

MEDIATION OF STUDY APPROACHES AND SKILLS IN UNIVERSITY STUDENTS DURING COVID-19: THE EFFECT ON THE RELATIONSHIP BETWEEN FAMILY INFLUENCE AND SELF-EFFICACY

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Received: 15 marzo 2024

Revised: 18 marzo 2024

Evaluator 1 report: 22 abril 2024

Evaluator 2 report: 28 abril 2024

Accepted: 16 mayo 2024

Published: junio 2024

ABSTRACT

Objective: Self-efficacy is a characteristic that helps university students to fulfill pedagogical and academic tasks and goals. The support of the family or the skills of students are important to their university career, which may be affected by the COVID-19 pandemic. The aim of this study is to analyze whether family influence and study approaches and skills can predict self-efficacy and whether the relationship between family influence and self-efficacy can be mediated by students' study approaches and skills. **Methods:** Participated in the study 174 Portuguese university students of both genders, with an average age of 23.70 years (± 8.47). The instruments applied were the Family Influence Scale, Higher Education Self-Efficacy Scale, Approaches and Study Skills Inventory for Students (short version) and a sociodemographic questionnaire. **Results:** The study approaches and skills predicts of self-efficacy and mediates the relationship between family influence and self-efficacy. **Conclusion:** Knowing the important impact of study approaches and skills on students' self-efficacy will contribute to the definition of support strategies that universities should promote, in a pandemic and post-pandemic phase, for the mental health and academic success of their community.

Keywords: study approaches; skills; COVID-19 pandemic; family influence; self-efficacy

RESUMEN

Mediación de los enfoques y habilidades de estudio en estudiantes universitarios durante la covid-19: el efecto en la relación entre la influencia familiar y la autoeficacia. **Objetivo:** La autoeficacia es una característica que ayuda a los estudiantes universitarios a cumplir con las tareas y metas pedagógicas y académicas. El apoyo de la familia o las habilidades de los estudiantes son importantes para su carrera universitaria, que puede verse afectada por la pandemia del COVID-19. El objetivo de este estudio es analizar si la influencia familiar y los enfoques y habilidades de estudio pueden predecir la autoeficacia y si la relación entre la influencia familiar y la autoeficacia puede estar mediada por los enfoques y habilidades de estudio de los estudiantes. **Métodos:** Participaron en el estudio 174 estudiantes universitarios portugueses de ambos sexos, con una edad media de 23,70 años ($\pm 8,47$). Los instrumentos aplicados fueron la Escala de Influencia Familiar, la Escala de Autoeficacia para la Educación Superior, el Inventario de Enfoques y Habilidades de Estudio para Estudiantes (versión corta) y un cuestionario sociodemográfico. **Resultados:** Los enfoques y habilidades de estudio predicen de la autoeficacia y median la relación entre influencia familiar y autoeficacia.

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Conclusiones: Conocer el importante impacto de los enfoques y habilidades de estudio en la autoeficacia de los estudiantes contribuirá a la definición de estrategias de apoyo que las universidades deben promover, en fase pandémica y post-pandémica, para la salud mental y el éxito académico de su comunidad.

Palabras clave: enfoques de estudio; habilidades; pandemia COVID-19; influencia familiar; autoeficacia

INTRODUCTION

The COVID-19 pandemic has had several consequences in the lives of students in terms of their mental health (Xiong et al., 2020). College students have suffered from anxiety, frustration, or other emotional problems (Aristovnik, Kerži, Ravšelj, Tomažević & Umek, 2020). Liu, Liu & Zong (2020), highlighted the significant increase in university students' anxiety and depression during this pandemic moment. University students were also victims of the pandemic situation in their academic life, as they were forced to adapt to online classes (Walke, Honein & Redfield, 2020), which raised concerns about their academic career (Aristovnik et al., 2020). During this period, students considered that there was a greater workload required, as well as difficulties in using technological tools (Aristovnik et al., 2020). They prefer to acquire learning in a face-to-face context than in an online context (Aguilera-Hermida, 2020). The learning contexts chosen by students can have an impact on a greater perception of their competence, pleasure and involvement in tasks (Cairney et al., 2012). Entering the university and experiencing a new life context already puts additional pressure on students. In this sense, the support they may receive is important to their success (Bewick, Koutsopoulou, Miles, Slaa & Barkham, 2010). Many students consider the support received by teachers during this phase was important (Aristovnik et al., 2020), but more important was the support received by the family, which took the form of financial support, security, feelings of concern or love for part of the family (Nunes, Pontes & Silva, 2020). The absence of support (e.g., financial) during this pandemic phase can lead to lower income students delaying their studies compared to students who receive support (Aucejo, French, Araya & Zafar, 2020). According to the study by Lauder et al. (2008), the quality of support felt by students was higher in the support received by family and friends than the support received by higher education institutions. The study by Topor, Keane, Shelton & Calkins (2010) found a significant association between parental dedication and students' academic performance. This is important because support from family members helps to reduce many negative situations in university students' lives (e.g., suicidal ideation) (Kwok, 2014). Nunes et al. (2020), were able to prove that family support is a determinant in students' self-esteem, future plans and self-efficacy. Self-efficacy is a feeling of security, it is a confidence that the subject believes he has in himself to perform tasks properly (Bandura, 1997), including academic tasks (Luszczynska, Gutiérrez-Doña & Schwarzer, 2005). The COVID-19 pandemic affected students' self-efficacy, although the study by Talsma, Robertson, Thomas & Norris (2021) had not found significant differences in this characteristic between students during the COVID-19 pandemic and students in pre-pandemic times. Previous studies have analyzed self-efficacy in nursing students in pre-pandemic times (Lim, Downie & Nathan, 2004), the relationship between self-efficacy and self-report skills in higher education students (Lauder et al., 2008), or self-efficacy in young people with alcohol consumption (Webb & Baer, 1995). However, it is unclear how factors such as family influence and study approaches and skills impact university students' self-efficacy during the COVID-19 pandemic. In this study, we want to study whether family influence and study approaches and skills are predictors of self-efficacy and whether study approaches and skills can mediate the relationship between family influence and self-efficacy.

