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2 Improving subjective well-being, trait emotional

3 intelligence and social anxiety through a programme

4 based on the Sport Education model in adolescents

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Abstract: The aim of this article has been to evaluate the impact of a physical-sport education programme, based on the pedagogical model of Sport Education within the framework of quality Physical Education and approached from the field of social and emotional learning, on a set of psychological variables: subjective well-being (quality of life related to health, positive affect and negative affect); trait emotional intelligence and social anxiety. A total number of 113 Compulsory Secondary Education students were involved, aged 12 to 15 years old, 44 of whom belonged to the control group (CG) and 69 to the experimental group (EG). A quasiexperimental design of repeated pretest and posttest measures with the CG was used. The results obtained in this investigation revealed that the intervention programme caused significant improvements in the subjective well-being and the trait emotional intelligence for the EG. These findings reinforce the pedagogical efficiency of the programme with regards to the aim that has been set. Likewise, the findings also highlight the suitability and appropriateness in terms of innovative teaching proposals. In the same way, the results showed relevant empirical contributions in this given school context due to its psychological benefits and the encouragement of healthy living.

Keywords: Physical Education; social and emotional learning; Sport Education model; subjective well-being; trait emotional intelligence; social anxiety.

1. Introduction

Health can be defined as a dynamic process which encompasses the well-being and the optimal functioning of each aspect of one's life. In this sense, health is generally determined by several indicators of a physical-biological, psychological and social nature [1]. The World Health Organization (WHO) [2] (p. 1) defines health as a "state of physical, mental and social well-being, and not only the lack of conditions and illnesses". Thus, a good health is a fundamental dimension in personal and social progress, and one important sphere in one's quality of life [3]. Approached from the perspective of positive health, the welfare state encourages the individual to reach a complete social and psychological development. [4].

Society has a common goal of achieving well-being, and consequently aims to improve the health factors [1] which favour a good quality of life [5]. Correspondingly, research of the influence of the subjective well-being on different social contexts has increased in importance over the last decades [6,7].

Similarly, the subjective well-being (SWB) comprises two main factors: the cognitive side (satisfaction with our own life) and the affective side (positive and negative affectivity) [8,9,10,11]. The cognitive side to well-being (CWB) refers to the results of the assessment of how individuals process information in their lives [12]. On the contrary, the affective side to well-being (AWB) implies

a hedonistic individual balance, that is, how often individuals experience positive and negative emotions [11].

A recent field of interest for research has focused on the study of the effects of some positive psychological variables on personal and group development [13]. These studies have been categorised within the perspective known as Positive Psychology [14]. One of the positive variables which currently has wider support due to its close connexions to SWB and to physical and mental health is the emotional intelligence [15,7,16]. Emotional intelligence can be defined as the set of individual differences in terms of identification, expression, use, comprehension and control of one's own emotions and those of others [17]. Possibly, an efficient management of all the factors that make up the emotional intelligence lead to positive states of mind and a decrease in negative moods, thus achieving a better feeling of well-being and health [16].

Nonetheless, variables such social anxiety have a negative effect on SWB [18]. In this sense, social anxiety can be defined as a constant fear of one or more social or performance situations in which the person is exposed to unknown persons or to the possible scrutiny of other people [19]. Social anxiety has a negative impact on SWB in adolescents due to the anguish individuals may feel [20], to the negative effect on the quality of interpersonal relationships [21], and to its connexion to a significant number of conducts of victimisation, such as bullying and cyberbullying [22] and because of its positive relation with stress and its negative relation with emotional intelligence in adolescents [23].

From these approaches, we believe that education should promote the social and emotional learning (SEL), defined the WHO as a heterogeneous set of life skills, and, therefore, it is seen as a potential factor that favours and encourages mental health [24]. Those in favour of this teaching proposal argue that emotional education might promote public health [25,26] as its ultimate goal is the improvement of the general quality of health and well-being in society.

In addition, within a school context, many researchers claim that one of the purposes of education must be the improvement of people's lives, so that individuals can reach an optimal degree of personal happiness and well-being in their adult life [27]. In that sense, the school environment can facilitate positive adjustment of the students when the latter is carried out in healthy pedagogical and psychological environments; and, thus, it becomes an essential aspect for the development of well-being in children and adolescents [28].

