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# Promoting future work skills in vocational training and baccalaureate setting through engagement in volunteering

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The aim of the present study was to analyze differences in future work skills as a function of participation in volunteering and work. The present study was based on a total sample of 3,101 students enrolled in secondary and baccalaureate education and vocational training in Andalusia (Spain). Once the quality parameters of the instrument were determined, its reliability and validity were confirmed, and data collection was initiated. With regards to data analysis, multivariate analysis (ANOVA) was conducted which interacted the variable describing engagement in volunteering and the variable pertaining to employment, with both variables having two levels (yes–no). From the data obtained, it was concluded that working or having worked at some point in time was particularly related with aspects related to intelligence linked with the society in which work is carried out. Other conclusions were that workers and volunteers possessed better competency attributions, knowledge of new means of communication and multidisciplinary skills. These outcomes were related with a series of motivations such as professional development, personal growth and putting their abilities into practice in order to improve their professional career.

## KEYWORDS

volunteering, students, baccalaureate/vocational training, European job market, future work skills

## Introduction

In the present day, transformations in the social and occupational fields are producing constant development at both a technological and an educational level. Today, the work of educational institutions is more important than ever for establishing collaborative networks in the formative setting. This work should be conducted alongside businesses and community organizations in order to achieve a better type of education which is capable of taking on new challenges and capitalizing on the job opportunities created by the huge social, human and technological change in which we are immersed in the 21st century

(Mischel and Shoda, 1995; Wong et al., 2010; Australian Collaborative Education Network (ACEN), 2015).

Volunteering is one of the most used forms of occupational development by professional entities. This is because it provides practical experiences in which problems are solved in specific systems (Vorotilkina and Koroleva, 2019) and it strengthens demand for young motivated workers who are interested in the progress of their company. In other words, companies seek out young people who are capable of contributing positive ideas, developing their personality whilst, at the same time, addressing their work interests (Lobanova, 2020).

Current literature suggests that a number of companies are using voluntary action as a means of job hiring, given that this activity provides beneficial outcomes for both sides (as much for the corporations themselves as for the volunteering sector) (Lee et al., 2018). These corporations are benefitted due to the fact that they improve their image, obtaining a competitive advantage over other corporations whilst, at the same time, the arrangement helps to sustain and run voluntary activities (Bocquet et al., 2020). Work such as that carried out by Vlaholias et al. (2015) has identified that it is necessary to measure the size and reach of voluntary activities, including those of charitable non-profit organizations, in order to get a real idea of existing voluntary action. Participation in volunteering should generate satisfaction in those involved. To achieve this it is important to keep in contact with participants and support them to encourage greater cooperation (Rozmiarek et al., 2021).

This describes the concept of volunteering as an aspect that can be developed for the acquisition of skills that promote the working future of young people. Within this concept, it is important to highlight which professional skills contribute greater quality to student training, *via* experiences that provide a service to the community to improve the lives of those individuals that make up the community (Trevethan, 2017; Carrillo et al., 2019). It is also important to identify the learning programs that encapsulate them.

This concept is based on the idea of learning *via* 'in situ' learning, typically achieved through practical sessions (service-learning [SL]) in which students perform activities outside of the classroom (Rodríguez-Gallego, 2014). Thanks to this new approach to learning, students can apply their knowledge and participate in an institution other than the educational institution (Mackaway et al., 2011).

The learning obtained through practical experiences enables activation of transformative competencies so that, at a later point, the learning will be able to act (Fraile et al., 2020; Mezirow, 2020). It is, therefore, necessary to clarify that, in order to respond appropriately to the diverse situations that must be managed throughout development, skills must be acquired which enable the learner to question any belief or personal assumption at the time. When students are able to perform this process adequately it is because transformative learning has been carried out correctly through reflection and dialog (Gewessler and Norris, 2020; Álvarez Justel and Ruiz Bueno, 2021).

