

QUALITY OF LIFE OF FOREIGN STUDENTS OF HIGHER MEDICAL EDUCATION WITH ADJUSTMENT DISORDERS

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The purpose of this work was to identify the characteristics of the quality of life of students of higher medical educational institutions at different stages of their education. The paper highlights the evidence-based impact of adjustment disorders on the quality of life of this contingent of individuals. An analysis of verified diagnoses depending on the groups was also presented. The study has been conducted from 2019 to 2020, 154 foreign students took part in it. The research base was Dnipro State Medical University. Depending on the stage of study, 2 groups were formed: the group 1 – students of the preparatory department (n=110), the group 2 – students of 1-2 studying courses (n=44). A semi-structured clinical interview method was used to collect clinical data. The following psychometric methods as the "Quality of life index" according to Mezzich in the adaptation of N.O. Maruta (2004), "Multidimensional Fatigue Inventory" (MFI-20) by E.M. Smets et al. (1994), "Integrative Anxiety Test" developed by A.P. Bizyuk et al. (2005) and Zung self-rating depression scale (1965) were used for a detailed analysis and objectification of the data. It was established that the subjects of the group 2 had statistically worse results than the subjects of the group 1 on such component of quality of life scale as: "Mental well-being", "Working capacity", "Interpersonal realization" and "General perception of life" compared to subjects of the group 1. It was also found out that for all manifestations of adjustment disorders, there was a statistically significant negative correlation (from moderate to high) with the integrative quality of life index in both studied groups. That is, a tendency to deepen the psychopathological process during the transition to the next stage of education was revealed, which significantly worsened the quality of life of foreign students of higher medical education. Therefore, there is a need to develop preventive measures, early diagnosis and correction of adjustment disorders in this contingent of persons.

Key words: foreign students, higher education, quality of life, adjustment disorders, psychometrics.

Connection of the publication with the planned scientific research.

This work was carried out within the framework of scientific research work of the Department of Psychiatry, Narcology and Medical Psychology of Dnipro State Medical University: «Development of system of diagnostic, psychocorrective, treatment, rehabilitative and preventive measures for patients with non-psychotic mental disorders and their family members», state registration number 0118U001281.

Introduction.

Maintaining of a sufficient level of quality of life is one of the most urgent problems of modern society, because this index directly affects all spheres of every person's life [1]. Students are especially vulnerable in this sense [2].

On the one hand, student's age is the period of greatest activity, professional development, choosing one's life path and self-determination, and significant psycho-emotional stress on the other one [3].

According to WHO's definition, quality of life is an individual relationship between a person's goals, their plans and opportunities, and the individual's position in society in the context of the culture and value systems of the society. The influence of unfavorable environmental factors can cause failures in the body's compensatory system, which will lead to the formation of various types of disorders in the spheres of both emotional and physical health, and this, in turn, will inevitably be reflected in quality of life [4, 5, 6]. This is especially evident in foreign students of higher medical education.

Thus, on the territory of Ukraine, students from more than 137 countries of the world are studying [7]. Each of them carries the norms of behavior, traditions

and values of its own culture. At the same time, colossal mental workload, socio-cultural stress, learning another language, irrational nutrition and hypodynamia inevitably are reflected on their health [8].

In addition, different categories of applicants pay attention to different personal qualities. For some, the priority is a personal development, the state of their own emotional health, establishing communicative ties with peers and receiving support from their environment, for others – respect for autonomy, own professional growth and achievement in the chosen professional field [9]. This is reflected in the types of response to stress and, as a result, affects the quality of life.

Therefore, it is very important to understand how future specialists feel, because this directly affects their work capacity, physical and psycho-emotional well-being.

The aim of the study.

To identify the characteristics of the quality of life of foreign students of higher medical education with adjustment disorders at various stages of education.

Object and research methods.

The study was conducted from 2019 to 2020, 154 foreign students that were studying at the Dnipro State Medical University took part in it.

All stages of the work were carried out in compliance with the principles of bioethics according to the «Universal Declaration on Bioethics and Human Rights (UNESCO)» and the WMA Declaration of Helsinki «Ethical Principles for Medical Research Involving Humans Subjects». Written informed consent was obtained from all foreign students who participated in the study.