In the field of education, a subject that can contribute to the improvement of well-being and health in children and adolescents is Physical Education (PE). Likewise, the concept of quality Physical Education (QPE), understood as an interrelated system of inclusive and active teaching and learning, must be considered as a key framework for all integral approaches (i.e. education and health) [29]. In the same manner, QPE is seen as a physically active teaching and learning experience, which can have a positive impact on students and their psychomotor abilities, cognitive comprehension and social and affective aptitudes [30]. Moreover, in our view, QPE could be grouped within the category of SEL.

QPE aims to achieve an integral education commitment [31,32], thus allowing students to be physically literate [33,34]. Physical literacy is the pillar of QPE and can be defined as the motivation and the cognitive, physical and affective competence to encourage and preserve an active attitude in life, enabling a positive development of the necessary aptitudes to achieve, understand and use decisions about one's health efficiently [35]. For that reason, students who are physically literate will value their own psychomotor capabilities intrinsically, as well as their contribution to well-being and health. [34].

The QPE works as a starting point for an integral commitment to health and PE, designing teaching and learning processes in this area that will favour the physical, psychological, emotional and social development [38]. In addition, QPE promotes an interdisciplinary relationship among the education, health and social institutions. One of its purposes is to teach young individuals about healthy living (keeping healthy and safe) [29].

The synergy between the significant practice of physical-sport activity, together with physical and psychological health, is an issue that is gradually growing in interest for education researchers

[39,40,41,42]. Moreover, there are different investigations within the education framework of evolution towards QPE which emphasise the need for a methodological change [43,32]. In that sense, several pedagogical models share these same features [44].

This study is based on QPE, which materialises by means of a specific model of Sport Education (SE) [45]. The SE is a pedagogical model which makes use of the essential features of sports (seasons, competitions, membership, data register, culminating event and festivity) and aims to achieve the inclusive goal with all the students can live real and meaningful sport experiences in PE. The SE aspires to develop competence, enthusiasm and the physical-sport culture in the students [46].

The SE's pedagogical potential, if correctly implemented [47], results in benefits at a physical level [48,49,50]. Similarly, it has been proved that there is a positive impact on variables of a psychological nature in adolescents, such as basic psychological needs [51]; improvements in the basic psychological need for competence [52] and related to the feeling of belonging to a group [53,54]; decrease in attitudes towards violence and improvements in social responsibility and the relationship of the participants [55]; a more self-determined behaviour [56]; improvements in friendship and sport goals [52]; decrease in aggressive behaviour and improvements in friendship relationships [57]; positive changes in the perception of the social climate [58]; improvements on social relationships [59]; improvements on trait emotional intelligence and motivational mediators [60] and an improvement on sport culture and on enthusiasm, although no benefits in terms of life satisfaction were found [61]. In this way, these education experiences, by making use of sport, give evidence of a meaningful and positive impact on the psychological and physical development of the school population [39,62].

In light of the precedents, this study aims to assess the impact of a physical-sport programme, within the framework of QPE, and realised through the SE, on the following variables: subjective well-being, trait emotional intelligence and social anxiety.

The hypotheses focus on the assumptions that the programme based on the SE will improve in our participants: 1) Hypothesis 1: subjective well-being; 2) Hypothesis 2: trait emotional intelligence; 3) Hypothesis 3: social anxiety.

2. Methods

2.1. Participants

The technique for sampling which was used is of a non-probabilistic nature as it was the most convenient option. The sample consisted of 113 individuals arranged in 5 natural groups of students in the first year of Compulsory Secondary Education (CSE), aged 12 to 15 years old (M = 13.82, SD = .79). The research was conducted in a state school. The control group (CG) was made up of 44 students (2 natural groups) whereas the experimental group (EG) consisted of 69 students (3 natural groups). The assignment of GE and GC was random based on the natural school group to which they belonged. As long as the gender distribution is concerned, 64 (57%) were male and 49 (43%) were female (see Table1).

As for the inclusion criteria, it had been previously established that the main requirement would be to have parental consent. While as exclusion criteria (n = 8) were established: a) attending 80% of the sessions of the intervention programme (at least 13 sessions); b) students with learning needs associated with intellectual disabilities; c) students with a disciplinary removal from school (n = 5).

