

EXAMINING FINANCIAL LITERACY LEVELS AMONG UNIVERSITY STUDENTS: A SURVEY STUDY IN AFYONKARAHİSAR¹

ÜNİVERSİTE ÖĞRENCİLERİ ARASINDA FİNANSAL OKURYAZARLIK DÜZEYLERİNİN İNCELENMESİ: AFYONKARAHİSAR'DA BİR ANKET ÇALIŞMASI

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ABSTRACT

Individuals' awareness of their daily financial decisions directly affects their economic well-being. Therefore, it is crucial for educational institutions to provide students with basic financial knowledge through curriculum programs supporting financial literacy. This study aims to assess the impact of financial management and accounting courses in universities on the body of financial literacy knowledge of students. The study draws on the data obtained from a survey of the students at the Faculty of Economics and Administrative Sciences at Afyon Kocatepe University. The survey was conducted on a sample of 838 students during the spring semester of the 2021-2022 academic year. Research data were analyzed using frequency analysis and chi-square test with the SPSS 23.0 software package. The findings reveal that, overall, students have low levels of financial literacy. However, the results indicate that finance and accounting courses play a significant role in increasing financial literacy levels.

ÖZET

Bireylerin günlük finansal kararları konusundaki farkındalıkları, ekonomik refahlarını doğrudan etkiler. Bu nedenle, eğitim kurumlarının finansal okuryazarlığı destekleyen müfredat programları aracılığıyla öğrencilere temel finansal bilgi sağlamaları önemlidir. Bu çalışma, üniversitelerdeki finansal yönetim ve muhasebe derslerinin öğrencilerin finansal okuryazarlık bilgisine olan etkisini değerlendirmeyi amaçlamaktadır. Çalışma, Afyon Kocatepe Üniversitesi İktisadi ve İdari Bilimler Fakültesi öğrencilerinden elde edilen verilere dayanmaktadır. Anket, 2021-2022 akademik yılının bahar döneminde 838 öğrenciye uygulanmıştır. Araştırma verileri, SPSS 23.0 yazılım paketi kullanılarak frekans analizi ve ki-kare testi ile analiz edilmiştir. Bulgular, genel olarak öğrencilerin düşük düzeyde finansal okuryazarlığa sahip olduğunu ortaya koymaktadır. Ancak, sonuçlar finans ve muhasebe derslerinin finansal okuryazarlık seviyelerini artırmada önemli bir rol oynadığını göstermektedir.

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Financial literacy encompasses individuals' understanding of financial concepts, knowledge about financial products, and ability to make financial decisions. As put forward by Hogarth & Hilgert (2002), financial literacy includes individuals' skills in managing money and securing themselves financially. In simple terms, financial literacy pertains to an individual's understanding and knowledge of financial concepts. Sing (2018) refers to this concept as the "ability of an individual to use knowledge and skills for effective management of financial resources for lifetime financial security." Additionally, the Financial Literacy and Access Association (2017) expresses this competency as "the ability of individuals to wisely evaluate their incomes, savings, and investments, and manage their budgets accurately."

Financial education is a process aimed at enhancing individuals' understanding of financial products, services, and concepts to enable them to make informed choices. As stated by the OECD (2005b: 4), financial education is a process where individuals benefit from knowledge, instructions, and objective advice to learn about financial risks and opportunities. Financial education allows individuals to comprehend financial issues and manage their personal finances satisfactorily (Anderloni & Vandone, 2010; Potrich, 2016: 356-357). "Additionally, financial education equips individuals with tools to safeguard against financial risks through sufficient savings and the use of insurance. The impact of financial education on financial literacy appears crucial in enhancing university students' financial management skills. Study by Cude et al. (2006) indicates that with increased access to financial knowledge and technological advancements, young individuals develop their financial literacy. As young adults embark on university life and begin living independently, they encounter financial responsibilities, among which managing their financial situations becomes a significant necessity.

As Isomidinova & Singh (2017) pointed out, financial education provided to university students has significant potential to impact their future careers and overall lives. The majority of studies in the literature empirically support the positive impact of financial education on financial literacy. However, as discussed in the literature review section of this study, some research fails to establish a clear link between financial education and the financial literacy levels of university students. Drawn on considerably large sample size, this study aims at providing further evidence regarding the effect of university students' enrollment in financial management and/or accounting courses on their level of financial literacy. The data set obtained from a questionnaire administered to students at the Faculty of Economics and Administrative Sciences at Afyon Kocatepe University was analyzed utilizing frequency and chi-square tests. The results emphasize the significance of financial education programs in increasing financial literacy levels and provide a basis for future studies.

