

RELATIONSHIP BETWEEN ACADEMIC PERFORMANCE, PSYCHOLOGICAL WELL-BEING, AND COPING STRATEGIES IN MEDICAL STUDENTS

RELACIÓN ENTRE RENDIMIENTO ACADÉMICO, BIENESTAR PSICOLÓGICO Y ESTRATEGIAS DE AFRONTAMIENTO EN ESTUDIANTES DE LA CARRERA DE MEDICINA.

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Abstract

Introduction: Academic performance is a product of the complex environment that surrounds the student, shaped by aspects such as intensity of study, motivation and context of relationships, which affect the academic achievement of individuals. There may be other psychological or emotional factors, such as anxiety, level of psychological well-being, and behavior strategies for effective adaptation to concrete environment demands and their associated emotional stress.

Objectives: This research study aims at determining the level of psychological well-being and coping strategies in students of the Basic Common Cycle of studies leading to an MD degree in the School of Medicine of the National University of Córdoba, Argentina.

Methods and materials: This is an observational study based on a "Questionnaire on determiners of academic performance", that was answered by 374 students. Data was processed using statistical bivariate analysis ($p < 0.05$) and multiple correspondence factorial analysis.

Results: Students with "VG/G (Very Good/Good) performance" show high levels of satisfaction and well-being use direct coping strategies which lead them to "cope with problematic situations" by means of "problem solving". Students with "R/I (Regular/Insufficient) academic performance" declare "dissatisfaction with most aspects of their personalities", feel unable to give a satisfactory response to environment demands, and assume "avoidance behaviors" as coping strategies.

Conclusions: Student academic performance is associated with psychological well-being, feeling of satisfaction with achievements, and coping with stressful situations.

Key words: academic performance – psychological well-being – coping strategies – medical students

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Resumen

Introducción: El rendimiento académico es producto del complejo mundo que envuelve al estudiante, determinado por aspectos cotidianos (intensidad de estudio, motivación y medio relacional) que afectan el desempeño académico de los individuos. Otros factores pueden ser psicológicos o emocionales tales como la ansiedad, el grado de bienestar psicológico y las estrategias conductuales tendientes a lograr una adaptación efectiva a las demandas concretas del ambiente y al estrés emocional asociado.

Objetivos: En esta investigación se propuso identificar el nivel de bienestar psicológico y las estrategias de afrontamiento en los estudiantes del Ciclo Básico de la Carrera de Medicina y analizar la relación entre bienestar, afrontamiento y rendimiento académico.

Material y método: Es un estudio observacional el cual se trabajó a partir del "Cuestionario Determinantes relacionados con el rendimiento académico" implementado a 374 alumnos. El análisis de los datos se efectuó a través del procesamiento estadístico con análisis bivariado ($p < 0,05$) y análisis factorial de correspondencia múltiple.

Resultados: Los alumnos con "Rendimiento MB/B" presentan altos niveles de satisfacción y bienestar utilizando un afrontamiento directo que contribuye a "enfrentar las situaciones que preocupan" mediante la "solución de problemas". En tanto que los alumnos con "Rendimiento R/I" perciben "disgusto con la mayoría de los aspectos de su personalidad" sintiéndose impedidos para responder satisfactoriamente a las demandas del ambiente, asumiendo "comportamientos de evitación" como forma de afrontamiento.

Conclusiones: El rendimiento académico de los estudiantes se asocia con la presencia de bienestar psicológico, satisfacción con respecto a los logros alcanzados y el afrontamiento de situaciones estresoras.

Palabras claves: rendimiento académico - bienestar psicológico - estrategias de afrontamiento – estudiantes de Medicina.

Introduction

The etiology of the problems related to the academic performance of university students is complex and includes various personal, academic and sociocultural factors¹, which are evident from the early years of study. When these factors remain unsolved, they tend to affect the psychological integrity of students, who evince loss of concentration, emotional troubles, low academic performance, and poor productivity², among other problems. This study aims at identifying the level of psychological well-being and the coping strategies used by medical students in the Basic Cycle to deal with academic situations that are perceived as stressors, such as excessive academic pressure, examination

anxiety, and class participation. A closely related objective is to analyze the relationship among psychological well-being, coping and academic performance.