Table 1. Sociodemographic data. Sex and age of the sample.

		n	%
Carr	Male	64	57
Sex	Female	49	43
	12	42	37
Age	13	45	40
	14	23	20
	15	3	3

2.2. Procedure

The collaboration of the educational centre of the province of Toledo (Spain) was requested, based on sampling of the convenience of the categories under study. The Management Board in this school was contacted so that their approval and authorization could be granted. In the same way, permission was asked from the families of the students that were involved, as well as from the teaching staff and the School Council. The research respected the corresponding ethical values and guaranteed the confidentiality and anonymity of the participants.

The study followed a quasiexperimental design with repeated pretest and posttest measures with CG. The CG completed a 16-session programme of conventional Physical Education. The study was conducted over different stages. In the first place, before intervention began, the assessment instruments were handed out, for the first 20 minutes of two of the sessions, so as to avoid students' exhaustion (pretest evaluation). After that, the programme based on the SE was carried out. The sessions took place during the second term of the school year. Finally, the assessment instruments were handed out for a second time (posttest evaluation). The independent variable (IV) in this study was the intervention programme, whereas the dependent variables (DV) were the subjective well-being, the trait emotional intelligence and social anxiety.

2.3. Measures

In order to assess the variables in this study, four evaluation instruments were handed out under the psychometric parameters of reliability and validity.

Health-Related Quality of Life (HRQL). Kidscreen-10 Index [63]. It is a 10-item questionnaire that assess subjective Health-Related Quality of Life (HRQL) and well-being available for Children and Adolescents aged from 8 to 18 years. For each item, five answer categories ranging from "never" to "always" or from "not at all" to "extremely" are provided. The 10 items of the KIDSCREEN-10 Index address affective symptoms of depressed mood, cognitive symptoms of disturbed concentration, psycho-vegetative aspects of vitality, energy and feeling well, and psychosocial aspects correlated with mental health, such as the ability to experience fun with friends or getting along well at school.

Positive and Negative Affect Schedule (PANAS) [64], validated in Spanish by Sandín [65] in the version for children and adolescents and the evaluation of affectivity (PANASN). It is made up of 20 items and is designed according to a two-dimensional structure: positive affect (PA) and negative affect (NA). Each subscale contains 10 items. The questionnaire is filled out by each child taking into account the way in which he/she normally feels and/or behaves. The scale consists of three response alternatives: «Never» (1), «Sometimes» (2), and «Many times» (3).

Trait Emotional Intelligence Questionnaire Adolescents Short Form (TEIQue-ASF) [66]; adapted into Spanish in its abridged version for teenagers by Ferrando and Serra [67] was used for the evaluation of TEI based on the theoretical model of Petrides and Furnham [68]. The 30 items that make up the TEIQue-ASF questionnaire are scored on a 7-point Likert scale (1 = completely disagree; 7 = completely agree). The general emotional intelligence score (GEI) of the total scale is obtained through the sum of the 30 items of the questionnaire.

Social Anxiety Scale for Adolescents (SAS-A) [69]. The SAS-A is composed of 22 items, of which 18 are self-descriptive and the other 4 are distracting elements that are not taken into account for the score. It contains three subscales: (a) fear of negative evaluation (FNE) with eight reagents, (b) anxiety and social avoidance before strangers or new social situations (SAD-N) with six items, and (c) the last subscale includes four reagents that measure anxiety and social avoidance in social situations in general (SAD-G). The response format is Likert-type with five options, from 1 (never) to 5 (always). In addition, a global index of social anxiety (SAS-T) is obtained by adding the scores assigned to each of the items, with the exception of the neutral ones. High scores reflect high levels of social anxiety [69] adapted to the Spanish population by Olivares, Ruiz, Hidalgo, García-López, Rosa, and Piqueras [70]. In this study, only the score SAS-T has been used.