METHODS

Participants

The study sample consisted of 174 Portuguese university students, 68 male and 106 female. The average in years of higher education attendance is ≈ 2 years (± 1.12). As for marital status, 85.6% are single, 12.6% are married and 1.7% are divorced. 52.9% considered that online classes during the COVID-19 pandemic were positive for learning and 47.1% considered that they were not positive. 44.8% of students recommend the existence of online classes and 55.2% do not recommend them. As inclusion criteria for the study, only undergraduate and

master's university students were considered. As exclusion criteria, doctoral or higher degree students were not considered in the study, as well as students who had some physical or mental limitation that did not allow them to respond to the protocol of this investigation.

Measures

For the present investigation, the sociodemographic questionnaire was used to collect information from the students. The Family Influence Scale (Portuguese version by Taveira, Ribeiro & Oliveira, 2012) was used, which assesses, through a 5-point Likert scale, how the family helps university students, specifically: financial support, family values and beliefs, family expectations, and information support. The authors consider that there are good Cronbach's Alpha values (varying between .70 and .84) for the types of support evaluated in this instrument. The Higher Education Self-Efficacy Scale (Portuguese version by Vieira, Polydoro & Guerreiro-Casanova, 2011) was used to assess the self-efficacy of university students during their academic challenges, through 20 items rated on a 6-point Likert scale. Cronbach's Alpha values are very good, with values above .90. Finally, the Approaches and Study Skills Inventory for Students – short version (Portuguese version of Valadas, 2010) was used. This instrument assesses students' approaches and study skills in their learning through 18 items, evaluated on a 5-point Likert scale. The Cronbach's Alpha values that the authors indicate are around .80.

Procedure

The directors of higher education institutions were asked to collaborate and authorize the development of the study. Those responsible were informed of the research objectives, as well as the ethical and deontological duties inherent to this type of work. They were also informed that there was no risk to the health or life of the participants. Students were contacted in person, authorizing their participation. Application of the protocol took place in the classroom for approximately 15 minutes. All ethical and deontological duties inherent to this research work were ensured.

Data analysis

For data analysis of this study, the Statistical Package for Social Sciences (SPSS), version 27 for Windows was used. A descriptive statistical analysis was performed for the characteristics of the sample, specifically means, standard deviations, percentage, and frequencies according to the type of variable. A multiple linear regression analysis was performed to verify the estimation of the magnitude and impact of family influence and study approaches and skills on self-efficacy, adjusting for the other independent variables. The assumptions of the multiple linear regression model were verified. The Medgraph program was used to calculate the mediation effect of the study approaches and skills variable on the relationship between family influence and self-efficacy. The significance adopted level was $p < .05$.

