

TESIS DOCTORAL



UNIVERSIDAD  
DE ALMERÍA

DOCTORADO EN EDUCACIÓN (RD09/11)  
ESCUELA INTERNACIONAL DE DOCTORADO

**Análisis de la influencia de variables psicológicas en el  
compromiso académico y satisfacción con la vida en  
estudiantes mexicanos de Educación Física**

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Analysis of the influence of psychological variables on  
academic engagement and satisfaction with life in Mexican  
physical education students

Doctorando:

Juan José Calleja Núñez

Directores:

Dr. Antonio Granero Gallegos

Dr. Raúl Fernández Baños

Almería, diciembre de 2023







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Como director y codirector de la tesis doctoral titulada:

**Análisis de la influencia de variables psicológicas en el compromiso académico y satisfacción con la vida en estudiantes mexicanos de Educación Física / Analysis of the influence of psychological variables on academic engagement and satisfaction with life in Mexican physical education students**

Realizada por el estudiante de doctorado D. Juan José Calleja Núñez

**CERTIFICAN** que la presente tesis doctoral, mediante la modalidad de compendio de publicaciones, reúne las condiciones en cuanto a rigor científico, originalidad y elaboración para su lectura y defensa, pudiendo optar a la obtención del Título de Doctor por la Universidad de Almería.

Y, para que surta los efectos oportunos, firmamos el presente en Almería, octubre de 2023.

Fdo.: Antonio Granero Gallegos

Fdo.: Raúl Fernández Baños



### **Tesis Doctoral por compendio que incluye por las siguientes publicaciones:**

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# Índice de abreviaturas



## Índice de abreviaturas

$\alpha$  = Cronbach's Alpha

ASE = Academic Self-Efficacy

AVE =Average Variance Extracted

CA = Academic Engagement

CFA = Confirmatory Factor Analysis

CFI = Comparative Fit Index

CI = Confidence Interval

CR = Composite Reliability

EI = Emotional Intelligence

df = Degrees of Freedom

GS = Grit-O Scale

Inf = Inferior Limit

$M$  = Mean

$N$  = Sample

Q1 = Skewness

Q2 = Kurtosis

$R^2$  = Explained Variance

RES = Resilience

RMSEA = Root Mean Square Error of Approximation

SAD = Social Anxiety Disorder

$SD$  = Standard Deviations

SE = Standard Error

SEM = Structural Equation Model

SIA = Social Interaction Anxiety

SIAS = Interaction Anxiety Scale

SPSS = Statistical Package for the Social Sciences

SRMR = Standardized Root Mean Square

STROBE = Strengthening the Reporting of Observational Studies in Epidemiology

Sup = Superior Limit

SWL = Satisfaction with Life

TLI = Tucker–Lewis Index

TMMS-24 = Traid Meta-Mood Scale-24

$\omega$  = McDonald's Omega

$\chi^2$  = chi-square

# Resumen



## Resumen

La sociedad actual se caracteriza por la incertidumbre, la volatilidad, la complejidad y la ambigüedad, lo cual, puede reflejarse en los estudiantes universitarios. La etapa universitaria supone un periodo desafiante para los estudiantes y es considerado como un punto de inflexión importante en la vida de los individuos. Las medidas restrictivas debido al COVID-19 generaron graves consecuencias en la salud física y psicológica de la población mundial, ya que las medidas restrictivas de confinamiento, distanciamiento social y limitaciones en la movilidad tuvieron un gran impacto en la vida diaria de las personas, por supuesto también en el contexto educativo. La presente tesis doctoral (por compendio de artículos) está conformada por tres estudios de investigación que fueron publicados en revistas de impacto y que plantea tres objetivos diferentes. El primer artículo tiene como objetivo analizar el efecto de la personalidad GRIT sobre el compromiso académico, teniendo en cuenta el papel mediador de la resiliencia. El segundo, estudiar la relación predictiva de la inteligencia emocional sobre el compromiso académico a través de la mediación de la autoeficacia académica. De esta manera, los dos primeros se centran en el análisis de variables psicológicas sobre el compromiso académico de estudiantes mexicanos de licenciatura de Educación Física, con la mediación de variables como la resiliencia y la inteligencia emocional, sobre todo teniendo en cuenta que los datos de la presente tesis fueron recabados en el período post Covid-19. Por ello, el tercer artículo integra una de las variables mediadoras analizadas (i.e., inteligencia emocional) y tiene como objetivo analizar el efecto de la inteligencia emocional sobre la satisfacción con la vida, analizando el papel mediador de la ansiedad de interacción social.

El diseño de investigación fue observacional, descriptivo, transversal y no aleatorizado. Participaron 1164 estudiantes (30% mujeres; 69.6% hombres; 0.4% otros) de los tres campus de la Facultad de Deportes de la Universidad Autónoma de Baja California

(19.8% del Campus Ensenada, 30.7% del Campus Mexicali, 49.6% del Campus Tijuana), con edad comprendida entre los 17 y los 50 años ( $M = 21.21$ ;  $DT = 3.26$ ). La población total de estudio (N) es de 1663 estudiantes de Licenciatura en Actividad Física y Deporte, lo que supone una participación de un 70% de la población de estudio (N), por lo que la muestra es representativa con un nivel de confianza del 99% y un margen de error de 2.08%. Se utilizaron las siguientes escalas: Grit-O Scale, Resiliencia, Compromiso Académico, Inteligencia Emocional, Autoeficacia Académica, Ansiedad de Interacción Social, Satisfacción con la Vida. En los tres artículos se llevó a cabo un análisis de ecuaciones estructurales con el método de dos pasos.

Los resultados del primer artículo muestran que la perseverancia del esfuerzo tiene un efecto directo y positivo sobre la resiliencia, el compromiso conductual y emocional, y negativo sobre la desafección conductual. La consistencia del interés tiene un efecto directo y negativo sobre la desafección conductual y emocional y positivo sobre el compromiso conductual. Los efectos totales sobre el compromiso conductual, emocional y la desafección emocional desde la perseverancia del esfuerzo se ven incrementados con la mediación de la resiliencia. Los efectos totales desde la consistencia de interés no se relacionan de forma estadísticamente significativa. En el segundo artículo los resultados muestran el importante papel de la autoeficacia académica ya que, por un lado, la claridad emocional solo se relaciona con las dimensiones del compromiso y el desafecto académico a través de la autoeficacia académica. Por otro lado, incrementa significativamente los efectos totales de la reparación emocional sobre el compromiso conductual, el compromiso emocional y la desafección emocional. En el tercer artículo se muestra el importante papel de la claridad y reparación emocional como variable mediadora entre la ansiedad de interacción social y la satisfacción con la vida, ya que disminuyen el efecto negativo de la ansiedad de interacción social sobre la satisfacción con la vida. Por lo tanto, al tener una personalidad basada en perseverancia del esfuerzo y reparación, así como claridad emocional repercute en el aumento de autoeficacia



académica, disminución de la ansiedad de interacción social y mayor satisfacción con la vida.

**Palabras clave:** perseverancia, esfuerzo, reparación emocional, claridad emocional, atención emocional, ansiedad de interacción social, compromiso académico, satisfacción con la vida.



# Abstract



## **Abstract**

Contemporary society is characterized by uncertainty, volatility, complexity, and ambiguity, which can also be reflected in university students. The university stage represents a challenging period for students and is considered a significant turning point in individuals' lives. The restrictive measures due to COVID-19 had serious consequences on the physical and psychological health of the global population, as lockdowns, social distancing, and mobility limitations had a significant impact on people's daily lives, including the educational context. This doctoral thesis (in the form of a compilation of articles) comprises three research studies published in impactful journals, each addressing different objectives.

The first article aims to analyze the effect of GRIT personality on academic commitment, taking into account the mediating role of resilience. The second study examines the predictive relationship between emotional intelligence and academic commitment, mediated by academic self-efficacy. Thus, the first two articles focus on the analysis of psychological variables on the academic commitment of Mexican undergraduate students in Physical Education, particularly considering that the data were collected in the post-COVID-19 period. Therefore, the third article integrates one of the analyzed mediating variables (i.e., emotional intelligence) and aims to assess the impact of emotional intelligence on life satisfaction, analyzing the mediating role of social interaction anxiety.

The research design was observational, descriptive, cross-sectional, and non-randomized. The study involved 1,164 students (30% female, 69.6% male, 0.4% others) from the three campuses of the Faculty of Sports at the Autonomous University of Baja California (19.8% from the Ensenada campus, 30.7% from the Mexicali campus, 49.6% from the Tijuana campus), with ages ranging from 17 to 50 years ( $M = 21.21$ ;  $SD = 3.26$ ). The total study population (N) consists of 1,663 undergraduate students in Physical Activity and Sports, representing 70% of the study population (N), making the sample representative with a

confidence level of 99% and a margin of error of 2.08%. The following scales were used: Grit-O Scale, Resilience, Academic Commitment, Emotional Intelligence, Academic Self-Efficacy, Social Interaction Anxiety, Life Satisfaction. Structural equation analysis with the two-step method was conducted for all three articles.

The results of the first article demonstrate that the perseverance of effort has a direct and positive effect on resilience, behavioral and emotional commitment, and a negative effect on behavioral disaffection. The consistency of interest has a direct and negative effect on behavioral and emotional disaffection and a positive effect on behavioral commitment. The total effects on behavioral commitment, emotional commitment, and emotional disaffection from the perseverance of effort are increased through the mediation of resilience. The total effects from the consistency of interest are not statistically significant. In the second article, the results highlight the significant role of academic self-efficacy, as emotional clarity is only related to the dimensions of academic commitment and academic disaffection through academic self-efficacy. Moreover, it significantly enhances the total effects of emotional repair on behavioral commitment, emotional commitment, and emotional disaffection. In the third article, the crucial role of emotional clarity and repair as mediating variables between social interaction anxiety and life satisfaction is demonstrated, as they reduce the negative effect of social interaction anxiety on life satisfaction. Therefore, having a personality characterized by perseverance of effort and emotional repair, as well as emotional clarity, leads to increased academic self-efficacy, reduced social interaction anxiety, and greater life satisfaction.

**Palabras clave:** perseverance, effort, emotional repair, emotional clarity, emotional attention, social interaction anxiety, academic commitment, life satisfaction.

# Introducción





## **Marco teórico**

La evidencia disponible en la literatura sobre los factores que inciden en variables relacionados con la personalidad e identidad de los estudiantes universitarios identifica la necesidad de un mayor análisis de los efectos que pueden tener entre sí, especialmente en los países donde este tipo de investigación aún es escasa. En la actualidad el trabajo de distintos autores ha sentado las bases para identificar variables que pueden estar asociadas a mejores o peores resultados académicos entre los estudiantes universitarios, por lo que es importante continuar incrementando el conocimiento de este relevante campo científico, la cual puede permitir identificar oportunidades de intervención para favorecer la calidad educativa. En ese sentido, la presente tesis doctoral parte de una importante necesidad en el noroeste de México, donde la investigación educativa es escasa pero necesaria, por lo que se han considerado instrumentos válidos y confiables para valorar variables psicológicas de una manera práctica y económica, lo que la posiciona en una referencia pertinente para continuar desarrollando estudios en estudiantes universitarios de cultura física, ciencias del ejercicio o áreas afines.

En la actualidad, las demandas de la sociedad en la que vivimos son cada vez más complejas y posicionan a los individuos en una situación de incertidumbre ante los retos personales, académicos y profesionales (Murugarren, 2021). Los estudiantes universitarios son unos de los principales actores sociales que se ven inmersos en procesos sociales que pueden derivar a altos niveles de estrés y presión por alcance de objetivos (Aragón et al., 2022). La historia académica de los estudiantes universitarios puede favorecer actitudes y competencias que lo pueden llevar a desempeñar un excelente rol como estudiante de educación superior (Sánchez et al. 2021), sin embargo, diversos factores sociales, inclusive académicos, pudieran también entorpecer las habilidades psicológicas de los estudiantes para afrontar situaciones desfavorables o que contribuyan a alcanzar sus metas (Calupíña

& Realpe, 2021; Bayo Fiegelist et al., 2017).

En ese sentido, se sabe que variables como personalidad GRIT y la resiliencia pudieran estar afectando la capacidad para un adecuado desempeño estudiantil, laboral o empresarial en consecuencia a un mayor o menor compromiso académico (Masso Viatela et al., 2019; Zafra, 2022). Esto es importante porque el compromiso académico ha mostrado influencia sobre la adaptación social y universitaria de los estudiantes, incluso con el abandono académico (Gutiérrez et al., 2018), por lo que actualmente esta variable es considerada en un factor relevante que se sugiere seguir estudiando (Maluenda, 2021).

La capacidad de responder adecuadamente a situaciones estresantes y manejarlas de una manera que las encamine al logro de los objetivos puede aumentar la probabilidad de unos adecuados resultados académicos, siendo persistentes y visualizando el impacto de las acciones a futuro. Lo anterior, ha sido identificado como una importante oportunidad de implementar estrategias entre los estudiantes universitarios para el desarrollo de resiliencia académica (Brewer et al., 2019). Por otro lado, la determinación, también conocida como personalidad GRIT de los estudiantes universitarios, se refiere a ser persistente e intentar alcanzar las metas a largo plazo, asimismo, puede contribuir a unos mejores resultados estudiantiles (Collantes-Tique et al., 2021). Se ha comprobado que, a mayor determinación, mayor compromiso académico, rendimiento escolar y menor probabilidad de abandono académico (Hernández et al., 2022).

Durante décadas, el abandono académico ha sido un tema alarmante en el contexto mexicano (Páramo & Maya, 1999, 2010, 2020), por lo que es necesario abordar de manera multidisciplinar distintas estrategias que contrarresten esta tendencia. El fomento del compromiso académico de los estudiantes universitarios puede ser uno aspectos que contribuyan a la permanencia y éxito escolar (Johnson & Stage, 2018). Del mismo modo, identificar variables que fomenten un mayor compromiso académico también es un tema de

interés para distintos autores (e.g., Buzzai et al., 2021; Tatiana et al., 2022). La autoeficacia podría ser una de estas variables, ya que al ser definida como la creencia que tiene el propio estudiante sobre sus capacidades en actividades necesarias para alcanzar expectativas educativas, podría jugar un rol que favorezca o limite el éxito académico (Gutiérrez & Tomás, 2019). Se ha observado que la autoeficacia afecta la satisfacción y permanencia con los estudios universitarios (Barrientos-Illanes et al., 2021; Malkoç & Mutlu, 2018).

La necesidad de promover mejores experiencias académicas a los estudiantes ha motivado a los investigadores a centrar su atención en variables que influyan de manera positiva al proceso de aprendizaje, donde recientemente figura entre ellas la inteligencia emocional (Pishghadam et al., 2022). Esta, a pesar de que se ha propuesto su importancia desde hace más de 20 años (Salovey et al., 1995) es recientemente que en el contexto universitario se ha identificado como un importante aspecto a fortalecer entre los estudiantes por su relación con respuestas emocionales positivas para enfrentar situaciones estresantes y destacar académicamente (Trigueros et al., 2020). La inteligencia emocional, además de lo anterior, también tiene un papel importante con el compromiso a aprender, satisfacción y éxito académico.

Las demandas actuales de la educación superior de calidad en el ámbito latinoamericano incluyen que los programas educativos consideren entre su optatividad o actividades complementarias a su formación disciplinar, programas de intervención de asignaturas o actividades especiales que promuevan el desarrollo de habilidades psicológicas, de personalidad y actitud para una mayor probabilidad de éxito académico de los estudiantes. Lo anterior podría fungir como un eje transversal basado en evidencia en los casos de carreras universitarias en las que se logren identificar bajas puntuaciones en este tipo de variables por medio de instrumentos válidos y confiables.

Son diversas las variables que pueden afectar el bienestar psicológico y el éxito

académico de estudiantes universitarios, donde se incluyen situaciones extraordinarias que obligan a desenvolverse y adaptarse en contextos cambiantes, como lo fueron todos aquellos ajustes educativos que provocó la pandemia del SARS-CoV-2. El presente trabajo fue desarrollado en el momento en que los estudiantes mexicanos regresaron a actividades escolares presenciales, por lo que los datos refieren de manera implícita el papel que pudo tener el aislamiento social y la educación a distancia (Schleicher, 2020; Toquero, 2020). En ese sentido, la ansiedad de interacción social, que entre otras cosas hace referencia a las emociones intensas, miedo y preocupación ante las comunicaciones interpersonales (de la Rubia et al., 2013), es una de las variables que podría mediar entre importantes aspectos asociados al ámbito educativo como la inteligencia emocional y la satisfacción con la vida en el ámbito físico (Baltaci, 2019). Se ha observado que altos niveles de ansiedad de interacción social tienden a presentar síntomas depresivos, baja autoestima y mayor insatisfacción con la vida (Dobos et al., 2021; Kählke et al., 2019; Murad, 2020), asimismo, quien presente estos altos niveles de ansiedad puede tener mayor probabilidad de desarrollar trastornos compulsivos y ansiedad generalizada (Hezel et al., 2019), por lo que identificar esta variable en universitarios podría ser de utilidad para sustentar acciones que permitan intervenir en favor de los estudiantes.

Lo anterior podría otorgar herramientas para el desarrollo de un mayor bienestar psicológico entre los estudiantes, de tal modo que fortalezcan las habilidades psicológicas pertinentes para un desenvolvimiento que confiera mayores oportunidades de éxito académico. Valorar la satisfacción con la vida incluye distintas esferas del individuo como familia, trabajo, amigos y otras, que en este tipo de población se ha visto asociada a la ansiedad de interacción social y a la inteligencia emocional, donde se sugiere que a mayor satisfacción con la vida menor ansiedad de interacción social y mayor inteligencia emocional (Luna et al., 2019; Szcześniak & Tułeczka, 2020).

## Hipótesis y objetivos

Una vez realizada la revisión bibliográfica y contextualizado el problema de investigación, los objetivos e hipótesis planteados en la presente tesis doctoral son los siguientes:

- Artículo 1:
  - Objetivo:
    - Analizar el papel mediador de la resiliencia entre la personalidad GRIT (i.e., perseverancia y consistencia) y el compromiso académico (i.e., compromiso conductual, compromiso emocional, desafección conductual, desafección emocional) en estudiantes mexicanos de licenciatura en Educación Física.
  - Hipótesis:
    - La perseverancia en el esfuerzo predice positivamente la resiliencia, el compromiso conductual y emocional (H1).
    - La perseverancia en el esfuerzo predice negativamente la desafección conductual y emocional (H2).
    - La consistencia de interés predice positivamente la resiliencia, el compromiso conductual y emocional (H3).
    - La consistencia de interés predice negativamente la desafección conductual y emocional (H4).
    - La resiliencia media positivamente la relación entre la perseverancia del esfuerzo y el compromiso conductual y emocional (H5).
    - La resiliencia media negativamente la relación entre la

perseverancia en el esfuerzo y la desafección conductual y emocional (H6).

- La resiliencia media positivamente la relación entre la consistencia de interés y el compromiso conductual y emocional (H7).
- La resiliencia media negativamente la relación entre la consistencia de interés y la desafección conductual y emocional (H8).

- Artículo 2:

- Objetivo:

- Analizar el rol mediador de la autoeficacia académica entre la inteligencia emocional (i.e., atención emocional, claridad emocional, reparación emocional) y el compromiso académico (i.e., compromiso conductual, compromiso emocional, desafección conductual, desafección emocional) en estudiantes mexicanos de licenciatura en Educación Física.

- Hipótesis:

- La atención emocional predice positivamente la autoeficacia académica, el compromiso conductual y el compromiso emocional, y negativamente la desafección conductual y emocional (H1).
    - La claridad emocional predice positivamente la autoeficacia académica, la desafección emocional, el compromiso conductual y emocional, y establece una relación predictiva negativa con la desafección conductual (H2).
    - La reparación emocional predice positivamente la autoeficacia académica y el compromiso conductual y emocional, mientras que predice negativamente la desafección conductual y emocional

(H3).

- La autoeficacia académica media positivamente en la relación entre la atención emocional y el compromiso conductual y emocional (H4).
- La autoeficacia académica media negativamente en la relación entre la atención emocional y la desafección conductual y emocional (H5).
- La autoeficacia académica media positivamente en la relación entre la claridad emocional y el compromiso conductual y emocional (H6).
- La autoeficacia académica media negativamente en la relación entre la claridad emocional y la desafección conductual y emocional (H7).
- La autoeficacia académica media positivamente en la relación entre la reparación emocional y el compromiso conductual y emocional (H8).
- La autoeficacia académica media negativamente la relación entre la reparación emocional y la desafección conductual y emocional (H9).

- Artículo 3:

- Objetivo:

- Analizar el efecto de la ansiedad de interacción social sobre la satisfacción con la vida en estudiantes mexicanos de licenciatura en Educación Física: mediación de la inteligencia emocional.

- Hipótesis:
  - La ansiedad de interacción social predice positivamente la atención emocional y negativamente la claridad emocional, reparación emocional (H1)
  - La ansiedad de interacción social es un predictor negativo de la satisfacción con la vida (H2).
  - La claridad emocional media positivamente la relación entre la ansiedad de interacción social y la satisfacción con la vida (H3).
  - La reparación emocional media positivamente la relación entre la ansiedad de interacción social y la satisfacción con la vida (H4).
  - La atención emocional media negativamente la relación entre la ansiedad de interacción social y la satisfacción con la vida (H5).



## **Diseño general de la tesis doctoral**

El diseño de investigación según Alvira (1996) se define como la planeación global que se compone de objetivos, correctas técnicas de toma de datos de forma congruente y adecuada, y análisis previstos. El diseño de la tesis fue tipo no experimental ya que no se tuvo un grupo control y experimental y tampoco hubo algún programa de intervención, transversal porque fue en un tiempo determinado y con el interés estableciendo relaciones de causa y efecto, y predictivo porque sus cuatro objetivos están planteados a explorar relación funcional mediante el pronóstico de alguna variable a partir de uno o más predictores (Ato et al., 2013).

Los diseños mencionados en el anterior párrafo se basan en la aplicación de encuestas para la recogida de datos. El diseño usado en la presente investigación es un diseño habitual en trabajos empíricos de investigación educativa y social. La ventaja de este tipo de diseño es la facilidad de identificar a través de los instrumentos validados, el sentir y el desempeño en la vida universitaria del estudiante de actividad física y deporte en la universidad.

Esta investigación se realizó de acuerdo con la Declaración de Helsinki. La presente Tesis Doctoral fue aprobada por la Facultad de Deportes y la Universidad Autónoma de Baja California, México, con número de identificación: 431/569/E y se obtuvo la aprobación del Comité de Bioética de la Universidad de Almería, con el número de identificación UALBIO2023/001. Para la realización del estudio se siguieron los siguientes puntos: 1. Creación de formularios con los instrumentos; 2. Solicitud a autoridades para aplicación del instrumento; 3. Asistencia a los campus para la aplicación de los instrumentos en el siguiente orden Ensenada, Mexicali y Tijuana; 4. Llenar el cuestionario de consentimiento informado para el uso de los datos en la investigación, el cual se encontraba de manera inicial al ingresar al formulario de Google; los participantes, si estaban de acuerdo en participar daban su consentimiento y proseguían con el llenado del formulario; 5. Informar detalladamente el procedimiento del llenado de las evaluaciones a través de *Google forms*. Pensamos que los

resultados que se obtengan de esta investigación favorecerán a la toma de decisiones en la Facultad de Deportes.

El día de la aplicación de los instrumentos, se dio una introducción de la importancia que esta investigación tiene para la Facultad, la cual nos favorece a la atención de observaciones del Comité acreditado, así como la toma de decisiones en aspectos clave para mejorar el proceso de enseñanza-aprendizaje. Todos los instrumentos para medir las diferentes variables se aplicaron en un mismo formato de Google, los cuales fueron contestados en los diferentes centros de cómputo con los que cuenta la Facultad y la Universidad, dejando un tiempo estimado de 15 a 20 minutos. Además, se les informó a los estudiantes las características del cuestionario (e.g., totalmente anónimo y sin respuestas correctas o incorrectas) y el protocolo a seguir, solicitándole así que contesten de la forma más sincera y honesta posible. La aplicación se llevó en un entorno calmado y tranquilo, el cual favorece la concentración y tranquilidad del alumnado. Durante el tiempo dedicado al trabajo de campo, el investigador principal fue respondiendo a las dudas planteadas por los participantes. Tomaron parte estudiantes de los tres campus de la Facultad de Deportes de la Universidad Autónoma de Baja California, Campus Ensenada (230 respuestas), Campus Mexicali (357 respuestas), y Campus Tijuana (577 respuestas) teniendo ese orden de aplicación. Participaron 1164 estudiantes de un total de 1663 de la Licenciatura en Actividad Física y Deporte, esto supone la participación de un 70% de la población de estudio, lo cual representa un nivel de confianza del 99% y un margen de error de 2.08%.

De los datos obtenidos se realizaron tres artículos sometidos a dos diferentes revistas, el primer artículo sometido y aceptado para su publicación en la Revista de Psicología del Deporte “Predictive effect of GRIT personality on academic engagement in Physical Education undergraduate students: the mediating role of resilience” el cual tiene como objetivo analizar el papel mediador de la resiliencia entre la personalidad GRIT (i.e., perseverancia y

consistencia) y el compromiso académico (i.e., compromiso conductual, compromiso emocional, desafección conductual, desafección emocional). Continuando con el interés de las variables que pueden interferir o mediar el compromiso académico se realizó el artículo “Mediation of academic self-efficacy between emotional intelligence and academic engagement in physical education undergraduate students” el cual fue aceptado y publicado en la revista *Frontiers in Psychology*. En este caso el objetivo fue analizar el rol mediador de la autoeficacia académica entre la inteligencia emocional (i.e., atención emocional, claridad emocional, reparación emocional) y el compromiso académico (i.e., compromiso conductual, compromiso emocional, desafección conductual, desafección emocional). Al observar la importancia de la inteligencia emocional en diferentes variables como la ansiedad de interacción social y la satisfacción con la vida, se planteó el tercer artículo “Mediating effect of social interaction anxiety between emotional intelligence and life satisfaction in Physical Education students, Post-covid-19 study”, publicado en la revista *Frontiers in Psychology*, el cual tuvo como objetivo analizar el efecto de la ansiedad de interacción social sobre la satisfacción con la vida.

Toda la información y resultados reportados en esta tesis resultan de interés para las autoridades universitarias que tienen la responsabilidad de atender al alumnado en temas de orientación psicopedagógica, así como al personal académico que imparte clases frente a grupos, ya que lograran identificar aspectos relacionados al éxito académico e incluir estrategias en sus planificaciones que permitan favorecer el desempeño estudiantil. Lo anterior, podría sustentar acciones para la innovación educativa en el contexto universitario estudiado.

Por otra parte, los estudios realizados podrán ser considerados como evidencia del interés de la institución por atender las recomendaciones nacionales e internacionales en la realización de investigación educativa.

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# **Publicación 1:**

**“Predictive effect of GRIT personality on academic engagement in Physical Education undergraduate students: the mediating role of resilience”**



## Artículo 1

# Predictive effect of GRIT personality on academic engagement in Physical Education undergraduate students: the mediating role of resilience

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# **Predictive effect of GRIT personality on academic engagement in Physical Education undergraduate students: the mediating role of resilience**

## **Abstract**

The aim of this research was to analyze the mediating role of resilience between GRIT personality and academic engagement in Physical Education university students. A non-experimental, cross-sectional, correlational-causal study was designed in which 1164 Mexican students participated ( $M_{age} = 21.21$ ;  $SD = 3.26$ ) (30.0% female; 69.6% male; 0.4% other). The scales of GRIT personality, resilience and academic engagement were used, and a structural equation analysis with latent variables was conducted. The results of the structural equation model show that perseverance of effort improves behavioral and emotional academic engagement in a positive way, and it was negatively related to behavioral disaffection. Furthermore, when students are resilient, their behavioral and emotional engagements increase, contrary to their emotional disaffection, which decreases. Interest consistency predicted both emotional and behavioral disaffection.

**Keywords:** university teaching, Physical Education, perseverance, interest, disaffection.

## **Introduction**

Our contemporary society is unpredictable and believed to have entered an epoch characterized by uncertainty, volatility, complexity and ambiguity (Ruksana & Ahmed, 2019). This can be seen in university students who are under constant pressure to find a job in a world of labor uncertainty as they fulfill their studies and prepare for their professional careers (Jeon et al., 2022). These expectations may lead students to experience cumulative burnout throughout their academic life (Meier & Schmeck, 1985), with resilience playing a critical role in overcoming academic burnout (Wu et al., 2019). In addition, academic engagement is deemed an important factor for preventing such burnout (Jeon et al., 2022), for assessing the quality of university education, for improving the academic skills of undergraduate students (Kim, 2015) and for developing work entrepreneurship and entrepreneurial performance (Eskreis-Winkler et al., 2014; García-Martínez et al., 2021).