The literature review section of the study explores research concerning the influence of accounting and finance courses on levels of financial literacy. The next section offers a comprehensive explanation of the methodology and the tools used for data collection. The study ends with a concluding section.

1. REVIEW OF THE LITERATURE

There are several studies in the literature examining the financial literacy levels of various groups. For instance, a set of studies such as Bernheim (1996), Lusardi & Mitchell (2006), and Lusardi & Mitchell (2009) examines how retirees' financial knowledge and skills affect their retirement periods. Şahin & Barış (2017) conducted a study targeting public and private sector employees. Lee (2012) examined the impact of financial literacy on bank employees, while Walakumbura (2021) focused on medical practitioners to explore the relationship between financial literacy and individual investment decisions. Aktaş (2020) investigated the financial literacy levels of academic and administrative staff. Akçay & Semercioğlu (2021) explored how primary school teachers' mathematics literacy correlates with their attitudes and behaviors regarding financial literacy. Akarçay Öğüz & Tektaş (2021) conducted a study on the financial literacy levels of accounting and finance teachers in vocational high schools. Er & Çetinbaş (2018) analyzed financial literacy levels of employees, while Yalman (2022) focused on financial literacy levels of non-financial professions such as engineers, pharmacists, and architects. Kaderli et al. (2016) examined the financial literacy levels of military personnel who served in the Turkish Armed Forces. Bernheim (1996), Lusardi & Mitchell (2014; 2017), and Güler & Tunahan (2017) investigated household financial literacy levels.

One of the earliest studies focusing on students was conducted by Wilson (1967), where the economic literacy of tenth, eleventh, and twelfth-grade students in Franklin County (Ohio) during the 1965-66 academic year was analyzed. The students were divided into successful and unsuccessful groups, and their literacy levels regarding economic concepts were examined. Based on the survey of 300 students, the findings revealed that students in the successful group had higher levels of economic knowledge compared to those in the unsuccessful community.

As for the university students, the available studies often compared their financial literacy levels with various socio-demographic characteristics such as age, parents' education level, financial education history, entrepreneurial inclination and

psychological factors. One of the pioneering studies on the financial literacy levels of university students was by Danes & Hira (1987). Their study aimed to assess university students' understanding of money management and the differences in these knowledge levels. Conducted on 323 students, the study found that statistical money management education was generally beneficial, but these benefits varied according to the students' demographic characteristics. Volpe et al. (1996) investigated university students' knowledge level of personal investment and its relationship with investment literacy, academic disciplines, and experience. The findings revealed that university students generally have insufficient knowledge about personal investments. A study conducted by Beal & Delpachitra (2003) investigated the financial knowledge levels of students from different faculties at the University of Southern Queensland. Based on a survey of 739 students, the study concluded that Business Administration Faculty students had a higher level of financial knowledge as per students from other faculties.

In a study by Rosacker & Rosacker (2016), four sessions of one-hour financial literacy training workshops were provided to 214 undergraduate students. In these workshops, it was stated that students in the accounting and business departments had high levels of financial literacy, while students in other departments had low levels of financial literacy. These findings reinforce the recommendation that financial literacy education should be provided to all undergraduate students and that it can be effectively implemented with an expanded curriculum at a low cost. Jacobsen & Correia (2019) conducted another study investigating the financial literacy of university students. Focusing on individual factors such as students' financial backgrounds, race, gender, major, and motivation, the study aimed to evaluate students' financial literacy levels. Survey data from 362 students were analyzed, revealing a lack of financial literacy among students who were not majoring in business, had not taken prior financial courses, and generally lacked confidence in their financial knowledge.

