INTERNATIONAL STUDIES IN TIME PERSPECTIVE

MARIA PAULA PAIXÃO
JOSÉ TOMÁS DA SILVA
(COORD.)
VICTOR ORTUÑO
PEDRO CORDEIRO
(EDITORS)

(Página deixada propositadamente em branco)

Instituto de Psicologia Cognitiva
Desenvolvimento Vocacional e Social

INTERNATIONAL STUDIES IN TIME PERSPECTIVE

MARIA PAULA PAIXÃO
JOSÉ TOMÁS DA SILVA
(COORD.)
VICTOR ORTUÑO
PEDRO CORDEIRO
(EDITORS)

(Página deixada propositadamente em branco)

Chapter 14

TRANSITION TO HIGHER EDUCATION: LIFESTYLE CHANGES, HEALTH CONDITION
AND ACADEMIC SUCCESS OF FIRST-YEAR STUDENTS

Andreia Soares
Marco Pereira
José Canavarro
Faculty of Psychology and Educational Sciences, University of Coimbra, Portugal
andreiamsoares2@gmail.com

Abstract: Lifetime normative transitions comprising significant ecological structural changes, as the transition to higher education, represent a risk factor in the adoption and maintenance of less healthy lifestyles. Health-related behaviors and attitudes (HBA) that form part of personal lifestyle are variables that affect students' health condition and academic success. A sample of first-year students ($N = 546$) from the University of Coimbra (academic year: 2009/2010) was collected in order to study "students in transition" lifestyle (viz. HBA changes; perceived impact on health condition, adaptation process and academic performance; intended changes), health condition, quality of the adaptation process and academic performance, as well as the associations among these variables. Although the prevalence of HBA had changed after university entry, most of the students maintained a high number of positive HBA but exhibited alarming levels of alcohol consumption and physical activity. The two previously mentioned HBA seemed to play an important yet conflicting role in health condition and academic success. Most of the results are consistent with the literature and provided important information for planning an initiative focused on promoting health and academic success in this specific context.

Keywords: academic success, health condition, health-related behaviors and attitudes, higher education, transition.

Introduction

Transition periods always represent, regardless of when they occur in the human lifespan, (the perception of) instability or discontinuity and adjustment, which in most cases requires changes in the pattern of behavioral, cognitive and emotional responses (Almeida, Soares, & Ferreira, 2000; Reich, Harber, & Siegel, 2008) and mobilization of available resources (Seabra, 2007). Transition to higher education appears to be a specific process that falls within transition processes in general, in a transitional perspective (Pinheiro, 2004), and is often experienced by students as the most desired but simultaneously difficult transition, because it entails considerable educational, ecological and developmental changes (Pinheiro, 2004; Pittman & Richmond, 2008). While most of the students are able to cope with the diversity of changes and to succeed in the adaptation/adjustment process (or in the individual response to the transition), some experience (psychological, emotional, physical or social) health problems,

that may compromise not only *health condition* (level of health of an individual, family or community at a given point in time, which can be assessed either by objective indicators or by more subjective measures; Fleck, 2008), but also *academic success* (understood as a broader concept than academic performance or retention rate; thus, its assessment also comprises personal, educational, social and vocational experiences of students; Upcraft, Gardner, Barefoot, & Associates, 2005) and therefore may precipitate studies interruption or cessation, during or at the end of the academic year (DeBerard, Spielmans, & Julka, 2004; Rayle & Chung, 2008).

During the past two decades, *health-related behaviors and attitudes* or HBA (i.e. set of actions and relatively enduring organizations of beliefs, feelings and behavioral tendencies usually grouped into two broad categories, based on their impact on health: (1) positive HBA, such as tobacco abstinence, physical activity or others which may protect or optimize health condition, and (2) negative HBA, such as excessive alcohol consumption, poor sleep hygiene, among others which may be damaging to health condition; Odgen, 2004) that form part of students' lifestyle have been widely investigated for several purposes. Among others, for epidemiological reasons, behavior understanding and prediction (the investigation carried out by Wardle and Steptoe, since 1989, is a paradigmatic example), comprehensive understanding of the relationship between HBA and health/disease related variables (viz. well-being, quality of life, stress, cf., e.g., Dusselier, Dunn, Wang, Shelley II, & Whalen, 2005; Grant, Wardle & Steptoe, 2009; Seabra, 2007) or academic success (cf., e.g., DeBerard et al., 2004; Elias, Azevedo & Maia, 2009). Although most of the freshmen educated at universities do not present unhealthy lifestyles, some researchers draw attention to the acquisition of negative HBA during the transition and adaptation to higher education: psychoactive substances use or insufficient sleep can result from (1) the stress induced by multiple changes (e.g. growing responsibility and autonomy in their personal and academic experiences) and examinations periods (Dusselier et al., 2005), (2) social intercourse with peers with unhealthy habits and (3) decreasing parental monitoring (Precioso, 2004). In general, a healthy lifestyle (in particular, with an adequate sleep pattern, regular exercise that doesn't compete with academic tasks, no binge-drinking nor tobacco use) can lead to higher levels of health and well-being (Vaez & Laflamme, 2003) and academic performance (DeBerard et al., 2004; Elias et al., 2009; Trockel, Barnes, & Egget, 2000). In return, academic success, life satisfaction and absence of stress inducers have been found to predict the avoidance of negative HBA and the expression of positive ones (Grant et al., 2009).