The division into groups was carried out depending on the stage of education. Thus, group 1 included

110 students of the preparatory department, the duration of whose studies at the time of participation in the study was from 1 to 2 months; to group 2 – 44 students of the 1st-2nd year (duration of study from 6 months to 2 years) [10].

The average age of the subjects for group 1 was 19,05 (±0.2), for group 2 – 20.7 (±0.3). The criteria for inclusion in the work were: the duration of study in the offline format lasting from 1 month to 2 years; absence of mental and behavioral disorders in the anamnesis; absence of severe somatic and neurological pathology; obtaining oral and written consent to conduct research and corrective measures (as needed).

The study did not take part in foreign students who were studying online, older than the 1-st year (language of instruction was Ukrainian or Russian), older than the 2-nd year (language of instruction was English). This was due to the fact that the subjects who studied in Ukrainian or Russian language were previously the students of the preparatory department, and those ones who studied in English language were immediately enrolled in the 1-st studying year. Applicants with the history of mental and behavioral disorders, severe somatic and neurological pathology, and those who did not give written consent to the study or expressed a desire to stop it at any stage were also excluded from the study.

For the examination, the semi-structured clinical interview method was used with a specially developed questionnaire to determine complaints and anamnesis data [11]. The following psychometric methods as the «Quality of life index» according to Mezzich in the adaptation of N.O. Maruta (2004), «Multidimensional Fatigue Inventory» (MFI-20) by E.M. Smets et al. (1994), «Integrative Anxiety Test» developed by A.P. Bizyuk et al. (2005) and Zung self-rating depression scale (1965) were used for a detailed analysis and objectification of the data [12, 13, 14, 15].

Statistical data processing was carried out using the STATISTICA v.6.1 software product (StatSoftInc., serial number AGAR909E415822FA.

Research results and their discussion.

According to the data of the clinical examination, we found out the normal health indexes (norm), conditional norm – («Lack of relaxation and leisure» (Z73.2)) and psychopathological conditions of the following diagnostic taxa: «Malaise and fatigue» (R53), «Adjustment disorder with mixed anxiety and depressed mood» (F43.22) and «Adjustment disorder with disturbance of other emotions» (F43.23).

For the group 1, the norm was found in 24%, Z73.2 – 36%, R53 – 15%, F43.22 – 13% and F43.23 – 12%. In the group 2, the ratio of

Table 1 – Average values (Me) of scales of quality of life index in subjects of groups 1 and 2

Scales of QoL	Me (0,25;0,75)		Differences between groups according to the Mann-Whitney U-test	*p (bilateral)
	Group 1	Group 2		
Physical well-being	8 (7;9)	7 (6,75;9)	2804,5	p=0,12
Psychological/emotional well-being	8 (7;9)	7 (5,75;8)	3266	p<0,001
Self-care and independence of action	9 (8;10)	8 (6,75;9)	2808	p=0,12
Working capacity	8 (6;9)	7 (5;8)	3163,5	p=0,003
Interpersonal realization	9 (7;10)	8 (6;9)	2989	p=0,02
Social and emotional support	8 (6;9)	7 (5,75;8,25)	2680,5	p=0,3
Public and official support	7,5 (7;8)	7 (5;9)	2716	p=0,24
Personal realization	8 (6;9)	7 (5;8,25)	2897	p=0,06
Spiritual realization	8 (7;9)	7 (5;9)	2858	p=0,08
General perception of life	8 (7;9)	7 (5,75;8)	3415	p<0,001
Integrative index	7,9(7;8,7)	7,3(5,98;7,98)	3179,5	p=0,002

Notes: * Values are significant at p<0.05.

verified diagnoses has differed significantly. Thus, the frequency of normal cases was only 2%, and borderline cases (Z73.2 40) – 27%. That is, we have seen the tendency of a gradual deterioration of the psychopathological state due to an increase of cases of other nosological forms, such as R53 (up to 30%) and F43.22 (up to 30%), which were in 2 and 2.3 times (respectively) higher than the indicators of the group 1. No significant difference between groups has been found out for F43.23.

In order to objectify changes in quality of life indexes on the background of the influence of adjustment disorders (asthenia, anxiety, depression), the psychometric assessment was conducted with the «Quality of life index» according to Mezzich in the adaptation of N.O. Maruta. The **table 1** presents the data of average values (Me) in both studied groups.