A study by Chen & Volpe (1998) examined the financial knowledge levels of university students in the United States using survey data from 924 university students. This study investigated students' levels of personal financial knowledge, as well as the relationship between these knowledge levels and students' characteristics. It was found that students in non-business majors, females, students under the age of 30, and students with less work experience had lower knowledge levels. Furthermore, it was shown that financial education considerably raised the literacy levels of the students

Research on the financial literacy of university students in Turkey holds a significant place in the literature, too. Bayram (2010), for example, examined the financial literacy and money management behavior of students of the Faculty of Economics and Administrative Sciences (FEAS) and Porsuk Vocational School at Anadolu University. The research results revealed that while students considered themselves financially competent, their financial literacy levels were low. A similar study was conducted by Temizel & Bayram (2011) on Anadolu University's FEAS students. This study found that students evaluated themselves as successful in managing their financial situations, but their financial literacy levels turned out to be low. Similarly, Saraç (2014), compared the financial literacy levels of students at Dumlupınar University who took finance courses with those who did not. The data collected through surveys were evaluated using T-tests, ANOVA tests, and frequency analyses. The analysis results showed that students who took finance courses had higher financial literacy levels compared to other students. Özen & Kaya (2015) conducted a survey of 521 Uşak University students, including those who had taken finance courses and those who had not. Of the participants, 265 were from departments that offered financial courses, whereas 256 came from departments that did not. According to the study's findings, 40% of students had a basic understanding of money, and those who had taken finance courses outperformed those who had not.

In a study conducted by Demirkor & Erduru (2017) at Harran University's Faculty of Economics and Administrative Sciences, it was found that students' financial literacy levels were inadequate. In a study conducted by Yatbaz & Çatıkkaş (2019), the financial knowledge levels of students in the Banking and Finance Department at Manisa Celal Bayar University were examined. The findings indicated that the financial knowledge levels of these students were at an acceptable level. Gümüş & Pailer (2019) conducted a study involving a survey of 268 first and fourth-year students in the Business Administration Department at Aydın Adnan Menderes University's Nazilli Faculty of Economics and Administrative Sciences. Regarding the financial knowledge levels, the results showed significant distinctions between students who had taken finance courses and those who had not. A study conducted by Salman & Esmeray (2020) focused on the students at Kayseri University's Vocational School of Social Sciences and Faculty of Applied Sciences. The findings of this study demonstrated a positive correlation between enrolling in finance courses and financial literacy. In another study by Dursun (2021), a survey was conducted with 208 students from the Faculty of Economics and Administrative Sciences and the Faculty of Education at Yeditepe University. According to the research results, participants who had taken finance courses had considerable levels of financial literacy as per those who had not.

The general results of these studies indicate that students who take finance courses exhibit more positive outcomes in terms of financial literacy compared to those who do not take such courses. These findings suggest that education related to financial

matters has the potential to enhance students' financial knowledge and skills.

However, there are also studies in the literature that show no relationship between taking accounting/finance courses and financial literacy levels. One of these studies was conducted by Mandell (2008), stating the relationship between financial literacy levels and financial education in American high school students. Five large-scale national surveys between 1997 and 2006 indicated that young adults had low ability levels in making age-appropriate and self-serving financial decisions. Also, personal finance and money management courses in curriculums were found to be ineffective in increasing financial literacy levels. Similarly, Mandell & Klein's (2009) study examined the different effects on 79 students in the high school system in America who had taken a personal finance management course. The research used a matched sample design, drawing on school system records, to compare students who had completed a personal finance management course with those who had not. The findings revealed that students who had taken the personal finance management course did not exhibit higher levels of financial literacy as per those who had not taken the course. Additionally, students who participated in the course did not see themselves as more focused on saving, and their financial behaviors were no better than those of their peers who had not taken the course.

In sum, it appears that the majority of the studies point out the positive contribution of finance courses to financial literacy levels of students, although some other studies do not confirm these findings. The current study is designed to analyze the effect of financial management and/or accounting courses on the overall financial literacy knowledge of university students by utilizing a large sample set, 838 students in total, from the Faculty of Economics and Administrative Sciences (FEAS) at Afyon Kocatepe University.

2. METHODOLOGY

The primary target of this research is to examine the influence of financial management/accounting courses on improving the financial literacy levels of university students. In the study, a survey was conducted throughout the spring semester of the 2021-2022 academic year on 838 students from the Faculty of Economics and Administrative Sciences at Afyon Kocatepe University.