Method

Sample

A sample of 546 first-year students (academic year: 2009/2010) was recruited from all eight faculties of the University of Coimbra. Mean age of participants was 18.7 (*SD* = 1.0), with the youngest participant being 17 years old and the oldest 24 years old. Women accounted for 58% of the sample. The majority of the participants was Portuguese (96%; 72% had left home to attend university), single (100%) and from middle (45%) and low (34%) socioeconomic status.

Procedure

All volunteers received information about the purpose and content of this cross-sectional study and provided their informed consent. Full confidentiality was guaranteed. The implementation of the evaluation protocol took place inside the University of Coimbra classrooms, from March to May 2010.

Measures: An anonymous self-report questionnaire was developed to assess (a) subjects' sociodemographic characteristics, (b) the prevalence of seven HBA before and after entering university (these questionnaire items were developed based on existing instruments, such as *Health and Behaviour Survey*; Grant et al., 2009), (c) direction of possible changes in HBA, taking into account the potential impact on health, (d) subjects' perception of the impact of these changes on their health, adaptation process and academic performance (e) subjects' intended changes regarding their new lifestyle, (f) subjects' perception of their health condition and (g) subjects' academic performance (which was given by the weighted average of students' examination results of the first semester). The short form of another questionnaire (*QVA-r* or *Questionário de Vivências Académicas – versão reduzida*; Almeida, Soares & Ferreira, 2000) was used to measure personal, educational, social and vocational experiences considered to have strong repercussions on the quality of adaptation/adjustment to higher education. More details about these 2 questionnaires can be found elsewhere (cf. Soares, Pereira, & Canavarro, in press).

Data analysis: The data were analyzed using SPSS version 17.0. Statistical analysis comprised descriptive statistics, paired Student's *t*-test and Spearman's rank correlation coefficient.

Results

Table 1 shows the prevalence of HBA before and after entering university and the sample distribution by the four categories of the variable "direction of possible changes in HBA": HBA positive change (PC), HBA negative change (NC), HBA positive non-change (PnC) and HBA negative non-change (NnC).

Table 1 – *Prevalence of HBA before and after entering university and sample distribution*
by "direction of possible changes in HBA" categories.

HBA	Prevalence of HBA (*N* = 546)		Direction of possible changes in HBA (*N* = 546)	
	$M \pm SD$ (Min-Max) or *% (n)*		*% (n)*	
	Before university	In university		
Eating behavior				
Meals (per day)	4.3 ± 0.8 (2-8)	4.1 ± 1.0 (2-12)	NnC 5.9 (32) PC 11.7 (64)	NC 17.8 (97) PnC 64.7 (353)
Nutritional quality of meals	Poor: 4.4 (24) Satisf: 24.9 (136) Good: 70.7 (386)	Poor: 13.2 (72) Satisf: 56.8 (310) Good: 30.0 (164)	NnC 3.5 (19) PC 48.0 (262)	NC 9.7 (53) PnC 38.8 (212)