It was established that the highest average values in the group 1 were observed on the scales «Self-care and independence of actions» – 9 (8;10) and «Interpersonal realization» – 9 (7;10), the lowest – on the scale «Public and official support» – 7.5 (7;8).

In the subjects of the group 2, the highest average values were found on such scales as «Self-care and independence of actions» 8 (6.75;9) and «Interpersonal realization» 8 (6;9), the lowest were evenly distributed among the remaining eight scales.

A comparative analysis between groups has shown that statistically lower results were observed in the subjects of the group 2 on the following scales: «Mental well-being», «Working capacity», «Interpersonal realization» and «General perception of life». It was also found out that according to the integrative quality

Table 2 – The relationship between the integrative quality of life index and the main manifestations of adjustment disorders in both groups

Manifestations of adjustment disorders	*r (95% DI)		Differences between groups by Fisher's Z-test	**p (bilateral)
	Group 1 (n=110)	Group 2 (n=44)		
Depression	-0,57 (-0,68; -0,42)	-0,84 (-0,91; -0,73)	Z=(-3,12)	p=0,002
Situational anxiety	-0,48 (-0,61; -0,32)	-0,64 (-0,79; -0,43)	Z=(-1,28)	p=0,2
Asthenia	-0,66 (-0,75; -0,54)	-0,57 (-0,68; -0,42)	Z=0,79	p=0,4

Notes: *r – Spearman's correlation coefficient with the reliability of results p<0.001, ** reliability of values with p<0.05.

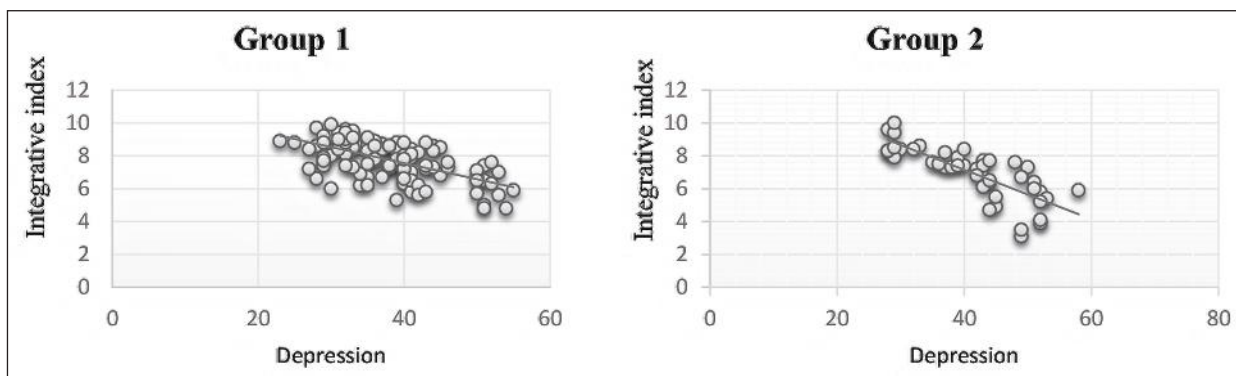


Figure 1 – Correlation between depression and the integrative quality of life index in the studied groups 1 and 2.

of life index, the group 2 also had significantly worse indexes compared to the group 1. Statistically higher results were not found out in the studied group 1. Based on this, we can conclude that there was a significant relationship between quality of life indexes and the expressiveness of psychopathological processes.

In order to confirm this statement, a correlation analysis has been conducted (table 2).

of life was decreasing. This is clearly demonstrated with the data of figures 1-3.