The questionnaire used in the study was developed by using studies of Lusardi & Mitchell (2005), Erdoğan & Erdoğan (2018), Rooij et al. (2011), Liu et al. (2021), Erbaş (2020), Zhao & Zhang (2021), Ateş (2014), and Demirci (2021). The questionnaire includes 17 questions covering wide range of financial literacy topics from inflation, risk diversification, to compound interest and the functions of stocks and bonds. Table 1 presents the questions used in the survey.

Table 1: *Questions Measuring Students' Financial Literacy Levels*

Q1.	If your friend inherits 10,000 TL today and his brother inherits 10,000 TL with the condition that he receives it in 3 years' time, which one has become richer due to the inheritance in question? -My friend -My friend's brother -Both equally -I don't know
Q2.	If an investor buys the stock of company B, which of the following statements is true? - Owns a part of company B - Lending money to company B - Becomes liable for the debts of company B - I don't know
Q3.	Assume you have a deposit of 1,000 TL in the bank and the annual compound interest rate is 10%. How much money do you think you will have in the bank after 2 years? - More than 1.200 TL - Exactly 1.200 TL - Less than 1.200 TL - I don't know
Q4.	Assume that the deposit interest rate is 10% on an annual basis and the inflation rate is 20%. How will the purchasing power of your money in the bank change after 1 year? -Stays exactly the same -There will be less than today -There will be more than today -I don't know
Q5.	How do bond prices change if market interest rates fall? - Increases - Decreases - Stays the same - I don't know
Q6.	Which of the following investment instruments is riskier for investors than the others? - Stocks - Treasury Bills - Bonds - I don't know
Q7.	Which of the following statements is correct? - Once we invest in a mutual fund, we cannot withdraw the invested amount in the first year - Mutual funds can invest in different financial instruments such as stocks and treasury bills - Mutual funds pay a guaranteed rate of return based on past year's performance - None - I don't know
Q8.	Considering a long period such as 10 or 20 years, which financial asset would normally be expected to provide a higher return? - Deposit account - Treasury Bills - Stocks - I don't know

Q9.	When an investor invests his money in different financial instruments, the risk of his investment - Increases - Decreases - Stays the same - I don't know
Q10.	Investing in stocks is normally riskier than investing in treasury bills. - True - False - I don't know
Q11.	Buying shares of a company provides a safer return than buying a stock mutual fund. - True - False - I heard the concept of stock fund for the first time - I don't know
Q12.	Which of the following securities is most at risk of becoming nearly worthless if a company files for bankruptcy? - Company stocks - Company bonds - I don't know
Q13.	In general, riskier investments tend to provide higher returns over time than less risky investments. - True - False - I don't know
Q14.	Assume that your income doubles in 2021 and at the same time the general level of prices (inflation) also doubles. How will your purchasing power change in 2021? - Remains the same - Decreases - Increases - I don't know
Q15.	Which of the following statements describes the basic function of the stock market? - Stock market helps in predicting stock returns - The stock market leads to an increase in share prices - The stock market brings together people who want to buy and sell stocks - None - I don't know
Q16.	Under normal circumstances, investing in bonds is riskier than investing in stocks. - True - False - I don't know
Q17.	How does risk change when an investor spreads his investment across various assets rather than purchasing a single product? - Increases - Decreases - Stays the same - I don't know

Note: The correct answers are indicated in bold.

A total of 845 students participated in the face-to-face survey. However, the data from seven students was omitted from the analysis due to missing information. Resultantly, the data about 838 students were analyzed using frequency analysis and chi-square tests with the SPSS 23 software.

The chi-square (X^2) test is used to determine if there are significant differences between the distributions of categorical variables. The chi-square statistic assesses the distribution of categorical responses across two or more independent groups. Among various chi-square tests, Pearson's chi-square test (1900) is the most commonly utilized. This test only shows whether there is a relationship, but it does not produce estimates of effects (risk ratio or odds ratio) and confidence intervals. Therefore, it does not determine the size of the effects (Pandis, 2016: 898).

The X^2 distribution is the sum of the squares of k standard normally distributed random variables:

$$X^2 = \sum_{i=1}^k Z_i^2 = \sum \frac{(O_i - E_i)^2}{E_i} \quad (1)$$

X^2 can take any value from zero to infinity. O represents the observed value, while E denotes the expected value.

3. RESEARCH FINDINGS

The demographic characteristics of the students participating in the study is given in Table 2.