2.4. Intervention programme

The physical-sport programme was completed following the SE structure [46]: (1) season: lengthy didactic units; (2) membership: development of a team spirit and cooperation; (3) regular competition: showing technical-tactical abilities; (4) data register: giving evidence of and analysing the process that has been followed; and (6) festivity: a festive atmosphere. In this sense, other important education aspects were highlighted such as: cooperative learning, autonomy and personal initiative, positive interdependence and the self-management of responsibility roles in conflict resolution (i.e. referee and coach). This helps to make this sport experience more real and positive, including how students transfer responsibilities by means of organization roles (i.e. referee and scorer), team roles (i.e. coach and physical trainer) and of how sport content is modified when adapted to the students [46].

Hastie and Casey's guidelines were followed for the design and validation of the programme [47] (p. 423): (a) thoroughly detailed curricular elements; (b) precise certification of the applied model; and (c) an in-depth explanation of the context of the programme.

The intervention programme implemented in the EG follows a sequencing of contents and activities which is divided into three stages (*initial*, *intermediate and final*) of 16 sessions (see Table 2).

Table 2. Sequencing of stages and activity sessions in the intervention programme.

Stage	Session	Sport Education model (SE)
Initial	1-2	Introduction and presentation of the SE with digital and audio-visual support (ICT). Presentation and distribution of learning resources. Division and organization of classroom groups in teams (assignment of team names with a didactic and cross curricular theme). Distribution and selection of responsibility roles.
	3	Theoretical and practical explanation for the self- design of learning resources on digital format (ICT). Selection and assignment of anthems, badges, mascots and T-shirts representing a team.
Intermediate	4-7	Explanation and practical implementation of the roles of each member of the teams. Learning of technical-tactical elements and abilities: kicking-off, catching, moving, throwing, defence and attack. Learning game rules.
	8-9 10-14	Warming-up, training and friendly matches. Meetings for comprehension and reflection with intervention of the responsibility roles. Regular stage competition (<i>Round Robin</i>).
Final	15-16	Inter-class groups final competitions (final matches with class groups), final event, giving awards and diplomas (within the context of festivity of the model)

The programme based on SE was implemented over the course of the class hours of the subject area of PE, in a total of 16 sessions of 55 minutes each. The intervention on the EG consisted of one didactic unit on one alternative sport that makes us of a divided court or net, called *ringo* [71,72]. On the other hand, for the CG, a didactic unit on traditional team sports within a traditional teaching framework was taught [73].

The selection and division into groups was done by drawing lots, as students were assigned different responsibility roles (referee, coach, trainer, person in charge of statistics and reports, and member of the organization and discipline board). Similarly, all the students that were part of the groups were made aware that they had been assigned two roles, both as a player and of responsibility, as an essential pillar in the implementation of the programme. The programme also used different learning and curricular resources (self-designed portfolio, worksheets and reports) which had been used in previous studies [74].

2.5. Analysis of Results

Initially, reliability coefficients Cronbach's alpha (α), composite reliability (CR), average variance extracted (AVE), and McDonald's omega coefficient (Ω) were calculated to obtain reliability evidence. After that, in order to determine the impact of the programme, descriptive analyses were completed (mean and standard deviation) and also analyses of variance (ANOVA) with each of the scores collected through the instruments used in the pretest stage. Finally, both descriptive analyses and analyses of covariance were used with posttest scores (ANCOVA) with the aim of showing evidence of the impact of the programme on each of the variables. In the same way, the effect size of these differences was calculated using Cohen's d statistic [75]. The effect size was analysed (Cohen's d) (small < .50; moderate .50–.79; large \geq .80). Lastly, the data were analysed with the statistical package SPSS v.24.0 (®IBM, 2016).

3. Results

3.1. Reliability evidences

In this study, we used well-established measures with appropriate psychometric properties (Table 3).

Table3. Reliability evidence of the instruments used (n = 113).

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	α	CR	AVE	Ω
KIDSCREEN	.91	.89	.674	.92
PANASN-PA	.70	.77	.502	.72
PANASN-NA	.74	.76	.519	.77
TEIQue-ASF	.71	.70	.503	.79
SAS-T	.85	.80	.687	.87

Note: α = Cronbach's Alpha; CR = Composite reliability, AVE = Average Variance Extracted; Ω = McDonald's Omega index.