The scientific literature has shown that students with higher academic engagement levels feel more satisfied, have better academic performance, and are more likely to finish their studies (Gao et al., 2020; Kim & Kim, 2021), with the teacher having great relevance in the academic engagement of university students (Moreno-Murcia & Corbí, 2021). It has also been proved that academic engagement has a great influence on the appropriate integration into society and the university environment, and contributes to decreasing academic dropout (Schaufeli et al., 2002). On the contrary, dissatisfaction and academic dropout rates are known to increase in students with low engagement (Gao et al., 2020). Therefore, numerous researchers who focus on the educational field consider that academic engagement has become a relevant aspect that needs to be analyzed further (e.g., Berry & Hammer, 2018).

## **Literature Review**

One dedicated theory analyzes academic engagement according to two factors: engagement and disaffection in the classroom. In turn, each of these factors features two

dimensions: emotional and behavioral, both linked to the learning process, inter individually stable, and composed of external factors without influencing one another (Skinner et al., 2008). The Self-Determination Theory supports this conceptualization of academic engagement by suggesting that emotions fuel classroom behaviors (i.e., emotional engagement), and that interest and enthusiasm nurture effort and persistence (i.e., behavioral engagement) (Ryan & Deci, 2017). On the one hand, emotional engagement refers to the positive and negative emotional responses of students to the learning process and classroom activities (Manwaring et al., 2017). On the other hand, behavioral engagement encompasses persistence, attention and effort during the initiation and fulfillment of academic activities, such as attending classes and participating in learning activities while following social and institutional rules (Sinval et al., 2021). In this manner, physical participation is associated with behavioral engagement, and emotional participation with psychological participation, both of which are necessary to acquire new skills and knowledge during the learning process (Janosz, 2012). Moreover, other authors highlight the negative approach to academic engagement, such as disaffection (Skinner et al., 2009), which refers to the onset of emotions and behaviors that reflect motivational states of poor adaptation (Curran & Standage, 2017). Accordingly, disaffection is composed of the two aforementioned dimensions (i.e., emotional disaffection and behavioral disaffection). Emotional disaffection refers to boredom, anxiety and frustration experienced in the classroom, whereas behavioral disaffection has to do with passivity and low student participation (Skinner et al., 2008). Thus, students with high levels of engagement tend to perceive themselves as having a greater learning capacity (Casas & Blanco-Blanco, 2017), feel more energetic (Schaufeli, 2013), respond faster to new commands, have greater concentration, and strive harder in general (Bakker, 2011). However, authors such as Lippmann (2013) consider that the lack of academic engagement among students implies that they cannot achieve high-quality learning.

Recent studies have pointed out the relationship between academic engagement and

resilience (López-García et al., 2022; Turner et al., 2017). According to Neufeld et al. (2020), resilience is the capacity to cope with stressful situations, and it is one of the strategies used to improve the well-being of university students. To develop academic resilience in college students is to endow them with mental strength (Rojas, 2015). Students who have developed said resilience are more likely to succeed academically, are more capable of overcoming the obstacles that they encounter (Wu et al., 2019), and show a stronger persistence and orientation into the future compared to those who have not (Morales, 2010). Accordingly, it has been proven that academic engagement has a mediating effect between resilience and two other important variables in university students: satisfaction with life and academic performance (García-Martínez et al., 2021). Nevertheless, we consider that resilience may play an even more meaningful role as a predictor of academic engagement; that is, the student should first acquire the strategy of overcoming stressful situations to strengthen positive emotions in the classroom (i.e., emotional engagement), and then the behavioral change will occur through interest, enthusiasm, effort and persistence (i.e. behavioral engagement). Furthermore, resilience has been positively related to an elevated GRIT as an independent characteristic of this personality trait (Kannangara et al., 2018). In fact, several researchers deem resilience an essential component of the GRIT personality (Duckworth et al., 2007; Duckworth & Quinn, 2009). However, research on how these variables correlate is scarce and the interaction between them must be further examined (Kannangara et al., 2018). On this basis, our study addresses the analysis of resilience as a mediating variable between the GRIT personality trait and academic engagement.

The GRIT personality trait (also known as determination) is defined as the perseverance and passion needed to achieve long-term goals and involves preserving the interest and effort when overcoming the challenges that arise throughout the necessary process to achieve previously set goals regardless of the difficulties, monotony and history of failure (Tortul et al.,



2020). Similarly, determination is a theoretical construct formed by two dimensions (Duckworth, 2016): perseverance of effort (i.e., working hard despite setbacks and difficulties) and consistency of interest (i.e., the tendency to maintain the goals and interests that the students have set for themselves). Determination is an essential attribute for students that predicts high academic engagement (Mason, 2021), high performance and low academic dropout rates (Duckworth et al., 2007; Eskreis-Winkler et al., 2014). In terms of the relationship between determination and academic engagement, a recent study showed that both perseverance of effort and consistency of interest positively predicted academic engagement, although only the former at a significant degree (Tang et al., 2022). Regarding the relationship of the dimensions of determination with those of academic engagement mentioned above, we have only identified the study conducted by Datu et al. (2016). This study found that both dimensions of determination negatively and significantly predicted behavioral disaffection and emotional disaffection, whereas only perseverance of effort positively and significantly predicted behavioral engagement and emotional engagement.

### **The Significance of the Study**

Upon review of the available scientific literature, it was found that, despite its short history, the academic engagement topic has gained great interest in educational research in recent years (Mystkowska-Wiertelak, 2022) because of its great relevance in aspects such as achieving academic success (Gao et al., 2020; Kim & Kim, 2021) and decreasing academic dropout (Schaufeli et al., 2002). Several studies have linked academic engagement to GRIT personality (Hodge et al., 2018; Tortul et al., 2020) and resilience (López-García et al., 2022), the latter being recognized as an essential component of determination (Duckworth et al., 2007; Duckworth & Quinn, 2009). However, no scientific studies are known to have addressed such an important aspect as analyzing the mediating role of resilience between the two determination factors and the four dimensions of academic engagement. Moreover, the literature is even

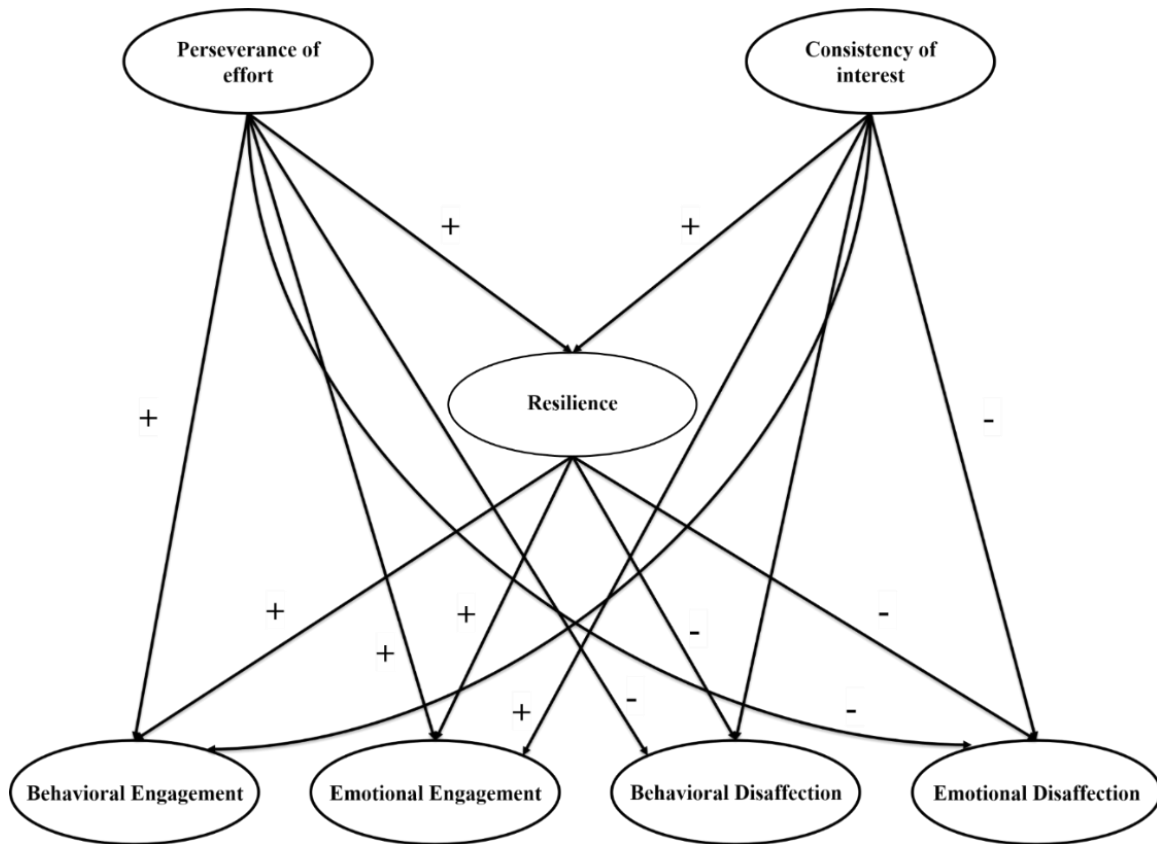
scarcer in Mexico, a country with worrisome dropout rates among university students (Álvarez-Pérez & López-Aguilar, 2021). The ways in which these variables relate to the students' academic engagement need further examination, understood that analyzing how the dimensions of determination relate to resilience and the dimensions of academic engagement may help increase academic success in university students and decrease academic burnout. It is particularly difficult to find studies that identify the variables that mediate the relationship among academic engagement, resilience and GRIT personality.

### **The Purpose of the Study**

Therefore, the objective of this study is to analyze the mediating effect of resilience between GRIT personality (i.e., perseverance of effort and consistency of interest) and academic engagement (i.e., behavioral engagement and emotional engagement, and behavioral disaffection and emotional disaffection). The hypothetical model shown in Figure 1 was tested taking into account the postulates of the different theoretical currents. The following hypotheses were established: First, perseverance of effort predicts resilience, behavioral and emotional engagement (H1); second, perseverance of effort negatively predicts behavioral and emotional disaffection (H2); third, consistency of interest predicts resilience, behavioral and emotional engagement (H3); fourth, consistency of interest negatively predicts behavioral and emotional disaffection (H4); fifth, resilience positively mediates the relationship between perseverance of effort and behavioral and emotional engagement (H5); sixth, resilience negatively mediates the relationship between perseverance of effort and behavioral and emotional disaffection (H6); seventh, resilience positively mediates the relationship between consistency of interest and behavioral and emotional engagement (H7); eighth, resilience negatively mediates the relationship between consistency of interest and behavioral and emotional disaffection (H8). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE; von Elm et al., 2008) was used for the description of the study.

**Figure 1**

*Hypothesized model with the expected correlations*



## **Materials and Methods**

### **Design and Sample**

The research design was observational, descriptive, cross-sectional and non-randomized. Participants were students from the three campuses of the Faculty of Sport of the Autonomous University of Baja California (Campus Ensenada, Campus Mexicali and Campus Tijuana). Inclusion criteria were the following: (i) to be enrolled in the Bachelor's degree in Physical Education in the aforementioned faculty and university; (ii) to give consent for the use of the provided data; (iii) to duly fill out the data collection form. An a priori analysis of the necessary sampling size was conducted to provide an answer to the study's objective, considering a structural equation model (SEM) composed of seven latent variables and 28

observable variables. The analysis was conducted using the Free Statistics Calculator v.4.0 software (Soper, 2023) and a minimum of 1141 participants was calculated to detect effect sizes ( $f^2$ ) = .16), with a statistical power of .95 % and a significance level of  $\alpha$  = .05.

A total of 1164 students participated in the study. It must be underscored that, according to the transparency portal of the three campuses of the Faculty of Sport of the Autonomous University of Baja California, the total study population (N) is 1663 students from the Bachelor's degree in Physical Activity and Sport. This translates into a participation of 70 % of the study population (N), so the sample is deemed representative with a confidence level of 99 % and a margin of error of 2.08 %.

### **Instruments**

Grit-O Scale (GS). This study used the Mexican version validated by Marentes-Castillo et al. (2019) of the Grit Scale by Duckworth et al. (2007). This instrument contains 12 items to measure the GRIT personality in school by using two subscales that measure consistency of interest (6 items) and perseverance of effort (6 items). Answers were collected using a 5-point Likert scale ranging from 1 (not at all like me) to 5 (just like me). The items for the consistency of interest dimension were drafted inversely, so the results of the items were inverted for the analysis (Marentes-Castillo et al., 2019). A CFA (Confirmatory Factor Analysis) of the scale's factorial structure was conducted with the sample of this study, yielding acceptable goodness-of-fit indices:  $\chi^2/df$  (chi-square/degrees of freedom) = 4.81,  $p < .001$ ; CFI (Comparative Fit Index) = .99; TLI (Tucker–Lewis Index) = .97; RMSEA (Root Mean Square Error of Approximation) = .057 [90% Confidence Interval (CI) = .040;.076;  $p_{close} = .228$ ]; SRMR (Standardized Root Mean Square Residual) = .037. Subscales showed the following reliability values: consistency of interest, McDonald's  $\omega$  = .81; perseverance of interest,  $\omega$  = .77.

Resilience (RES). This study used the version adapted to the Mexican context by Córdova (2019) from the original version by Sinclair & Wallston (2004). This instrument

contains four items to measure resilience at school. Answers were collected using a 5-point Likert scale ranging from 1 (it does not describe me at all) to 5 (it describes me very accurately). For this study, CFA goodness-of-fit indices were acceptable:  $\chi^2/\text{gl} = 3.48$ ,  $p < .001$ ; CFI = .99; TLI = .99; RMSEA = .046 (90 %CI = .012,.086;  $p_{\text{close}} = .491$ ), SRMR = .014. Reached reliability was:  $\omega = .78$ .

Academic engagement (CA). This study used the scale adapted to the Mexican context by Rodriguez-Medellín et al. (2020) based on the original version by Chi et al. (2010). This scale contains 12 items grouped into four subscales: behavioral engagement (3 items), emotional engagement (3 items), behavioral disaffection (3 items) and emotional disaffection (3 items). Answers were collected using a Likert scale ranging from 1 (false) to 5 (true). For this study, the CFA goodness-of-fit indices were acceptable:  $\chi^2/\text{df} = 4.48$ ,  $p < .001$ ; CFI = .96; TLI = .94; RMSEA = .055 (90 %CI = .047,.063;  $p_{\text{close}} = .167$ ), SRMR = .036. Reached reliability was: behavioral engagement,  $\omega = .69$ ; emotional engagement,  $\omega = .69$ ; behavioral disaffection,  $\omega = .57$ ; emotional disaffection,  $\omega = .71$ .

## **Procedure**

The director of the three campuses (Ensenada, Mexicali and Tijuana) of the Faculty of Sport of the Autonomous University of Baja California was contacted to inform him of the purpose of the research and to request permission to apply the questionnaires. Upon granted authorization, an online questionnaire was administered in person in the institution's computer room in March 2022. Participants were taught how to use the scales and informed about the importance of the research, that their answers were anonymous, that participation or non-participation would not affect their scores, and that they could abandon the study at any time. All participants gave their prior consent for their responses to be used for the study. The research protocol was approved by the Bioethics Committee of the University of Almeria (Ref: UALBIO2021/009).

## Statistical Analysis

A structural equation model analysis (SEM) with latent variables was conducted to analyze how GRIT personality is associated with resilience and academic engagement in Mexican students. Following (Kline, 2016), the two-step model was used. In the first step, known as the measurement model, the robustness of the bidirectional relationships between the variables that form the model was analyzed. In the second step, the predictive effects between the variables were examined. The SEM was controlled by the sex and campus of origin variables, given that the students belong to three different university campuses. The goodness-of-fit indices of the models, including the CFA of the study instruments, were assessed based on:  $\chi^2/df$ , CFI, TLI, RMSEA with a confidence interval of 90 % (CI), and SRMR. For the  $\chi^2/df$  ratio, values  $<2.0$  or  $<5.0$  are deemed either excellent (Tabachnick & Fidell, 2019) or acceptable (Hu & Bentler, 1999); for CFI and TLI, values  $>.95$  are considered excellent, whereas  $.90$  and  $.95$  are considered acceptable; for RMSEA and SRME, values  $<.06$  are considered excellent and  $<.08$  are deemed acceptable (Hu & Bentler, 1999; Marsh, Hau, & Wen, 2004). Due to the lack of multivariate normality for the SEM (Mardia's coefficient = 100.38;  $p <.001$ ), the maximum likelihood model with the bootstrapping procedure was used for 5000 re-samplings (Kline, 2016). The internal consistency of each scale was evaluated using McDonald's  $\omega$  (McDonald, 1970), where values  $>.70$  are deemed acceptable. In this study, three dimensions of academic engagement (i.e., behavioral engagement, emotional engagement and behavioral disaffection) showed reliability levels below  $.70$ ; however, according to Taylor et al. (2008), these can be considered marginally acceptable due to the small number of items (three) of each factor.

## Results

### Participants

Participants were 1164 students (30.0 % women; 69.6 % men; 0.4 % other) from the three campuses of the Faculty of Sport of the Autonomous University of Baja California (19.8 % from Campus Ensenada; 30.7% from Campus Mexicali; 49.6% from Campus Tijuana), aged between 17 and 50 years old ( $M = 21.21$ ;  $SD = 3.26$ ). There were no lost values in the responses included in the study. Apart from the total sample, 29 questionnaires were discarded because they were filled incorrectly, and 14 because the respondents did not give their consent to participate in the research.

### Preliminary Analysis

Descriptive statistics and correlations among the different variables are shown in Table 1.

1.

**Table 1**

*Descriptive statistics and correlations among variables.*

Variable	Range	M	SD	Q1	Q2	$\omega$	2	3	4	5	6	7
1. Consistency of interest	1-5	2.85	.88	-.09	-.33	.81	-.04	-.05	.05	-.01	-.16**	-.20**
2. Perseverance of effort	1-5	3.71	.74	-.33	.02	.77	-	.47**	.34**	.28**	-.12**	-.15**
3. Resilience	1-5	3.98	.75	-.61	.24	.78		-	.39**	.40**	-.13**	-.22**
4. Behavioral engagement	1-5	3.90	.67	-.35	-.12	.69			-	.49**	-.40**	-.34**
5. Emotional engagement	1-5	4.24	.67	-1.05	1.55	.69				-	-.19**	-.47**
6. Behavioral disaffection	1-5	2.41	.89	.37	-.30	.57					-	.41**
7. Emotional disaffection	1-5	1.90	.78	1.05	1.45	.71						-

Note. \*\*Correlation is significant at level .01; \*Correlation is significant at level .05;  $M$ =Mean;  $SD$ =Standard Deviation;  $Q1$ =Skewness;  $Q2$ =Kurtosis;  $\omega$ =McDonald's Omega.

### Main Analysis

The SEM showed acceptable goodness-of-fit indices during step 1:  $\chi^2/df = 2.87$ ,  $p < .001$ ; CFI = .95; TLI = .94; RMSEA = .040(90 %CI = .036;.044;  $p_{close} = .999$ ), SRMR = .040. During step 2, the hypothesized SEM yielded a similar and acceptable fit:  $\chi^2/df = 2.87$ ,  $p < .001$ ;

CFI = .95; TLI = .94; RMSEA = .040(90 %CI = .036;.044;  $p_{close} = .999$ ), SRMR=.040. The model was controlled by the sex and campus of origin variables and reached an explained variance of 32 % for behavioral engagement, 23 % for emotional engagement, 17 % for behavioral disaffection, 13 % for emotional disaffection, and 29 % for resilience (Figure 2). The correlations among the GRIT personality variables (i.e., consistency of interest and perseverance of effort), resilience and the four dimensions of academic engagement (i.e., behavioral engagement, emotional engagement, behavioral disaffection and emotional disaffection) can be attested in Figure 2 and Table 3.

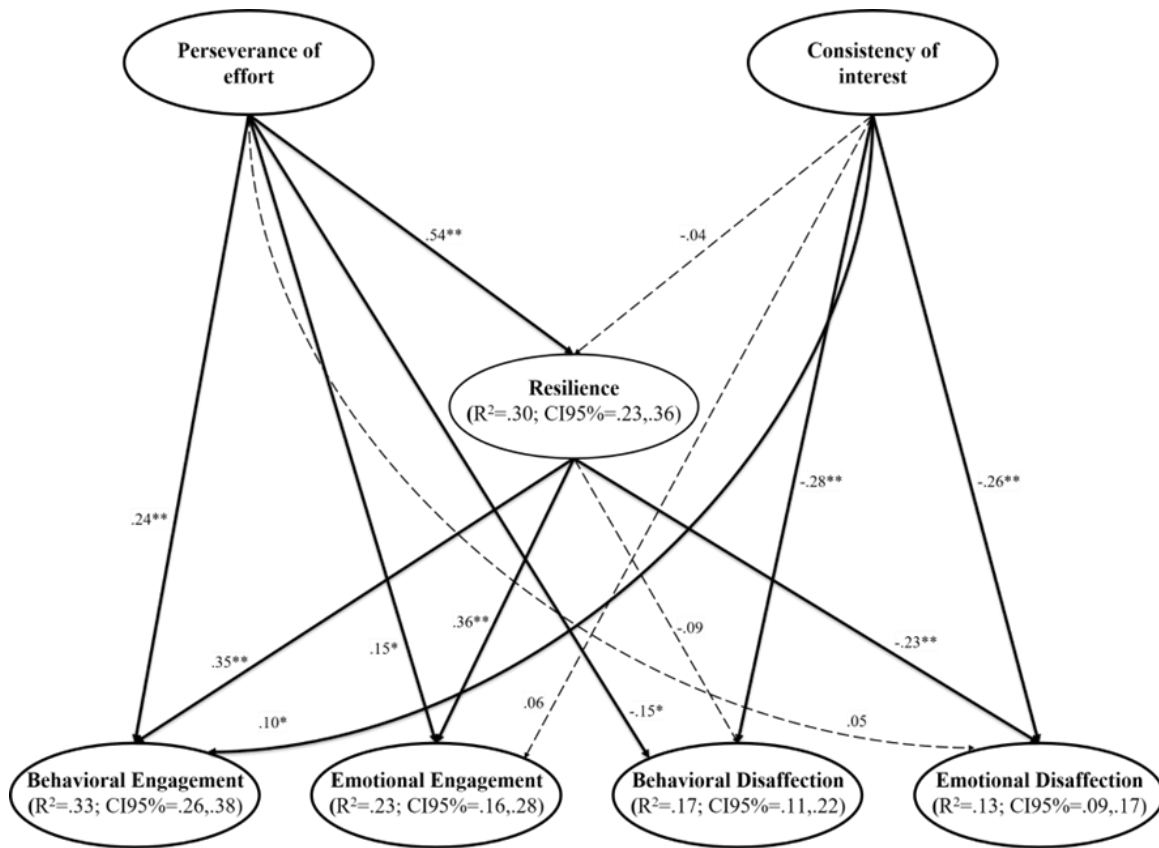
Figure 2 outlines the SEM and demonstrates that the consistency of interest of GRIT personality has a positive and significant direct relationship with a dimension of academic engagement: behavioral engagement ( $p = .004$ ); whereas its relationships with behavioral disaffection ( $p < .001$ ) and emotional disaffection ( $p < .001$ ) are significant and negative. On the other hand, the perseverance of effort of GRIT personality shows direct, positive and significant relationships with resilience ( $p < .001$ ) and with two dimensions of academic engagement: behavioral engagement ( $p < .001$ ) and emotional engagement ( $p = .005$ ), whereas the direct relationship with behavioral disaffection is negative and significant ( $p = .010$ ). Moreover, resilience has a positive and significant direct effect on behavioral engagement ( $p < .001$ ) and emotional engagement ( $p < .001$ ), and a negative effect on emotional disaffection ( $p = .010$ ). Concerning mediation, resilience acts as a positive and significant mediating variable between perseverance of effort and behavioral engagement ( $p = .001$ ), and between perseverance of effort and emotional engagement ( $p = .001$ ), whereas the mediation effect between perseverance of effort and behavioral disaffection ( $p = .124$ ) is not significant. However, the role of resilience as a mediating variable is noteworthy, as it enhances the total effects of perseverance of effort and behavioral ( $p = .001$ ) and emotional engagement ( $p = .001$ ) among university students. Furthermore, the CI (95 %) of  $R^2$  can be attested in Figure 2, thereby



confirming that these can be considered effect size measurements (Dominguez-Lara, 2017).

**Figure 2**

*Predictive relationships of perseverance of effort and consistency of interest on academic engagement through the mediating role of resilience*



Note: \*\* $p < .01$ ; \*  $p < .05$ .  $R^2$ =Explained variance;  $CI$ =Confidence interval. The dashed lines represent non-significant relationships.

**Table 2***Estimation of significant standardized parameters and statistics of the mediation model*

Independent variable	Dependent variable	Mediator	$\beta$	SE	95 %CI	
					Inf	Sup
Direct effects						
Consistency of interest	Behavioral engagement		.11*	.04	.04	.17
Consistency of interest	Behavioral disaffection		-.27**	.05	-.34	-.19
Consistency of interest	Emotional disaffection		-.26**	.04	-.33	-.19
Perseverance of effort	Resilience		.54**	.04	.48	.61
Perseverance of effort	Behavioral engagement		.24**	.06	.14	.33
Perseverance of effort	Emotional engagement		.15*	.06	.05	.26
Perseverance of effort	Behavioral disaffection		-.15*	.06	-.24	.05
Resilience	Behavioral engagement		.35**	.05	.27	.44
Resilience	Emotional engagement		.36**	.06	.26	.45
Resilience	Emotional disaffection		-.23**	.06	-.32	-.14
Indirect effects						
Perseverance of effort	Behavioral engagement	Resilience	.19*	.03	.14	.25
Perseverance of effort	Emotional engagement	Resilience	.19*	.04	.14	.26
Perseverance of effort	Behavioral disaffection	Resilience	-.05	.03	-.10	.00
Total effects						
Perseverance of effort	Behavioral engagement		.43*	.04	.35	.50
Perseverance of effort	Emotional engagement		.35*	.05	.27	.43
Perseverance of effort	Behavioral disaffection		-.20*	.05	-.27	-.12

Note.  $\beta$ =Estimation of standardized parameters; SE=standard error; 95 % CI=95% confidence interval; Inf=Inferior limit of 95 % CI; Sup=Superior limit of 95% CI; \*\* $p$ <.01; \* $p$ <.05.

## Discussion

The purpose of this study was to analyze the mediating effect of resilience between GRIT personality (perseverance of effort and consistency of interest) and academic engagement (behavioral and emotional engagement, and behavioral and emotional disaffection). The key results show that perseverance of effort has a positive direct effect on resilience, behavioral engagement and emotional engagement, and a negative direct effect on behavioral disaffection. Consistency of interest has a direct and negative effect on behavioral

disaffection and emotional disaffection, and a positive direct effect on behavioral engagement. Nonetheless, the mediating role of resilience is noteworthy, as it significantly increases the total effects of perseverance of effort on behavioral engagement, emotional engagement and emotional disaffection.

The results obtained in this study show that perseverance of effort directly and positively predicts behavioral and emotional academic engagement; these results are similar to those attained by other researchers (Datu et al., 2016). In addition, other studies found that perseverance of effort predicted academic engagement when measured unidimensional (Hodge et al., 2018; Tang et al., 2022; Tang et al., 2019; Teuber et al., 2021), or as a unidimensional variable of determination (Hodge et al., 2018; Tortul et al., 2020); we are not aware of additional research on the relationships among the dimensions of determination and the dimensions of academic engagement as posited by Skinner et al. (2008), except for the aforementioned study by Datu et al. (2016). The results of our study might stem from the fact that when students maintain their effort and dedication, their involvement and engagement with learning increases (Álvarez-Pérez et al., 2021) both emotionally and behaviorally, as our work shows. Furthermore, students with high determination scores can improve their emotions and mindsets, boosting their desire and energy toward learning and thus academic performance (Buğra Özhan, 2021). These results provide the scientific literature with relevant information, as the relationship between determination and the students' academic engagement remains largely uncharted (Jeon et al., 2022).