The Phoenix Report on future work skills for H2020 (Davies et al., 2011) proposed that one road towards skill development lies within work efforts and occurs *via* the implementation of a training process which leads to the attainment of essential skills for the future workplace. With regards to these skills, values linked to volunteering take on an important role. These include social intelligence, interculturality and critical thinking, with all of these making the link established between job development and volunteering essential. These skills include critical thinking or the capacity to evaluate ideas, contribute new ideas and make decisions. Considering the values referred to above in turn, social intelligence focuses on cognitive capacity and problem solving. Social intelligence is based on adapting to the context and perceived social support. Innovative and adaptive thinking refers to the capacity for change. Intercultural skills enable effective interaction in a diverse world that is in a state of constant development. Further, mastery of "Big Data" is important as this is based on spatial and mathematical knowledge of information for its application in real world situations. An effective relationship with media and social networks is useful for the transmission of knowledge, as is the capacity to combine various disciplines. Multidisciplinary skills are crucial in a society that is evolving at different levels. A creative mentality is needed to establish new response processes and deal with the diverse situations faced by individuals. Knowledge management is important for structuring and making use of both short- and long-term memory, covering also reasoning and the basis of memory. Finally, virtual collaboration in digital settings is needed, both individually and collectively, as a means of advancing individual and social development.

These skills within the entrepreneurial framework are developed by Jardim (2021) who concludes that entrepreneurial skills (creativity and innovation, spirit of initiative, self-efficacy and resilience, strategic planning and evaluation, problem solving and decision making, transformational leadership, clear and visual communication, teamwork and networking, and digital communication) are necessary for professional success in the labor market, where innovation, the promotion of creating value and communicating efficiently are fundamental. For this, they must be developed from education in general and integrated as part of the curriculum or in an interdisciplinary way, following the methodology of learning by discovery.

Therefore, the transmission by the educator of inspirational strategies, valuing the entrepreneurial culture, should be one of the tools that promote the entrepreneurial mindset and the transfer of knowledge to society to improve its resources and social problems (Jardim et al., 2021).

Given the situation currently being lived due to COVID-19 and the constantly changing social demands and transformations taking place in job settings, all individuals have had to adapt to e-learning and new online model of learning. Active populations in some regions of the European Economic Community, such as the Mediterranean basin, find themselves under a large degree of adaptive stress due to the closure of a large number of small and

medium businesses. This has had consequences on rates of unemployment and social exclusion (Olmedo-Moreno et al., 2020). These important social problems must be tackled with proactive employment and social interaction policies but, also, through prior actions such as educational policies which promote job insertion and occupational autonomy.

Such future actions should be focused on humanizing interpersonal actions, encouraging compassionate and empathetic voluntary actions to help other peers who find themselves in a difficult situation (Gelles et al., 2020). They should also provide the skills and knowledge needed to achieve success, with these actions, at a later point, facilitating necessary job inclusion (Akhmetshin et al., 2019).

In this context, the main aim of the present study is to determine whether or not significant differences exist in perceptions of the future work skills addressed at secondary and baccalaureate educational institutions in Andalusia, as a function of whether students are employed (yes–no) and engaged in volunteering (yes–no).

## Materials and methods

### Method

The present research design was non-experimental, quantitative, descriptive-exploratory, cross-sectional and ex post-facto in nature. A non-probabilistic, convenience and incidental sample was recruited.

### Participants

A total sample of 3,101 individuals took part, consisting of 46.51% male and 53.48% females. With regards to age, representation was selected to cover ages 15 to 35. Specifically, those aged between 15 and 20 years made up 80.2%, those aged 20–30 corresponded to 14.6% and those aged 30 and over made up 5.2% of the sample ( $M=20.59$ ,  $SD=6.75$ ). With regards to having a job, 69.8% were not engaged in any occupational activity, relative to 30.2% who were. Finally, with regards to volunteering, 13.3% reported that they were volunteers and 86.7% reported that they were not.

### Instruments

The present study was conducted by members of the Department of Research Methods and Diagnostics in Education in the Faculty of Educational and Sport Sciences in Melilla and the Faculty of Educational Sciences. Both of these faculties belong to the University of Granada and are dedicated towards the personal, professional and academic orientation of students. A questionnaire was developed and validated to estimate future work skills in

secondary students in Andalusia and the way in which participation in volunteering and current employment or employment history influences their development. On the one hand, the questionnaire incorporated sociodemographic variables and, on the other, it included variables related with future work skills. Design of the instrument was based on main theoretical foundations and international recommendations for test development (Comrey, 1985). For data collection, the present study counted on the voluntary participation of secondary students from 14 institutions in Andalusia. Permission was granted to enter university classrooms prior to data collection, in accordance with the Helsinki protocol.