3.2. *Effects of the programme*

The ANOVA results obtained in the pretest stage (see Table 4) revealed that there were no statistically significant differences in any of the dependent variables in the study before the programme began, except for the variable trait emotional intelligence (TEI) in which the EG obtained a significantly higher score than the CG. The size of the effect (d of Cohen) was low in the TEI (d = .39). Thereupon, the analysis of covariance (ANCOVA) of the dependent variables in this study during the posttest stage was subsequently carried out. In order to assess the magnitude of these differences, the effect size for each variable was calculated by d of Cohen (see Table 4).

- 3.2.1. Effects on the subjective well-being
- The results gave evidence of significant improvements on HRQL in favour of the EG (see Table
- 4). The size of the effect (d of Cohen) was small (d = .31)
- The results from the analyses confirmed a significant increase in PA scores and a significant
- decrease in NA scores, in favour of EG (see Table 4). The size of the effect (d of Cohen) was moderate
- 252 in PA (d = .57) and in NA (d = .48).
- 253 3.2.2. Effects on trait emotional intelligence
- Concerning the TEI variable, results revealed significant improvements on TEI in favour of the
- EG, with a large size (d = .86) of the effect (d of Cohen) (see Table 4).
- 256 3.2.3. Effects on social anxiety
- 257 Lastly, as far as the variable SAS-T is concerned, the analysed results did not reveal significant
- differences between the EG and the CG. However, the SAS-T variable is close to the statistical
- significance (p = .062) (see Table 4).

4. Discussion

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The main aim of this study has been to assess the impact of a physical-sport intervention programme within the framework of QPE, and materialised through the SE, with Compulsory Secondary Education students, on the variables of subjective well-being, trait emotional intelligence and social anxiety.

The results obtained in this study revealed that this programme based on SE triggered significant improvements on the SWB for the EG. Likewise, as far as the quality of life in relation to health (CWB) is concerned, the EG confirmed a significant improvement with regards to the CG. That is to say, an improvement on how the students carry out a cognitive evaluation of their lives [12]. These results contradict those given by other authors [61], which, by means of SE-based experience with adolescents, do not confirm significant benefits for life satisfaction. However, the results do emphasise the importance of further research in this field. On the other hand, the findings corroborate a significant increase in the PA and a significant decrease in the NA, thus improving the AWB. Namely, an increase in positive emotions and a decrease in negative emotions [11]. These results verify Hypothesis 1.

An explanation for these finding may well be due to the existence of positive connexions between quality of life and a healthy living through an active participation in physical-sport activities [40,29]. Another possible explanation would be the improvements achieved with the SE on the positive emotions, such as enthusiasm in adolescents, in accordance to the findings found in other studies [61]. In that sense, previous studies establish a connexion between physical activity and subjective well-being [76]. In the same manner, these findings agree with the research that argues that active, inclusive and effective teaching and learning processes, applied within the framework of QPE, can foster a motivating school climate in affective and psychological terms which favours quality of life, and for that matter, positive affectivity [77,29]. Pedagogical and methodological aspects that the intervention programme highlights, such as cooperative learning, a feeling of membership to a team, positive interdependence and the self-management or autonomy (use of

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Table 4. Arithmetic average (AA), analysis of variance (ANOVA), analysis of co-variance (ANCOVA) and size of the effect (d of Cohen) of the variables in the study with regards to the EG and CG, both at the pre-test and post-test stage.

	PRETEST				POSTTEST					
-	EXPERIMENTAL	CONTROL				EXPERIMENTAL	CONTROL			
-	Mean (SD)	Mean (SD)	F	p	d	Mean (SD)	Mean (SD)	F	р	d
KIDSCREEN										
HRQL	35.18 (5.84)	35.09 (6.01)	1.414	.697	.02	36.94 (6.14)	35.04 (5.99)	1.975	.018	.31
PANASN										
PA	21.43 (3.90)	20.02 (4.21)	3.293	.07	.35	21.95 (2.78)	20.33 (2.88)	5.438	.017	.57
NA	11.23 (3.54)	11.58 (3.58)	.251	.62	.10	9.96 (2.95)	11.62 (3.86)	7.044	.010	.48
TEIQUE-ASF										
TEI	4.82 (.60)	4.58 (.64)	4.368	.04	.39	5.02 (.63)	4.52 (.53)	16.394	.000	.86
SAS										
SAS-T	2.61 (.67)	2.64 (.68)	.040	.84	04	2.38 (.63)	2.58 (.62)	3.419	.062	.38

Note: HRQL = Health-Related Quality of Life; PA = positive affect; NA = negative affect; TEI = Trait Emotional Intelligence; SAS-T = Total Social Anxiety Scale.

responsibility roles) could have had an influence on these results as well. Furthermore, a motivating school context, enabled by the implementation of the SE [60], could also be strengthening affective bonding in adolescents [40].