In terms of consistency of interest, the data obtained by this research directly and negatively predicted behavioral and emotional disaffection and positively predicted behavioral engagement. The results found in the scientific literature were misleading and contradictory. On the one hand, similar results were obtained by Datu et al. (2016), who found consistency of interest to negatively predict behavioral and emotional disaffection, even though consistency

of interest did not predict behavioral engagement according to their work. Other studies that measured academic engagement as a unidimensional factor found a negative relationship between consistency of interest and academic engagement (Teuber et al., 2021). However, some researchers reported a positive relationship between these constructs, albeit non-significant (Tang et al., 2022; Tang et al., 2019). In this vein, Hodge et al. (2018) obtained a positive and significant prediction of determination on academic engagement, with both variables being measured unidimensionally. This controversy with consistency of interest might exist due to the fact that this dimension is a component that cannot fully explain consistency of interest like the other dimension (i.e., perseverance of effort), with perseverance being the most suitable and parsimonious dimension to assess consistency of interest (Schmidt et al., 2018). In this regard, previous research has shown that only perseverance of effort is significantly related to well-being (Disabato et al., 2019) and academic performance (Credé et al., 2017), demonstrating that these dimensions are independent of one another (Credé et al., 2017; Disabato et al., 2019). As other authors have recently mentioned, researchers need to delve into how determination factors relate to the outcomes of engagement (Tang et al., 2022), therefore our study is presented as a relevant contribution to the scientific literature, although, as can be seen, it is necessary to further elaborate on this line of research to clarify the relationship of consistency of interest with the other variables.

In addition, the results of this study show that the total effects of perseverance of effort on three dimensions of academic engagement (i.e., behavioral engagement, emotional engagement and emotional disaffection) increase with the mediation of resilience. We are not aware of research work that has correlated these variables, although several studies have linked them separately. On the one hand, other researchers have also found a positive relationship between resilience and determination (Kannangara et al., 2018), and different authors have highlighted resilience as an essential component of determination (Duckworth et

al., 2007; Duckworth & Quinn, 2009); whereas, on the other hand, resilience is a predictor of academic engagement (López-García et al., 2022; Turner et al., 2017). This correlation might stem from the fact that when students are able to maintain their effort to achieve their long-term goals, they also learn the ability to face negative outcomes with mental strength, overcoming the obstacles that they may encounter. In this way, their persistence and orientation toward the future improve (Morales, 2010), along with their chances of academic success (Wu et al., 2019). The novel outlook offered by our study compared to earlier works that relate determination to academic engagement (Credé et al., 2017; Datu et al., 2016; Disabato et al., 2019; Hodge et al., 2018; Tang et al., 2019; Teuber et al., 2021) is that academic engagement increases when the student develops academic resilience from determination.

Lastly, this research features a series of strengths and limitations that we believe should be mentioned. In terms of strengths, we must underscore the subject matter itself, because, as shown in the referenced literature, academic engagement is a variable of great interest and current relevance in educational research, and studies on it and its relationship with determination are scarce. Another strength to highlight is the sample size of Mexican students pursuing the Bachelor's degree in Physical Activity and Sport in the State of Baja California. In addition, blinding was applied between the participants and the researchers who performed the data processing and analysis. As for limitations, it must be noted that there was no sample randomization and that the use of self-report instruments might be compromised by exaggeration from the participants, leading to a social-desirability bias. Another limitation is the use of a cross-sectional research design, as causal inferences might not be effectively signaled. Because of these limitations, we believe that future studies need to adopt a longitudinal or experimental design to provide more evidence to help explain the underlying mechanisms among the analyzed variables. It would also be interesting to see future researchers interview the participants to collect qualitative data necessary to elaborate on and

gain a deeper understanding of the interaction between determination and academic engagement. Finally, we believe it would be interesting for future researchers to analyze how teachers can influence the determination, resilience and academic engagement of university students, especially when taking into account the burnout endured by Mexican teachers (Rojas-Solís et al., 2021).

## **Conclusions**

In conclusion, we can assert that perseverance of effort improves behavioral and emotional academic engagement and decreases behavioral disaffection. Moreover, academic engagement increases when students are resilient, further decreasing behavioral disaffection. In contrast, consistency of interest decreases emotional and behavioral disaffection and increases behavioral engagement, but resilience does not have a mediating effect between these variables. Lastly, teachers should encourage university students to strive and commit to their studies, showing a proactive attitude when they do not achieve the expected academic results, and analyzing what they have failed to do and what they can do to improve in future academic situations.

## **Practical implications**

The results of this research underline the importance of perseverance of effort, consistency of interest and resilience for the development of academic engagement in university students. Therefore, we recommend that teachers and education centers strive to improve personal aspects, interpersonal relationships and satisfaction with the university courses, acknowledging that these factors can effectively increase determination, learning agility and academic engagement, and decrease burnout (Jeon et al., 2022). One fundamental aspect for teachers is to devise tasks that represent and/or emulate situations that students may encounter during their internships or in their future jobs, as this increases their academic engagement (Hong et al., 2021). It is also important to highlight the importance of developing

determination in university students through workshops and personal and professional training that helps students to develop a growth mindset and increase their expectations and participation, first applying this in their university life and then outside educational contexts (Jones & McConnell, 2022). This is particularly important, as students with greater engagement and determination are more likely to develop work entrepreneurship and entrepreneurial performance (Eskreis-Winkler et al., 2014; García-Martínez et al., 2021). In this way, the current demand of society for students graduating with high personal and professional competencies will be met (Palomer et al., 2016).

Finally, those responsible for education matters should establish and develop psychoeducation groups that can strengthen determination levels by creating learning environments where students have fun and learn (Martín-Moya et al., 2022; Özhan, 2021) through contents that they find novel and interesting (Baños et al., 2022). Therefore, psychopedagogical areas should provide support to teachers so that, without prejudice to the imperatives necessary to achieve the learning objectives, they can create positive learning environments, motivating the students toward academic engagement, aware that their efforts will translate into positive results (Pan, 2022).

## **Appendix A**

### **Personalidad GRIT**

Esta escala cuenta con 12 ítems, donde se miden dos subescalas: Conciencia del interés (Del 1 al 6) y Perseverancia del esfuerzo (Del 7 al 12)

- No se parece nada a mí (1)
- No se parece tanto a mí (2)
- Se parece algo a mí (3)
- Casi igual a mí (4)

- Igual a mí (5)

En una escala del 1 (No se parece nada a mí) al 5 (Igual a mí), dínos si estás de acuerdo con las afirmaciones que se encuentran abajo.

1. (Conciencia del interés) Frecuentemente me establezco una meta, pero después de un tiempo elijo perseguir una diferente
2. (Conciencia del interés) Algunas veces las nuevas ideas y proyectos me distraen de otras anteriores
3. (Conciencia del interés) Me intereso en nuevos objetivos cada mes
4. (Conciencia del interés) Mis intereses cambian año con año
5. (Conciencia del interés) He estado obsesionado con cierta idea o proyecto en un corto tiempo, pero después pierdo el interés
6. (Conciencia del interés) Tengo dificultad para mantenerme enfocado sobre proyectos que toman poco más de algunos meses para completarse
7. (Perseverancia del esfuerzo) He alcanzado objetivos que toman años de trabajo
8. (Perseverancia del esfuerzo) He superado contratiempos para conquistar un reto importante
9. (Perseverancia del esfuerzo) Yo acabo todo lo que comienzo
10. (Perseverancia del esfuerzo) Los contratiempos no me desaniman
11. (Perseverancia del esfuerzo) Trabajo arduamente
12. (Perseverancia del esfuerzo) Soy diligente. Nunca me rindo

### **Resiliencia**

Esta escala cuenta con 4 ítems, donde se miden la resiliencia

En una escala del 1 (No me describe en absoluto) al 5 (Me describe muy bien):

- 1=No me describe en absoluto



- 2= Me describe poco
- 3= Ni poco ni mucho
- 4= Me describe bastante

5= Me describe muy bien

A continuación, encontrará una serie de afirmaciones que describen su comportamiento y acciones. Valore cada una de ellas en una escala de 1 a 5.

1. Busco formas creativas para cambiar las situaciones difíciles
2. Independientemente de lo que me suceda, creo que puedo controlar mis reacciones.
3. Creo que puedo crecer positivamente haciendo frente a las situaciones difíciles.
4. Busco activamente formas de superar las pérdidas que tengo en la vida.

### **Compromiso académico**

Esta escala cuenta con 12 ítems, donde se miden cuatro subescalas: Compromiso (Compromiso conductual 1,2,3 y Compromiso Emocional 4,5,6) y Descontento (Afección Conductual 7,8,9 y Aversión Emocional 10,11,12)

- 1 = falso hasta
- 5 = cierto

Dinos qué tan ciertas son las siguientes afirmaciones referentes a las clases de educación física

1. Pongo atención en la clase de educación física
2. Estudio para la clase de educación física
3. Trato de hacer lo más que pueda en la clase de educación física
4. Disfruto del tiempo que paso en la clase de educación física
5. Es emocionante cuando hago conexiones entre las ideas aprendidas en la clase de

educación física

6. Es interesante el contenido que vemos en la clase de educación física
7. Es difícil asistir a la clase de educación física
8. Sólo hago lo suficiente para pasar en la clase de educación física
9. No hago mucho trabajo fuera de la clase de educación física
10. Son muy aburridas las clases del profesor de educación física
11. Me estresa la clase de educación física
12. Es una pérdida de tiempo estar en la clase de educación física

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# Publicación 2:

**“Mediation of academic self-efficacy between emotional intelligence and academic engagement in physical education undergraduate students”**



## Artículo 2

# Mediation of academic self-efficacy between emotional intelligence and academic engagement in physical education undergraduate students

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# **Mediation of academic self-efficacy between emotional intelligence and academic engagement in physical education undergraduate students**

## **Abstract**

The aim of this study was to analyze academic self-efficacy as a mediator between emotional intelligence and academic engagement. A non-experimental, cross-sectional, correlational-causal study was designed in which 1164 Mexican students participated ( $M_{age}=21.21$ ;  $SD=3.26$ ) (30.0% female; 69.6% male; 0.4% other). The scales of emotional intelligence, academic self-efficacy and academic engagement were used, and a structural equation analysis with latent variables was conducted. The results obtained demonstrate that emotional clarity and repair have a positive and direct effect on academic self-efficacy. In addition, emotional repair predicts behavioral and emotional engagement. It was also found that academic self-efficacy is an excellent mediator between emotional clarity and repair, and the dimensions of academic engagement, as it substantially improves behavioral and emotional engagement while decreasing behavioral and emotional disaffection.

**Keywords:** engagement disaffection, emotional disaffection, emotional repair, emotional clarity, university.

## Introduction

The university stage is a challenging period for students (Asikainen et al., 2020; Özhan & Boyaci, 2018) and is considered a major turning point in the lives of individuals (Bulfone et al., 2020). It is an important process in which students must focus their efforts on their own academic development in order to shape their personal and professional future. Understood that this drives university students to envision a series of expectations of success at the academic and social levels (Vizoso et al., 2019), it is paramount to raise awareness of the physical, mental and organizational factors that might impact the students' success and reduce their potential negative effects (Özhan, 2021). But adding academic and family pressure on top of these expectations may lead to severe symptoms of psychological distress (Özhan & Boyaci, 2018), which can increase the likelihood of experiencing academic burnout and other outcomes such as school desertion (Boyaci & Özhan, 2018).

Preventing academic burnout and desertion is a problem that must be addressed in university teaching (Özhan, 2021), but this situation is even more severe in the Mexican context (Álvarez-Pérez & López-Aguilar, 2021). To counteract these negative effects on university students, several studies (e.g., Jeon et al., 2022) have highlighted the importance of devising learning strategies that foster academic engagement, as this is a significant component in preventing academic dropout. It is essential that student's express engagement with their studies since it has been proven that academic engagement not only increases their probabilities of successfully completing their studies (Gao et al., 2020; Kim & Kim, 2021) but also improves their learning during corporate internships (Hong et al., 2021). In this line, several studies have underscored the importance of variables such as academic self-efficacy (Oriol-Granado et al., 2017) and emotional intelligence (Usán-Supervía et al., 2019) to improve academic engagement. However, studies that have analyzed the interaction of these three variables in the university context are scarce, and the ones that we identified have only



surveyed students from Spain (Bonilla-Yucailla et al., 2022; Pérez-González et al., 2022). For these reasons, and because academic dropout rates in Mexico are truly worrying (Álvarez-Pérez & López-Aguilar, 2021; Vanegas et al., 2022), we consider it necessary to further delve into the interaction between these three variables in Mexican university students.

### **Academic Engagement**

Academic engagement has been assessed according to different theoretical standpoints (Alrashidi et al., 2016). On the one hand, one may refer to Fredricks' model (2004), also known as the North American model, composed of three dimensions that measure academic engagement from a positive approach (i.e., behavioral, emotional and cognitive). Similarly, the model proposed by Schaufeli (2002), known as the European model, measures academic engagement positively but using three other dimensions (i.e., absorption, vigor and dedication). However, Skinner et al. (2008) proposed that academic engagement should be measured from both a positive (i.e., engagement) and a negative (i.e., disaffection) perspective, each composed of two dimensions: cognitive and emotional. Thus, academic engagement would encompass four factors in total: behavioral engagement (i.e., persistence, attention and effort during the onset and execution of academic activities) (Sinval et al., 2021), emotional engagement (i.e., the students' positive and negative emotional responses to the learning process and class activities) (Manwaring et al., 2017), behavioral disaffection (i.e., passivity and low student participation) (Skinner et al., 2008) and emotional disaffection (i.e., boredom, anxiety and frustration experienced in the classroom) (Skinner et al., 2008). We consider this theory to be of interest for our research, as it analyzes engagement from two standpoints, i.e., the positive and the negative.

Different studies (Kuo et al., 2021; Liu et al., 2018; Zhen et al., 2020) have highlighted the importance of academic self-efficacy on academic engagement after having analyzed the North American model by Fredricks (2004). Other works (Azila-Gbettor & Abiemo, 2020; Cai et

al., 2022; Zhao et al., 2021), following the European model by Schaufeli et al. (2002), have found that academic self-efficacy is a predictor of academic engagement. As can be seen, the scientific literature has already attested that academic self-efficacy predicts academic engagement, however, we are not aware of any studies that have delved into this relationship by having analyzed academic engagement from both positive and negative approaches. Moreover, research works that analyze the relationship between academic engagement and academic self-efficacy are virtually non-existent in the Mexican context. Therefore, and considering that academic self-efficacy positively predicts academic engagement, it is convenient to study how it relates to academic disaffection.

### **Academic Self-Efficacy**

The theoretical construct of academic self-efficacy stems from the Social Cognitive Theory (Bandura, 1997) and is defined as the assumptions that students have about their own capabilities to organize and carry out the activities that are necessary to attain previously envisioned educational expectations (Gutiérrez & Tomás, 2019). Academic self-efficacy has a direct effect on satisfaction and the continuity of studies, thus helping prevent university students from dropping out (Lent et al., 2017). In this sense, students with high academic self-efficacy work harder, use more effective methods to deal with academic difficulties, are more willing to participate in learning activities, and have better performance compared to students with low academic self-efficacy (Fernandez-Rio et al., 2017; Gebauer et al., 2020). Hence, this variable (i.e., academic self-efficacy) relates to the students' capabilities to identify opportunities and drawbacks in the environment, without prejudice to their engagement and motivation (Oriol-Granado et al., 2017). To our knowledge, although several studies have related academic self-efficacy to emotional intelligence (Bidhendi et al., 2018; Pérez-González et al., 2022a; Saeed & Ahmad, 2020), only one study has analyzed the relationship between academic self-efficacy and emotional intelligence using structural equation modeling (SEM)

(Bonilla-Yucailla et al., 2022). These authors found that emotional intelligence positively and significantly predicts academic self-efficacy, with academic engagement playing a mediating role. However, said study only measured academic engagement from a positive perspective, so we consider it would be helpful to analyze this relationship taking the two possible academic engagement perspectives into consideration, i.e., positive and negative. In addition, given that the scientific literature fosters the role of academic self-efficacy as a predictor of academic engagement (Akanni, 2022; Azila-Gbettor et al., 2022; Casas & Blanco-Blanco, 2017; Oriol-Granado et al., 2017; She et al., 2021), we consider it interesting to study the relationships between these three constructs while analyzing the mediating role of academic self-efficacy between emotional intelligence and academic engagement.

### **Emotional Intelligence**

A substantial body of literature has underscored the importance of emotional intelligence in the occurrence of positive emotional responses during the learning process (Thomas & Heath, 2022). In the university context, emotional intelligence has stood out as an adequate tool for coping with stressful situations, and for achieving a successful academic performance and emotional well-being (Guil et al., 2021; Parhiala et al., 2018). Salovey et al. (1995) suggest that emotional intelligence is composed of three dimensions and that it can be defined as an individual's capacity to address (emotional attention), understand (emotional clarity) and alter (emotional repair) their own emotional states. Different studies have emphasized the important role of Salovey's theory in terms of engagement with learning, satisfaction and academic performance (Baños et al., 2019; Fernández-Lasarte & Axpe-Sáez, 2019; Supervía et al., 2019).

Emotional intelligence (i.e., emotional attention, emotional clarity and emotional repair) has been recently related to the academic engagement of secondary (junior high) school students (Supervía et al., 2019; Supervía & Bordás, 2019; Usán-Supervía et al., 2019) using

the European model by Schaufeli et al. (2013). Similarly, emotional intelligence (albeit unidimensionally measured) has also been related to the academic engagement of university students (Thomas & Allen, 2020; Thomas & Heath, 2022) according to Skinner's model (2008), in which academic engagement is addressed from a positive and negative perspective. In fact, to our knowledge, these (Thomas & Allen, 2020; Thomas & Heath, 2022) are the only studies that have related emotional intelligence to Skinner's model of academic engagement; said studies, however, did not measure emotional intelligence from the dimensions of attention, clarity and repair, but rather unidimensionally. These works pointed out the importance of considering the positive effect of emotional intelligence on behavioral engagement and emotional engagement. Conversely, students with high emotional intelligence relate negatively to behavioral disaffection and emotional disaffection (Thomas & Heath, 2020). As can be seen, scientific works that relate the dimensions of emotional intelligence (emotional attention, emotional clarity and emotional repair) to the academic engagement model by Skinner et al. (2008) are non-existent. Therefore, we consider it interesting to thoroughly analyze how these two constructs relate within the Mexican context.

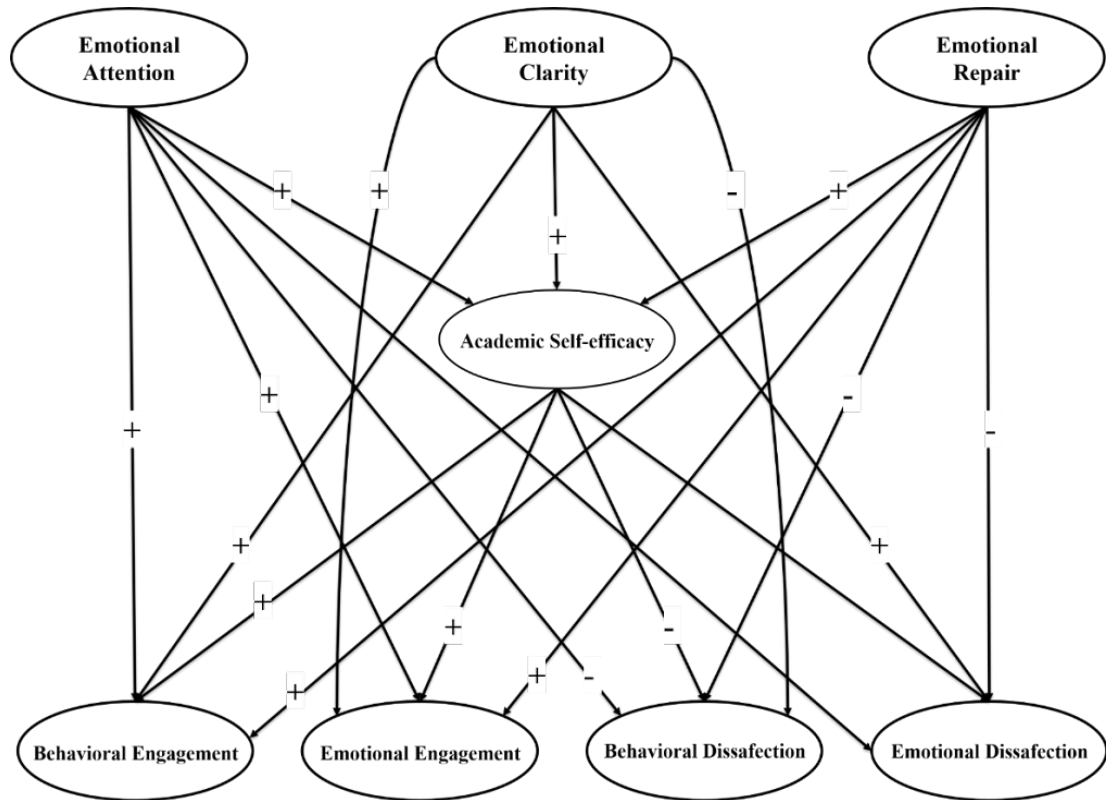
### **This Study**

Having analyzed the scientific literature and observed the importance of academic engagement in the education of university students, we consider the predictive analysis of emotional intelligence and academic self-efficacy on academic engagement to be relevant, and that studying it should lead to learning improvements that benefit Mexican university students. In summary: on the one hand, even though studies have related academic self-efficacy to either the North American model (Kuo et al., 2021; Liu et al., 2018; Zhen et al., 2020) or the European model of academic engagement (Azila-Gbettor & Abiemo, 2020; Cai et al., 2022; Zhao et al., 2021), these have only analyzed academic engagement from a positive perspective, without delving into how academic self-efficacy relates to academic disaffection. On the other hand,

while few studies are known to have analyzed emotional intelligence unidimensionally with academic engagement and disaffection (Thomas & Allen, 2020; Thomas & Heath, 2022), others have analyzed how the dimensions of emotional intelligence correlate according to the European model of academic engagement, i.e., without measuring academic disaffection (Supervía et al., 2019; Supervía & Bordás, 2019; Usán-Supervía et al., 2019). Furthermore, as far as we are aware, the analysis of the role of academic self-efficacy as a mediator between emotional intelligence and academic engagement and disaffection has not been addressed. Therefore, this study intends to be a relevant contribution to the understanding of the relationship between the dimensions of emotional intelligence, academic self-efficacy and academic engagement, especially by incorporating the variables of academic disaffection, given that studies that have taken academic disaffection into consideration are scarce both in the Mexican university context and worldwide. Figure 1 shows the hypothesized model of this research to examine the aforementioned relationships. Thus, the purpose of this research is to analyze the mediation of academic self-efficacy between emotional intelligence and academic engagement. The *Strengthening the Reporting of Observational Studies in Epidemiology* (STROBE) initiative (Von Elm et al., 2008) was used for the description of the study.

**Figure 1**

*Modelo hipotetizado con las relaciones esperadas*



## Materials and Methods

### Design and Participants

The design of this research was descriptive, observational, cross-sectional and non-randomized. Participants study at either of the three campuses of the Faculty of Sport of the Autonomous University of Baja California, Mexico (i.e., Campus Tijuana, Campus Mexicali and Campus Ensenada). Inclusion criteria for participation in the study were the following: (i) to be enrolled in the Bachelor's degree in Physical Activity and Sport at either of the three aforementioned campuses and attend classes regularly; (ii) to give their informed consent for data collection; (iii) to duly fill out the data collection form with the different scales. An a priori analysis of the necessary sampling size was conducted to provide an answer to the proposed

objective, considering a structural equation model (SEM) composed of six latent variables and 49 observable variables. The analysis was conducted using the *Free Statistics Calculator* v.4.0 software (Soper, 2023) and a minimum of 1164 participants was calculated to detect effect sizes ( $f^2$ ) = .166), with a statistical power of .99% and a significance level of  $\alpha = .05$ . The total number of participants was 1164 university students of the Bachelor's degree in Physical Education (349 women, 810 men and 5 other) from the Tijuana ( $n = 577$ ), Mexicali ( $n = 357$ ) and Ensenada ( $n = 230$ ) University Campuses. Students were aged between 17 and 50 years old ( $M = 21.21$ ;  $SD = 3.26$ ). It must be mentioned that 14 individuals did not give their consent to participate in the research and that 29 questionnaires were discarded because they were filled incorrectly. Lastly, there were no lost values in the responses included in the study.

## **Instruments**

### ***Traid Meta-Mood Scale-24 (TMMS-24)***

This study used the Mexican version by Valdivia et al. (2015) adapted from the original by Salovey et al. (1995). The scale is composed of 28 items distributed across three dimensions: *emotional attention* (8 items; e.g., I pay close attention to my feelings. "*Presto mucha atención a mis sentimientos*"), *emotional clarity* (8 items; e.g., I frequently can define my feelings. "*Frecuentemente puedo definir mis sentimientos*") and *emotional repair* (8 items; e.g., I try to have positive thoughts, even when I feel bad. "*Intento tener pensamientos positivos, aunque me sienta mal*"). Answers were collected using a Likert scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). For this study, the CFA goodness-of-fit indices were acceptable:  $\chi^2/df=4.97$ ,  $p < .001$ ; CFI = .98; TLI = .97; RMSEA = .058 (90%CI = .048,.069;  $p_{close} = .089$ ), SRMR=.037. Reached reliability was: emotional attention,  $\omega=.86$ ; emotional clarity,  $\omega=.86$ ; emotional repair,  $\omega=.87$ .

### **Academic Self-Efficacy (ASE)**

This study used the scale adapted to the Mexican context by Córdova (2019) based on the original by Palenzuela (1983). This instrument is composed of 13 items that measure academic self-efficacy unidimensionally (e.g., I believe I am capable of understanding a subject well. “*Pienso que tengo capacidad para comprender bien una materia*”). Answers were collected using a Likert scale ranging from 1 (*never*) to 4 (*always*). In this study, the CFA goodness-of-fit indices were acceptable:  $\chi^2/df = 3.37$ ,  $p < .001$ ; CFI = .99; TLI = .99; RMSEA = .045 (90%CI=.028,.063;  $p_{close} = .643$ ), SRMR = .016. Reached reliability was  $\omega = .88$ .

### **Academic Engagement (CA)**

This study used the Mexican adaptation by Rodriguez-Medellín et al. (2020) from the original scale by Chi et al. (2010). The scale contains 12 items grouped into four subscales of three items each: *emotional engagement* (e.g., Class contents are interesting. “*Es interesante el contenido que vemos en las clases*”), *behavioral engagement* (e.g., I try to do the most I can in classes. “*Trato de hacer lo más que puedo en las clases*”), *emotional disaffection* (e.g., I get stressed during classes. “*Me estreso en las clases*”) and *behavioral disaffection* (e.g., I don't do a lot of work during classes. “*No hago mucho trabajo en las clases*”). Answers were collected using a Likert scale ranging from 1 (*false*) to 5 (*true*). The CFA goodness-of-fit indices for this study were deemed acceptable:  $\chi^2/df = 4.48$ ,  $p < .001$ ; CFI = .96; TLI = .94; RMSEA = .055 (90%CI = .047,.063;  $p_{close} = .167$ ), SRMR=.036. Reached reliability was: behavioral engagement,  $\omega=.69$ ; emotional engagement,  $\omega = .69$ ; behavioral disaffection,  $\omega=.57$ ; emotional disaffection,  $\omega=.71$ .

### **Procedure**

The general director of the Faculty of Sport and the deputy directors of the three campuses (Tijuana, Mexicali and Ensenada) of the Autonomous University of Baja California were contacted to inform them of the purpose of the research and to request permission to



apply the questionnaires. Upon granted authorization, an online questionnaire was administered in person in the institution's computer room in March 2022. Participants were taught how to use the scales and informed about the importance of the research, that their answers were anonymous and would therefore not affect their scores, and that they could abandon the study at any time if they so desired. All participants included in the study gave their prior consent for their responses to be used. The research protocol was approved by the Bioethics Committee of the University of Almeria (Ref: UALBIO2020/019).