During the elaboration of the questionnaire, the Phoenix Report on future work skills for H2020 was considered (Davies et al., 2011). This was adapted to the context of unaccompanied foreign minors by Expósito-López et al. (2020).

With the aim of examining comprehension and clarity of questionnaire items, an expert group considered the different options, correcting and adjusting the questionnaire according to highlighted corrections. This process was based on the Delphi technique and was performed in five rounds. Experts showed 85% agreement ratings (Chacón-Cuberos et al., 2021). The final questionnaire comprised 10 questions which were divided into two factors, alongside the sociodemographic variables. Factor 1 encapsulated questions linked with cognitive and adaptive skills, whilst factor 2 considered questions pertaining to collaboration and integration skills.

This version of the questionnaire was administered to a pilot sample of 1,159 students in order to evaluate the content validity and consistency of the questionnaire. Inter-rater agreement between the experts was higher than 85%. Construct validity was examined using confirmatory factor analysis (CFA) employing the program IBM Amos Graphics®. Goodness of fit was examined according to the goodness-of-fit criteria stipulated by Kock (2014). In the case of  $\chi^2$  values, non-significant  $p$  values indicate good model fit. Values of comparative fit index (CFI), normalized fit index (NFI) and incremental fit index (IFI) are considered to be acceptable when higher than 0.90, with values higher than 0.95 being excellent. Finally, root mean square error approximation (RMSEA) values are considered excellent when they are lower than 0.05 and acceptable when lower than 0.08 (Chacón-Cuberos et al., 2021). Reliability analysis was conducted *via* examination of the Cronbach alpha coefficient, setting the reliability index at 95%.

### Procedure

Firstly, authorization was requested and received from the Andalusian Education Authority to contact directors of the institutions. These were then contacted *via* letter and, once permission was received, questionnaires were administered, in-person. A member of the team was present at all times in order to clarify doubts and address any problems. Both teachers and students were informed that the study was voluntary in nature and

that anonymity would be protected throughout. Information was also provided about the aims and objectives of the study. Next, the questionnaire was administered in paper format to students 25 min before the end of class. Data were collected during the first and second term of the 2020–2021 academic year. Likewise, approval was received from the Research Ethics Committee of the University of Granada (reference number: 1678/CEIH/2020).

## Data analysis

Once data had been collected, homogeneity of data was verified by examining asymmetry and kurtosis, in addition to outcomes of the Levene test. Outcomes supported the use of parametric tests. Thus, a multivariate ANOVA was used. This test is considered to be the most appropriate test for comparing two groups. Namely, the two groups pertained to employment, which had two levels (yes–no) and volunteering, which also had two levels (yes–no). These two groups were compared in relation to the two factors previously established through confirmatory analysis conducted by Chacón, Expósito-López et al. (2020). In this sense, the ten variables were divided into the two groups that demonstrated greatest validity in this previous analysis. The ten skills were scored according to four levels which corresponded to the following ranges: Level 1 (0–10), level 2 (11–13), level 3 (14–17) and level 4 (18–20). These can be consulted in the appendix provided by Expósito-López et al. (2020). Data were analyzed using the program SPSS 24.0.

## Results

Table 1 presents results of the multivariate ANOVA analysis. It can be seen that significant differences existed between perceptions of the ten evaluated skills [Skills for Future Work (H2030)] in those who were employed and those who engaged in volunteering.

Multivariate tests permit simultaneous analysis of the relationship between different levels of the same variable (future work skills) and the significance of the relationship between the levels of two different variables (employment, yes–no; volunteering, yes–no) using mean individual scores (Andréu, 2011). Results point to significant differences, albeit with small effect sizes, with regards to the different examined skills and the relationship they hold with volunteering, employment and the interaction between both. The sample size and proportion of variance explained (by the ANOVA) (Coe and Merino, 2003; see Table 1), in relation to the variable describing the skill of designing a new way of thinking, produced a result of  $\eta^2 = 0.14$ . Normally, eta-values higher than 0.14 determine a large effect. This suggests that the differences found to emerge in this future work skills can be attributed to the effect of the ability to establish new ways of thinking as a function of the capacity to adapt to the context and situations. The high value could be due as much to the

representation of workers in the same as the specific influence of volunteering, given that different levels were studied and various measures derived from different populations (Comrey, 1985; Richardson, 2011; Closas et al., 2013; Lakens, 2013). In the same way, significant differences were shown with regards to the interaction between volunteering and employment, as a function of original and adaptive thinking skills and intercultural skills, and sample size which, despite not being very large, is notable for being close to 0.10.