Materials and Methods

The subjects of this study were taken from the student population of the Basic Common Cycle of studies leading to an MD degree in the School of Medicine of the National University of Córdoba, Argentina, during the academic year 2010, i.e. students from the first, second and third years who were selected through multistage sampling by subject and academic level. The strata comprise students enrolled in the following subjects: Medical Anthropology (first year), Psychosocial Medicine (second year) and Community Health III

(third year). Using simple random sampling for each stage, a total of 374 complete records of voluntary answers was obtained. Ethical protection was granted for all data provided by the students. The questionnaire, called "Questionnaire on determiners of academic performance", was prepared on the basis of various related instruments that were revised to obtain a version specifically designed for this study^{3,4,5,6,7,8}, which is observational and transversal. The questionnaire was validated, in the first stage of the study, by an analysis using the alpha Cronbach⁹ coefficient, for which a value of 0.79 was obtained. The instrument consists of 22 questions, some of them dichotomous and others of the multiple-choice type, enquiring about social and personal determiners that may affect students' academic performance. The study analyzes students' perceptions of their general psychological well-being, academic well-being, and coping strategies. As regards psychological well-being, 27 items were related to subjects' perception of well-being in such matters as level of autonomy, mastery of environment, situation control, self-acceptance, and life goals (agree / does not agree); besides, 6 items enquire about academic well-being, including statements on correspondence between expectations and actual academic achievements, such as "I find studying interesting", "I find studying monotonous", "Studying is important for me", "I enjoy studying" (agree / does not agree). As regards coping strategies, the questionnaire includes 6 items that enquire about protective behaviors against stressful events. The questionnaire items facilitate determination of the frequency of use of coping strategies and their nature: whether they focus on the situation, problem solving, communication, help seeking, avoidance, or denial (never / sometimes / always). Data on individual students' academic performance for the 2010-2012 period was obtained from the

Students Office database of the School of Medicine, i.e. the grade point averages based on a scale of 1 to 10. The marks spanned the examinations dates from February 2010 through to December 2012. The marking scale groups students as follows: those having a performance in the range of 1 to 3.99 (termed "Insufficient"), those having 4 to 5.99 (termed "Regular"), those having 6 to 7.99 (termed "Good"), and those having 8 to 10 (termed "Very Good"). Following a preliminary analysis, students were regrouped in two strata: those having a "Good-Very Good (G/VG)" performance, and those having a "Regular-Insufficient (R/I)" performance; these variables indicate student performance and facilitate student profile characterization. Statistical data processing was first carried out using bivariate categorical data analysis (adjusted Chi-square test), with a significance level of $p < 0.05$ for all cases, and later using a multiple correspondence factorial analysis, which permitted an extension of the categorical analysis of the recorded variables. This multivariate technique facilitated the generation of profiles for all students on the basis of the indicators that were rendered significant by the bivariate analysis.

Results

The questionnaire was given to 374 students enrolled in the first, second, and third years of the School of Medicine. The mean age of the students in the sample was 20 years, within a range of 17 to 35 years. 65% of students were female and 35%, male. Comparing the mean age of the groups stratified by gender, it was noted that the mean for the females was lower than the corresponding to males, namely 20.05 ± 0.12 and 20.66 ± 0.21 , respectively, ($p < 0.0069$).

The perception of psychological well-being by students at the time of answering the questionnaire was 86% positive; it must be taken into account that the ques-

tions enquired about level of autonomy, mastery of environment, situation control, self-acceptance, and life goals (Figure 1).

mance” than in students with “R/I academic performance” ($p < 0.0150$, $p < 0.0152$, $p < 0.0001$, $p < 0.0433$, $p < 0.0452$, $p < 0.0011$, and $p < 0.0230$, respectively).