Table 2: *Characteristics of Students*

	Frequency (n)	%
Gender		
Female	456	54,4
Male	380	45.3
Missing	2	0.2
Class		
Freshman	104	12.4
Sophomore	265	31.6
Junior	255	30.5
Senior	211	25.2
Department		
Public Finance	228	27.2
Management	95	11.3
International Trade and Finance	135	16.1
Management (in English)	107	12.8
Public Administration	182	21.7
Economics	89	10.6
Missing	2	0.2
Have you taken financial management and/or accounting course(s) at the faculty?		
Yes. I took and passed	461	55
I am still registered	235	28
No. I have not taken	141	16.8
Missing	1	0.1
TOTAL	838	100.0

As shown in Table 2, 54.42% of the students who participated in the survey are female, while 45.3% are male. Of the 838 students who participated in the survey, 31.6 percent are in their second year, and 30.5 percent are in their third year. The Public Finance Department students constituted the leading portion of the sample (27,2%), followed by the Department of Public Administration (21,7%). Regarding the courses enrolled, 55% of the participants have successfully completed courses in financial management or accounting, 28% are still taking these courses, while the remaining 16.8% have never taken any financial management or accounting course.

Table 3 presents the percentage of students who provided correct answers to each question. The general average of students correctly answering questions turned out to be 42.6%. The results show that, overall, the students exhibited a low level of knowledge in financial issues represented in the questionnaire.

Table 3: *Percentage of Students Providing Correct Answers*

Question Number	Correct answers (%)
Q1.	54.2%
Q2.	67.8%
Q3.	34.1%
Q4.	58.4%
Q5.	36.4%
Q6.	40.5%
Q7.	25.1%
Q8.	33.2%
Q9.	36%
Q10.	43.3%
Q11.	16.7%
Q12.	52.7%
Q13.	68.1%
Q14.	40.3%
Q15.	33.4%
Q16.	34.2%
Q17.	50.1%
General Average	42.6%

The relationship between course enrollment and financial literacy is analyzed by means of the chi-square test. The test results are provided in Table 4.

Table 4: Results of Chi-Square Test

			Have you taken financial management and/or accounting course(s) at the faculty?		χ^2
			Yes (696 students in total)	No (141 students in total)	
Q1.	Those who answered the question correctly	n	374 (54.0%)	80 (56.7%)	1.649
		Expected value	377.2	76.8	
Q2.	Those who answered the question correctly	n	473 (68.8%)	92 (65.7%)	7.895**
		Expected value	469.5	95.5	
Q3.	Those who answered the question correctly	n	241 (34.8%)	45 (32.1%)	6.328**
		Expected value	237.9	48.1	
Q4.	Those who answered the question correctly	n	428 (62.4%)	62 (45.6%)	23.345***
		Expected value	408.9	81.1	
Q5.	Those who answered the question correctly	n	261 (37.9%)	43 (31.4%)	22.889***
		Expected value	253.6	50.4	
Q6.	Those who answered the question correctly	n	305 (44.7%)	34 (26.0%)	35.870***
		Expected value	284.4	54.6	
Q7.	Those who answered the question correctly	n	179 (26.1%)	30 (12.2%)	6.770
		Expected value	174.7	34.3	
Q8.	Those who answered the question correctly	n	245 (35.6%)	33 (23.9%)	16.184***
		Expected value	231.6	46.4	
Q9.	Those who answered the question correctly	n	266 (39.2%)	35 (25.7%)	19.619***
		Expected value	250.7	50.3	
Q10.	Those who answered the question correctly	n	324 (47.3%)	39 (28.3%)	25.551***
		Expected value	302.1	60.9	
Q11.		n	128 (18.7%)	11 (8,0%)	17.173***

	Those who answered the question correctly	Expected value	115.8	23,2	
Q12.	Those who answered the question correctly	n	382 (55.2%)	59 (41,8%)	16,649***
		Expected value	366.4	74.6	
Q13.	Those who answered the question correctly	n	484 (69.6%)	87 (61.7%)	4.177
		Expected value	474.7	96,3	
Q14.	Those who answered the question correctly	n	286 (42.0%)	52 (39.7%)	0,543
		Expected value	283.5	54.5	
Q15.	Those who answered the question correctly	n	249 (36.5%)	31 (22.5%)	33.275***
		Expected value	232.9	47.1	
Q16.	Those who answered the question correctly	n	261 (38.2%)	26 (18.8%)	33.951***
		Expected value	238,8	48.2	
Q17.	Those who answered the question correctly	n	360 (52.0%)	59 (42.4%)	4.658
		Expected value	348.9	70.1	

Note: ***, ** and * denote the significance level of 1%, 5% and 10%, respectively. The values in parentheses show the percentage of each group that provided correct answer.