HBA	Prevalence of HBA (N = 546)		Direction of possible changes in HBA (N = 546)	
	$M \pm SD$ (Min-Max) or % (n)		% (n)	
	Before university	In university		
Sleep-wake pattern				
Hours of sleep (per day)	8.1 ±1.2 (2-13)	7.0 ± 1.2 (1-12)	NnC 5.5 (30) PC 33.2 (181)	NC 33.0 (180) PnC 28.4 (155)
Quality of sleep	Poor: 2.2 (12) Satisf: 29.9 (163) Good: 67.9 (371)	Poor: 15.0 (82) Satisf: 54.0 (295) Good: 31.0 (169)	NnC 1.8 (10) PC 34.8 (190)	NC 13.2 (72) PnC 50.2 (274)
Physical activity pattern				
Frequency/duration of the practice (per week)	Rare: 9.7 (53) Occas: 29.5(161) Often: 60.8(332)	Rare: 39.9 (218) Occas: 37.4(204) Often: 22.7 (124)	NnC 14.5 (79) PC 11.0 (60)	NC 62.8 (343) PnC 11.7 (64)
Psychoactive substances use				
Illicit drugs consumption	Never: 88.3 (482) Rare: 7.5 (41) Occas: 2.9 (16) Often: 1.3 (7)	Never: 88.6 (484) Rare: 6.0 (33) Occas: 3.3 (18) Often: 2.0 (11)	NnC 8.1 (44) PC 0.5 (3)	NC 3.3 (18) PnC 88.1 (481)
Alcohol consumption (units per day)	0.3 ± 0.8 (0-5)	0.8 ± 1.4 (0-10)	NnC 1.1 (6) PC 16.3 (89)	NC 10.3 (56) PnC 72.3 (395)
Excessive alcohol (> 20g/day) consumption (days per month)	1.3 ± 2.5 (0-25)	2.6 ± 4.0 (0-25)	NnC 14.3 (78) PC 1.5 (8)	NC 37.2 (203) PnC 47.1 (257)
Tobacco consumption (units per day)	1.1 ± 3.0 (0-25)	1.7 ± 3.9 (0-25)	NnC 6.8 (37) PC 0.5 (3)	NC 15.4 (84) PnC 77.3 (422)
Caffeine consumption (drinks per day)	0.8 ± 1.0 (0-8)	1.3 ± 1.3 (0-7)	NnC 2.4 (13) PC 30.8 (168)	NC 12.3 (67) PnC 54.6 (298)
Self-medication				
Frequency of medication intake without professional advice (per year)	Never: 34.2 (187) Rare: 47.1(257) Occas: 16.1(88) Often: 2.6 (14)	Never: 33.9 (185) Rare: 44.0(240) Occas: 17.9(98) Often: 4.2 (23)	NnC 16.7 (91) PC 1.3 (7)	NC 5.5 (30) PnC 76.6 (418)
Sexual behavior				
Frequency of condom use (per sexual intercourse)	Abstin: 19.6 (107) Rare: 20.1(110) Often: 12.5 (68) Always: 47.8 (261)	Abstin: 19.2 (105) Rare: 19.2 (105) Often: 12.3 (67) Always: 49.3 (269)	NnC* 28.6(156) PC* 2.4 (13)	NC* 2.9 (16) PnC* 66.1 (361)

HBA	Prevalence of HBA ($N = 546$)		Direction of possible changes in HBA ($N = 546$)	
	$M \pm SD$ (Min-Max) or $\%$ (n)			
	Before university	In university	$\%$ (n)	
Health monitoring				
Frequency of monitoring (per year)	Never: 0.7 (4) Rare: 27.7 (151) Occas: 46.7 (255) Often: 24.9 (136)	Never: 0.5 (3) Rare: 34.4 (188) Occas: 42.1 (230) Often: 22.9 (125)	NnC 25.6 (140) PC 7.5 (41)	NC 9.4 (51) PnC 57.5 (314)
Lifestyle (general measure)	10.3 ± 1.6 (5-13)	9.1 ± 2.0 (0-13)		

* Answers were analyzed according to whether or not students had sexual intercourse and multiple sexual partners.

Statistically significant ($p < .01$ or $p < .05$) differences between the two conditions (before and after entering university) were found for each HBA considered (except illicit drugs consumption) and lifestyle general measure. In the university, freshmen scored lower in eating behavior, sleep-wake pattern, physical activity pattern and health monitoring, but higher in psychoactive substances use, self-medication and safe sexual behavior. Lifestyle general measure also decreased with the transition.

As to freshmen's perception of the impact of these possible changes, students acknowledged a negative impact ($n = 249$, 45.6%) or no impact at all ($n = 238$, 43.6%) in their health condition, no impact at all ($n = 288$, 52.7%) or a positive impact ($n = 131$, 24.0%) in their adaptation process and, at last, no impact at all ($n = 266$, 48.7%) or a negative impact ($n = 214$, 39.2%) in their academic performance. Only 36.8% of the respondents ($n = 201$) would like to change their current behavioral/attitudinal repertoire and almost half of them ($n = 95$, 47.3%) wanted to start physical exercise / sports activity or to increase their level of practice.

Table 2 presents information about subjects' current health condition, academic performance and quality of the adaptation process to higher education.