RESULTS

Prediction of self-efficacy

The results obtained using the Multiple Linear Regression Model are presented. Equation estimated by the method of ordinary least squares:

$$(\text{Self-efficacy})\hat{=} .60.50 + .059 \text{ familyinfluence} + .498 \text{ study approaches and skills}$$

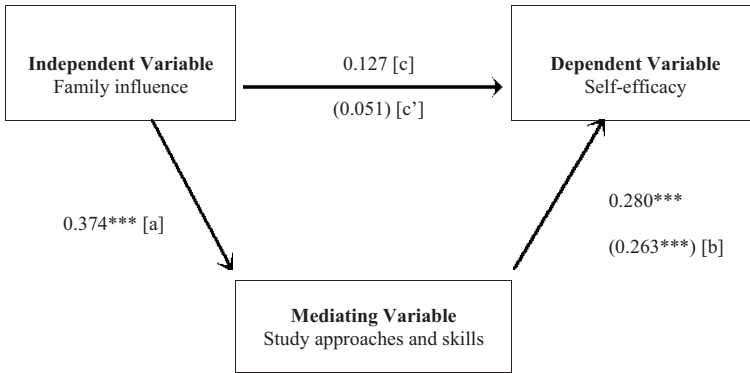
The adjusted impact of family influence on self-efficacy is positive and equal to .059, which means that when family influence increase by one-unit, the estimated self-efficacy increases .059, adjusting for the other variables. The adjusted impact of study approaches and skills is positive and equal to .498, which means that when study approaches and skills increase by one-unit, the estimated self-efficacy increases .498, adjusting for the other variables. For a significance level of 5%, study approaches and skills prove to be an important variable to explain self-efficacy as it reveals a statistically significant coefficient ($p < .05$).

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Mediating effect of study approaches and skills on the relationship between family influence and self-efficacy

The figure 1 represents the mediation effect of study approaches and skills on the relationship between family influence and self-efficacy. Study approaches and skills is a mediator of the relationship between family influence and self-efficacy ($Z = 2727836, p = .006$).

Figure 1. The mediating effect of study approaches and skills on the relationship between family influence and self-efficacy



Notes: [a], [b], the numerical values in parentheses are beta values taken from the second regression and the other values are zero-order correlations; [c] = total effect of family influence on self-efficacy without the mediating variable. [c'] = indirect effect of family influence on self-efficacy considering the effect of the mediator variable (study approaches and skills). * $p < .05$. ** $p < .01$. *** $p < .001$

DISCUSSION

The main objectives of this study were to verify the predictive effect of family influence and study approaches and skills in self-efficacy and to analyze the mediating effect of study approaches and skills on the relationship between family influence and self-efficacy. The results showed that study approaches and skills are a significant explanatory variable of self-efficacy. In addition, this variable was also able to mediate the relationship between family influence and self-efficacy.

According to the study by Koh et al. (2021), developed with 263 medical students, with an average age of 22 years, it was verified that the knowledge that students had about COVID-19 (e.g., mode of transmission) had effects on their self-efficacy of protection against the virus. The authors found that the greater the knowledge, the greater the students' self-efficacy. But university students' beliefs about COVID-19 may not predict their academic outcomes (Talsma et al., 2021) and, consequently, their self-efficacy. Grabowski et al. (2021), proved that when students' skills are trained for the exercise of the profession, there can be a significant increase in their self-efficacy. Furthermore, Lim et al. (2004) found that students who attended the course for a longer time, with more theoretical knowledge and more experience, assumed to have more self-efficacy than students who attended the course for only one year. On the other hand, languages spoken, work experience, age or gender may not have an impact on perceived self-efficacy. In the study by Teixeira & Costa (2018) with 480 university students, they found, as explanatory variables of self-efficacy, the average access to higher education, openness to experience, career satisfaction, emotional states, parental demands, among others. With regard to the mediating role of study approaches and skills, Topor et al. (2010) highlighted the mediating effect of the perception of cognitive skills on

the relationship between parental dedication and the performance of younger children. The grades obtained for the good performance of students have effectively shown their relationship with academic self-efficacy and performance self-efficacy (Richardson, Abraham & Bond, 2012). Furthermore, the present study did not reveal family influence as a significant predictor of students' self-efficacy. In particular, it may happen that the support given by the father is positively related to the search for self-efficacy (Beets, Pitetti & Forlaw, 2007) but the way in which the family relates and transmits its values and knowledge to the younger ones, has effects on the children's self-efficacy beliefs, including those related to their academic and professional careers (Santos, 2003). Nevertheless, this study reveals some limitations, namely it does not provide knowledge about the prediction of self-efficacy among students who have been studying for a longer time and who have studied less at the university. When they are considered students from different higher education courses, it only allows understanding self-efficacy in a global way and not according to the scientific requirements of each course. The fact that students have, over the last few years, seen an increase in more financial and work problems (Hastings, Ramia, Wilson, Mitchell & Morris, 2021), it would be important for future studies to consider the differences between students who only study and students who study and work. In addition, the vulnerability and financial difficulties of families over time and post-pandemic should be analyzed. This investigation contributes to a greater knowledge about the predictors of self-efficacy of university students during the COVID-19 pandemic. It is important that higher education institutions can develop new strategies to support and consolidate their students's academic self-efficacy, develop specialized skills training programs, prevent school dropout and promote their academic success.

There are no conflicts of interest in this study.

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