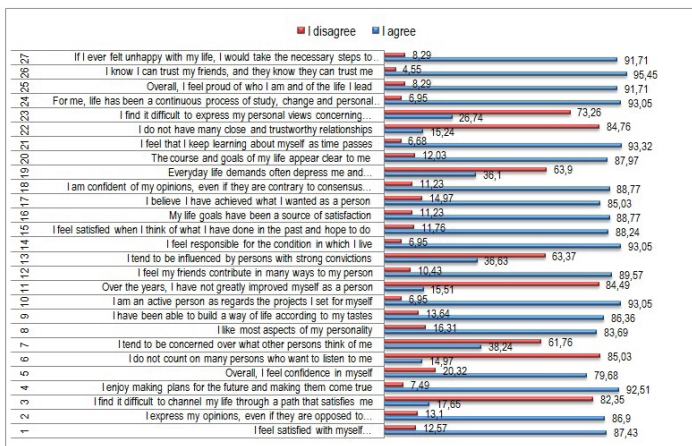


Figure 1. Distribution of the total of medical students who have answered the questionnaire in the SM, according to psychological well-being (n=374)

The analysis of the relationship between “Psychological Well-being” and “Academic Performance”, in the evaluation of item 3, “I find it difficult to channel my life through a path that satisfies me”, revealed a prevalence of students with “R/I academic performance” over those with “VG/G academic performance” ($p < 0.0007$). In the evaluation of the items “I like most aspects of my personality” (item 8), “I have been able to build a life according to my tastes” (item 9), “I am an active person as regards the projects I set for myself” (item 10), “My life goals have been a source of satisfaction rather than a source of frustration for me” (item 16), “I believe I have achieved what I wanted as a person” (item 17), “Overall, I feel proud of who I am and of the life I lead” (item 25), and “If I ever felt unhappy with my life, I would take the necessary steps to change it” (item 27), a higher frequency of choice was found in students with “VG/G academic perfor-

In the analysis by course year, for the items “For me, life has been a continuous process of study, change and personal growth” (item 24) and “If I ever felt unhappy with my life, I would take the necessary steps to change it” (item 27), first-year students with “VG/G academic performance” prevailed over those with “R/I academic performance” ($p < 0.0288$ and $p < 0.0330$, respectively). As regards the items “I am an active person as regards the projects I set for myself” (item 10), “I feel satisfied when I think of what I have done in the past and hope to do in the future” (item 15), and “Overall, I feel proud of who I am and of the life I lead” (item 25), second-year students with “VG/G academic performance” prevailed over those with “R/I academic performance” ($p < 0.0223$, $p < 0.0405$, and $p < 0.0223$, respectively). When comparing item 25, “I feel proud of who I am and of the life I lead” across course years, in the group with “VG/G academic performance”, students of first and third year showed prevalen-

ce over those of second year ($p < 0.0001$ and $p < 0.0001$, respectively). As regards academic psychological well-being, students answered “I enjoy studying”, “I find studying interesting”, “Studying gives a meaning to my life”, and “Studying has given me independence” (Figure 2).

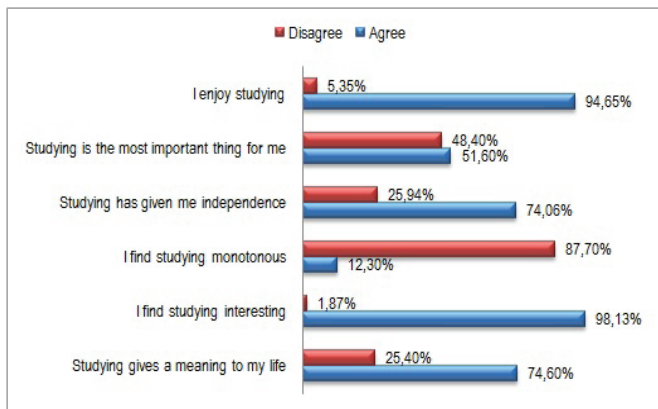


Figure 2. Distribution of the total of medical students who have answered the questionnaire, according to academic well-being (n=374)

When analyzing the relationship between psychological well-being and academic performance for all the subjects of the study it was found that “I enjoy studying” (item 6) prevailed in students with “VG/G academic performance” over those with “R/I academic performance” ($p < 0.0332$).

Coping Strategies

The Coping strategies most commonly resorted to by the subjects of the study in the face of problematic situations are “To face the situation”, “To develop a course of action and to carry it out”, and “To communicate and seek help” (Figure 3).