The fit of ANOVA data to the gathered data revealed significant associations in relation to the skills of “creating meaning” ( $p = 0.004$ ), “intercultural competence” ( $p = 0.013$ ), “literacy pertaining to new means of communication” ( $p = 0.004$ ), “multidisciplinary skills” ( $p = 0.001$ ), “design a new way of thinking” ( $p = 0.004$ ) and “cognitive load management” ( $p = 0.002$ ), as a function of volunteering. Thus, it can be observed, in all cases, that being a volunteer implied positive development of the skills presented above.

With regards to outcomes pertaining to students as a function of employment, significant differences were found regarding “social intelligence” ( $p = 0.004$ ), “original and adaptive thinking” ( $p = 0.004$ ), “intercultural competence” ( $p = 0.004$ ), “computational thinking” ( $p = 0.004$ ), “interdisciplinary skills” ( $p = 0.004$ ) and “designing a new way of thinking” ( $p = 0.004$ ). In the case of skills based on social and contextual intelligence and adaptation, intercultural skills and computational skills, students who were not employed perceived themselves to be more competent at these skills. The groups of employed students considered themselves to have better skills with regards to discipline and adaptation to change.

Obtained outcomes pertaining to the interaction between work skills as a function of the interaction between volunteering and employment revealed significant differences regarding “creating meaning” ( $p = 0.007$ ), “original and adaptive thinking” ( $p = 0.000$ ), “intercultural competence” ( $p = 0.000$ ), “literacy pertaining to new means of communication” ( $p = 0.003$ ), “interdisciplinary skills” ( $p = 0.000$ ) and “designing a new way of thinking” ( $p = 0.000$ ). Students who were volunteers and employed, or who had been employed at a point in time, considered themselves to have better abilities when it came to creating meaning, use and knowledge of new means of communication, and multidisciplinary skills. Students who volunteered but were not employed considered themselves to have better intercultural attitudes and better approaches to designing new thinking for problem solving and context adaptation. In contrast, those who volunteered and were not employed believed that they were more apt when it came to adaptive thinking.

Table 2 presents outcomes of the multivariate ANOVA analysis, which was used as an analytical technique to analyze dependent and independent associations between variables. This test demonstrated that significant differences existed in questionnaire responses [Skills for Future Work (H2030)] which reflected different perceptions of skills, as a function of the two examined levels of volunteering and employment. This enabled

**TABLE 1** Analysis of variance (ANOVA) and effect size ( $\eta^2$ ) outcomes regarding perceptions of future work skills as a function of being in employment or volunteering.

Items	Volunteering			Employment			Volunteering $\times$ employment (corrected model)		
	<i>F</i>	<i>p</i>	$\eta^2$	<i>F</i>	<i>p</i>	$\eta^2$	<i>F</i>	<i>p</i>	$\eta^2$
1. Create meaning	8.311	0.004	0.003	1.204	0.273	0.000	4.074	0.007	0.004
2. Social intelligence	2.022	0.155	0.001	4.289	0.038	0.001	2.119	0.096	0.002
3. Original and adaptive thinking	0.326	0.568	0.000	26.629	0.000	0.009	9.036	0.000	0.009
4. Transcultural competence	6.203	0.013	0.002	20.803	0.000	0.007	9.006	0.000	0.009
5. Computational thinking	1.214	0.271	0.000	4.183	0.041	0.001	1.969	0.116	0.002
6. Literacy pertaining to new means of communication	13.181	0.000	0.004	0.54	0.463	0.000	4.632	0.003	0.005
7. Transdisciplinary abilities	4.342	0.037	0.001	8.588	0.003	0.003	6.781	0.000	0.007
8. Design new ways of thinking	11.513	0.001	0.004	30.639	0.000	0.01	14.141	0.000	0.014
9. Cognitive load management	5.12	0.024	0.002	0.024	0.876	0.000	1.723	0.16	0.002
10. Virtual collaboration	0.651	0.42	0.000	4.951	0.026	0.002	1.878	0.131	0.002

Multilevel linear adjustment was applied to reduce type I error ( $\alpha$ ). To this end, the  $\alpha$ -value was divided by the number of pairwise comparisons for each ANOVA.