### **Statistical Analysis**

Descriptive statistics, the correlations among variables and McDonald's omega ( $\omega$ ) coefficient (McDonald, 1970) were initially calculated using SPSS v.28 for each dimension, assuming that values  $>.70$  indicate adequate reliability (Viladrich et al., 2017). Main analyses were performed using AMOS v.26, and a two-step SEM with latent variables following Kline (2016) was calculated to evaluate the predictive relationships of the dimensions of emotional intelligence on the dimensions of academic engagement, analyzing the mediating role of academic self-efficacy. In the first step of the SEM, known as the measurement model, the robustness of the bidirectional relationships between the model variables was assessed. In the second step, the predictive effects between the variables were examined, with the SEM effects being controlled according to the gender and campus of origin of the students. Due to the violation of the multivariate normality assumption (Mardia's coefficient = 138.61;  $p <.001$ ), the analysis was conducted using the maximum likelihood estimation method and the 5000-iteration bootstrapping procedure (Kline, 2016). The SEM were assessed with the following goodness-of-fit indices: values of the chi-square/degrees of freedom ratio ( $\chi^2/df$ ), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA) with a confidence interval of 90% (CI), and Standardized Root Mean Square (SRMR). For the  $\chi^2/df$  ratio, values  $<2.0$  or  $<5.0$  are respectively considered excellent (Tabachnick & Fidell,

2019) or acceptable (Hu & Bentler, 1999); for the CFI and the TLI, values  $>.95$  are deemed excellent, whereas the range between  $.90$  and  $.95$  is considered acceptable; for RMSEA and SRMR, values  $<.06$  are considered excellent (Hu & Bentler, 1999; Marsh, Hau, & Wen, 2004). The internal consistency of each instrument was assessed using McDonald's  $\omega$ , considering that values  $>.70$  are deemed acceptable. In this study, three factors of academic engagement (i.e., behavioral engagement, emotional engagement, and behavioral disaffection) showed reliability values  $<.70$ , however, according to Taylor et al. (2008), these can be considered marginally acceptable due to the small number of items (three) in each dimension.

## Results

### Resource Identification Initiative

Descriptive statistics and correlations between the different variables are shown in Table 1.

**Table 1**

*Descriptive statistics and correlations among variables*

Variable	Range	M	SD	Q1	Q2	2	3	4	5	6	7	8
1.- Emotional attention	1-5	3.46	1.10	-.35	-.41	.21**	.08**	.04	.13**	.07*	-.00	.01
2.- Emotional clarity	1-5	3.43	1.05	-.30	-.12	-	.33**	.31**	.22**	.18**	-.09**	-.13**
3.- Emotional repair	1-5	3.76	1.03	-.64	1.55		-	.27**	.23**	.27**	-.06*	-.18**
4.- Academic self-efficacy	1-4	3.06	.59	-.29	-.41			-	.43**	.38**	-.20**	-.22**
5.- Behavioral engagement	1-5	3.90	.67	-.35	-.12				-	.49**	-.40**	-.34**
6.- Emotional engagement	1-5	4.24	.67	-1.05	1.55					-	-.19**	-.47**
7.- Behavioral disaffection	1-5	2.41	.89	.37	-.30						-	.41**
8.- Emotional disaffection	1-5	1.90	.78	1.05	1.45							-

Note. \*\*Correlation is significant at level .01; \*Correlation is significant at level .05; M=Mean; SD=Standard Deviation; Q1=Skewness; Q2=Kurtosis;  $\omega$ =McDonald's Omega.

## Main Analysis

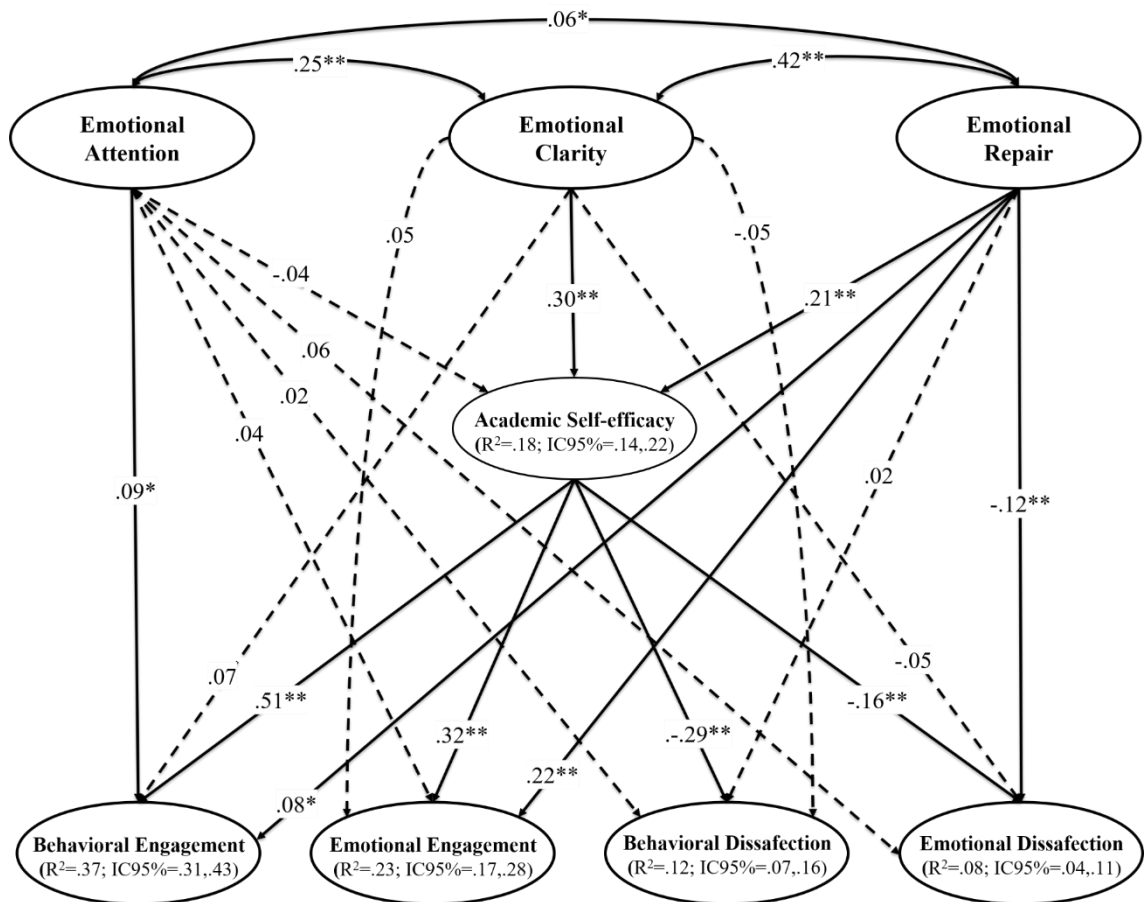
The SEM showed acceptable goodness-of-fit indices during step 1:  $\chi^2/df = 2.71$ ,  $p < .001$ ; CFI = .96; TLI = .95; RMSEA = .038(90 %CI = .035;.041;  $p_{close} = .999$ ), SRMR = .039. During step 2, the SEM showed a similar and acceptable fit:  $\chi^2/df = 2.71$ ,  $p < .001$ ; CFI = .96; TLI = .95; RMSEA = .038(90%CI = .035;.041;  $p_{close} = .999$ ), SRMR = .039. The model was controlled by the sex and campus of origin variables and reached an explained variance of 37% for behavioral engagement, 23% for emotional engagement, 12% for behavioral disaffection, 8% for emotional disaffection and 18% for academic self-efficacy (Figure 2). The relationships among the dimensions of emotional intelligence (i.e., emotional attention, emotional clarity and emotional repair), academic self-efficacy and the four dimensions of academic engagement (i.e., behavioral engagement, emotional engagement, behavioral disaffection and emotional disaffection) can be attested in Figure 2 and Table 2.

Figure 2 outlines the SEM and demonstrates that emotional clarity has a direct, positive and significant relationship with academic self-efficacy. On the other hand, emotional repair correlates directly, positively and significantly with emotional engagement and behavioral engagement, and negatively with emotional disaffection. Emotional attention shows a direct, positive and significant relationship only with behavioral engagement. Likewise, academic self-efficacy has a positive and significant direct effect on behavioral engagement and emotional engagement, and a negative and significant effect on behavioral disaffection and emotional disaffection. The mediating role of academic self-efficacy must be highlighted, as it indirectly, significantly and positively relates emotional clarity with behavioral engagement and emotional engagement, and significantly and negatively relates emotional clarity with behavioral disaffection and emotional disaffection. In addition, academic self-efficacy acts as a positive and significant mediating variable between emotional repair and behavioral engagement and between emotional repair and emotional engagement, and as a negative mediator between

emotional repair and behavioral disaffection and between emotional repair and emotional disaffection. Lastly, the CI (95%) of  $R^2$  can be attested in Figure 2, thereby confirming that these can be considered ES measurements (Dominguez-Lara, 2017).

**Figure 2**

*Predictive relationships of the emotional intelligence on academic engagement through the mediating role of the academic self-efficacy*



Note: \*\* $p < .01$ ; \* $p < .05$ .  $R^2$ =Explained variance; CI=Confidence interval. The dashed lines represent non-significant relationships.

**Table 2***Estimación de parámetros estandarizados significativos y estadísticas del modelo de mediación.*

Independent variable	Dependent variable	Mediator	$\beta$	SE	95%CI	
					Inf	Sup
<b>Direct effects</b>						
Emotional attention	Behavioral engagement		.09*	.04	.03	.16
Emotional repair	Behavioral engagement		.08*	.04	.02	.15
Emotional repair	Emotional engagement		.22**	.05	.15	.30
Emotional repair	Emotional disaffection		-.12**	.04	-.18	-.04
Emotional clarity	Academic self-efficacy		.30**	.04	.23	.37
Emotional repair	Academic self-efficacy		.21**	.05	.14	.27
Academic self-efficacy	Behavioral engagement		.51**	.04	.45	.57
Academic self-efficacy	Emotional engagement		.32**	.05	.25	.40
Academic self-efficacy	Behavioral disaffection		-.29**	.05	-.36	-.20
Academic self-efficacy	Emotional disaffection		-.16**	.05	-.23	-.09
<b>Indirect effects</b>						
Emotional clarity	Behavioral engagement	Academic self-efficacy	.15**	.02	.12	.19
Emotional clarity	Emotional engagement	Academic self-efficacy	.10**	.02	.07	.13
Emotional clarity	Behavioral disaffection	Academic self-efficacy	-.09**	.02	-.12	-.06
Emotional clarity	Emotional disaffection	Academic self-efficacy	-.05**	.02	-.08	-.03
Emotional repair	Behavioral engagement	Academic self-efficacy	.11**	.02	.07	.15
Emotional repair	Emotional engagement	Academic self-efficacy	.07**	.02	.04	.01
Emotional repair	Behavioral disaffection	Academic self-efficacy	-.06**	.02	-.09	-.04
Emotional repair	Emotional disaffection	Academic self-efficacy	-.03**	.01	-.06	-.02
<b>Total effects</b>						
Emotional clarity	Behavioral engagement		.22**	.05	.15	.32
Emotional clarity	Emotional engagement		.15**	.05	.08	.23
Emotional clarity	Behavioral disaffection		-.14*	.05	-.22	-.05
Emotional clarity	Emotional disaffection		-.10*	.05	-.18	-.03
Emotional repair	Behavioral engagement		.19**	.05	.11	.26
Emotional repair	Emotional engagement		.29**	.04	.22	.36
Emotional repair	Emotional disaffection		-.15**	.04	-.22	-.08

Note.  $\beta$ =Estimation of standardized parameters; SE=standard error; 95 % CI=95% confidence interval; Inf=Inferior limit of 95 % CI; Sup=Superior limit of 95% CI; \*\* $p<.01$ ; \* $p<.05$ .

## Discussion

The aim of this research was to analyze the role of academic self-efficacy as a mediator between emotional intelligence and academic engagement. The main results demonstrate the important role of academic self-efficacy since, on the one hand, emotional clarity is only related to the dimensions of academic engagement and disaffection through academic self-efficacy. On the other hand, it significantly increases the total effects of emotional repair on behavioral engagement, emotional engagement and emotional disaffection.

We are not aware of any research that has related the dimensions of emotional intelligence (i.e., emotional attention, emotional clarity and emotional repair) to academic engagement and disaffection (i.e., behavioral engagement, emotional engagement, behavioral disaffection and emotional disaffection). Our work shows that emotional repair directly and positively predicts behavioral engagement, but especially emotional engagement. In contrast, emotional repair directly and negatively predicted emotional disaffection. These results follow the path of other studies carried out with university students where emotional intelligence (measured unidimensionally) predicts behavioral and emotional engagement positively, and behavioral and emotional disaffection negatively (Thomas & Allen, 2020; Thomas & Heath, 2022b). Other studies conducted with middle school students (Supervía et al., 2019; Supervía & Bordás, 2019; Usán-Supervía et al., 2019) also obtained positive relationships for all dimensions of emotional intelligence (i.e., emotional attention, emotional clarity and emotional repair) according to the European model of academic engagement; however, these did not analyze academic disaffection. This positive relationship between emotional intelligence and academic engagement might stem from the fact that students with higher emotional intelligence are more likely to experience achievement-inducing emotions such as interest, enjoyment and enthusiasm, while being less likely to undergo negative emotions, e.g., boredom, anxiety and frustration (Pekrun et al., 2007). We consider this to be a contribution of our study to the

scientific literature, given that the dimensions of emotional intelligence had not been previously analyzed according to the academic engagement and disengagement model.

In this study, emotional attention directly and positively predicted behavioral engagement only, and did not show any significant relationship with the indirect and total effects of the model. Other studies conducted with middle school students obtained similar results, in which emotional attention had a weak relationship with academic engagement (Supervía et al., 2019; Supervía & Bordás, 2019; Usán-Supervía et al., 2019). This weakness in the prediction of emotional attention could be due to the fact that, unlike emotional clarity and emotional repair (Salovey et al., 1995), this dimension does not have great inference in people's behavior. However, we believe that the relationship between emotional intelligence according to Salovey et al. (1995) and academic engagement and disaffection should be further studied.

It is worth underscoring the important role of academic self-efficacy in the SEM proposed in this study, not only because it considerably increases the total effects of emotional repair, but also because, more importantly, emotional clarity only relates to academic engagement and disaffection through academic self-efficacy as a mediating variable. We are not aware of earlier studies that have analyzed the relationships among the models of the variables featured in this research. However, works using other theoretical constructs of emotional intelligence and academic engagement did find a positive correlation between emotional intelligence, academic self-efficacy and academic engagement (Bonilla-Yucailla et al., 2022; Pérez-González et al., 2022). Other studies also found that high emotional intelligence related to high academic self-efficacy (Bidhendi et al., 2018; Pérez-González et al., 2022a; Saeed & Ahmad, 2020), and that academic self-efficacy did predict academic engagement (Akanni, 2022; Azila-Gbettor et al., 2022; Casas & Blanco-Blanco, 2017; Oriol-Granado et al., 2017; She et al., 2021). A potential explanation for this is that when students are more capable of understanding their emotions and dissipating feelings of frustration in their

academic life by having different strategies at hand that help them approach class tasks efficiently, this can in turn help them increase their engagement with learning (Pekrun et al., 2007). Our study makes a relevant contribution to the scientific literature by highlighting the important roles of academic self-efficacy, clarity and emotional repair in increasing academic engagement. On the contrary, if emotional intelligence and academic self-efficacy are not developed in university students, they will see their academic disaffection increase, which relates to lower performance (Kim & Kim, 2021) and even academic dropout (Gao et al., 2020). However, since the scientific literature in this area is scarce, we consider that this relationship should be taken with caution, and we suggest conducting further research to analyze the relationships among the variables presented in this study.

Lastly, we will disclose a series of limitations and strengths observed in our study, as well as future research outlooks. The main limitations include: (i) the cross-sectional design of the study, which did not allow us to establish causal inferences; (ii) the potential social desirability bias due to the use of self-reporting, since participants may have exaggerated when filling out their form; (iii) there was no sample randomization. On the other hand, the strengths of this research should be highlighted: (i) the sample size of Mexican university students from the three campuses (Tijuana, Mexicali and Ensenada) enrolled in the Bachelor's Degree in Physical Activity and Sport Sciences at the Autonomous University of Baja California; (ii) the subject matter is of great value and current relevance in educational research, as studies that relate emotional intelligence, academic self-efficacy and academic engagement are still scarce. We consider it necessary for researchers to delve further into the relationships between these variables using different research designs (e.g., experimental or longitudinal) to provide more evidence to help explain how the analyzed variables interrelate with one another. It would also be convenient for future researchers to work with students from other degree programs or to conduct cross-cultural research with other states in Mexico, or with other countries, analyzing



potential differences. To conclude, due to the major role that teachers play in the academic engagement of university students (Moreno-Murcia & Corbí, 2021), especially considering the frustration of basic psychological needs and burnout endured by Mexican teachers (Delgado-Herrada et al., 2021; Luis Rojas-Solís et al., 2021), we consider it interesting for future researchers to analyze how teachers can influence the emotional intelligence, academic self-efficacy and academic engagement of university students.

### **Conclusions**

In conclusion, it can be attested that emotional clarity and repair have a direct and positive effect on academic self-efficacy, as do emotional repair on behavioral and emotional engagement, and emotional attention on behavioral engagement. However, academic self-efficacy is an excellent mediator between emotional intelligence and the dimensions of academic engagement, as it substantially improves behavioral and emotional engagement while decreasing behavioral and emotional disaffection. Finally, teachers should present students with different learning strategies that teach them how to be efficient in their learning and to understand the feelings they experience, remediating potential negative emotions derived from frustrations or unattained achievements in order to face future academic situations.

### **Practical Implications**

The results of this research underscore the importance of emotional clarity, emotional repair and especially academic self-efficacy in the development of academic engagement in Mexican students. Therefore, those responsible for education matters should devise and establish psychoeducation groups that strengthen the academic self-efficacy of university students (Özhan, 2021). Accordingly, teachers should use different learning strategies to provide students with numerous learning tools and techniques, such as the ones proposed by different researchers (Baños et al., 2021, 2022; Gómez-López et al., 2022; González-

Fernández et al., 2022; Martín-Moya et al., 2022; Pérez-Suasnavas & Cela, 2022; Sánchez-Cabrero & Pericacho-Gómez, 2022;). In this way, students will be able to try and experience different educational resources, analyzing which of them will be more effective in their learning. To this end, the psycho-pedagogical areas can organize workshops for teachers to support the teaching and learning processes by creating positive classroom environments, acknowledging the motivations of each student and fostering academic engagement in them, understanding that, if they learn how to be efficient, they will obtain good results (Oriol-Granado et al., 2017; Pan, 2022). In other words, when university students develop academic self-efficacy, they will not only see their academic engagement improve (Álvarez-Pérez et al., 2021), but also feel efficient during their internships and in their future jobs (Hong et al., 2021; Martínez-Martínez & Ventura, 2020).

As a final consideration, students should be first taught how to be efficient not at the university stage, but in earlier years. Significant time must be allocated to inform middle and high school students about career guidance and job opportunities, and to teach them how to be efficient. However, students perceive that some schools do not prepare them adequately for higher education or do not provide them with the skills and information needed to thrive in higher education (Thomas & Maree, 2022)

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# Publicación 3:

“Mediating effect of social interaction anxiety between emotional intelligence and life satisfaction in Physical Education students. Post-covid-19 study”





## Artículo 3

# Mediating effect of social interaction anxiety between emotional intelligence and life satisfaction in Physical Education students. Post-covid-19 study

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# **Mediating effect of social interaction anxiety between emotional intelligence and life satisfaction in Physical Education students.**

## **Post-covid-19 study**

### **Abstract**

The aim of this research is to analyze the effect of social interaction anxiety on satisfaction with life mediated by emotional intelligence. The research design was descriptive, cross-sectional, and non-randomized. In total, 1164 Mexican physical education students participated ( $M_{\text{age}} = 21.21$ ;  $SD = 3.26$ ) (30.0% female; 69.6% male; 0.4% other). The scales used were the Social Interaction Anxiety Scale, Trait Meta-Mood Scale and Satisfaction with Life and a structural equation analysis with latent variables was conducted. The results highlight that it can be asserted that emotional clarity and repair had a mediating effect between social interaction anxiety and satisfaction with life, as they did decrease the negative effects of social interaction anxiety on satisfaction with life. In addition, social interaction anxiety had a direct and positive effect on emotional attention and a negative effect on emotional clarity and repair.

**Keywords:** social anxiety; emotional repair; emotional clarity; emotional attention; university.

## Introduction

The restrictive measures in response to the COVID-19 pandemic triggered serious consequences on the general health of the world's population (Faraci et al., 2022). The spread of the pandemic and the ensuing restrictive policies involving confinement, social distancing and mobility had a major impact on the global economy and the daily lives of people around the world (Di Crosta et al., 2020; Gollwitzer et al., 2021; Kuo et al., 2021; Racine et al., 2022; Xiong et al., 2020). These strategies came with severe negative psychological effects (Obschonka et al., 2021; Özdin & Bayrak Özdin, 2020; Pietrabissa & Simpson, 2020), including anxiety, depression, fear of illness, fear of death, fear of social interaction, post-traumatic stress and insomnia (Di Crosta et al., 2020; Rodríguez-Hidalgo et al., 2020; Sturgill et al., 2021; Torales et al., 2020). Said restrictive measures, meant to decrease community transmission (Kim A. Weeden & Cornwell, 2020), even led to universities shutting down worldwide (Baños et al., 2022).

As a consequence of the COVID-19 pandemic, university education had to undergo a rapid transition from in-person classes to online learning systems (Baños et al., 2021). This increased the daily frequency of technology overuse among university students, especially smartphones (Bhatnagar et al., 2021). This in turn amplified the irrational fear and stress experienced by middle school (Nguyen et al., 2022) and university students (Zwilling, 2022) of being away from a device that facilitates both general communication and attending academic activities, especially in students who struggle to regulate their emotions (Brown & Medcalf-Bell, 2022; Ercengiz et al., 2020). Thus, COVID-19 not only comes with a dreadful pathology, but it is also the source of numerous secondary problems, such as becoming addicted to the use of the Internet, social networks and any form of media associated with recent technologies (Masrek et al., 2022). In fact, the disruptive use of smartphones surged from the onset of the first wave of COVID-19 (Zwilling, 2022), thereby increasing the incidence of pathologies such

as stress and anxiety (Nguyen et al., 2022), which even doubled in some countries during the first confinement period (Amerio et al., 2021; Medda et al., 2022). Therefore, as the amount of time spent on screens (e.g., smartphones, computers, tablets, etc.) increases, physical interaction among people diminishes, which has an impact on their social interaction skills (Masrek et al., 2022). For all these reasons, it would be interesting to determine if the levels of social interaction anxiety (SIA) among students can affect their satisfaction with life once the confinement and social distancing measures are lifted and on-site classes return in a post-pandemic context. Despite the significance that the students' emotional regulation can have in this situation, few studies have analyzed the effect of SIA on satisfaction with life taking into account the emotional intelligence of the students once they have returned to in-person classes at universities following the end of confinement.

### **Social Interaction Anxiety**

SIA refers to intense, individual emotional reactions and avoidance behaviors, such as fear, anxiety and distress regarding one or multiple social interactions (Li, 2020). SIA is a widespread condition that can sometimes become chronic, causing severe impact on a person's academic, occupational and social functioning, as well as their psychological well-being on a general level (Kessler, 2003; O'Toole et al., 2013; Wittchen et al., 2000). The fear of being judged or negatively criticized is the core motive that, together with the fear of contracting COVID-19, prompted people to avoid social interactions, which in turn affected the individuals' daily functioning (Erliksson et al., 2020). Not addressing this pathology immediately and otherwise allowing it to develop in young people may lead to detrimental effects on their mental health and undermine their academic work and their lives in general (Chartrand et al., 2011). As previously mentioned, social interaction was rare or even non-existent during the pandemic, which could easily trigger SIA and unhealthy emotions, especially in young students who continued their education at home (Hahn, 2020). As age increases, so do the academic

load and pressure put on young people, which can lead to an increase in interpersonal communication problems; therefore, the social environment can become overwhelming, leading to psychological conditions common in contemporary youth (Li, 2020). This can be particularly detrimental to students about to graduate, as their interpersonal environment has grown increasingly complex and they may become anxious more easily when facing interpersonal problems (Kwon et al., 2018).

People with high levels of SIA exhibit low self-esteem, depressive symptoms and increased dissatisfaction with life (Makadi & Koszycki, 2020). SIA has also been related to obsessive-compulsive disorders, depression and generalized anxiety disorder (Erliksson et al., 2020). A major characteristic of people with SIA is a lack of emotional regulation (Kashdan & Breen, 2008; Kashdan & Steger, 2006; Werner et al., 2011). Therefore, acknowledging or understanding emotions may play a significant role in the adaptive regulation of emotions during social interactions that cause the person to become anxious (O'Toole et al., 2013).

### **Emotional Intelligence**

In the university context, emotional intelligence has been highlighted as an adequate tool for coping with stressful situations and achieving successful academic performance and emotional well-being (Guil et al., 2021; Parhiala et al., 2018). Emotional intelligence is defined as an individual's ability to assess and regulate their own emotions and use them to solve problems and accomplish goals (Salovey et al., 1995). Guil et al. (2021) propose that emotional intelligence is composed of three dimensions: emotional attention (i.e., self-perceptions about the degree to which an individual addresses their own emotional experiences), emotional clarity (i.e., self-perceptions regarding how clearly people understand emotional states) and emotional repair (i.e., self-perceptions about the ability to adequately manage emotions). In general, research has found that higher scores on emotional intelligence are associated with better psychological functioning and well-being, whereas low scores are linked to anxiety (Berenbaum

et al., 2003; García-Fernández et al., 2015). Likewise, there are individual differences in the degree of the three dimensions (attention, clarity and repair), with each dimension having a different role (García-Fernández et al., 2015). Enhancing our understanding of broad emotional constructs and discrete emotions in SAD can have implications for theoretical models of SAD, for clinical assessment and diagnosis, and for treatment (Rozen & Aderka, 2023). Numerous authors have suggested further research on how these three dimensions interact and their relationship with SIA (Boden & Berenbaum, 2012; García-Fernández et al., 2015; Guil et al., 2019; Turk et al., 2005).

In this vein, the predisposition of SIA increases when one does not pay attention to the information that emotions provide or possesses high emotional attention but poor emotional clarity (Boden & Berenbaum, 2012). The role of emotional attention is less clear than those of emotional repair and clarity (García-Fernández et al., 2015). On the one hand, although individuals must pay at least some attention to their emotions in order to understand them and to remediate negative ones, high levels of attention have been found to be detrimental to emotional well-being (Salovey et al., 1995). On the other hand, emotional attention has been negatively related to SIA (Guil et al., 2019; Turk et al., 2005). As can be seen, there is controversy regarding the relationship between SIA and the dimension of emotional attention.

Because the ability to clearly identify one's emotions is the first step to successful emotional regulation and coping (Butler et al., 2006), the importance of emotional clarity in regulating emotions has been particularly underscored. In this case, as opposed to the dimension of emotional attention, most studies agree that a lack of emotional clarity greatly increases SIA (Butler et al., 2018; Dixon-Gordon et al., 2014; Guil et al., 2019; Thompson et al., 2017). Likewise, individuals with lower levels of emotional clarity tend to describe more paranoid beliefs (Boden & Berenbaum, 2012). Toole et al. (2013) suggest that deficits in emotional clarity and difficulties in remediating negative emotions are key factors to consider

when addressing SIA. In fact, several studies have negatively related emotional repair to SIA (Bigman et al., 2015; Guil et al., 2019; Klemanski et al., 2017; Masters et al., 2019). Specifically in the university context, it has been found that students who hoped to be more successful in regulating their negative emotions showed fewer signs of anxiety (Catanzaro & Mearns, 1999). Furthermore, middle school students who exhibited higher levels of emotional intelligence during the pandemic scored higher on satisfaction with life (Correa-Barwick et al., 2022; Torres-Gázquez et al., 2023). Along these lines, Sturgill et al., (2021) found that a Mindfulness program with university students increased their emotional intelligence and satisfaction with life, however, studies on this population conducted during the pandemic are scarce.

### **Psychological Well-being**

The concept of psychological well-being is closely linked to the subjective well-being and the quality of life or satisfaction with life (SWL) concepts (Baños et al., 2019). Diener & Emmons (1985) postulated the Subjective Well-Being Theory to analyze people's SWL, defining "subjective well-being" as the subjective assessment of one's own life quality, that is, the range of elements from transitory stages to relatively abstract assessments or evaluations of the meaning of one's life. These authors stated that people can express being satisfied with their lives either from a global evaluation or after making different assessments in specific areas of their lives (e.g., family, work, social relationships, etc.) (Diener & Emmons, 1985). Several studies have associated SWL with low levels of SIA (Kessler, 2003; O'Toole et al., 2013; Wittchen et al., 2000) and with high levels of emotional intelligence (Blasco-Belled et al., 2020; Hodzic et al., 2016a; Sánchez-Álvarez et al., 2016).