The study of the impact of individual manifestations of adjustment disorders on the quality of life has shown that the most pronounced correlation was observed with asthenia in the subjects of the group 1 (-0.66 (-0.75; -0.54)), while in group 2 – with depression (-0.84 (-0.91; -0.73)). In the comparative analysis between the

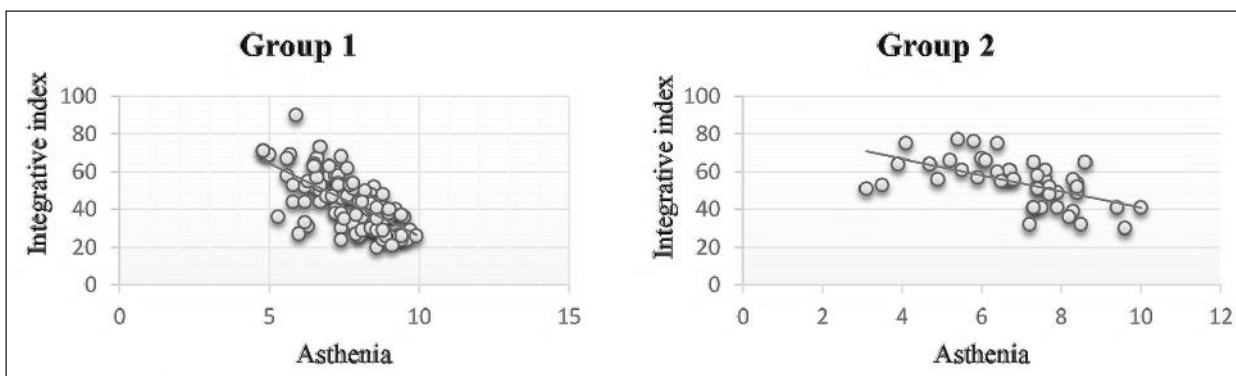


Figure 2 – Correlation between asthenia and the integrative quality of life index in the studied groups 1 and 2.

As a result of the work, it was established that in group 1, a moderate correlation was observed for all manifestations of adjustment disorders, while in group 2 a moderate correlation was found with asthenia and situational anxiety, and a pronounced correlation with depression.

It should also be noted that a statistically significant (with bilateral $p < 0.001$) negative correlation with the integrative quality of life index was found out for all manifestations of adjustment disorders. It has been shown that as the manifestations of asthenia, situational anxiety and depression was increasing while the quality

groups, significantly higher indexes were found out only in the case of depression in the subjects of the group 2 ($p = 0.002$). These indexes have shown the deepening of the pathological process towards the affective register with the transition to the next stage of learning.

While discussing the obtained results, it should be noted that foreign students who have just arrived to study from abroad (group 1) face a large number of problems. External support has a significant impact on quality of life in addition to the language barrier, socio-cultural features of another country, a new style of life, mates, climate and nutrition. This confirms the

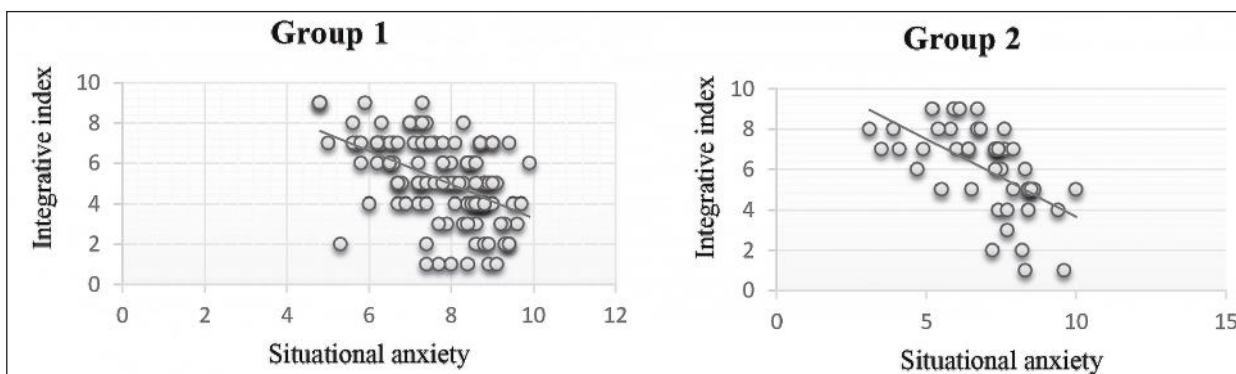


Figure 3 – Correlation between situational anxiety and an integrative indicator of quality of life in studied groups 1 and 2

