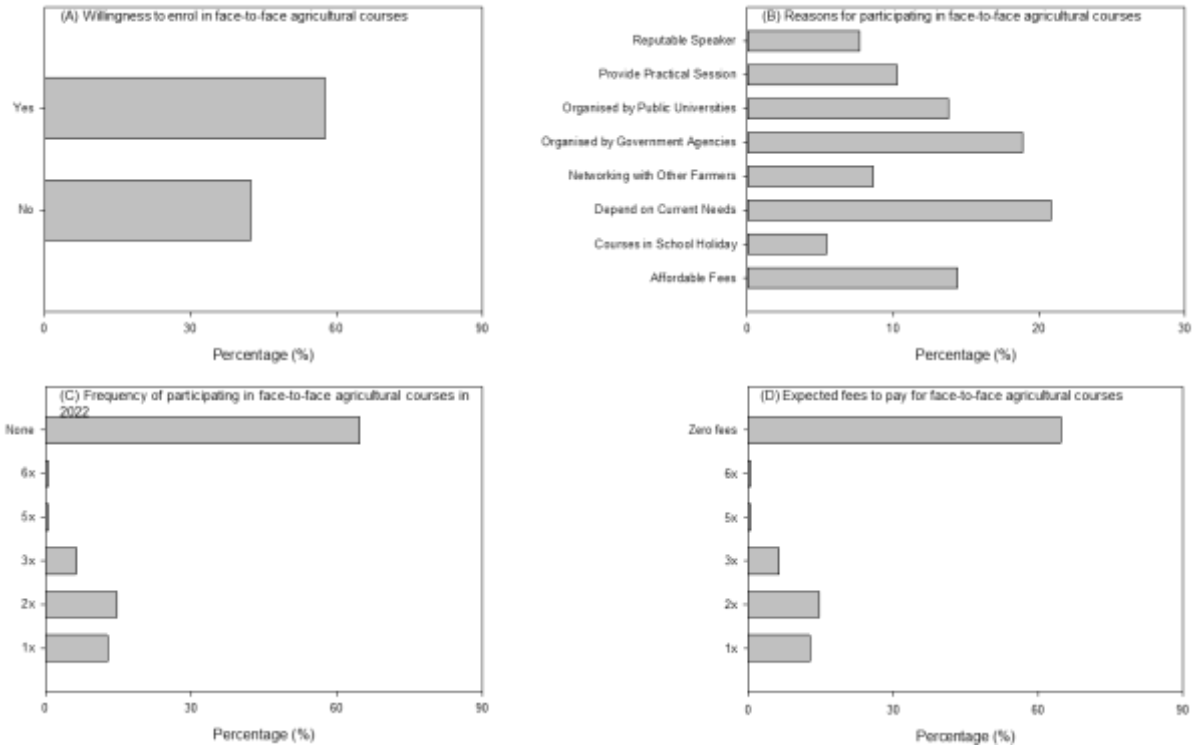
Further, we dug deeper into these results by analysing the limited adaptability and ineffectiveness of enrolling in online agricultural courses; our participants did not have confidence in the outcomes (34.88%), the fees were too high (30.23%), the courses were irrelevant to their current farming activities (16.28%), they were ineffective (2.33%), and they lacked the time to try them out (2.33%). With more people not believing the results, we feel compelled to look at the challenges inherent in offering agriculture courses online. This data indicates that a majority of our respondents are dissatisfied with the lack of a hands-on component in online agriculture courses (61.54%). Because of this, it is difficult to find relevant and useful social media platforms for teaching agricultural-related topics unless they are hosted by government organisations or public institutions. Experts in the field of agriculture, such as agriculture graduates, full-time agricultural workers, or experienced agronomists, who operate as freelancers, have been shown to be effective in offering practical as well as theoretical training in online agricultural courses via the use of videos. However, whether or not these videos will show up in the participants' news feeds is dependent on a number of factors, including the virality of the content, audience engagement, and the number of recommendations they received from other users.

3.4. Willingness to pay for face-to-face courses

Figure 3 depicts the outcomes of paid face-to-face course enrolment, with the majority deciding to participate (Figure 3A) by responding "yes" (57.69%) and the remainder chose "no" (42.31%). Such responses were based on current demands (20.83%), government agency organisation (18.91%), and reasonable fees (14.42%). However, the frequency of attending face-to-face agriculture courses in 2022 (Figure 3C) ranges from none (64.74%) to twice a year (14.74%). Meanwhile, the willingness to pay fees for face-to-face agriculture courses (Figure 3D) is led by zero fees (47.44%), followed by < RM100, with 37.18%.

To avoid even the possibility of having to pay the usual expenses that would be associated with taking an online agriculture course, most participants opted to take classes in person. Fees below RM100 are likely to be paid by respondents, suggesting that conventional educational settings are not optimal for teaching agricultural topics at this time. In addition, our participants, such as small-scale farmers, may feel weighed down by the necessity to pay fees to participate in the in-person agricultural courses, or by the difficulties associated with making the long-distance trip necessary for attending them. Rather, despite logistical challenges, online agricultural courses have grown in popularity and availability thanks to content creators on social media who have figured out how to leverage the medium to their benefit.

Figure 3: Preference for face-to-face participation in short agriculture courses



5. Conclusions

Our participants' preferences for, challenges with, and inability to adopt agricultural knowledge gained via the online platform versus in-person were determined by analysing the sources from which they were gleaned. Given these findings, it seems that people in Bintulu enjoy attending agricultural courses online rather than in person, despite the fact that there have been some difficulties with the latter due to their inapplicability and lack of adaptability. As is customary for farmers growing perennial crops, the majority of our respondents live in rural areas or close to Bintulu town. This limitation may make it more costly (> RM100) to enrol in in-person agriculture courses. While social media provides a wealth of agricultural knowledge, it is important for those taking online agricultural courses to weed out irrelevant or counterproductive remarks. Lastly, we would like to stress the importance of improving mobile and IT literacy in ensuring the future success of online agricultural courses.

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Conflict of Interest

The authors reported no conflicts of interest for this work and declare that there is no potential conflict of interest with respect to the research, authorship, or publication of this article.

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