No associations were observed between “Academic performance” and “Coping strategies” in students of the first and second years. However, the analysis showed that item 6, “To avoid the situation”, in third year students of the group “R/I academic performance” prevailed

over those with “VG/G academic performance” ($p < 0.0455$). The multiple correspondence analysis aimed at determining the level of association between “Academic performance” and perception of “Psychological well-being” and “Coping strategies” revealed two factors that define students’ profiles.

The first factor indicates the relationship between “VG/G academic performance” with the perceptions of “I am an active person as regards the projects I set for myself”, “I have been able to build a way of life according to my tastes”, “I like most aspects of my personality”, “Overall, I feel proud of who I am and of the life I lead”, and “I feel satisfied when I think of what I have done

in the past and hope to do in the future”, “If I ever felt unhappy with my life, I would take the necessary steps to change it”, “To face the situation”. On the other hand, “R/I academic performance” is associated with the perceptions “dissatisfaction with one’s personality” and “tendency to avoid problematic situations” (Figure 4).

Ref: 1. Regular-Insufficient academic performance; Psychological well-being Cat. 19-8 (I like most aspects of my personality); Coping Strategies Cat. 21-6 (To avoid the situation); 2. Academic performance Very Good-Good; Psychological well-being Cat. 19-15

(I feel satisfied when I think of what I have done in the past and hope to do in the future); Psychological well-being Cat. 19-26 (I know I can trust my friends, and they know they can trust me); Psychological well-being Cat. 19-27 (If I ever felt unhappy with my life, I would take the necessary steps to change it); Psychological

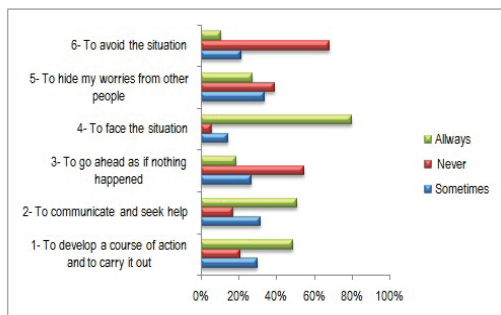


Figure 3. Distribution of the total of medical students who have answered the questionnaire in the SM,

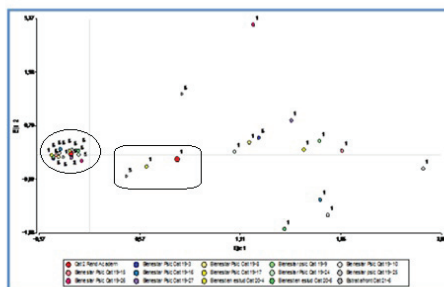


Figura 4. Visualization of factors associated with academic performance with reference to perception of psychological well-being and to coping strategies for problematic situations in medical students who have answered the questionnaire in the SM.

well-being Cat. 19-24 (For me, life has been a continuous process of study, change and personal growth); Psychological well-being Cat. 19-9 (I have been able to build a life according to my tastes); Psychological well-being Cat. 20-4 (Studying has given me independence.)

Discussion

The high levels of well-being found in the subjects of this study are similar to those found by Villaseñor-Ponce (2010)¹⁰, who maintains that the high satisfaction evinced by the subjects he studied is due to their being satisfied with their achievements up to the time of the study¹⁰. In a study carried out in Spain, Cabanach and Col. (2008) agree that “the perception of having the resources required for coping with academic demands fosters student’s learning motivations, psychological adjustment and, as a result, higher levels of well-being”¹¹.

The association that was found between “psychological well-being” and “academic performance” in students with “VG/G academic performance”, who evinced a higher level of satisfaction and well-being compared to those with “R/I academic performance”, agrees with the findings of

other research studies that find a positive association between academic engagement—understood as a state of well-being defined by high levels of concentration—and commitment to study, whose relationships are established with variables such as gender, age, self-efficacy, life satisfaction and performance^{12,13,14}. Moreover, a relationship has also been established between levels of satisfaction and academic achievement (mediated by motivation), effectiveness, and success expectations^{13,15}. In relation to this, the study performed by Contreras and Col. (2008), in Colombia, indicates that the commitment, determination and satisfaction perceived by the student in his academic work are facilitators of a good academic performance, and that some of the factors that influence academic failure are concentration and comprehension problems, plus emotional components related to learning, such as poor motivation, lack of self-confidence, low tolerance to frustration, fear of future, and fear of making decisions and of making mistakes¹⁶. The association found in our study between psychological discomfort—namely, the perception of high levels of stress and continuous tension, loss of self-confiden-