presence of the lowest average indexes (Me) according to the scale of QoL «Public and social support». That is, these students find themselves in a situation where relatives and loved ones are far away, and the skills necessary for independent living are not sufficiently developed. They remain alone with their problems, which in turn contributes to the emergence of psycho-emotional destabilization, which, with the simultaneous action of other unfavorable external factors, leads to the emergence of adjustment disorders. With the transition to the next stage of training for foreign students of higher medical education (group 2), another problem comes to the fore – large volumes of new, sufficiently complex information. In addition, the problems of the language barrier, socio-cultural difference and mutual relations in one's own international team remain relevant, which in turn again serves as a basis for the development of maladaptation. This is confirmed by the data of a clinical-psychopathological and psychometric study. First of all, statistically lower indexes were found out for such scales of the QoL as: «Mental well-being», «Working capacity», «Interpersonal realization» and «General perception of life». It should also be emphasized the importance of the obtained data, because they directly indicate a decrease in work capacity against the background of psychopathological disorders, which in turn is reflected in the success of future specialists.

We also conducted a comparative analysis of the obtained data with other literary sources. First of all, the primary interest was given to the norm. According

to research by N. O. Maruta (2004), conducted in the population of the Kharkiv region, the average level (M) of the integrative quality of life index in healthy people using the «Quality of Life Index» method was 8.1 points. In the subjects of the group 1, M (SD) was 7.8 (1.2) with the value of Me (0.25; 0.75) – 7.9 (7; 8.7), while for the subjects of the group 2 M (SD) was 6.9 (1.6) at the level of Me (0.25; 0.75) – 7.3 (5.98; 7.98). The obtained data clearly demonstrate the difference between the indexes of foreign students and healthy individuals, this is especially noticeable in the case of the studied group 2.

Conclusions.

Summarizing the obtained results, it can be concluded that with the transition to the next stage of education, there is a tendency towards a gradual deepening of the psychopathological process (from asthenic to affective disorders), which in turn contributes to a decrease in the quality of life of foreign students of higher medical education. This is of great practical importance, because adjustment disorders directly affect the success in education of a future specialist. Therefore, there is a need to develop further measures of prevention, correction and treatment in order to improve the quality of life of this category of persons.

Prospects for further research.

This work is an evidence base for the further development of preventive measures, early diagnosis and correction of manifestations of adjustment disorders in foreign students of higher medical education at various stages of education.

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ЯКІСТЬ ЖИТТЯ ІНОЗЕМНИХ ЗДОБУВАЧІВ ВИЩОЇ МЕДИЧНОЇ ОСВІТИ З РОЗЛАДАМИ АДАПТАЦІЇ

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Резюме. У статті висвітлені особливостям якості життя здобувачів вищої медичної освіти з розладами адаптації. У дослідженні, яке було проведено з 2019 по 2020 рр., прийняло участь 154 іноземних здобувачів, що проходили навчання на базі Дніпровського державного медичного університету. Розподіл за групами проводився в залежності від їх етапу навчання. До групи 1 увійшли 110 слухачів підготовчого відділення, до групи 2 – 44 здобувачі 1-2 курсу. Для оцінки клінічної картини був використано метод напівструктурованого клінічного інтерв'ю. Для психометричної оцінки були використані такі шкали як: «Показник якості життя» по Mezzich у адаптації Н.О. Марути (2004), «Суб'єктивна оцінка астенії» за Е.М. Smets et al. (1994), «Інтегративний тест тривожності» за Бізюк та співав. (2004) та «Самооцінка депресії» по Zung WW (1965). За результатами дослідження встановлено, що найвищі середні значення як у групі 1, та і у групі 2 було виявлено за складовими шкалами якості життя «Самообслуговування та незалежність дій» і «Міжособистісна реалізація». Найнижчі для групи 1 було виявлено лише за складовою «Громадська та службова підтримка», у той час як у групі 2 найменші результати були рівномірно розподілені між восьми шкалами, що залишились. Порівняльний аналіз між групами показав наявність статистично гірших результатів у досліджуваних групі 2 за такими складовими шкалами, як: «Психічне благополуччя», «Працездатність», «Міжособистісна реалізація», «Загальне сприйняття життя» та за інтегративним показником. Це свідчить про зниження показників якості життя при переході на наступний, більш складний етап навчання. У результаті дослідження також було встановлено, що у групі 1 за всіма проявами розладів адаптації спостерігався помірний кореляційний зв'язок, у той час, як у групі 2 з астеною та ситуативною тривогою було виявлено помірний, а з депресією – виражений кореляційний зв'язок. При цьому, слід зазначити, що за усіма проявами розладів адаптації був знайдений статистично достовірний (при двобічному $p < 0,001$) від'ємний кореляційний зв'язок з інтегративним показником якості життя. Він показав, що при зростанні проявів астенії, ситуативної тривоги та депресії відбувається зниження показників якості життя. Вивчення впливу окремих проявів розладів адаптації на ЯЖ показав, що у досліджуваних групі 1 найбільш сильний кореляційний зв'язок спостерігався з астеною (-0,66 (-0,75; -0,54)), у той час як у групі 2 – з депресією (-0,84 (-0,91; -0,73)). При порівняльному аналізі між групами було виявлено достовірно вищі показники лише у випадку депресії у досліджуваних група 2 ($p = 0,002$), що говорить про поглиблення патологічного процесу у бік афективного регістру. Тобто можна сказати, що з переходом на наступний етап навчання зростає кількість випадків розладів адаптації та збільшується їх важкість, що знаходить своє відображення на показниках якості життя. Тому є необхідність у розробці заходів ранньої діагностики, профілактики та корекції розладів адаптації у іноземних здобувачів вищої медичної освіти.