As shown in Table 3, for five questions (Q1, Q7, Q13, Q14 and Q17), no significant relationship was observed between the course enrollment and the students' correct answers. Among those five questions, both groups performed best on Q13 about diversification benefits (69.6% for students enrolled in the course and 61.7% for students not enrolled), while their worst performance was on Q7 about mutual funds (26.1% for students enrolled in the course and 12.2% for students not enrolled).

For all other remaining 12 questions, the observed values for students who took financial management and/or accounting courses were significantly higher than the expected values. Conversely, in the group of students who did not take these courses, the observed values were lower than the expected values. Additionally, the percentages of correct answers from students who took financial management and/or accounting courses were higher than the percentages of correct answers from students who did not take these courses. Overall, the scores for these questions indicate that there is a significant relationship between financial management/accounting course enrollment and financial literacy levels of the students. This finding confirms the effectiveness of these courses in improving financial literacy levels that has been found out in some previous studies such as Beal & Delpachitra (2003), Cull & Whitton (2011), Saraç (2014), Özen & Kaya (2015), Rosacker & Rosacker (2016), and Dursun (2021).

4. CONCLUSIONS

In recent years, increasing importance has been given to financial literacy worldwide. Financial literacy enables individuals to manage their financial transactions more effectively, achieve their financial goals, and ensure their financial security. Financial literacy is also crucial for university students who prepare themselves for the challenges of their future lives. The literature on the subject mostly put forward that financial management/accounting course enrollment improved the financial literacy levels of students. However, there are studies failing to find this positive association between financial literacy and taking finance related courses. This study aims to analyze the impact of financial management and/or accounting courses on the overall financial literacy of university students. It utilizes a large sample of 838 students from the Faculty of Economics and Administrative Sciences (FEAS) at Afyon Kocatepe University. The respondents were asked to answer a set of 17 questions derived from the literature probing the financial knowledge capacity of students.

The analysis of the results revealed that students exhibit a low level of financial literacy. However, in most cases, students enrolled in finance-related courses demonstrated statistically significant improvement in financial literacy levels compared to those not enrolled in any finance-related courses.

It has been confirmed by the study results that financial management and/or accounting courses offered at the university level significantly enhance students' financial literacy levels. This study affirms the critical role of accounting and finance courses in enhancing students' financial literacy. It highlights that these courses make substantial contributions to fostering financial awareness. Expanding the availability of these courses and equipping students with practical financial skills can empower them to approach future financial decisions with greater insight and competence. Introducing applied projects and case studies can offer students valuable practical experience in financial literacy, allowing them to bridge theoretical knowledge with real-world situations and foster deeper comprehension. These initiatives can enable individuals to make informed financial decisions, effectively plan their financial futures, and ultimately enhance the financial well-being of society as a whole. Consequently, it is reasonable to anticipate that incorporating accounting and finance courses into the national curriculum could enhance students' financial literacy levels, which, in turn, may positively impact overall economic growth and development.

Future studies could investigate potential mediating and moderating processes involved in the relationship between financial education and financial literacy. In this context, the moderating roles of factors such as students' internship experiences and parental professions could be explored. Additionally, examining the mediating effects of variables like self-confidence and increased awareness of economic policies would be valuable in understanding the mechanisms behind the improvement in financial literacy resulting from financial coursework.

AUTHOR DECLARATIONS

Declarations of Research and Publication Ethics: This study has been prepared in accordance with scientific research and publication ethics.

Ethics Committee Approval: The Afyon Kocatepe University Scientific Research and Publication Ethics Committee for Social and Human Sciences has declared, with decision number 16.05.2022-97976, that there are no ethical concerns regarding this study.

Author Contributions: The authors have jointly prepared the study.

Conflict of Interest: There is no conflict of interest arising from the study for the author or third parties.

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