In terms of the dimensions of emotional intelligence, a study conducted in Spain, Portugal and Brazil found that SWL was predicted by emotional clarity and emotional repair, but not by emotional attention (Hodzic et al., 2016). Blasco-Belled et al. (2020) also found that emotional attention was negatively related to subjective well-being, albeit this relationship was



not significant in the study conducted by Ramos-Díaz et al. (2019). In this line, it is emphasized that a decrease in emotional attention and an increase in emotional clarity and repair should be the target of interventions in adolescents to improve their SWL (Azpiazu et al., 2022; De la Barrera et al., 2023; Guerra-Bustamante et al., 2019; Martínez-Marín & Martínez, 2019), since the intelligent management of emotions helps to prevent negative feelings and fosters positive ones, thus promoting greater SWL (Sánchez-Álvarez et al., 2016). Several studies have highlighted the importance of emotional clarity and repair for improved psychological functioning (Masters et al., 2019; Petrides et al., 2018), psychological adjustment (Butler et al., 2018; García-Fernández et al., 2015; Salguero et al., 2012) and psychological well-being (Extremera & Fernández, 2005; Gohm & Clore, 2002; Salguero et al., 2012).

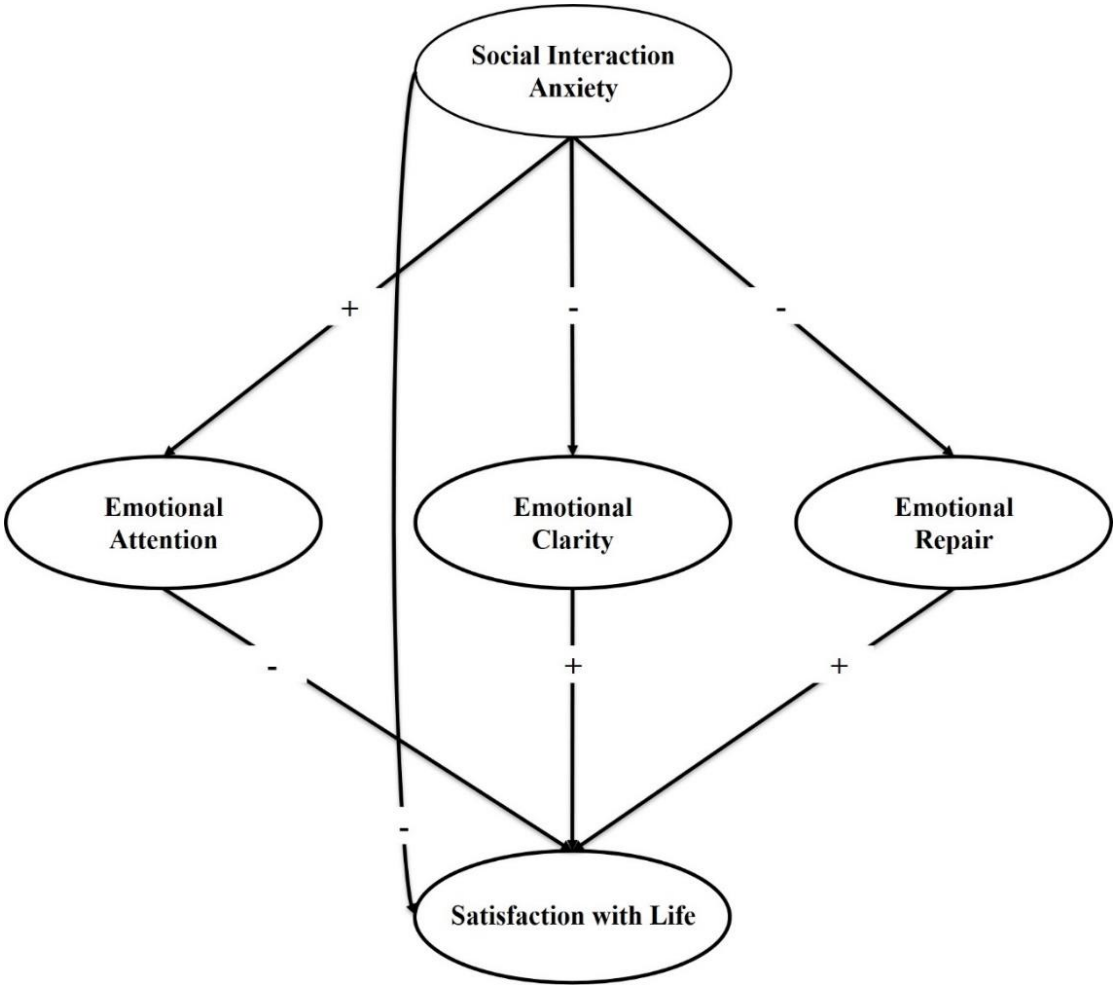
### **The Present Study**

After analyzing the scientific literature and observing the importance of emotional clarity and repair in preventing SIA and improving people's SWL, both before and during the COVID-19 pandemic, the predictive analysis of SIA and emotional intelligence on SWL can be deemed relevant, understood that the sanitary restrictions have been lifted. In summary, on the one hand, studies have related SIA to emotional intelligence (Guil et al., 2021; Parhiala et al., 2018) and SIA to satisfaction with life (Kessler, 2003; O'Toole et al., 2013; Wittchen et al., 2000), and, on the other hand, emotional intelligence to satisfaction with life (Blasco-Belled et al., 2020; Hodzic et al., 2016; Sánchez-Álvarez et al., 2016). All these studies were conducted before or during the pandemic, however, we are unaware of the existence of studies that have analyzed emotional intelligence as a mediating variable between SIA and SWL, and if the relationships between these variables have been analyzed following the end of mobility restrictions and the return to in-person university classes. Moreover, research conducted with Mexican students was scarce even before the pandemic. Therefore, this study represents a contribution to the understanding of the relationships among SIA, the dimensions of emotional intelligence and

SWL in the Mexican university context. Thus, the objective of this research is to analyze the effect of SIA on SWL mediated by emotional intelligence. Figure 1 shows the hypothesized model for examining the relationships described above. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) initiative (Von Elm et al., 2008).

**Figure 1**

*Hypothesized model with the expected correlations.*



## Materials and Methods

### Design and Participants

The research design was descriptive, cross-sectional, observational and non-randomized. The sample was composed of students from the Faculty of Sport of the three campuses (Campus Ensenada, Campus Mexicali and Campus Tijuana) of the Autonomous University of Baja California (Mexico). Inclusion criteria were the following: (i) to be enrolled in the Bachelor's degree in Physical Activity and Sport at the aforementioned campus and university; exclusion criteria: (i) failure to provide their informed consent for data use in the study; (ii) failure to duly fill out the data collection form. An a priori analysis of the necessary sampling size was conducted to provide an answer to the study objective, considering a structural equation model (SEM) composed of five latent variables and 53 observable variables. The analysis was conducted using the Free Statistics Calculator v.4.0 software (Soper, 2023) and a minimum of 1 151 participants was calculated to detect effect sizes ( $f^2$ )=.163), with a statistical power of .99 % and a significance level of  $\alpha$ =.05. In this research 1 164 physical education students (30.0 % women; 69.6 % men; 0.4 % other) from the three campuses of the Faculty of Sports of the Autonomous University of Baja California (19.8 %, Campus Ensenada; 30.7 %, Campus Tijuana; 49.6 %, Campus Tijuana) participated, aged between 17 and 50 years old ( $M=21.21$ ;  $SD=3.26$ ). There were no lost values in the responses included in the study. Apart from the total sample, 29 questionnaires were discarded because they were filled incorrectly, and 14 because the respondents did not give their consent to participate in the research.

## Instruments

Interaction Anxiety Scale (SIAS). This study used the scale adapted to the Mexican context by de la Rubia et al. (2013) based on the original version by Mattick & Clarke (1998). This instrument is composed of 20 items that measure social interaction anxiety (e.g., I find it hard to socialize with my classmates. “Se me hace difícil socializar con las personas con las que estudio”). Answers were collected using a 5-point Likert scale ranging from 0 (not at all) to 4 (completely). For this study, the CFA (Confirmatory Factorial Analysis) goodness-of-fit indices were acceptable:  $\chi^2/df = 5.01$ ,  $p < .001$ ; CFI = .98; TLI = .98; RMSEA = .059 (90%CI = .047, .070;  $p_{close} = .077$ ), SRMR = .033.

Emotional Intelligence (EI). This study used the Mexican version by Valdivia et al. (2015) adapted from the original version by Salovey et al. (1995). The scale contains 28 items that measure emotional intelligence across three dimensions: emotional attention (8 items; e.g., I frequently think about my feelings. “A menudo pienso en mis sentimientos”), emotional clarity (8 items; e.g., I am capable of understanding my feelings. “Puedo llegar a comprender mis sentimientos”), and emotional repair (8 items; e.g., When I feel sad, I think about all the pleasures in life. “Cuando estoy triste, pienso en todos los placeres de la vida”). Answers were collected using a Likert scale ranging from 1 (completely disagree) to 5 (completely agree). For this study, the CFA goodness-of-fit indices were acceptable:  $\chi^2/df = 4.97$ ,  $p < .001$ ; CFI = .98; TLI = .97; RMSEA = .058 (90%CI = .046, .068;  $p_{close} = .072$ ), SRMR = .042.

Satisfaction with Life (SWL). This study used the scale adapted into Spanish by Atienza et al. (2000) to measure satisfaction with life in general based on the original version by Diener et al. (1985). The scale contains 5 grouped items that measure satisfaction with life (e.g., My life circumstances are good. “Las circunstancias de mi vida son buenas”). Answers were collected using a Likert scale ranging from 1 (completely disagree) to 5 (completely agree). For

this study, the CFA goodness-of-fit indices were acceptable:  $\chi^2/df = 2.55$ ,  $p = .054$ ; CFI = .99; TLI = .99; RMSEA = .037 (90%CI = .000,.070;  $p_{close} = .071$ ), SRMR = .011.

### **Procedure**

First, a meeting was held with the three deputy directors and the general director of the Faculty of Sports of the three campuses of the Autonomous University of Baja California (Ensenada, Mexicali and Tijuana). The purpose of the study was explained and permission to apply the questionnaires was requested. Upon granted authorization, the participants were summoned to the institution's computer room in March 2022. Participants were taught how to fill out the online questionnaires and informed about the importance of the research, that their participation was anonymous, and that there were no right or wrong answers; they were thus asked to be completely honest and were told that they could abandon the study at any time if they desired so. The questionnaire was completed in around twenty minutes and all participants gave their prior consent for their responses to be included in the study. The research protocol was approved by the Bioethics Committee of the University of Almeria (Ref: UALBIO2023/001).

### **Statistical Analysis**

A structural equation model (SEM) with latent variables was carried out to analyze how SIA is associated with emotional intelligence and satisfaction with life in Mexican university students. For the SEM, a two-step method following Kline (2016) was developed. In step-1, bidirectional relationships between variables were evaluated (i.e., measurement model). In step-2, the predictive effects between the variables were assessed. The SEM was controlled by the variable sex and campus of origin. The following indices were used to evaluate the models: chi square/degrees of freedom ( $\chi^2/df$ ), CFI (Comparative Fit Index), TLI (Tucker–Lewis Index), RMSEA (Root Mean Square Error of Approximation) with a confidence interval of 90 % (CI), and SRMR (Standardized Root Mean Square Residual). For the  $\chi^2/df$  ratio, values  $<2.0$  or  $<5.0$  are respectively considered excellent (Tabachnick & Fidell, 2019) or acceptable (Hu &

Bentler, 1999); for the CFI and TLI, values >.95 are considered excellent, whereas the range between .90 and .95 is considered acceptable; for the RMSEA and SRMR, values <.06 are considered excellent, and <.08, acceptable (Hu & Bentler, 1999; Marsh et al., 2004) Due to the lack of multivariate normality in the SEM (Mardia's coefficient=106.82;  $p < .001$ ) the maximum likelihood (ML) method was used with the bootstrapping procedure for 5 000 re-samplings (Kline, 2016). The reliability of each scale was assessed using different parameters: McDonald's omega ( $\omega$ ), composite reliability (CR), and AVE for measuring convergent validity. Reliability values >.70 and AVE>.50 are deemed acceptable. For this study, even if the SWL scale yields an AVE value <.50 (i.e., .47), such value is deemed acceptable according to Hair et al. (2018), as all the standardized regression weights were significant and >.50.

## Results

### Preliminary Results

Descriptive statistics and correlations between the different variables are shown in Table 1.

**Table 1**

*Descriptive statistics and correlations among variables*

Variable	Range	M	SD	Q1	Q2	$\omega$	CR	AVE	2	3	4	5
8. Emotional Attention	1-5	3.47	1.10	-.35	-.65	.89	.89	.67	.21**	.08**	.08**	.05
9. Emotional Clarity	1-5	3.43	1.05	-.30	-.58	.90	.82	.60	-	.33**	-.27**	.37**
10. Emotional Repair	1-5	3.76	1.03	-.64	-.26	.85	.87	.69		-	-.16**	.37**
11. Social Interaction Anxiety	0-4	1.47	1.05	.39	-.76	.93	.90	.54			-	-.29**
12. Satisfaction with Life	1-5	3.67	.84	-.44	-.26	.81	.81	.47				-

Note. \*\*Correlation is significant at level .01; \*Correlation is significant at level .05; M=Mean; SD=Standard Deviation; Q1=Skewness; Q2=Kurtosis;  $\omega$ =Omega of McDonald; CR=Composite Reliability; AVE=Average Variance Extracted.

### Main Results

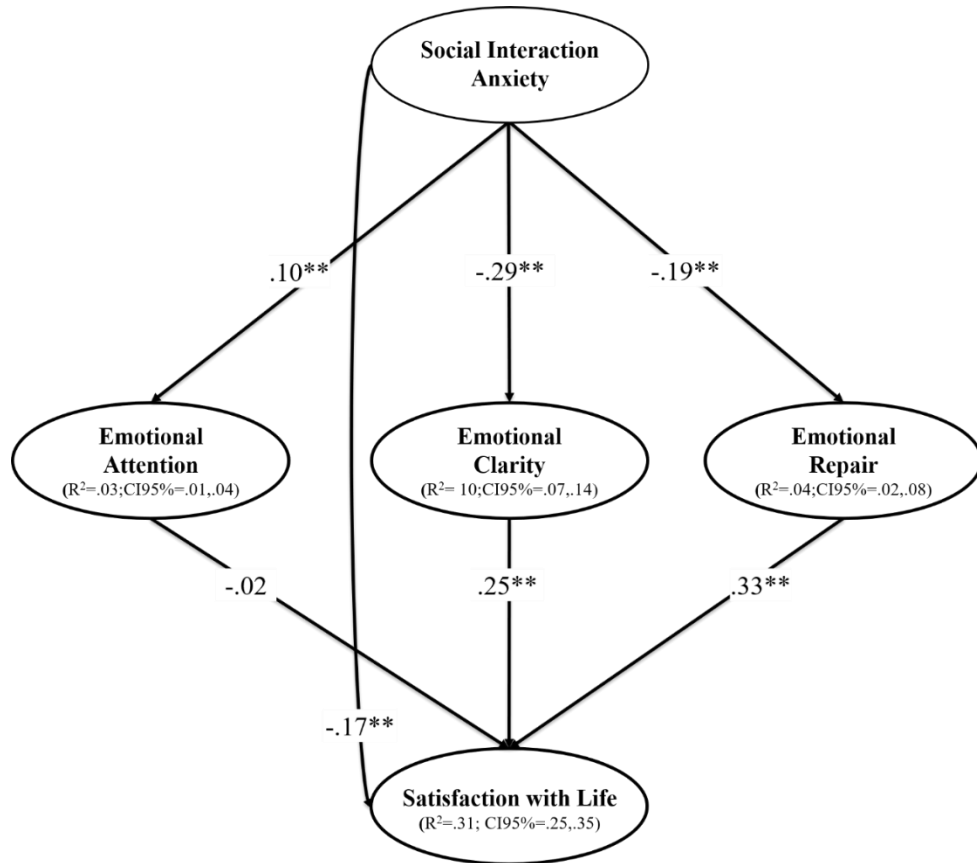
During step 1, the SEM showed excellent goodness-of-fit indices:  $\chi^2/df = 2.40$ ,  $p < .001$ ; CFI = .98; TLI = .97; RMSEA = .035(90%CI = .031;.038;  $p_{close} = 1.00$ ), SRMR = .035. During

step 2, the hypothesized SEM yielded a similar and excellent fit:  $\chi^2/df = 2.40$ ,  $p < .001$ ; CFI = .98; TLI = .97; RMSEA = .035(90 %CI = .031;.038;  $p_{close} = 1.000$ ), SRMR = .035. The model was controlled by the sex and campus of origin variable and reached an explained variance of 31 % for SWL, 3 % for emotional attention, 4 % for emotional repair and 10 % for emotional clarity (Figure 2). The correlations among SIA, the emotional intelligence variables (i.e., emotional attention, emotional clarity and emotional repair) and SWL can be attested in Figure 2 and Table 3.

Figure 2 outlines the SEM and shows that SIA has a direct, negative and significant relationship with SWL ( $p < .001$ ), as well as emotional clarity ( $p < .00$ ) and emotional repair ( $p < .001$ ). On the other hand, SIA has a direct, positive and significant relationship with emotional attention ( $p = .004$ ). In terms of the mediating effect of the dimensions of emotional intelligence, it should be noted that emotional clarity and emotional repair play a remarkable role between SIA and SWL, as they soften the negative direct effect of SIA on SWL, given that these two dimensions (i.e., emotional clarity and emotional repair) have a positive and significant direct effect on SWL (Table 2). In addition, Figure 2 demonstrates the CI (95 %) of  $R^2$ , thereby confirming that these values can be considered ES measurements (Dominguez-Lara, 2017).

**Figure 2**

*Predictive relationships of the emotional intelligence on satisfaction with life through the mediating role of the social interaction anxiety*



Note:  $^{**}p<.01$ ;  $^*p<.05$ .  $R^2$ =Explained variance; CI=Confidence interval. The dashed lines represent non-significant relationships. The model was controlled by the sex and the campus of the students.



**Table 2***Estimation of significant standardized parameters and statistics of the mediation model.*

Independent variable	Dependent variable	Mediator	$\beta$	SE	95%CI	
					Inf	Sup
Direct effects						
SIA	Emotional Attention		.10**	.04	.03	.16
SIA	Emotional Clarity		-.29**	.04	-.35	-.23
SIA	Emotional Repair		-.19**	.03	-.24	-.13
SIA	SWL		-.17**	.04	-.22	-.11
Emotional Clarity	SWL		.25**	.05	.17	.33
Emotional Repair	SWL		.33**	.04	.25	.40
Indirect effects						
SIA	SWL	Emotional Clarity	-.07**	.01	-.09	-.04
SIA	SWL	Emotional Repair	-.06**	.01	-.07	-.03
Total effects						
SIA	SWL		-.30**	.03	-.36	-.24

Note.  $\beta$ =Estimation of standardized parameters; SE=standard error; 95 % CI=95% confidence interval; Inf=Inferior limit of 95 % CI; Sup=Superior limit of 95% CI; \*\* $p$ <.01; \* $p$ <.05; SIA=social interaction anxiety; SWL=satisfaction with life.

## Discussion

The purpose of this research was to analyze emotional intelligence as a mediator between SIA and SWL. The main results illustrate the important role of emotional clarity and repair as mediating variables between SIA and SWL, given that they decrease the negative effect of SIA on SWL.

A possible explanation for this is that emotional clarity is the key to regulating emotions, as the ability to clearly identify one's emotions is the first step to successful emotional regulation and coping (Butler et al., 2006). Thus, young people who understand their emotions and recognize their own abilities to solve problems and overcome difficult situations through their own efforts will adopt a positive emotional coping style, mitigating the distress caused by SIA and improving their social performance (Li, 2020), and thus their SWL (Hodzic et al., 2016). In

this vein, Guil et al. (2019) highlight the importance of the interaction between the three dimensions of emotional intelligence concerning SIA. These authors state that students who are confident in their own abilities to cope with challenging situations, do not pay much attention to their emotions, and do trust their competencies to clearly perceive and repair their emotional states will cope more efficiently with SIA (Guil et al., 2019). In terms of the relationship of SIA with the dimensions of emotional intelligence, we consider that, because of its timely execution, this study provides the global university context with an important scientific contribution, understanding that the data for the present study were collected just two weeks after the return to in-person classes following the COVID-19 confinement, as the fear of contagion and stress in general due to the pandemic were still visible in society (Di Crosta et al., 2020; Rodríguez-Hidalgo et al., 2020; Torales et al., 2020).

However, according to our research, emotional attention did not have a significant direct effect on SWL, nor were there significant indirect effects between SIA and SWL. In this line, Hodzic et al. (2016) also did not obtain a significant relationship between emotional attention and SWL. Although the role of emotional attention compared to emotional clarity and repair is confusing according to García-Fernández et al. (2015), on the one hand, Blasco-Belled et al. (2020) have found that emotional attention negatively and significantly predicts SWL (Blasco-Belled et al., 2020), while others found a negative but not significant prediction (Hodzic et al., 2016; Ramos-Díaz et al., 2019). Emotional attention not predicting SWL could be due to the fact that this dimension does not have as much of a potential inference in people's behavior as emotional clarity and emotional repair do (Salovey et al., 1995). Thus, when students pay too much attention to their emotions without understanding them or having repair skills, they negatively affect their mood and psychological functioning (Butler et al., 2018; García-Fernández et al., 2015; Masters et al., 2019; Petrides et al., 2018), while also decreasing their SWL (Azpiazu et al., 2022; De la Barrera et al., 2023; Guerra-Bustamante et al., 2019;

Martínez-Marín & Martínez, 2019). On the contrary, the intelligent management of emotions helps students to prevent negative feelings and increases positive ones, contributing to the increase of SWL (Sánchez-Álvarez et al., 2016) while improving academic performance with appropriate learning strategies (García-Fernández et al., 2015). Because scientific literature in this context is scarce and given that the results obtained are in line with the international literature, we consider this study to be a scientific contribution to the Mexican university context.

It is also worth mentioning that SIA significantly, positively and directly predicted emotional attention in this research. Since past studies have negatively related SIA to emotional attention (Guil et al., 2019; Turk et al., 2005), contrary to the results obtained in this research, the relationship between SIA and emotional attention remains controversial (García-Fernández et al., 2015). However, the results obtained in the present study are in line with the findings of Boden & Berenbaum, (2012), who also described a positive relationship between SIA and emotional attention. These authors claim that when one does not pay attention to the information provided by emotions, or one has a high level of emotional attention, but with a deficient emotional clarity, the predisposition toward SIA increases. A potential explanation is that people with a high level of emotional attention tend to be hypervigilant about their own emotions and signs of anxiety, becoming less flexible to explain their states of anxiety and misjudging both their severity and visibility to others, and feeling more threatened by how others understand them (Edelmann & Baker, 2002; Roth et al., 2001; Wells & Papageorgiou, 2001).

Finally, we will describe a series of limitations and strengths of the present study, as well as future research perspectives. Limitations include: (i) the timing of data collection, two weeks after the confinement and mobility measures due to the COVID-19 pandemic had been lifted, as this might have caused widespread emotional and psychological instability in participants, even when filling the questionnaires; (ii) the variables were evaluated neither before nor during the pandemic, so we are not able to observe the evolution of these variables

after such an upsetting experience; (iii) the cross-sectional design of the study does not allow for establishing causal inferences; (iv) there was no sample randomization, so the results cannot be generalized; (v) a possible social desirability bias due to the use of self-reporting, since participants may have exaggerated their responses. On the other hand, noteworthy strengths of this research include: (i) the timing of data collection may be a strength in itself since scientific literature on this topic set just after the end of mobility restrictions is scarce; (ii) the sample size of Mexican undergraduate Physical Education students from the three campuses of the Autonomous University of Baja California (Ensenada, Tijuana and Mexicali), as well as the statistical power of the study. We consider it necessary for future studies to analyze the dimension of emotional attention by conducting a quadratic regression analysis since both excessive emotional attention and low levels of this dimension are related to SIA. We also suggest longitudinal studies a few years after the pandemic to analyze how the post-pandemic dimensions of emotional intelligence relate to occupational success.

## **Conclusions**

In conclusion, it can be asserted that emotional clarity and repair had a mediating effect between SIA and SWL, as they did decrease the negative effects of SIA on SWL. In addition, SIA had a direct and positive effect on emotional attention and a negative effect on emotional clarity and repair. Furthermore, emotional clarity and repair had a direct and positive effect on SWL, although emotional attention did not predict SWL. Therefore, we believe that university institutions should train and educate students in managing SIA by further developing their emotional intelligence. It would be interesting to provide university students with strategies to control and manage the understanding of their own emotions, and to manage negative emotions resulting from SIA. Finally, it is important to highlight the importance of young people not paying too much emotional attention, as an excess of it can increase SIA levels,

undermining SWL at the same time.

### **Practical Implications**

The results of this research underline the importance of emotional clarity and repair in decreasing SIA and increasing SWL in Mexican university students after the pandemic and are in line with other studies conducted before the pandemic. Therefore, educational institutions should organize workshops related to the development of emotional intelligence to help young people to understand the feelings and emotions that they experience, and to remediate negative emotions that might be stressful for them (Cabello-Sanz & Muñoz-Parreño, 2023; Correa-Barwick et al., 2022; Torres-Gázquez et al., 2023). In this line, Valenti et al., (2022) consider that appropriate programs should be designed to help people to see the bright side of negative experiences, which permits a reshaping of harmful emotional outcomes by focusing on some positive aspects. In addition, it is recommended that people suffering from SIA practice activities such as Mindfulness (Butler et al., 2018), aerobic exercise (Jazaieri et al., 2012), or activities in natural environments (Chen & Huo, 2022), as they help to decrease SIA and to increase the levels of SWL.

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# Conclusiones



## Conclusiones

En esta tesis doctoral se deben establecer tres conclusiones para dar respuesta a cada uno de los objetivos de investigación propuestos:

- Artículo 1:
  - Entre los estudiantes de la Facultad de Deportes de la Universidad Autónoma de Baja California, la perseverancia al esfuerzo mejora el compromiso académico conductual y emocional, disminuyendo la desafección conductual que pudieran generar experiencias académicas percibidas como negativas. El compromiso académico se incrementa cuando los estudiantes son resilientes, disminuyendo aún más la desafección conductual. Por el contrario, la consistencia al interés aumenta la desafección emocional y conductual y disminuye el compromiso conductual. Además, la consistencia al interés no afecta de manera significativa a la resiliencia. Con base a lo anterior, el profesorado debe de fomentar al alumnado universitario a esforzarse y comprometerse con sus estudios, mostrando una actitud proactiva cuando no obtengan los resultados académicos esperados, analizando en qué han fallado y que pueden hacer para mejorar en situaciones académicas futuras.
- Artículo 2:
  - Los participantes de este estudio mostraron que la autoeficacia académica es una variable mediadora entre la inteligencia emocional y las dimensiones del compromiso académico, ya que, mejora sustancialmente el compromiso conductual y emocional y disminuye, la desafección conductual y emocional. Asimismo, la claridad y

reparación emocional tienen un efecto directo y positivo sobre la autoeficacia académica; la reparación emocional sobre el compromiso conductual y emocional; y la atención emocional sobre el compromiso conductual. Todo ello sugiere que, tanto autoridades universitarias como el profesorado, deberían promover estrategias de aprendizaje que permitan a los estudiantes ser eficaces en su aprendizaje y a comprender los sentimientos que están experimentando mientras aprenden, reparando aquellas emociones negativas derivadas de frustraciones o logros no alcanzados, para hacer frente a situaciones académicas futuras.

- Artículo 3:
  - La claridad y la reparación emocional muestran un efecto mediador entre la ansiedad de interacción social y la satisfacción con la vida, pues disminuyen los efectos negativos de la ansiedad sobre la satisfacción con la vida. Además, la ansiedad de interacción social tiene un efecto directo y positivo sobre la atención emocional y negativo sobre la claridad y reparación emocional. También la claridad y reparación emocional tienen un efecto directo y positivo sobre la satisfacción con la vida, aunque la atención emocional no predice la satisfacción con la vida. De esta forma, consideramos que las instituciones universitarias que imparten programas educativos en áreas afines en la actividad física y deporte deberían formar y educar a los estudiantes en el manejo de la ansiedad de interacción social a través de desarrollar la inteligencia emocional entre sus estudiantes. Podría cobrar relevancia que los procesos educativos que dotaran a

los universitarios de estrategias de control y manejo de la comprensión de las propias emociones, así como de las emociones negativas producto de la ansiedad de interacción social. Finalmente, destacar la importancia de que los jóvenes no presten demasiada atención emocional ante sus experiencias, ya que un exceso de esta atención puede aumentar los niveles de la ansiedad y, con ello, la disminución de la satisfacción con la vida.