With regards to the results on the TEI, significant improvements were observed in favour of the EG, thus verifying Hypothesis 2. The results converge with those given by other authors [60]. In that sense, the existing relations between the TEI and SWB [7,16], as well as between the TEI and physical and psychological health [15] could be triggering these improvements in adolescents. Confirming that a suitable TEI promotes positive emotional states and a reduction of negative moods, positively impacting on well-being and health [16].

Conversely, no significant improvements on social anxiety in students were proved. These findings do not confirm Hypothesis 3. In the same direction as the results obtained by different authors in variables of social relation [51,52]. Nevertheless, the results contradict the findings in other studies [57,58,55,53,54,59]. Further research into the effects of the SE would therefore be necessary, given the theoretical specificity of social anxiety and its incidence on social relations among adolescents. However, social anxiety can present two opposing consequences. It can have positive effects on some individuals in terms of social relations, whereas it can have negative effects on others, characterised by great anguish and social avoidance [78].

Despite these promising results, this study presents the following limitations. In the first place, the sampling procedure has been chosen for convenience reasons and not by random procedures. Nevertheless, allocating the students either on EG or CG has been done randomly on the grounds on the class group they belonged to at school. Secondly, widening the sample further has proved to be necessary in order to minimise the biases on the results and to favour the generalization processes with regards to the results in other sociocultural contexts. Thirdly, the answers that the students provided turned out to be self-reports that may well have been influenced by their own worries of social acceptance which all adolescents share. It would be necessary to make use of high-performance tests or evaluation hetero-reports that minimise that potential bias. Likewise, the differences in the TEI pretest scores between the EG and the CG could also have had an impact on our results. Lastly, it is necessary to highlight the difficulties encountered when following all the recommendations for the implementation of the SE [47].

With reference to future lines of investigation, several aspects can be suggested: on the one hand, to widen the number of participants, as well as to diversify their sociocultural background. On the other hand, to analyse the impact of the programme on other variables such as academic performance and social and school adjustment. In the same way, it would be interesting to carry out a follow-up evaluation, so as to assess the sustainability of the effects of the programme.

For all these reasons, this study presents innovative contributions both at a theoretical and practical level. At a theoretical level, the contribution is related to the lack of physical activity in individuals, which can have a harmful effect on health and is currently one of the most important public health concerns [79]. In this respect, the UNESCO [29] emphasises the importance of fostering and promoting active behaviours [34] in all the contexts, especially at schools. Consequently, it is to be noted that there is a positive connexion between health and physical activity: sedentarism is currently one of the highest risks of mortality, thus causing a great concern for the prevalence of sedentarism and socio-educative patterns of inactivity, especially within school contexts. At a practical level, the findings revealed in this study may help the teaching staff in their tasks at school, as it provides them with a tool which can be used in their teaching practice. In addition, it opens up interesting fields of research for the future in terms of the application of the SE, mainly as far as its impact on psychological variables is concerned.

5. Conclusions

In conclusion, the findings in this study confirm that the programme has been successfully and effectively implemented for the improvement of the SWB and the TEI, but not for that of social anxiety in adolescents. In consequence, the implementation of these programmes within the framework of QPE and the approach of SEL is advisable, due to its potential psychological benefits

- in adolescents in a school context. It is very likely that the commitment to sports and other options of
- physical-sport activities, within the framework of QPE and efficiently applied by means of relevant
- pedagogical models like SE, play an important role in the students' integral development [80,81].
- 341 Author Contributions: P.L., J.G. and J.C. conceived and designed the experiments; P.L., J.G. and J.C.
- performed the experiments; P.L., J.G. and J.C. analysed the data; P.L., J.G. and J.C. contributed
- reagents/materials/analysis tools: P.L., J.G. and J.C. wrote the paper.
- 344 **Conflicts of Interest**: The authors declare no conflict of interest.

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