**TABLE 2** Analysis of variance (ANOVA) and effect size ( $\eta^2$ ) results for the sums of aggregated scales pertaining to future work skills, as a function of volunteering and employment.

Origen	Dependent variable	Type I sum of squares	<i>df</i>	Squared mean	<i>F</i>	<i>p</i>	$\eta^2$
Corrected model	FACTOR1	5.642a	3	1.881	4.73	<0.005	0.005
	FACTOR2	2.220b	3	0.74	1.499	>0.005	0.001
Intersection	FACTOR1	25219.23	1	25219.23	63428.13	<0.005	0.954
	FACTOR2	20575.66	1	20575.66	41683.8	<0.005	0.931
Employment	FACTOR1	1.145	1	1.145	2.88	>0.005	0.001
	FACTOR2	0.075	1	0.075	0.151	>0.005	0.000
Volunteering	FACTOR1	4.495	1	4.495	11.305	<0.005	0.004
	FACTOR2	0.853	1	0.853	1.727	>0.005	0.001
Employment* volunteering	FACTOR1	0.002	1	0.002	0.006	>0.005	0.000
	FACTOR2	1.293	1	1.293	2.619	>0.005	0.001

The critical alpha level was adjusted for multiple testing to reduce type I error ( $\alpha$ ). To this end, the  $\alpha$ -value was divided by the number of pairwise comparisons conducted in each ANOVA. Outcomes were adjustment to determine significance in terms of 95% confidence intervals and \* $p < 0.005$ .

observation of differences in variance of the independent means pertaining to these variables.

Table 2 presents ANOVA outcomes. It can be seen that significant differences were not identified and only small effects were found for factor 1 with regards to the interaction between employment and volunteering ( $F = 0.006$ ,  $p > 0.005$ ,  $\eta^2 = 0.000$ ). The same occurred with factor 2, with significant differences not being found with regards to the interaction between employment and volunteering ( $F = 2.619$ ,  $p > 0.005$ ,  $\eta^2 = 0.001$ ; Cohen et al., 2003; Richardson, 2011; Lakens, 2013).

Outcomes demonstrated small effect sizes and little explained variance (ANOVA), with this being lower than 0.14 (Cohen, 1988) and not being considered as a meaningful effect (Badenes et al., 2018). With regards to factor 2, identified

differences were related with disciplinary behavior and acceptance of norms. In line with that examined, the group of unemployed students reported agreement with this item to a lesser extent, in this way, showing that they had greater difficulty accepting disciplinary actions and complying with accepted behavior norms.

## Discussion and conclusion

In order to carry out the present study, the inter-relationship between volunteering and being in present employment, or having been employed at some timepoint, was analyzed. This analysis was conducted in students enrolled on secondary or

baccalaureate education, or vocational training, for whom employment (in the case of being employed) was short-term and not a part of their formative development. For this reason, they were still undertaking regulated education with the purpose of working towards a professional future which encouraged their social development. As a result of this, differences in the future work skills of these groups were compared with the aim of identifying tools which could facilitate inclusion in the workforce. Outcomes from ANOVA analysis demonstrated significant differences and moderate effect sizes in relation to participant response frequencies when asked about the different examined skills. Differences were seen in both personal student development and in the two established factors of cognitive and adaptability skills (factor 1) and collaboration and integration skills (factor 2). Thus, differences were found which favored volunteering, specifically, when examining variables linked with competencies pertaining to thinking, interculturality, use of new channels of communication, disciplinary norms, cognitive thinking and problem solving. As supported by the literature, this may be due to the fact that volunteering is an organized, social and sustainable activity, which is performed in a set time and within a given organization or entity and has repercussions that affect the participant themselves and other individuals (Penner, 2002). A series of values exist which are obtained following engagement in voluntary actions. These activities bring with them social benefits but, also, personal benefits given that they improve various aspects related with cognitive and moral development. At the same time, they help advance other abilities such as teamwork, time management and self-confidence (Madsen, 2004). All of these aforementioned outcomes were supported by present findings. Given that participants were adolescent students (82%), they represent an important social group. Any type of impact related with their training and development of their personality will have repercussions on the future workforce as, in just a short period of time, they will be leaders in our society. Involvement in volunteering is influenced by diverse factors related with organizational characteristics, cultural norms, motivation, and the personality of participants and their satisfaction with the tasks they carry out (Sundram et al., 2018). This activity may be influenced by specific values such as altruism, solidarity, responsibility and generosity (Jardim and Marques da Silva, 2018), all of which are common values when it comes to interculturality, digital literacy and disciplinary skills.