ce, and lesser ability to face problems and make decisions¹⁷— and lower academic performance, low grade point average, and less satisfaction with the course of studies has also been observed in young university students of Nursing in Spain¹⁸ and Chile¹⁹. Another aspect that has been analyzed is the presence of “Academic psychological well-being” in students with “VG/G academic performance”, as can be observed in previous research studies that have confirmed the relationship between satisfaction and enjoyment experienced by students in their learning processes and academic achievement^{13, 16}.

Also, our preliminary data analysis revealed that the “Coping strategies” used by the subjects of this study to face problematic situations may be ordered by decreasing frequency as follows: “To face the situation”, “To develop a course of action and to carry it out”, “To communicate and seek help”, “To go ahead as if nothing happened”, and “To avoid the situation”. These findings reveal that students have a tendency to use more frequently those strategies that focus on problem solving, coping with the situation or preparing a course of action to solve it, than passive strategies focused on emotional control. Similar results have been obtained by studies which found that problem solving, help seeking, and avoidance are the most frequent strategies used by young university students^{20,21,22,15}. In short, our study reports that, to face situations arising from academic requirements, students use “Coping strategies” that contribute to “problem solving”; this indicates that students perceive that, through a direct and behavioral type of coping, they have the ability to modify the situation, to look for possible solutions and to carry out actions that may alter the source of stress and overcome the problem. Other students, on perceiving themselves as unable to meet satisfactorily some concrete demands and their associated stress, assume, as coping approaches, “behaviors that entail

escapism or avoidance”. With reference to this, some researchers point out that persons with medium to high levels of anxiety resort to escapism and avoidance when facing academic work^{23,24}.

World education research that has characterized the coping strategies used by university students in dealing with stressing academic situations, supports the relationship between coping and performance, since appropriate and effective coping strategies would tend to promote a better adaptation of the student and a higher academic performance^{20,22}. Thus, the relationship between coping and academic performance has been reported in studies that maintain that students who cope with academic stress tend to evince a better performance, whereas those who ignore it tend to evince lower performance²⁵. Similar results are reported in a study carried out with students of the School of Medicine of Akdeniz University, in Turkey, which found a relationship between academic performance and coping focused on problem solving. Therefore, students who use coping strategies focused on problem solving combined with self-confidence have a better adaptation to the demands of academic environments and present higher levels of academic satisfaction and achievement²⁶. The results of our study lead to the conclusion that a majority of subjects evince psychological well-being. Thus, academic performance of students is associated with psychological well-being, perception of autonomy, situation control, self-acceptance and satisfaction with achievements. When facing situations that generate concern, students tend to use more frequently strategies focused on “problem solving”, “facing the problem or preparing a course of action to overcome it”. Students with “VG/G academic performance” have a perception of themselves as “persons who are able to reach the goals they set for themselves”, and state that they “feel satisfied with the characteristics of their personalities”, “are

proud of being who they are and of the life they lead”, “are satisfied with their achievements to date, able to change readily those situations which are deemed unsatisfactory” and “face situations which create concern”. On the other hand, “R/I academic performance” is associated with “dissatisfaction with characteristics of their personality” and a “tendency to avoid situations that generate concern”. Based on these findings and taking into account the personal and academic characteristics of students who are immersed in the current academic environment, it will be possible to develop actions aimed at accompanying and facilitating their adaptation and adjustment to the academic requirements of higher education; these actions would also act as a boosting element for student performance.

El presente estudio no presenta conflictos de intereses y está encuadrado en el marco del Proyecto de Investigación “Los Ciclos de Nivelación de las Carreras de la Facultad de Ciencias Médicas: un abordaje a los procesos evaluativos y su relación con el rendimiento académico de los alumnos”. FCM. UNC. Director: Dra. Mgter Marcela Lucchese. Entidad otorgante Secyt. Inicio 2010.

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