Ключові слова: іноземні здобувачі, вища освіта, якість життя, розлади адаптації, психометрія.

QUALITY OF LIFE OF FOREIGN STUDENTS OF HIGHER MEDICAL EDUCATION WITH ADJUSTMENT DISORDERS

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Abstract. The article highlights the features of the quality of life of students of higher medical education with adjustment disorders. The study, which was conducted from 2019 to 2020, involved 154 foreign students studying at the Dnipro State Medical University. The division into the groups was carried out depending on their stage of study. The group 1 included 110 students of the preparatory department, the group 2 – 44 students of the 1-st and 2-nd years. A semi-structured clinical interview method has been used to assess the clinical picture. The following psychometric methods as the «Quality of life index» according to Mezzich in the adaptation of N.O. Maruta (2004), «Multidimensional Fatigue Inventory» (MFI-20) by E.M. Smets et al. (1994), «Integrative Anxiety Test» developed by A.P. Biziuk et al. (2005) and Zung self-rating depression scale (1965) have been used for a detailed analysis and objectification of the data. According to the results of the study, it was established that the highest average values in both the group 1 and the group 2 were found out for the next scales of quality of life: “Self-care and independence of actions” and “Interpersonal realization”. The lowest scores for the group 1 were found out only on the «Public and official support» scale, while the Group 2 had the lowest scores evenly distributed among the remaining eight scales. The comparative analysis between groups has shown statistically worse results in the subjects of the group 2 on such scales as: “Mental well-being”, “Working capacity”, “Interpersonal realization”, “General perception of life” and on the integrative index. This indicates a decrease in quality of life indexes during the transition to the next, more difficult stage of education. As a result of the study, it was also established that in the group 1, a moderate correlation was observed for all manifestations of adjustment disorders, while in the group 2, a moderate correlation was found out with asthenia and situational anxiety, and a pronounced correlation with depression. At the same time, it should be noted that a statistically significant ($p < 0,001$) negative correlation with the integrative index was found out for all manifestations of adjustment disorders. It was shown that the manifestations of asthenia, situational anxiety and depression increase, quality of life index decrease. The study of the impact of individual manifestations of adjustment disorders on QoL has shown that the strongest correlation was observed with asthenia (-0,66 (-0,75; -0,54)) among the subjects of the group 1, while in the group 2 – with depression (-0,84 (-0,91; -0,73)). In the comparative analysis between the groups, significantly higher indexes were found out only in the case of depression in the subjects of the group 2 ($p = 0,002$), which indicates a deepening of the pathological process towards the affective register. That is, it could be considered that with the transition to the next stage of education, the number of cases of adjustment disorders increases and their severity increases, which is reflected in quality of life index. Therefore, there is a need to develop further measures for early diagnosis, prevention and correction of adjustment disorders in foreign students of higher medical education.

Key words: foreign students, higher education, quality of life, adjustment disorders, psychometry.

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There is no conflict of interest between the authors of this article.

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