# Apéndice



# **Escalas utilizadas en la investigación**



## Escala de Personalidad Grit (EPG)

(Marente-Castillo, Zamarripa, & Castillo, 2019)

En una escala del 1 al 5 (1 = No se parece nada a mí; 2 = No se parece tanto a mí; 3 = Se parece algo a mí; 4 = Casi igual a mí; 5 = Igual a mí), indica tu grado de acuerdo con las siguientes afirmaciones:

---

1. Frecuentemente me establezco una meta, pero después de un tiempo elijo perseguir una diferente	1	2	3	4	5
2. Algunas veces las nuevas ideas y proyectos me distraen de otras anteriores	1	2	3	4	5
3. Me intereso en nuevos objetivos cada mes	1	2	3	4	5
4. Mis intereses cambian año con año	1	2	3	4	5
5. He estado obsesionado con cierta idea o proyecto en un corto tiempo, pero después pierdo el interés	1	2	3	4	5
6. Tengo dificultad para mantenerme enfocado sobre proyectos que toman poco más de algunos meses para completarse	1	2	3	4	5
7. He alcanzado objetivos que toman años de trabajo	1	2	3	4	5
8. He superado contratiempos para conquistar un reto importante	1	2	3	4	5
9. Yo acabo todo lo que comienzo	1	2	3	4	5
10. Los contratiempos no me desaniman	1	2	3	4	5
11. Trabajo arduamente	1	2	3	4	5
12. Soy diligente. Nunca me rindo	1	2	3	4	5

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## Escala de Resiliencia (RES)

(Córdoba Flores, 2019)

A continuación, se exponen una serie de afirmaciones que describen su comportamiento y acciones. Valore cada una de ellas en una escala del 1 al 5 (1 = No me describe en absoluto; 2 = Me describe poco; 3 = Ni poco, ni mucho; 4 = Me describe bastante; 5 = Me describe muy bien), indicando su grado de acuerdo con las afirmaciones:

---

1. Busco formas creativas para cambiar las situaciones difíciles	1	2	3	4	5
2. Independientemente de lo que me suceda, creo que puedo controlar mis reacciones.	1	2	3	4	5
3. Creo que puedo crecer positivamente haciendo frente a las situaciones difíciles.	1	2	3	4	5
4. Busco activamente formas de superar las pérdidas que tengo en la vida.	1	2	3	4	5

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## Escala de Compromiso Académico (CA)

(Rodríguez-Medellín, Zamarripa, Marentes-Castillo, Otero-Saborido, Baños, & Morquecho-Sánchez, 2020)

Indica qué tan ciertas son las siguientes afirmaciones referentes a las clases de Educación Física en una escala del 1 al 5 (1 = Falso; 5 = Cierto):

---

1. Pongo atención en la clase de educación física	1	2	3	4	5
2. Estudio para la clase de educación física	1	2	3	4	5
3. Trato de hacer lo más que pueda en la clase de educación física	1	2	3	4	5
4. Disfruto del tiempo que paso en la clase de educación física	1	2	3	4	5
5. Es emocionante cuando hago conexiones entre las ideas aprendidas en la clase de educación física	1	2	3	4	5
6. Es interesante el contenido que vemos en la clase de educación física	1	2	3	4	5
7. Es difícil asistir a la clase de educación física	1	2	3	4	5
8. Sólo hago lo suficiente para pasar en la clase de educación física	1	2	3	4	5
9. No hago mucho trabajo fuera de la clase de educación física	1	2	3	4	5
10. Son muy aburridas las clases del profesor de educación física	1	2	3	4	5
11. Me estresa la clase de educación física	1	2	3	4	5
12. Es una pérdida de tiempo estar en la clase de educación física	1	2	3	4	5

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## Escala de Inteligencia Emocional (IE)

(Valdivia, Rubio, & French 2019)

En una escala del 1 al 5 (1 = Totalmente en desacuerdo; 2= Bastante en desacuerdo; 3 = Un poco de acuerdo; 4 = Bastante de acuerdo; 5 = Totalmente de acuerdo), indica tu grado de acuerdo con las siguientes afirmaciones:

---

1. Presto mucha atención a los sentimientos	1	2	3	4	5
2. Normalmente me Preocupo mucho por lo que siento	1	2	3	4	5
3. Normalmente dedico tiempo a pensar en mis sentimientos	1	2	3	4	5
4. Pienso que merece la pena prestar atención a mis emociones y estado de ánimo	1	2	3	4	5
5. Dejo que mis sentimientos afecten mis pensamientos	1	2	3	4	5
6. Pienso en mi estado de ánimo constantemente	1	2	3	4	5
7. A menudo pienso en mis sentimientos	1	2	3	4	5
8. Presto mucha atención a cómo me siento	1	2	3	4	5
9. Tengo claro mis sentimientos	1	2	3	4	5
10. Frecuentemente puedo definir mis sentimientos	1	2	3	4	5
11. Casi siempre sé cómo me siento	1	2	3	4	5
12. Normalmente conozco mis sentimientos sobre las personas	1	2	3	4	5
13. A menudo me doy cuenta de mis sentimientos en diferentes situaciones	1	2	3	4	5
14. Siempre puedo decir cómo me siento	1	2	3	4	5
15. A veces puedo decir cuáles son mis emociones	1	2	3	4	5
16. Puedo llegar a comprender mis sentimientos	1	2	3	4	5
17. Aunque a veces me siento triste, suelo tener una visión optimista	1	2	3	4	5
18. Aunque me sienta mal procuro pensar en cosas agradables	1	2	3	4	5
19. Cuando estoy triste, pienso en todos los placeres de la vida	1	2	3	4	5
20. Intento tener pensamientos positivos aunque me sienta mal	1	2	3	4	5
21. Si doy demasiadas vueltas a las cosas, complicándolas, trato de calmarme	1	2	3	4	5
22. Me preocupo por tener un buen estado de ánimo	1	2	3	4	5
23. Tengo mucha energía cuando me siento feliz	1	2	3	4	5
24. Cuando estoy enfadado intento cambiar mi estado de ánimo	1	2	3	4	5

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## Escala de Autoeficacia Académica (AA)

(Córdoba, 2019)

A continuación, encontrará una serie de afirmaciones. Valore cada una de ellas en una escala de 1 a 4 (1 = Nunca; 2 = Algunas veces; 3 = Bastantes veces; 4 = Siempre), indicando su grado de acuerdo:

---

1. Considero que estoy capacitado para enfrentar con éxito cualquier tarea académica.	1	2	3	4
2. Pienso que tengo capacidad para comprender bien una materia	1	2	3	4
3. Pienso que tengo capacidad para comprender rápidamente una materia.	1	2	3	4
4. Me siento con confianza para abordar situaciones que exijan mi capacidad académica.	1	2	3	4
5. Puedo resolver con éxito los exámenes.	1	2	3	4
6. Me da igual que los profesores sean exigentes, pues confío en mi propia capacidad académica.	1	2	3	4
7. Me da igual que los profesores sean duros, pues confío en mi propia capacidad académica	1	2	3	4
8. Creo que soy una persona bastante capacitada en mi vida académica.	1	2	3	4
9. Creo que soy una persona bastante competente en mi vida académica.	1	2	3	4
10. Si me lo propongo, tengo la suficiente capacidad para obtener un buen rendimiento académico.	1	2	3	4
11. Pienso que puedo pasar los cursos con bastante facilidad, e incluso, sacar buenas notas.	1	2	3	4
12. Soy de esas personas que no necesitan estudiar para aprobar una asignatura o pasar un curso completo.				
13. Creo que estoy preparado y bastante capacitado para conseguir muchos éxitos académicos.	1	2	3	4

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## Escala de Satisfacción con la Vida (SV)

(Atienza, Pons, Balaguer & García-Merita, 2019)

En una escala del 1 al 5 (1 = Totalmente en desacuerdo; 5 = Totalmente de acuerdo), indica tu grado de acuerdo con las siguientes afirmaciones:

---

1. En la mayoría de los aspectos mi vida es como quiero que sea	1	2	3	4	5
2. Hasta ahora he conseguido de la vida las cosas que considero importantes	1	2	3	4	5
3. Estoy satisfecho con mi vida	1	2	3	4	5
4. Si pudiera vivir mi vida otra vez, la repetiría tal y como ha sido	1	2	3	4	5
5. Las circunstancias de mi vida son buenas	1	2	3	4	5

---

## Escala de Ansiedad de Interacción Social (AIS)

(Rubia, Cadena & Casas, 2013)

Para cada afirmación que encuentre a continuación, indique el grado en el que la frase representa lo que es cierto sobre usted. Valore en una escala del 1 al 5 (donde 1 = Muy en desacuerdo, 3 = Indiferente, y 5 = Muy de acuerdo):

---

1. Me pongo nervioso si tengo que hablar con alguna autoridad (maestro, jefe, etc.)	1	2	3	4	5
2. Se me hace difícil mirar a los ojos a los demás.	1	2	3	4	5
3. Me pongo tenso si tengo que hablar sobre mí o sobre mis sentimientos.	1	2	3	4	5
4. Se me hace difícil socializar con las personas con las que trabajo.	1	2	3	4	5
5. Tengo facilidad para hacer amigos de mi edad.	1	2	3	4	5
6. Me tenso si me encuentro algún conocido en la calle.	1	2	3	4	5
7. Cuando socializo me siento incómodo	1	2	3	4	5
8. Me siento tenso si estoy a solas con otra persona	1	2	3	4	5
9. Se me hace fácil conocer nuevas personas en fiestas, etc.	1	2	3	4	5
10. Se me hace difícil platicar con otras personas.	1	2	3	4	5
11. Se me hace fácil pensar en cosas sobre las cuales hablar.	1	2	3	4	5
12. Me preocupa expresarme por temor a parecer torpe	1	2	3	4	5
13. Se me hace difícil estar en desacuerdo con el punto de vista de alguien más	1	2	3	4	5
14. Tengo dificultades para hablar con una persona atractiva del sexo opuesto.	1	2	3	4	5
15. Me preocupo de no saber qué decir en situaciones sociales.	1	2	3	4	5
16. Me siento nervioso al socializar con personas que no conozco bien.	1	2	3	4	5
17. Siento que diré algo vergonzoso cuando hable.	1	2	3	4	5
18. Cuando socializo en un grupo me preocupa que me vayan a ignorar.	1	2	3	4	5
19. Estoy tenso cuando socializo en un grupo.	1	2	3	4	5
20. Estoy indeciso acerca de saludar a alguien que conozco solo superficialmente.	1	2	3	4	5

---



# **Informe del Comité de Bioética**



D. JOSÉ ANTONIO SÁNCHEZ PÉREZ, presidente de la Comisión de Bioética de la Universidad de Almería

**INFORMA QUE:**

Tras estudiar el informe presentado por el Comité de Bioética de Investigación Humana, en la reunión de la Comisión de Bioética de 24 de abril de 2023, y que fue discutido, esta Comisión evalúa positivamente y emite **Informe Favorable** para el siguiente estudio:

Título del estudio	Investigador/a principal
Relación de la inteligencia emocional y personalidad GRIT con la resiliencia, ansiedad, satisfacción con la vida, autoeficacia y compromiso académico	Antonio Granero Gallegos

Y a los efectos oportunos lo firmo en Almería, a fecha indicada en pie de firma



Fdo: José Antonio Sánchez Pérez  
Presidente de la Comisión de Bioética  
Universidad de Almería



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# **Artículos publicados**





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**Dear Author (s)**

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It's my pleasure to inform you that, after the peer review, your paper, **“Predictive effect of GRIT personality on academic engagement in Physical Education undergraduate students: the mediating role of resilience”** has been ACCEPTED to publish with *Revista de Psicología del Deporte* (‘Journal of Sport Psychology’), ISSN 1132239X (SSCI, Scopus Indexed, Scimago Q3). It will be published in Volume 34 issue 03 of 2024.

I believe that our collaboration will help to accelerate the global knowledge creation and sharing one step further. Please do not hesitate to contact me if you have any further questions.

Sincerely,



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# Mediation of academic self-efficacy between emotional intelligence and academic engagement in physical education undergraduate students

Raúl Baños<sup>1,2†</sup>, Juan José Calleja-Núñez<sup>1\*†</sup>, Roberto Espinoza-Gutiérrez<sup>1</sup> and Antonio Granero-Gallegos<sup>3,4</sup>

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The aim of this study was to analyze academic self-efficacy as a mediator between emotional intelligence and academic engagement. A non-experimental, cross-sectional, correlational-causal study was designed in which 1,164 Mexican students participated ( $M_{age}=21.21$ ;  $SD=3.26$ ) (30.0% female; 69.6% male; 0.4% other). The scales of emotional intelligence, academic self-efficacy and academic engagement were used, and a structural equation analysis with latent variables was conducted. The results obtained demonstrate that emotional clarity and repair have a positive and direct effect on academic self-efficacy. In addition, emotional repair predicts behavioral and emotional engagement. It was also found that academic self-efficacy is an excellent mediator between emotional clarity and repair, and the dimensions of academic engagement, as it substantially improves behavioral and emotional engagement while decreasing behavioral and emotional disaffection.

## KEYWORDS

engagement disaffection, emotional disaffection, emotional repair, emotional clarity, university

## 1. Introduction

The university stage is a challenging period for students (Özhan and Boyaci, 2018; Asikainen et al., 2020) and is considered a major turning point in the lives of individuals (Bulfone et al., 2020). It is an important process in which students must focus their efforts on their own academic development in order to shape their personal and professional future. Understood that this drives university students to envision a series of expectations of success at the academic and social levels (Vizoso et al., 2019), it is paramount to raise awareness of the physical, mental and organizational factors that might impact the students' success and reduce their potential negative effects (Özhan, 2021). But adding academic and family pressure on top of these expectations may lead to severe symptoms of psychological distress (Özhan and Boyaci, 2018), which can increase the likelihood of experiencing academic burnout and other outcomes such as school desertion (Boyaci and Özhan, 2018).

Preventing academic burnout and desertion is a problem that must be addressed in university teaching (Özhan, 2021), but this situation is even more severe in the Mexican context (Álvarez-Pérez and López-Aguilar, 2021). To counteract these negative effects on university students, several studies (e.g., Jeon et al., 2022) have highlighted the importance of devising learning strategies that foster academic engagement, as this is a significant component in preventing academic dropout. It is essential that students express engagement with their studies since it has been proven that academic engagement not only increases their probabilities of successfully completing their studies (Gao et al., 2020; Kim and Kim, 2021) but also improves their learning during corporate internships (Hong et al., 2021). In this line, several studies have underscored the importance of variables such as academic self-efficacy (Oriol-Granado et al., 2017) and emotional intelligence (Usán-Supervía et al., 2019) to improve academic engagement. However, studies that have analyzed the interaction of these three variables in the university context are scarce, and the ones that we identified have only surveyed students from Spain (Bonilla-Yucailla et al., 2022; Pérez-González et al., 2022). For these reasons, and because academic dropout rates in Mexico are truly worrying (Álvarez-Pérez and López-Aguilar, 2021; Vanegas et al., 2022), we consider it necessary to further delve into the interaction between these three variables in Mexican university students.

## 1.1. Academic engagement

Academic engagement has been assessed according to different theoretical standpoints (Alrashidi et al., 2016). On the one hand, one may refer to Fredricks' model (Fredricks et al., 2004), also known as the North American model, composed of three dimensions that measure academic engagement from a positive approach (i.e., behavioral, emotional and cognitive). Similarly, the model proposed by Schaufeli et al. (2002), known as the European model, measures academic engagement positively but using three other dimensions (i.e., absorption, vigor and dedication). However, Skinner et al. (2008) proposed that academic engagement should be measured from both a positive (i.e., engagement) and a negative (i.e., disaffection) perspective, each composed of two dimensions: cognitive and emotional. Thus, academic engagement would encompass four factors in total: behavioral engagement (i.e., persistence, attention and effort during the onset and execution of academic activities; Sinval et al., 2021), emotional engagement (i.e., the students' positive and negative emotional responses to the learning process and class activities; Manwaring et al., 2017), behavioral disaffection (i.e., passivity and low student participation; Skinner et al., 2008) and emotional disaffection (i.e., boredom, anxiety and frustration experienced in the classroom; Skinner et al., 2008). We consider this theory to be of interest for our research, as it analyzes engagement from two standpoints, i.e., the positive and the negative.

Different studies (Liu et al., 2018; Zhen et al., 2020; Kuo et al., 2021) have highlighted the importance of academic self-efficacy on academic engagement after having analyzed the North American model by Fredricks et al. (2004). Other works (Azila-Gbettor and Abiemo, 2020; Zhao et al., 2021; Cai et al., 2022), following the European model by Schaufeli et al. (2002), have found that academic self-efficacy is a predictor of academic engagement. As can be seen, the scientific literature has already attested that academic self-efficacy

predicts academic engagement, however, we are not aware of any studies that have delved into this relationship by having analyzed academic engagement from both positive and negative approaches. Moreover, research works that analyze the relationship between academic engagement and academic self-efficacy are virtually non-existent in the Mexican context. Therefore, and considering that academic self-efficacy positively predicts academic engagement, it is convenient to study how it relates to academic disaffection.

## 1.2. Academic self-efficacy

The theoretical construct of academic self-efficacy stems from the Social Cognitive Theory (Bandura, 1997) and is defined as the assumptions that students have about their own capabilities to organize and carry out the activities that are necessary to attain previously envisioned educational expectations (Gutiérrez and Tomás, 2019). Academic self-efficacy has a direct effect on satisfaction and the continuity of studies, thus helping prevent university students from dropping out (Lent et al., 2017). In this sense, students with high academic self-efficacy work harder, use more effective methods to deal with academic difficulties, are more willing to participate in learning activities, and have better performance compared to students with low academic self-efficacy (Fernandez-Rio et al., 2017; Gebauer et al., 2020). Hence, this variable (i.e., academic self-efficacy) relates to the students' capabilities to identify opportunities and drawbacks in the environment, without prejudice to their engagement and motivation (Oriol-Granado et al., 2017). To our knowledge, although several studies have related academic self-efficacy to emotional intelligence (Bidhendi et al., 2018; Saeed and Ahmad, 2020; Pérez-González et al., 2022), only one study has analyzed the relationship between academic self-efficacy and emotional intelligence using structural equation modeling (SEM; Bonilla-Yucailla et al., 2022). These authors found that emotional intelligence positively and significantly predicts academic self-efficacy, with academic engagement playing a mediating role. However, said study only measured academic engagement from a positive perspective, so we consider it would be helpful to analyze this relationship taking the two possible academic engagement perspectives into consideration, i.e., positive and negative. In addition, given that the scientific literature fosters the role of academic self-efficacy as a predictor of academic engagement (Casas and Blanco-Blanco, 2017; Oriol-Granado et al., 2017; She et al., 2021; Akanni, 2022; Azila-Gbettor et al., 2022), we consider it interesting to study the relationships between these three constructs while analyzing the mediating role of academic self-efficacy between emotional intelligence and academic engagement.

## 1.3. Emotional intelligence

A substantial body of literature has underscored the importance of emotional intelligence in the occurrence of positive emotional responses during the learning process (Thomas and Heath, 2022). In the university context, emotional intelligence has stood out as an adequate tool for coping with stressful situations, and for achieving a successful academic performance and emotional well-being (Parhiala et al., 2018; Guil et al., 2021). Salovey et al. (1995) suggest that emotional intelligence is composed of three dimensions and that it can

be defined as an individual's capacity to address (emotional attention), understand (emotional clarity), and alter (emotional repair) their own emotional states. Different studies have emphasized the important role of Salovey's theory in terms of engagement with learning, satisfaction, and academic performance (Baños et al., 2019; Fernández-Lasarte and Axpe Sáez, 2019; Supervía et al., 2019).

Emotional intelligence (i.e., emotional attention, emotional clarity and emotional repair) has been recently related to the academic engagement of secondary (junior high) school students (Supervía et al., 2019; Supervía and Bordás, 2019; Usán-Supervía et al., 2019) using the European model by Schaufeli (2013). Similarly, emotional intelligence (albeit unidimensionally measured) has also been related to the academic engagement of university students (Thomas and Allen, 2020; Thomas and Heath, 2022) according to Skinner's model Skinner et al. (2008), in which academic engagement is addressed from a positive and negative perspective. In fact, to our knowledge, these (Thomas and Allen, 2020; Thomas and Heath, 2022) are the only studies that have related emotional intelligence to Skinner's model of academic engagement; said studies, however, did not measure emotional intelligence from the dimensions of attention, clarity and repair, but rather unidimensionally. These works pointed out the importance of considering the positive effect of emotional intelligence on behavioral engagement and emotional engagement. Conversely, students with high emotional intelligence relate negatively to behavioral disaffection and emotional disaffection (Thomas and Heath, 2022). As can be seen, scientific works that relate the dimensions of emotional intelligence (emotional attention, emotional clarity and emotional repair) to the academic engagement model by Skinner et al. (2008) are non-existent. Therefore, we consider it interesting to thoroughly analyze how these two constructs relate within the Mexican context.

## 1.4. This study

Having analyzed the scientific literature and observed the importance of academic engagement in the education of university students, we consider the predictive analysis of emotional intelligence and academic self-efficacy on academic engagement to be relevant, and that studying it should lead to learning improvements that benefit Mexican university students. In summary: on the one hand, even though studies have related academic self-efficacy to either the North American model (Liu et al., 2018; Zhen et al., 2020; Kuo et al., 2021) or the European model of academic engagement (Azila-Gbetteo and Abiemo, 2020; Zhao et al., 2021; Cai et al., 2022), these have only analyzed academic engagement from a positive perspective, without delving into how academic self-efficacy relates to academic disaffection. On the other hand, while few studies are known to have analyzed emotional intelligence unidimensionally with academic engagement and disaffection (Thomas and Allen, 2020; Thomas and Heath, 2022), others have analyzed how the dimensions of emotional intelligence correlate according to the European model of academic engagement, i.e., without measuring academic disaffection (Supervía et al., 2019; Supervía and Bordás, 2019; Usán-Supervía et al., 2019). Furthermore, as far as we are aware, the analysis of the role of academic self-efficacy as a mediator between emotional intelligence and academic engagement and disaffection has not been addressed. Therefore, this study intends to be a relevant contribution to the

understanding of the relationship between the dimensions of emotional intelligence, academic self-efficacy and academic engagement, especially by incorporating the variables of academic disaffection, given that studies that have taken academic disaffection into consideration are scarce both in the Mexican university context and worldwide. Figure 1 shows the hypothesized model of this research to examine the aforementioned relationships. Thus, the purpose of this research is to analyze the mediation of academic self-efficacy between emotional intelligence and academic engagement. The *Strengthening the Reporting of Observational Studies in Epidemiology* (STROBE) initiative (Von Elm et al., 2008) was used for the description of the study.

## 2. Materials and methods

### 2.1. Design and participants

The design of this research was descriptive, observational, cross-sectional and non-randomized. Participants study at either of the three campuses of the Faculty of Sport of the Autonomous University of Baja California, Mexico (i.e., Campus Tijuana, Campus Mexicali and Campus Ensenada). Inclusion criteria for participation in the study were the following: (i) to be enrolled in the Bachelor's degree in Physical Activity and Sport at either of the three aforementioned campuses and attend classes regularly; (ii) to give their informed consent for data collection; (iii) to duly fill out the data collection form with the different scales. An *a priori* analysis of the necessary sampling size was conducted to provide an answer to the proposed objective, considering a structural equation model (SEM) composed of six latent variables and 49 observable variables. The analysis was conducted using the *Free Statistics Calculator* v.4.0 software (Soper, 2022) and a minimum of 1,164 participants was calculated to detect effect sizes ( $f^2$ ) = 0.166, with a statistical power of 0.99% and a significance level of  $\alpha$  = 0.05. The total number of participants was 1,164 university students of the Bachelor's degree in Physical Education (349 women, 810 men and 5 other) from the Tijuana ( $n$  = 577), Mexicali ( $n$  = 357) and Ensenada ( $n$  = 230) University Campuses. Students were aged between 17 and 50 years old ( $M$  = 21.21;  $SD$  = 3.26). It must be mentioned that 14 individuals did not give their consent to participate in the research and that 29 questionnaires were discarded because they were filled incorrectly. Lastly, there were no lost values in the responses included in the study.

### 2.2. Instruments

#### 2.2.1. Traid meta-mood scale-24

This study used the Mexican version by Valdivia Vázquez et al. (2015) adapted from the original by Salovey et al. (1995). The scale is composed of 28 items distributed across three dimensions: *emotional attention* (8 items; e.g., I pay close attention to my feelings. "Presto mucha atención a mis sentimientos"), *emotional clarity* (8 items; e.g., I frequently can define my feelings. "Frecuentemente puedo definir mis sentimientos") and *emotional repair* (8 items; e.g., I try to have positive thoughts, even when I feel bad. "Intento tener pensamientos positivos, aunque me sienta mal"). Answers were collected using a Likert scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). For this study, the

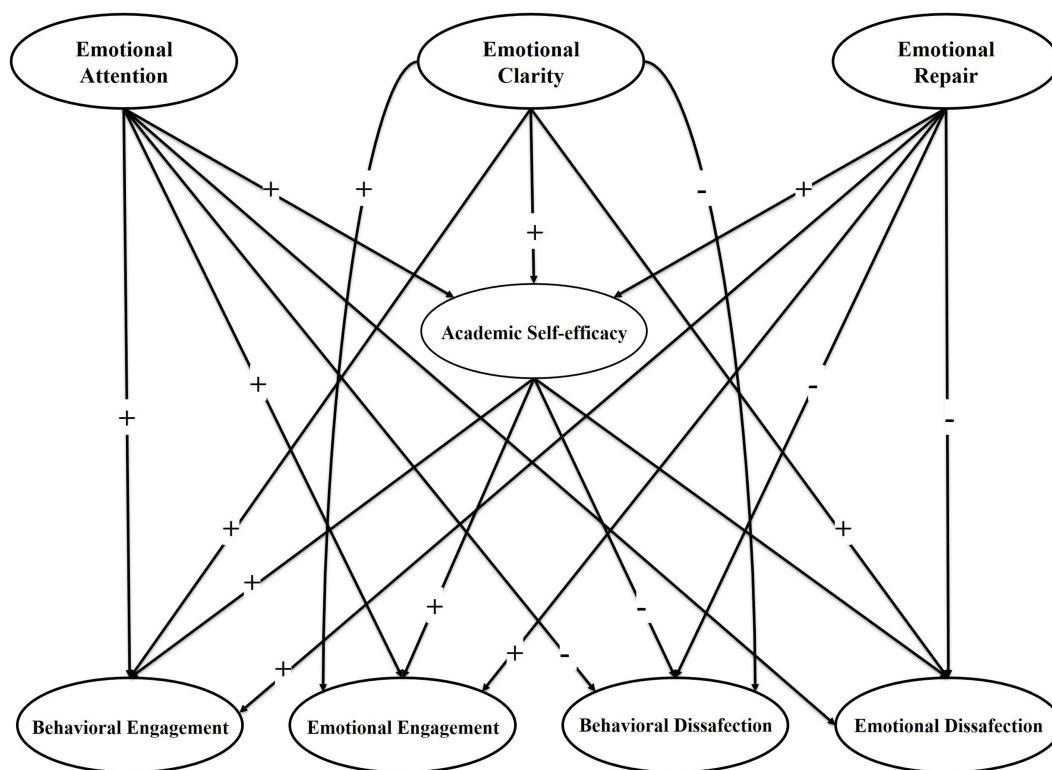


FIGURE 1  
Modelo hipotetizado con las relaciones esperadas.

CFA goodness-of-fit indices were acceptable:  $\chi^2/gL=4.97$ ,  $p<0.001$ ; CFI=0.98; TLI=0.97; RMSEA=0.058 (90%CI=0.048, 0.069;  $p_{close}=0.089$ ), SRMR=0.037. Reached reliability was: emotional attention,  $\omega=0.86$ ; emotional clarity,  $\omega=0.86$ ; emotional repair,  $\omega=0.87$ .

### 2.2.2. Academic self-efficacy

This study used the scale adapted to the Mexican context by [Córdova \(2019\)](#) based on the original by [Palenzuela \(1983\)](#). This instrument is composed of 13 items that measure academic self-efficacy unidimensionally (e.g., I believe I am capable of understanding a subject well. “*Pienso que tengo capacidad para comprender bien una materia*”). Answers were collected using a Likert scale ranging from 1 (*never*) to 4 (*always*). In this study, the CFA goodness-of-fit indices were acceptable:  $\chi^2/gL=3.37$ ,  $p<0.001$ ; CFI=0.99; TLI=0.99; RMSEA=0.045 (90%CI=0.028, 0.063;  $p_{close}=0.643$ ), SRMR=0.016. Reached reliability was  $\omega=0.88$ .