Present findings demonstrate that being employed, or having been employed at some point in time, is specifically linked to aspects related with intelligence pertaining to the society in which students develop, the adaptation of thought, new types of computational thinking, interculturality and interdisciplinarity. According to Schieman and Gabriel (2008), education is one of the main routes to achieving greater personal control. This control will determine different employment and work opportunities in the future and economic security, thanks to socialization effects (Hitlin and Kirkpatrick, 2015).

For this reason, individuals who possess a high level of education tend to obtain more positive educational outcomes, reaching greater levels of control (Uchechi et al., 2016). Thus, students should continue to strive for a permanent ongoing education and pursue continued formation. This will equip them to achieve better future employment, finding better gaps to fill in the job market and enabling them to develop a professional path that is in line with their vocations.

The present research also highlights other relevant aspects. For example, students were not aware of the importance of volunteering to their working future. This is seen in the fact that although the interaction did produce differences in various skills when examined separately, these differences did not emerge when outcomes were examined according to factors. In the case of the latter, only the factor pertaining to collaboration and integration skills produced significant differences. These differences favored workers, with volunteering seeming to have greater impact over more traditional skills, such as those related with altruism and the development of social interactions (Czike and Kuti, 2006). Vocation-linked learning, and students' choice of vocation is part of their sense of self and subjugated to it, in relation to social benefits of students is part of their sense of self and is subjugated to it, in relation to the social benefits (Karlsson et al., 2022). Despite the fact that, in the present day, volunteers opt to engage in this activity in order to obtain some type of personal benefit, only when the analysis was broken down to consider individuals skills, were workers and volunteers observed to possess better skill attributions, knowledge about new media and multidisciplinary skills. This finding was related with a series of motivations such as professional development, personal growth and the practical application of skills as a means to improving one's professional and occupational development (Handy et al., 2010). The real reasons behind which individuals decide to become volunteers have been found to be personal realization and other personal circumstances (Chacon et al., 2010).

## Limitations of the study

It is necessary to highlight some of the limitations of the present study. Firstly, the sample should be broadened to include more teaching institutions, going beyond Andalusia and even Spain (and perhaps even Europe). Likewise, the need is highlighted to conduct more studies that are capable of providing evidence about future work skills. It would be useful to identify the agents and social principles required for this concept to come to life. Another of the limitations faced by the present study was due to challenges in accessing the sample caused by the covid-19 pandemic and described at an earlier point in the study. This complicated the recruitment of participants. Nonetheless, it is important to indicate that data collection was completed as expected within an acceptable time frame.

As a continuation of this study, we propose the creation of evaluation and diagnostic tools for the detection of values that

promote employment, based on the labor competencies developed in this study. These values will allow us to know the involvement of users in volunteering, with respect to labor market insertion, creating synergies that promote such market insertion. In this way, we will be able to establish improvements in the educational strategies of secondary school, high school and vocational training, for their future incorporation into the labor market from a business-social value perspective.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

## Ethics statement

The studies involving human participants were reviewed, approved and conducted according to the guidelines of the Declaration of Helsinki, and approved by the Research Ethics Committee of the University of Granada (reference number: 1678/CEIH/2020). Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

## Author contributions

MO-G conceived the hypothesis of this study and writing—review and editing. MG-G and JR participated in data collection. MO-G and JR analyzed the data. All authors

contributed to data interpretation of the statistical analysis, wrote the manuscript with significant input, contributed to the data analysis interpretation, and read and approved the final manuscript.

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## Conflict of interest

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

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