### 2.2.3. Academic engagement

This study used the Mexican adaptation by [Rodríguez-Medellín et al. \(2020\)](#) from the original scale by [Chi et al. \(2010\)](#). The scale contains 12 items grouped into four subscales of three items each: *emotional engagement* (e.g., Class contents are interesting. “*Es interesante el contenido que vemos en las clases*”), *behavioral engagement* (e.g., I try to do the most I can in classes. “*Trato de hacer lo más que puedo en las clases*”), *emotional disaffection* (e.g., I get stressed during classes. “*Me estreso en las clases*”) and *behavioral disaffection* (e.g., I do not do a lot of work during classes. “*No hago mucho trabajo en las clases*”). Answers were collected using a Likert scale ranging from 1 (*false*) to 5 (*true*). The

CFA goodness-of-fit indices for this study were deemed acceptable:  $\chi^2/gL=4.48$ ,  $p<0.001$ ; CFI=0.96; TLI=0.94; RMSEA=0.055 (90%CI=0.047, 0.063;  $p_{close}=0.167$ ), SRMR=0.036. Reached reliability was: behavioral engagement,  $\omega=0.69$ ; emotional engagement,  $\omega=0.69$ ; behavioral disaffection,  $\omega=0.57$ ; emotional disaffection,  $\omega=0.71$ .

## 2.3. Procedure

The general director of the Faculty of Sport and the deputy directors of the three campuses (Tijuana, Mexicali and Ensenada) of the Autonomous University of Baja California were contacted to inform them of the purpose of the research and to request permission to apply the questionnaires. Upon granted authorization, an online questionnaire was administered in person in the institution’s computer room in March 2022. Participants were taught how to use the scales and informed about the importance of the research, that their answers were anonymous and would therefore not affect their scores, and that they could abandon the study at any time if they so desired. All participants included in the study gave their prior consent for their responses to be used. The research protocol was approved by the Bioethics Committee of the University of Almeria (Ref:UALBIO2020/019).

## 2.4. Statistical analysis

Descriptive statistics, the correlations among variables and McDonald’s omega ( $\omega$ ) coefficient ([McDonald, 1970](#)) were initially



calculated using SPSS v.28 for each dimension, assuming that values  $>0.70$  indicate adequate reliability (Viladrich et al., 2017). Main analyses were performed using AMOS v.26, and a two-step SEM with latent variables following Kline (2016) was calculated to evaluate the predictive relationships of the dimensions of emotional intelligence on the dimensions of academic engagement, analyzing the mediating role of academic self-efficacy. In the first step of the SEM, known as the measurement model, the robustness of the bidirectional relationships between the model variables was assessed. In the second step, the predictive effects between the variables were examined, with the SEM effects being controlled according to the gender and campus of origin of the students. Due to the violation of the multivariate normality assumption (Mardia's coefficient = 138.61;  $p < 0.001$ ), the analysis was conducted using the maximum likelihood estimation method and the 5,000-iteration bootstrapping procedure (Kline, 2016). The SEM were assessed with the following goodness-of-fit indices: values of the chi-square/degrees of freedom ratio ( $\chi^2/gL$ ), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA) with a confidence interval of 90% (CI), and Standardized Root Mean Square (SRMR). For the  $\chi^2/gL$  ratio, values  $<2.0$  or  $<5.0$  are, respectively, considered excellent (Tabachnick and Fidell, 2019) or acceptable (Hu and Bentler, 1999); for the CFI and the TLI, values  $>0.95$  are deemed excellent, whereas the range between 0.90 and 0.95 is considered acceptable; for RMSEA and SRMR, values  $<0.06$  are considered excellent (Hu and Bentler, 1999; Marsh et al., 2004). The internal consistency of each instrument was assessed using McDonald's  $\omega$ , considering that values  $>0.70$  are deemed acceptable. In this study, three factors of academic engagement (i.e., behavioral engagement, emotional engagement, and behavioral disaffection) showed reliability values  $<0.70$ , however, according to Taylor et al. (2008), these can be considered marginally acceptable due to the small number of items (three) in each dimension.

### 3. Results

#### 3.1. Resource identification initiative

Descriptive statistics and correlations between the different variables are shown in Table 1.

#### 3.2. Main analysis

The SEM showed acceptable goodness-of-fit indices during step 1:  $\chi^2/gL = 2.71$ ,  $p < 0.001$ ; CFI = 0.96; TLI = 0.95; RMSEA = 0.038 (90%CI = 0.035;0.041;  $p_{close} = 0.999$ ), SRMR = 0.039. During step 2, the SEM showed a similar and acceptable fit:  $\chi^2/gL = 2.71$ ,  $p < 0.001$ ; CFI = 0.96; TLI = 0.95; RMSEA = 0.038 (90%CI = 0.035;0.041;  $p_{close} = 0.999$ ), SRMR = 0.039. The model was controlled by the sex and campus of origin variables and reached an explained variance of 37% for behavioral engagement, 23% for emotional engagement, 12% for behavioral disaffection, 8% for emotional disaffection and 18% for academic self-efficacy (Figure 2). The relationships among the dimensions of emotional intelligence (i.e., emotional attention, emotional clarity and emotional repair), academic self-efficacy and the four dimensions of academic engagement (i.e., behavioral engagement,

emotional engagement, behavioral disaffection and emotional disaffection) can be attested in Figure 2 and Table 2.

Figure 2 outlines the SEM and demonstrates that emotional clarity has a direct, positive, and significant relationship with academic self-efficacy. On the other hand, emotional repair correlates directly, positively, and significantly with emotional engagement and behavioral engagement, and negatively with emotional disaffection. Emotional attention shows a direct, positive and significant relationship only with behavioral engagement. Likewise, academic self-efficacy has a positive and significant direct effect on behavioral engagement and emotional engagement, and a negative and significant effect on behavioral disaffection and emotional disaffection. The mediating role of academic self-efficacy must be highlighted, as it indirectly, significantly and positively relates emotional clarity with behavioral engagement and emotional engagement, and significantly and negatively relates emotional clarity with behavioral disaffection and emotional disaffection. In addition, academic self-efficacy acts as a positive and significant mediating variable between emotional repair and behavioral engagement and between emotional repair and emotional engagement, and as a negative mediator between emotional repair and behavioral disaffection and between emotional repair and emotional disaffection. Lastly, the CI (95%) of  $R^2$  can be attested in Figure 2, thereby confirming that these can be considered ES measurements (Dominguez-Lara, 2017).

### 4. Discussion

The aim of this research was to analyze the role of academic self-efficacy as a mediator between emotional intelligence and academic engagement. The main results demonstrate the important role of academic self-efficacy since, on the one hand, emotional clarity is only related to the dimensions of academic engagement and disaffection through academic self-efficacy. On the other hand, it significantly increases the total effects of emotional repair on behavioral engagement, emotional engagement and emotional disaffection.

We are not aware of any research that has related the dimensions of emotional intelligence (i.e., emotional attention, emotional clarity and emotional repair) to academic engagement and disaffection (i.e., behavioral engagement, emotional engagement, behavioral disaffection, and emotional disaffection). Our work shows that emotional repair directly and positively predicts behavioral engagement, but especially emotional engagement. In contrast, emotional repair directly and negatively predicted emotional disaffection. These results follow the path of other studies carried out with university students where emotional intelligence (measured unidimensionally) predicts behavioral and emotional engagement positively, and behavioral and emotional disaffection negatively (Thomas and Allen, 2020; Thomas and Heath, 2022). Other studies conducted with middle school students (Supervía et al., 2019; Supervía and Bordás, 2019; Usán-Supervía et al., 2019) also obtained positive relationships for all dimensions of emotional intelligence (i.e., emotional attention, emotional clarity and emotional repair) according to the European model of academic engagement; however, these did not analyze academic disaffection. This positive relationship between emotional intelligence and academic engagement might stem from the fact that students with higher emotional intelligence are more likely to experience achievement-inducing emotions such as

TABLE 1 Descriptive statistics and correlations among variables.

Variable	Range	M	SD	Q1	Q2	2	3	4	5	6	7	8
1. Emotional attention	1–5	3.46	1.10	−0.35	−0.41	0.21**	0.08**	0.04	0.13**	0.07*	−0.00	0.01
2. Emotional clarity	1–5	3.43	1.05	−0.30	−0.12	-	0.33**	0.31**	0.22**	0.18**	−0.09**	−0.13**
3. Emotional repair	1–5	3.76	1.03	−0.64	1.55		-	0.27**	0.23**	0.27**	−0.06*	−0.18**
4. Academic self-efficacy	1–4	3.06	0.59	−0.29	−0.41			-	0.43**	0.38**	−0.20**	−0.22**
5. Behavioral engagement	1–5	3.90	0.67	−0.35	−0.12				-	0.49**	−0.40**	−0.34**
6. Emotional engagement	1–5	4.24	0.67	−1.05	1.55					-	−0.19**	−0.47**
7. Behavioral disaffection	1–5	2.41	0.89	0.37	−0.30						-	0.41**
8. Emotional disaffection	1–5	1.90	0.78	1.05	1.45							-

\*\*Correlation is significant at level 0.01; \*Correlation is significant at level 0.05; M = Mean; SD=Standard Deviation; Q1 = Skewness; Q2 = Kurtosis; ω = McDonald's Omega.

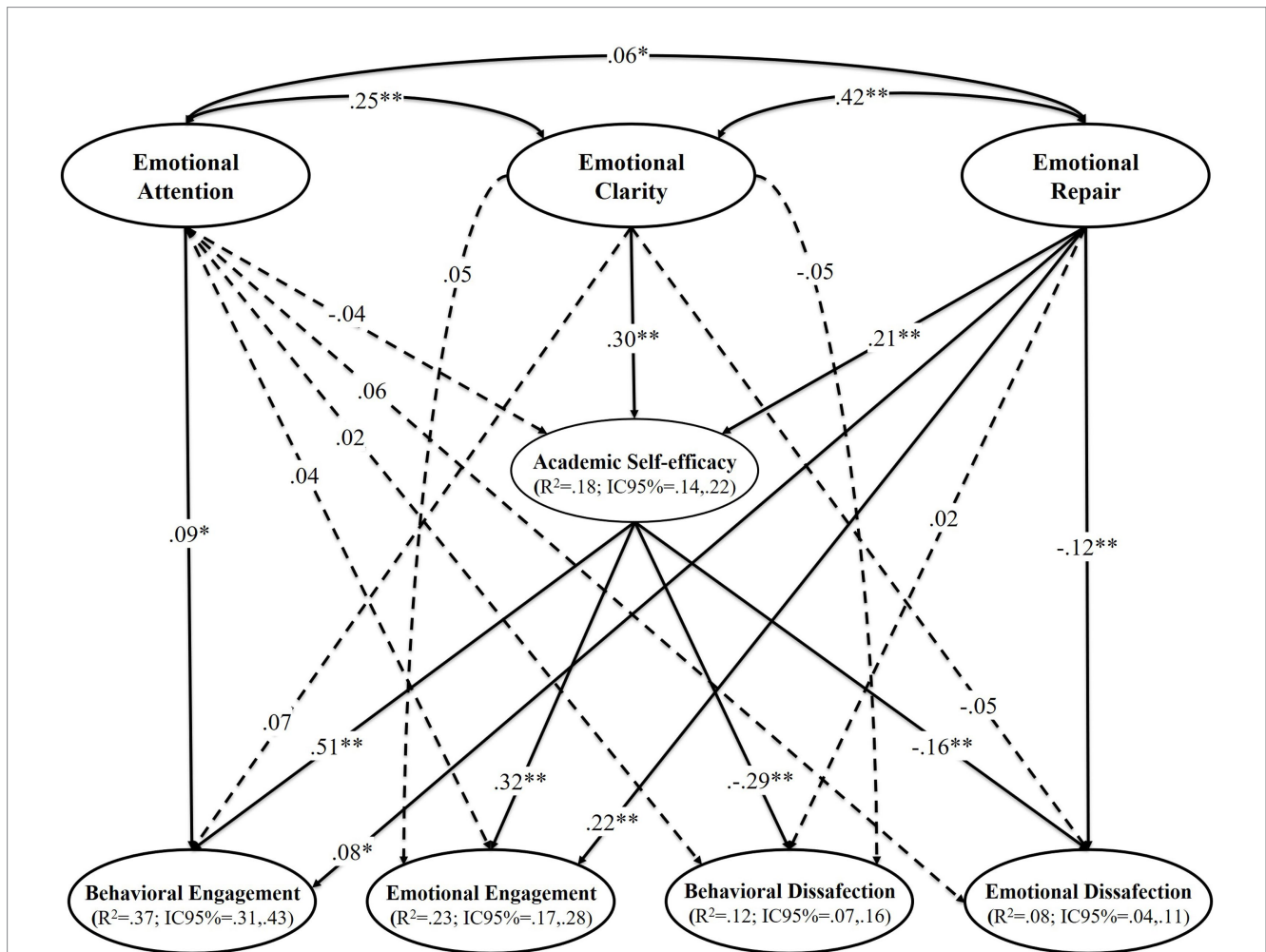


FIGURE 2 Predictive relationships of the emotional intelligence on academic engagement through the mediating role of the academic self-efficacy. \*\*p<0.01; \*p<0.05. R<sup>2</sup>=Explained variance; CI=Confidence interval. The dashed lines represent non-significant relationships.

TABLE 2 Estimación de parámetros estandarizados significativos y estadísticas del modelo de mediación.

	Independent variable	Dependent variable	Mediator	$\beta$	SE	95%CI	
						Inf	Sup
<i>Direct effects</i>							
	Emotional attention	Behavioral engagement		0.09*	0.04	0.03	0.16
	Emotional repair	Behavioral engagement		0.08*	0.04	0.02	0.15
	Emotional repair	Emotional engagement		0.22**	0.05	0.15	0.30
	Emotional repair	Emotional disaffection		-0.12**	0.04	-0.18	-0.04
	Emotional clarity	Academic self-efficacy		0.30**	0.04	0.23	0.37
	Emotional repair	Academic self-efficacy		0.21**	0.05	0.14	0.27
	Academic self-efficacy	Behavioral engagement		0.51**	0.04	0.45	0.57
	Academic self-efficacy	Emotional engagement		0.32**	0.05	0.25	0.40
	Academic self-efficacy	Behavioral disaffection		-0.29**	0.05	-0.36	-0.20
	Academic self-efficacy	Emotional disaffection		-0.16**	0.05	-0.23	-0.09
<i>Indirect effects</i>							
	Emotional clarity	Behavioral engagement	Academic self-efficacy	0.15**	0.02	0.12	0.19
	Emotional clarity	Emotional engagement	Academic self-efficacy	0.10**	0.02	0.07	0.13
	Emotional clarity	Behavioral disaffection	Academic self-efficacy	-0.09**	0.02	-0.12	-0.06
	Emotional clarity	Emotional disaffection	Academic self-efficacy	-0.05**	0.02	-0.08	-0.03
	Emotional repair	Behavioral engagement	Academic self-efficacy	0.11**	0.02	0.07	0.15
	Emotional repair	Emotional engagement	Academic self-efficacy	0.07**	0.02	0.04	0.01
	Emotional repair	Behavioral disaffection	Academic self-efficacy	-0.06**	0.02	-0.09	-0.04
	Emotional repair	Emotional disaffection	Academic self-efficacy	-0.03**	0.01	-0.06	-0.02
<i>Total effects</i>							
	Emotional clarity	Behavioral engagement		0.22**	0.05	0.15	0.32
	Emotional clarity	Emotional engagement		0.15**	0.05	0.08	0.23
	Emotional clarity	Behavioral disaffection		-0.14*	0.05	-0.22	-0.05
	Emotional clarity	Emotional disaffection		-0.10*	0.05	-0.18	-0.03
	Emotional repair	Behavioral engagement		0.19**	0.05	0.11	0.26
	Emotional repair	Emotional engagement		0.29**	0.04	0.22	0.36
	Emotional repair	Emotional disaffection		-0.15**	0.04	-0.22	-0.08

$\beta$ , Estimation of standardized parameters; SE, standard error; 95% CI, 95% confidence interval; Inf, Inferior limit of 95% CI; Sup, Superior limit of 95% CI; \*\* $p < 0.01$ ; \* $p < 0.05$ .

interest, enjoyment and enthusiasm, while being less likely to undergo negative emotions, e.g., boredom, anxiety and frustration (Pekrun et al., 2007). We consider this to be a contribution of our study to the scientific literature, given that the dimensions of emotional intelligence had not been previously analyzed according to the academic engagement and disengagement model.

In this study, emotional attention directly and positively predicted behavioral engagement only, and did not show any significant relationship with the indirect and total effects of the model. Other studies conducted with middle school students obtained similar results, in which emotional attention had a weak relationship with academic engagement (Supervía et al., 2019; Supervía and Bordás, 2019; Usán-Supervía et al., 2019). This weakness in the prediction of emotional attention could be due to the fact that, unlike emotional clarity and emotional repair (Salovey et al., 1995), this dimension does not have great inference in people's behavior. However, we believe that the relationship between emotional intelligence according to Salovey

et al. (1995) and academic engagement and disaffection should be further studied.

It is worth underscoring the important role of academic self-efficacy in the SEM proposed in this study, not only because it considerably increases the total effects of emotional repair, but also because, more importantly, emotional clarity only relates to academic engagement and disaffection through academic self-efficacy as a mediating variable. We are not aware of earlier studies that have analyzed the relationships among the models of the variables featured in this research. However, works using other theoretical constructs of emotional intelligence and academic engagement did find a positive correlation between emotional intelligence, academic self-efficacy and academic engagement (Bonilla-Yucailla et al., 2022; Pérez-González et al., 2022). Other studies also found that high emotional intelligence related to high academic self-efficacy (Bidhendi et al., 2018; Saeed and Ahmad, 2020; Pérez-González et al., 2022), and that academic self-efficacy did predict academic engagement (Casas and Blanco-Blanco,

2017; Oriol-Granado et al., 2017; She et al., 2021; Akanni, 2022; Azila-Gbetteo et al., 2022). A potential explanation for this is that when students are more capable of understanding their emotions and dissipating feelings of frustration in their academic life by having different strategies at hand that help them approach class tasks efficiently, this can in turn help them increase their engagement with learning (Pekrun et al., 2007). Our study makes a relevant contribution to the scientific literature by highlighting the important roles of academic self-efficacy, clarity and emotional repair in increasing academic engagement. On the contrary, if emotional intelligence and academic self-efficacy are not developed in university students, they will see their academic disaffection increase, which relates to lower performance (Kim and Kim, 2021) and even academic dropout (Gao et al., 2020). However, since the scientific literature in this area is scarce, we consider that this relationship should be taken with caution, and we suggest conducting further research to analyze the relationships among the variables presented in this study.

Lastly, we will disclose a series of limitations and strengths observed in our study, as well as future research outlooks. The main limitations include: (i) the cross-sectional design of the study, which did not allow us to establish causal inferences; (ii) the potential social desirability bias due to the use of self-reporting, since participants may have exaggerated when filling out their form; (iii) there was no sample randomization. On the other hand, the strengths of this research should be highlighted: (i) the sample size of Mexican university students from the three campuses (Tijuana, Mexicali and Ensenada) enrolled in the Bachelor's Degree in Physical Activity and Sport Sciences at the Autonomous University of Baja California; (ii) the subject matter is of great value and current relevance in educational research, as studies that relate emotional intelligence, academic self-efficacy and academic engagement are still scarce. We consider it necessary for researchers to delve further into the relationships between these variables using different research designs (e.g., experimental or longitudinal) to provide more evidence to help explain how the analyzed variables interrelate with one another. It would also be convenient for future researchers to work with students from other degree programs or to conduct cross-cultural research with other states in Mexico, or with other countries, analyzing potential differences. To conclude, due to the major role that teachers play in the academic engagement of university students (Moreno-Murcia and Corbí, 2021), especially considering the frustration of basic psychological needs and burnout endured by Mexican teachers (Delgado-Herrada et al., 2021; Luis Rojas-Solis et al., 2021), we consider it interesting for future researchers to analyze how teachers can influence the emotional intelligence, academic self-efficacy and academic engagement of university students.

## 5. Conclusion

In conclusion, it can be attested that emotional clarity and repair have a direct and positive effect on academic self-efficacy, as do emotional repair on behavioral and emotional engagement, and emotional attention on behavioral engagement. However, academic self-efficacy is an excellent mediator between emotional intelligence and the dimensions of academic engagement, as it substantially improves

behavioral and emotional engagement while decreasing behavioral and emotional disaffection. Finally, teachers should present students with different learning strategies that teach them how to be efficient in their learning and to understand the feelings they experience, remediating potential negative emotions derived from frustrations or unattained achievements in order to face future academic situations.

## 5.1. Practical implications

The results of this research underscore the importance of emotional clarity, emotional repair and especially academic self-efficacy in the development of academic engagement in Mexican students. Therefore, those responsible for education matters should devise and establish psychoeducation groups that strengthen the academic self-efficacy of university students (Özhan, 2021). Accordingly, teachers should use different learning strategies to provide students with numerous learning tools and techniques, such as the ones proposed by different researchers (Baños et al., 2021, 2022; Gómez López et al., 2022; González-Fernández et al., 2022; Martín-Moya et al., 2022; Pérez-Suasnavas and Cela, 2022; Sánchez-Cabrero and Pericacho-Gómez, 2022;). In this way, students will be able to try and experience different educational resources, analyzing which of them will be more effective in their learning. To this end, the psycho-pedagogical areas can organize workshops for teachers to support the teaching and learning processes by creating positive classroom environments, acknowledging the motivations of each student and fostering academic engagement in them, understanding that, if they learn how to be efficient, they will obtain good results (Oriol-Granado et al., 2017; Pan, 2022). In other words, when university students develop academic self-efficacy, they will not only see their academic engagement improve (Álvarez-Pérez et al., 2021), but also feel efficient during their internships and in their future jobs (Martínez-Martínez and Ventura, 2020; Hong et al., 2021).

As a final consideration, students should be first taught how to be efficient not at the university stage, but in earlier years. Significant time must be allocated to inform middle and high school students about career guidance and job opportunities, and to teach them how to be efficient. However, students perceive that some schools do not prepare them adequately for higher education or do not provide them with the skills and information needed to thrive in higher education (Thomas and Maree, 2022).

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

The studies involving human participants were reviewed and approved by the University of Almería (Ref: UALBIO2023/001). The patients/participants provided their written informed consent to participate in this study.

## Author contributions

JJC-N, RB, and AG-G conceived the hypothesis of this study. JJC-N and RE-G participated in data collection. RB and AG-G analyzed the data. RB, JJC-N, AG-G, and RE-G wrote the manuscript with the most significant input from RB. All authors contributed to the data interpretation of statistical analysis 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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# Mediating effect of social interaction anxiety between emotional intelligence and life satisfaction in physical education students: post-COVID-19 study

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The aim of this research is to analyze the effect of social interaction anxiety on satisfaction with life mediated by emotional intelligence. The research design was descriptive, cross-sectional, and non-randomized. In total, 1,164 Mexican physical education students participated ( $M_{age} = 21.21$ ;  $SD = 3.26$ ; 30.0% female; 69.6% male; 0.4% other). The scales used were the Social Interaction Anxiety Scale, Trait Meta-Mood Scale and Satisfaction with Life and a structural equation analysis with latent variables was conducted. The results highlight that it can be asserted that emotional clarity and repair had a mediating effect between social interaction anxiety and satisfaction with life, as they did decrease the negative effects of social interaction anxiety on satisfaction with life. In addition, social interaction anxiety had a direct and positive effect on emotional attention and a negative effect on emotional clarity and repair.

## KEYWORDS

social anxiety, emotional repair, emotional clarity, emotional attention, university

## 1. Introduction

The restrictive measures in response to the COVID-19 pandemic triggered serious consequences on the general health of the world's population (Faraci et al., 2022). The spread of the pandemic and the ensuing restrictive policies involving confinement, social distancing and mobility had a major impact on the global economy and the daily lives of people around the world (Di Crosta et al., 2020; Xiong et al., 2020; Gollwitzer et al., 2021; Kuo et al., 2021; Racine et al., 2022). These strategies came with severe negative psychological effects (Özdin and Bayrak Özdin, 2020; Pietrabissa and Simpson, 2020; Obschonka et al., 2021), including anxiety, depression, fear of illness, fear of death, fear of social interaction, post-traumatic stress and insomnia (Di Crosta et al., 2020; Rodríguez-Hidalgo et al., 2020; Torales et al., 2020; Sturgill et al., 2021). Said restrictive measures, meant to decrease community transmission (Weeden and Cornwell, 2020), even led to universities shutting down worldwide (Baños et al., 2022).

As a consequence of the COVID-19 pandemic, university education had to undergo a rapid transition from in-person classes to online learning systems (Baños et al., 2021). This increased the daily frequency of technology overuse among university students, especially smartphones

(Bhatnagar et al., 2021). This in turn amplified the irrational fear and stress experienced by middle school (Nguyen et al., 2022) and university students (Zwilling, 2022) of being away from a device that facilitates both general communication and attending academic activities, especially in students who struggle to regulate their emotions (Ercengiz et al., 2020; Brown and Medcalf-Bell, 2022). Thus, COVID-19 not only comes with a dreadful pathology, but it is also the source of numerous secondary problems, such as becoming addicted to the use of the Internet, social networks and any form of media associated with recent technologies (Masrek et al., 2022). In fact, the disruptive use of smartphones surged from the onset of the first wave of COVID-19 (Zwilling, 2022), thereby increasing the incidence of pathologies such as stress and anxiety (Nguyen et al., 2022), which even doubled in some countries during the first confinement period (Amerio et al., 2021; Medda et al., 2022). Therefore, as the amount of time spent on screens (e.g., smartphones, computers, tablets, etc.) increases, physical interaction among people diminishes, which has an impact on their social interaction skills (Masrek et al., 2022). For all these reasons, it would be interesting to determine if the levels of social interaction anxiety (SIA) among students can affect their satisfaction with life once the confinement and social distancing measures are lifted and on-site classes return in a post-pandemic context. Despite the significance that the students' emotional regulation can have in this situation, few studies have analyzed the effect of SIA on satisfaction with life taking into account the emotional intelligence of the students once they have returned to in-person classes at universities following the end of confinement.

## 1.1. Social interaction anxiety

SIA refers to intense, individual emotional reactions and avoidance behaviors, such as fear, anxiety and distress regarding one or multiple social interactions (Li, 2020). SIA is a widespread condition that can sometimes become chronic, causing severe impact on a person's academic, occupational and social functioning, as well as their psychological well-being on a general level (Wittchen et al., 2000; Kessler, 2003; O'Toole et al., 2013). The fear of being judged or negatively criticized is the core motive that, together with the fear of contracting COVID-19, prompted people to avoid social interactions, which in turn affected the individuals' daily functioning (Erlíksson et al., 2020). Not addressing this pathology immediately and otherwise allowing it to develop in young people may lead to detrimental effects on their mental health and undermine their academic work and their lives in general (Chartrand et al., 2011). As previously mentioned, social interaction was rare or even non-existent during the pandemic, which could easily trigger SIA and unhealthy emotions, especially in young students who continued their education at home (Hahn, 2020). As age increases, so do the academic load and pressure put on young people, which can lead to an increase in interpersonal communication problems; therefore, the social environment can become overwhelming, leading to psychological conditions common in contemporary youth (Li, 2020). This can be particularly detrimental to students about to graduate, as their interpersonal environment has grown increasingly complex and they may become anxious more easily when facing interpersonal problems (Kwon et al., 2018).

People with high levels of SIA exhibit low self-esteem, depressive symptoms and increased dissatisfaction with life (Makadi and

Koszycki, 2020). SIA has also been related to obsessive-compulsive disorders, depression and generalized anxiety disorder (Erlíksson et al., 2020). A major characteristic of people with SIA is a lack of emotional regulation (Kashdan and Steger, 2006; Kashdan and Breen, 2008; Werner et al., 2011). Therefore, acknowledging or understanding emotions may play a significant role in the adaptive regulation of emotions during social interactions that cause the person to become anxious (O'Toole et al., 2013).

## 1.2. Emotional intelligence

In the university context, emotional intelligence has been highlighted as an adequate tool for coping with stressful situations and achieving successful academic performance and emotional well-being (Parhiala et al., 2018; Guil et al., 2021). Emotional intelligence is defined as an individual's ability to assess and regulate their own emotions and use them to solve problems and accomplish goals (Salovey et al., 1995). Guil et al. (2021) propose that emotional intelligence is composed of three dimensions: emotional attention (i.e., self-perceptions about the degree to which an individual addresses their own emotional experiences), emotional clarity (i.e., self-perceptions regarding how clearly people understand emotional states) and emotional repair (i.e., self-perceptions about the ability to adequately manage emotions). In general, research has found that higher scores on emotional intelligence are associated with better psychological functioning and well-being, whereas low scores are linked to anxiety (Berenbaum et al., 2003; García-Fernández et al., 2015). Likewise, there are individual differences in the degree of the three dimensions (attention, clarity and repair), with each dimension having a different role (García-Fernández et al., 2015). Enhancing our understanding of broad emotional constructs and discrete emotions in SAD can have implications for theoretical models of SAD, for clinical assessment and diagnosis, and for treatment (Rozen and Aderka, 2023). Numerous authors have suggested further research on how these three dimensions interact and their relationship with SIA (Turk et al., 2005; Boden and Berenbaum, 2012; García-Fernández et al., 2015; Guil et al., 2019).

In this vein, the predisposition of SIA increases when one does not pay attention to the information that emotions provide or possesses high emotional attention but poor emotional clarity (Boden and Berenbaum, 2012). The role of emotional attention is less clear than those of emotional repair and clarity (García-Fernández et al., 2015). On the one hand, although individuals must pay at least some attention to their emotions in order to understand them and to remediate negative ones, high levels of attention have been found to be detrimental to emotional well-being (Salovey et al., 1995). On the other hand, emotional attention has been negatively related to SIA (Turk et al., 2005; Guil et al., 2019). As can be seen, there is controversy regarding the relationship between SIA and the dimension of emotional attention.

Because the ability to clearly identify one's emotions is the first step to successful emotional regulation and coping (Butler et al., 2006), the importance of emotional clarity in regulating emotions has been particularly underscored. In this case, as opposed to the dimension of emotional attention, most studies agree that a lack of emotional clarity greatly increases SIA (Dixon-Gordon et al., 2014; Thompson et al., 2017; Butler et al., 2018; Guil et al., 2019).

Likewise, individuals with lower levels of emotional clarity tend to describe more paranoid beliefs (Boden and Berenbaum, 2012). O'Toole et al. (2013) suggest that deficits in emotional clarity and difficulties in remediating negative emotions are key factors to consider when addressing SIA. In fact, several studies have negatively related emotional repair to SIA (Bigman et al., 2015; Klemanski et al., 2017; Guil et al., 2019; Masters et al., 2019). Specifically in the university context, it has been found that students who hoped to be more successful in regulating their negative emotions showed fewer signs of anxiety (Catanzaro and Mearns, 1999). Furthermore, middle school students who exhibited higher levels of emotional intelligence during the pandemic scored higher on satisfaction with life (Correa-Barwick et al., 2022; Torres-Gázquez et al., 2023). Along these lines, Sturgill et al. (2021) found that a Mindfulness program with university students increased their emotional intelligence and satisfaction with life, however, studies on this population conducted during the pandemic are scarce.

### 1.3. Psychological well-being

The concept of psychological well-being is closely linked to the subjective well-being and the quality of life or satisfaction with life (SWL) concepts (Baños et al., 2019). Diener and Emmons (1985) postulated the Subjective Well-Being Theory to analyze people's SWL, defining "subjective well-being" as the subjective assessment of one's own life quality, that is, the range of elements from transitory stages to relatively abstract assessments or evaluations of the meaning of one's life. These authors stated that people can express being satisfied with their lives either from a global evaluation or after making different assessments in specific areas of their lives (e.g., family, work, social relationships, etc.; Diener and Emmons, 1985). Several studies have associated SWL with low levels of SIA (Wittchen et al., 2000; Kessler, 2003; O'Toole et al., 2013) and with high levels of emotional intelligence (Hodzic et al., 2016; Sánchez-Álvarez et al., 2016; Blasco-Belled et al., 2020).

In terms of the dimensions of emotional intelligence, a study conducted in Spain, Portugal and Brazil found that SWL was predicted by emotional clarity and emotional repair, but not by emotional attention (Hodzic et al., 2016). Blasco-Belled et al. (2020) also found that emotional attention was negatively related to subjective well-being, albeit this relationship was not significant in the study conducted by Ramos-Díaz et al. (2019). In this line, it is emphasized that a decrease in emotional attention and an increase in emotional clarity and repair should be the target of interventions in adolescents to improve their SWL (Guerra-Bustamante et al., 2019; Martínez-Marín and Martínez, 2019; Azpiazu et al., 2022; De la Barrera et al., 2023), since the intelligent management of emotions helps to prevent negative feelings and fosters positive ones, thus promoting greater SWL (Sánchez-Álvarez et al., 2016). Several studies have highlighted the importance of emotional clarity and repair for improved psychological functioning (Petrides et al., 2018; Masters et al., 2019), psychological adjustment (Salguero et al., 2012; García-Fernández et al., 2015; Butler et al., 2018) and psychological well-being (Gohm and Clore, 2002; Extremera and Fernández, 2005; Salguero et al., 2012).

## 1.4. The present study

After analyzing the scientific literature and observing the importance of emotional clarity and repair in preventing SIA and improving people's SWL, both before and during the COVID-19 pandemic, the predictive analysis of SIA and emotional intelligence on SWL can be deemed relevant, understood that the sanitary restrictions have been lifted. In summary, on the one hand, studies have related SIA to emotional intelligence (Parhiala et al., 2018; Guil et al., 2021) and SIA to satisfaction with life (Wittchen et al., 2000; Kessler, 2003; O'Toole et al., 2013), and, on the other hand, emotional intelligence to satisfaction with life (Hodzic et al., 2016; Sánchez-Álvarez et al., 2016; Blasco-Belled et al., 2020). All these studies were conducted before or during the pandemic, however, we are unaware of the existence of studies that have analyzed emotional intelligence as a mediating variable between SIA and SWL, and if the relationships between these variables have been analyzed following the end of mobility restrictions and the return to in-person university classes. Moreover, research conducted with Mexican students was scarce even before the pandemic. Therefore, this study represents a contribution to the understanding of the relationships among SIA, the dimensions of emotional intelligence and SWL in the Mexican university context. Thus, the objective of this research is to analyze the effect of SIA on SWL mediated by emotional intelligence. Figure 1 shows the hypothesized model for examining the relationships described above. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) initiative (Von Elm et al., 2008).

## 2. Materials and methods

### 2.1. Design and participants

The research design was descriptive, cross-sectional, observational and non-randomized. The sample was composed of students from the Faculty of Sport of the three campuses (Campus Ensenada, Campus Mexicali and Campus Tijuana) of the Autonomous University of Baja California (Mexico). Inclusion criteria were the following: (i) to be enrolled in the Bachelor's degree in Physical Activity and Sport at the aforementioned campus and university; exclusion criteria: (i) failure to provide their informed consent for data use in the study; (ii) failure to duly fill out the data collection form. An *a priori* analysis of the necessary sampling size was conducted to provide an answer to the study objective, considering a structural equation model (SEM) composed of five latent variables and 53 observable variables. The analysis was conducted using the *Free Statistics Calculator* v.4.0 software (Soper, 2023) and a minimum of 1,151 participants was calculated to detect effect sizes ( $f^2$ ) = 0.163, with a statistical power of 0.99% and a significance level of  $\alpha$  = 0.05. In this research 1,164 physical education students (30.0% women; 69.6% men; 0.4% other) from the three campuses of the Faculty of Sports of the Autonomous University of Baja California (19.8%, Campus Ensenada; 30.7%, Campus Tijuana; 49.6%, Campus Tijuana) participated, aged between 17 and 50 years old ( $M$  = 21.21;  $SD$  = 3.26). There were no lost values in the responses included in the study. Apart from the total sample, 29 questionnaires were discarded because they were filled incorrectly, and 14 because the respondents did not give their consent to participate in the research.

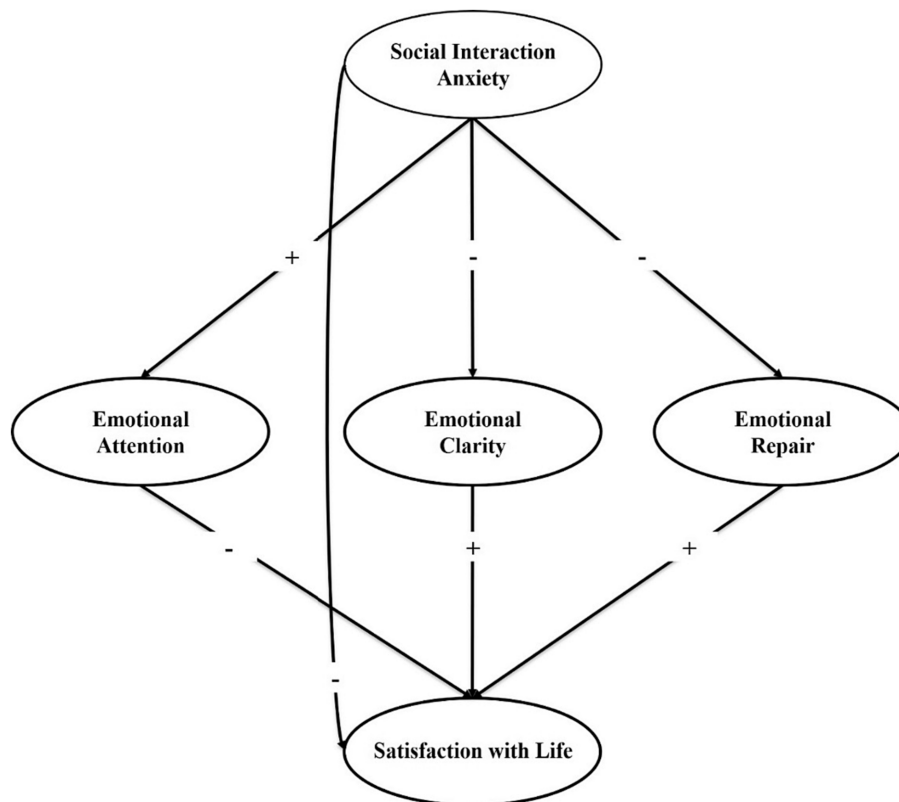


FIGURE 1  
Hypothesized model with the expected correlations.

## 2.2. Instruments

### 2.2.1. Interaction Anxiety Scale

This study used the scale adapted to the Mexican context by [de la Rubia et al. \(2013\)](#) based on the original version by [Mattick and Clarke \(1998\)](#). This instrument is composed of 20 items that measure social interaction anxiety (e.g., I find it hard to socialize with my classmates. “*Se me hace difícil socializar con las personas con las que estudio*”). Answers were collected using a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*completely*). For this study, the CFA (Confirmatory Factorial Analysis) goodness-of-fit indices were acceptable:  $\chi^2/df = 5.01$ ,  $p < 0.001$ ; CFI = 0.98; TLI = 0.98; RMSEA = 0.059 (90%CI = 0.047, 0.070;  $p_{close} = 0.077$ ), SRMR = 0.033.

### 2.2.2. Emotional intelligence

This study used the Mexican version by [Valdivia et al. \(2015\)](#) adapted from the original version by [Salovey et al. \(1995\)](#). The scale contains 28 items that measure emotional intelligence across three dimensions: *emotional attention* (8 items; e.g., I frequently think about my feelings. “*A menudo pienso en mis sentimientos*”), *emotional clarity* (8 items; e.g., I am capable of understanding my feelings. “*Puedo llegar a comprender mis sentimientos*”), and *emotional repair* (8 items; e.g., When I feel sad, I think about all the pleasures in life. “*Cuando estoy triste, pienso en todos los placeres de la vida*”). Answers were collected using a Likert scale ranging from 1 (*completely disagree*) to 5 (*completely agree*). For this study, the CFA goodness-of-fit indices were acceptable:

$\chi^2/df = 4.97$ ,  $p < 0.001$ ; CFI = 0.98; TLI = 0.97; RMSEA = 0.058 (90%CI = 0.046, 0.068;  $p_{close} = 0.072$ ), SRMR = 0.042.

### 2.2.3. Satisfaction with life

This study used the scale adapted into Spanish by [Atienza et al. \(2000\)](#) to measure satisfaction with life in general based on the original version by [Diener and Emmons \(1985\)](#). The scale contains 5 grouped items that measure satisfaction with life (e.g., My life circumstances are good. “*Las circunstancias de mi vida son buenas*”). Answers were collected using a Likert scale ranging from 1 (*completely disagree*) to 5 (*completely agree*). For this study, the CFA goodness-of-fit indices were acceptable:  $\chi^2/df = 2.55$ ,  $p = 0.054$ ; CFI = 0.99; TLI = 0.99; RMSEA = 0.037 (90%CI = 0.000, 0.070;  $p_{close} = 0.071$ ), SRMR = 0.011.

## 2.3. Procedure

First, a meeting was held with the three deputy directors and the general director of the Faculty of Sports of the three campuses of the Autonomous University of Baja California (Ensenada, Mexicali and Tijuana). The purpose of the study was explained and permission to apply the questionnaires was requested. Upon granted authorization, the participants were summoned to the institution’s computer room in March 2022. Participants were taught how to fill out the online questionnaires and informed about the importance of the research, that their participation was anonymous, and that there were no right

or wrong answers; they were thus asked to be completely honest and were told that they could abandon the study at any time if they desired so. The questionnaire was completed in around 20 min and all participants gave their prior consent for their responses to be included in the study. The research protocol was approved by the Bioethics Committee of the University of Almeria (Ref: UALBIO2023/001).

## 2.4. Statistical analysis

A structural equation model (SEM) with latent variables was carried out to analyze how SIA is associated with emotional intelligence and satisfaction with life in Mexican university students. For the SEM, a two-step method following Kline (2016) was developed. In step-1, bidirectional relationships between variables were evaluated (i.e., measurement model). In step-2, the predictive effects between the variables were assessed. The SEM was controlled by the variable sex and campus of origin. The following indices were used to evaluate the models: chi square/degrees of freedom ( $\chi^2/df$ ), CFI (Comparative Fit Index), TLI (Tucker–Lewis Index), RMSEA (Root Mean Square Error of Approximation) with a confidence interval of 90% (CI), and SRMR (Standardized Root Mean Square Residual). For the  $\chi^2/df$  ratio, values  $<2.0$  or  $<5.0$  are, respectively, considered excellent (Tabachnick and Fidell, 2019) or acceptable (Hu and Bentler, 1999); for the CFI and TLI, values  $>0.95$  are considered excellent, whereas the range between 0.90 and 0.95 is considered acceptable; for the RMSEA and SRMR, values  $<0.06$  are considered excellent, and  $<0.08$ , acceptable (Hu and Bentler, 1999; Marsh et al., 2004). Due to the lack of multivariate normality in the SEM (Mardia's coefficient = 106.82;  $p < 0.001$ ) the maximum likelihood (ML) method was used with the *bootstrapping* procedure for 5,000 re-samplings (Kline, 2016). The reliability of each scale was assessed using different parameters: McDonald's omega ( $\omega$ ), composite reliability (CR), and AVE for measuring convergent validity. Reliability values  $>0.70$  and AVE  $>0.50$  are deemed acceptable. For this study, even if the SWL scale yields an AVE value  $<0.50$  (i.e., 0.47), such value is deemed acceptable according to Hair et al. (2018), as all the standardized regression weights were significant and  $>0.50$ .

## 3. Results

### 3.1. Preliminary results

Descriptive statistics and correlations between the different variables are shown in Table 1.

### 3.2. Main results

During step 1, the SEM showed excellent goodness-of-fit indices:  $\chi^2/df = 2.40$ ,  $p < 0.001$ ; CFI = 0.98; TLI = 0.97; RMSEA = 0.035 (90% CI = 0.031; 0.038;  $p_{close} = 1.00$ ), SRMR = 0.035. During step 2, the hypothesized SEM yielded a similar and excellent fit:  $\chi^2/df = 2.40$ ,  $p < 0.001$ ; CFI = 0.98; TLI = 0.97; RMSEA = 0.035 (90% CI = 0.031; 0.038;  $p_{close} = 1.00$ ), SRMR = 0.035. The model was controlled by the sex and campus of origin variable and reached an explained variance of 31% for SWL, 3% for emotional attention, 4% for emotional repair and 10% for emotional

clarity (Figure 2). The correlations among SIA, the emotional intelligence variables (i.e., emotional attention, emotional clarity, and emotional repair) and SWL can be attested in Figure 2 and Table 2.

Figure 2 outlines the SEM and shows that SIA has a direct, negative and significant relationship with SWL ( $p < 0.001$ ), as well as emotional clarity ( $p < 0.001$ ) and emotional repair ( $p < 0.001$ ). On the other hand, SIA has a direct, positive and significant relationship with emotional attention ( $p = 0.004$ ). In terms of the mediating effect of the dimensions of emotional intelligence, it should be noted that emotional clarity and emotional repair play a remarkable role between SIA and SWL, as they soften the negative direct effect of SIA on SWL, given that these two dimensions (i.e., emotional clarity and emotional repair) have a positive and significant direct effect on SWL (Table 2). In addition, Figure 2 demonstrates the CI (95%) of  $R^2$ , thereby confirming that these values can be considered ES measurements (Dominguez-Lara, 2017).

## 4. Discussion

The purpose of this research was to analyze emotional intelligence as a mediator between SIA and SWL. The main results illustrate the important role of emotional clarity and repair as mediating variables between SIA and SWL, given that they decrease the negative effect of SIA on SWL.

A possible explanation for this is that emotional clarity is the key to regulating emotions, as the ability to clearly identify one's emotions is the first step to successful emotional regulation and coping (Butler et al., 2006). Thus, young people who understand their emotions and recognize their own abilities to solve problems and overcome difficult situations through their own efforts will adopt a positive emotional coping style, mitigating the distress caused by SIA and improving their social performance (Li, 2020), and thus their SWL (Hodzic et al., 2016). In this vein, Guil et al. (2019) highlight the importance of the interaction between the three dimensions of emotional intelligence concerning SIA. These authors state that students who are confident in their own abilities to cope with challenging situations, do not pay much attention to their emotions, and do trust their competencies to clearly perceive and repair their emotional states will cope more efficiently with SIA (Guil et al., 2019). In terms of the relationship of SIA with the dimensions of emotional intelligence, we consider that, because of its timely execution, this study provides the global university context with an important scientific contribution, understanding that the data for the present study were collected just 2 weeks after the return to in-person classes following the COVID-19 confinement, as the fear of contagion and stress in general due to the pandemic were still visible in society (Di Crosta et al., 2020; Rodríguez-Hidalgo et al., 2020; Torales et al., 2020).

However, according to our research, emotional attention did not have a significant direct effect on SWL, nor were there significant indirect effects between SIA and SWL. In this line, Hodzic et al. (2016) also did not obtain a significant relationship between emotional attention and SWL. Although the role of emotional attention compared to emotional clarity and repair is confusing according to García-Fernández et al. (2015), on the one hand, Blasco-Belled et al. (2020) have found that emotional attention negatively and significantly predicts SWL (Blasco-Belled et al., 2020), while others found a negative but not significant prediction (Hodzic et al., 2016;

TABLE 1 Descriptive statistics and correlations among variables.

Variable	Range	M	SD	Q1	Q2	$\omega$	CR	AVE	2	3	4	5
1. Emotional attention	1–5	3.47	1.10	–0.35	–0.65	0.89	0.89	0.67	0.21**	0.08**	0.08**	0.05
2. Emotional clarity	1–5	3.43	1.05	–0.30	–0.58	0.90	0.82	0.60	-	0.33**	–0.27**	0.37**
3. Emotional repair	1–5	3.76	1.03	–0.64	–0.26	0.85	0.87	0.69		-	–0.16**	0.37**
4. Social interaction anxiety	0–4	1.47	1.05	0.39	–0.76	0.93	0.90	0.54			-	–0.29**
5. Satisfaction with life	1–5	3.67	0.84	–0.44	–0.26	0.81	0.81	0.47				-

M = mean; SD = standard deviation; Q1 = skewness; Q2 = kurtosis;  $\omega$  = omega of McDonald; CR = composite reliability; AVE = average variance extracted. \*Correlation is significant at level 0.05. \*\*Correlation is significant at level 0.01.

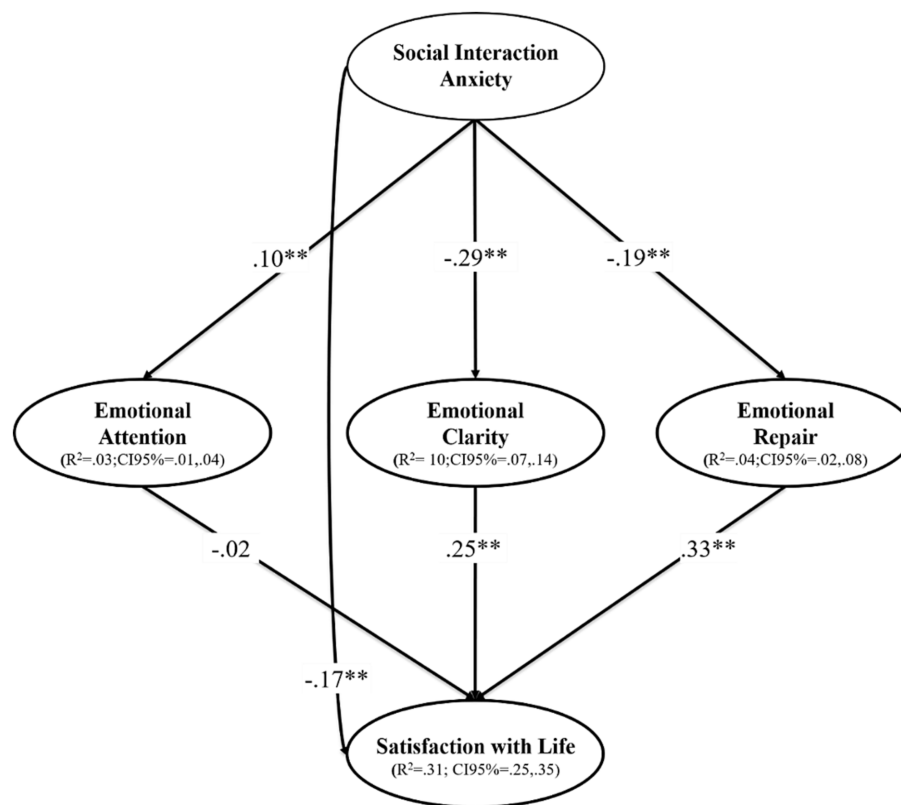


FIGURE 2 Predictive relationships of the emotional intelligence on satisfaction with life through the mediating role of the social interaction anxiety. \*\* $p < 0.01$ ; \* $p < 0.05$ .  $R^2$  = Explained variance; CI = Confidence interval. The dashed lines represent non-significant relationships. The model was controlled by the sex and the campus of the students.

Ramos-Díaz et al., 2019). Emotional attention not predicting SWL could be due to the fact that this dimension does not have as much of a potential inference in people’s behavior as emotional clarity and emotional repair do (Salovey et al., 1995). Thus, when students pay too much attention to their emotions without understanding them or having repair skills, they negatively affect their mood and psychological functioning (García-Fernández et al., 2015; Butler et al., 2018; Petrides et al., 2018; Masters et al., 2019), while also decreasing their SWL (Guerra-Bustamante et al., 2019; Martínez-Marín and Martínez, 2019; Azpiazu et al., 2022; De la Barrera et al., 2023). On the contrary, the intelligent management of emotions helps students to prevent negative feelings and increases positive ones, contributing to the increase of SWL (Sánchez-Álvarez et al., 2016) while improving academic performance with appropriate learning strategies

(García-Fernández et al., 2015). Because scientific literature in this context is scarce, and given that the results obtained are in line with the international literature, we consider this study to be a scientific contribution to the Mexican university context.

It is also worth mentioning that SIA significantly, positively and directly predicted emotional attention in this research. Since past studies have negatively related SIA to emotional attention (Turk et al., 2005; Guil et al., 2019), contrary to the results obtained in this research, the relationship between SIA and emotional attention remains controversial (García-Fernández et al., 2015). However, the results obtained in the present study are in line with the findings of Boden and Berenbaum (2012), who also described a positive relationship between SIA and emotional attention. These authors claim that when one does not pay attention to the information

TABLE 2 Estimation of significant standardized parameters and statistics of the mediation model.

	Independent variable	Dependent variable	Mediator	$\beta$	SE	95%CI	
						Inf	Sup
<b>Direct effects</b>							
	SIA	Emotional attention		0.10**	0.04	0.03	0.16
	SIA	Emotional clarity		-0.29**	0.04	-0.35	-0.23
	SIA	Emotional repair		-0.19**	0.03	-0.24	-0.13
	SIA	SWL		-0.17**	0.04	-0.22	-0.11
	Emotional clarity	SWL		0.25**	0.05	0.17	0.33
	Emotional repair	SWL		0.33**	0.04	0.25	0.40
<b>Indirect effects</b>							
	SIA	SWL	Emotional Clarity	-0.07**	0.01	-0.09	-0.04
	SIA	SWL	Emotional Repair	-0.06**	0.01	-0.07	-0.03
<b>Total effects</b>							
	SIA	SWL		-0.30**	0.03	-0.36	-0.24

$\beta$  = Estimation of standardized parameters; SE = standard error; 95% CI = 95% confidence interval; Inf = Inferior limit of 95% CI; Sup = Superior limit of 95% CI. SIA = social interaction anxiety; SWL = satisfaction with life.

\* $p < 0.05$ . \*\* $p < 0.01$ .

provided by emotions, or one has a high level of emotional attention, but with a deficient emotional clarity, the predisposition toward SIA increases. A potential explanation is that people with a high level of emotional attention tend to be hypervigilant about their own emotions and signs of anxiety, becoming less flexible to explain their states of anxiety and misjudging both their severity and visibility to others, and feeling more threatened by how others understand them (Roth et al., 2001; Wells and Papageorgiou, 2001; Edelman and Baker, 2002).

Finally, we will describe a series of limitations and strengths of the present study, as well as future research perspectives. Limitations include: (i) the timing of data collection, 2 weeks after the confinement and mobility measures due to the COVID-19 pandemic had been lifted, as this might have caused widespread emotional and psychological instability in participants, even when filling the questionnaires; (ii) the variables were evaluated neither before nor during the pandemic, so we are not able to observe the evolution of these variables after such an upsetting experience; (iii) the cross-sectional design of the study does not allow for establishing causal inferences; (iv) there was no sample randomization, so the results cannot be generalized; (v) a possible social desirability bias due to the use of self-reporting, since participants may have exaggerated their responses. On the other hand, noteworthy strengths of this research include: (i) the timing of data collection may be a strength in itself since scientific literature on this topic set just after the end of mobility restrictions is scarce; (ii) the sample size of Mexican undergraduate Physical Education students from the three campuses of the Autonomous University of Baja California (Ensenada, Tijuana and Mexicali), as well as the statistical power of the study. We consider it necessary for future studies to analyze the dimension of emotional attention by conducting a quadratic regression analysis since both excessive emotional attention and low levels of this dimension are related to SIA. We also suggest longitudinal studies a few years after

the pandemic to analyze how the post-pandemic dimensions of emotional intelligence relate to occupational success.

## 5. Conclusion

In conclusion, it can be asserted that emotional clarity and repair had a mediating effect between SIA and SWL, as they did decrease the negative effects of SIA on SWL. In addition, SIA had a direct and positive effect on emotional attention and a negative effect on emotional clarity and repair. Furthermore, emotional clarity and repair had a direct and positive effect on SWL, although emotional attention did not predict SWL. Therefore, we believe that university institutions should train and educate students in managing SIA by further developing their emotional intelligence. It would be interesting to provide university students with strategies to control and manage the understanding of their own emotions, and to manage negative emotions resulting from SIA. Finally, it is important to highlight the importance of young people not paying too much emotional attention, as an excess of it can increase SIA levels, undermining SWL at the same time.

## 6. Practical implications

The results of this research underline the importance of emotional clarity and repair in decreasing SIA and increasing SWL in Mexican university students after the pandemic and are in line with other studies conducted before the pandemic. Therefore, educational institutions should organize workshops related to the development of emotional intelligence to help young people to understand the feelings and emotions that they experience, and to remediate negative emotions that might be stressful for them (Correa-Barwick et al., 2022; Cabello-Sanz and Muñoz-Parreño,

2023; Torres-Gázquez et al., 2023). In this line, Valenti et al. (2022) consider that appropriate programs should be designed to help people to see the bright side of negative experiences, which permits a reshaping of harmful emotional outcomes by focusing on some positive aspects. In addition, it is recommended that people suffering from SIA practice activities such as Mindfulness (Butler et al., 2018), aerobic exercise (Jazaieri et al., 2012), or activities in natural environments (Chen and Huo, 2022), as they help to decrease SIA and to increase the levels of SWL.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

The studies involving human participants were reviewed and approved by the University of Almería (Ref: UALBIO2023/001). The patients/participants provided their written informed consent to participate in this study.

## Author contributions

JC-N: Conceptualization, Data curation, Formal analysis, Writing – review & editing. AG-G: Conceptualization, Formal analysis, Methodology, Writing – review & editing. RE-G: Data curation, Investigation, Writing – review & editing. RB: Conceptualization, Data curation, Formal analysis, Methodology, Writing – original draft.

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