Table 2 – *Descriptive statistics of current health condition and academic success*

Variables		$\%$ (n)		$M \pm SD$ (Min-Max)
Physical health condition ($n = 544$)		1=Bad 4.6 (25) 2=Fair 26.1 (142) 3=Good 41.0 (223)	4=Very good 22.8 (124) 5=Excellent 5.5 (30)	3.0 ± 1.0 (1.0-5.0)
Mental health condition ($n = 544$)		1=Bad 5.0 (27) 2=Fair 18.0 (98) 3=Good 30.5 (166)	4=Very good 31.4 (171) 5=Excellent 15.1 (82)	3.3 ± 1.1 (1.0-5.0)
Academic performance ($n = 546$)				10.7 ± 4.2 (0-18.5)
Quality of the adaptation process ($n = 546$)	Personal Social Vocational Learning Institutional			3.5 ± 0.8 (1.4-5.0) 3.8 ± 0.7 (1.2-5.0) 3.9 ± 0.7 (1.1-5.0) 3.2 ± 0.6 (1.5-4.9) 3.9 ± 0.6 (1.6-5.0)

Results for Spearman's coefficient calculation revealed statistically significant ($p <.01$ and $p <.05$) associations (which varied in strength: from weak to moderate) between lifestyle (viz. general measure and selected HBA) and the other main variables (viz. health condition, adaptation process and academic performance). A summary of the relevant data follows: (a) lifestyle general measure was positively associated with physical health condition ($\rho = .25$, $p <.01$), mental health condition ($\rho = .23$, $p <.01$), academic performance ($\rho = .26$, $p <.01$) and personal ($\rho = .25$, $p <.01$), learning ($\rho = .25$, $p <.01$) and vocational ($\rho = .12$, $p <.01$) experiences; (b) the quality of sleep was positively related with all indicators of health condition and academic success ($.13 \leq \rho \leq .36$, $p <.01$), (c) the practice of physical activity was positively associated with physical health condition ($\rho = .30$, $p <.01$) but unassociated with academic performance, (d) the excessive consumption of alcohol was negatively associated with learning experiences ($\rho = -.13$, $p <.01$) and academic performance ($\rho = -.10$, $p <.05$), but positively associated with social experience ($\rho = .18$, $p <.01$); and (e) the consumption of tobacco was negatively associated with academic performance ($\rho = -.25$, $p <.01$), learning experience ($\rho = -.17$, $p <.01$) and mental health condition ($\rho = -.13$, $p <.01$).

Discussion & Conclusion

Almost every HBA exhibited by freshmen from the first study changed after university entry and two of them were particularly affected: physical activity pattern and psychoactive substances use (viz. excessive alcohol consumption). These results are consistent with previous studies (e.g. Bray & Born, 2004; Elias et al., 2009; Seabra, 2007). This cluster of changes led to lifestyle damage (i.e. an increase in negative HBA) and to the acknowledgement of a subsequent negative impact in health condition, although the new lifestyle was characterized by a high number of positive CAS and followed by encouraging perceptions of current health condition and quality of academic life experiences, as well as a fair academic achievement.

It seems to exist a discrepancy between students' perception regarding their lifestyle negative evolution (and following impact) and their will to change something. A few authors (e.g. Fletcher, Bryden, Schneider, Dawson, & Vandermeer, 2007; Precioso, 2004) provide already possible explanations: (1) young adults perceived themselves as invulnerable to diseases (more than 69% of the sample self-assessed their health condition as good, very good or excellent), (2) there are benefits (e.g., increased sense of belonging) when exhibiting negative HBA such as psychoactive substances use or sleep deprivation required by academic festivities (in this study, excessive alcohol consumption was positively related with social experience) and (3) several theoretical models advocate the existence of complex mechanisms involved in intention formation (to change HBA).

Students' preference for physical exercise or sports practice above other HBA wasn't surprising given (1) the large percentage of practitioners (77.3%) that changed for (or remained in) insufficient levels of practice and the growing demand for physical activity programs (a new social phenomenon) due to several reasons (e.g. aesthetic, performance, health-related) (Gaspar, 2004).

Most of the associations found between lifestyle and the other main variables (viz.

health condition, adaptation process and academic performance) are consistent with the literature (e.g. Elias et al., 2009; Grant et al., 2009; Trockel et al., 2000; Vaez & Laflamme, 2003): in general, healthier lifestyles (with more positive HBA) lead to more positive perceptions of health condition and academic success (and vice versa). However, in this sample, a few HBA seemed to play a conflicting role. First, despite important to physical health condition, the practice of physical activity was irrelevant to academic performance (probably because high levels of practice compete for time which is essential for academic tasks). Then, excessive alcohol consumption appeared to be relevant to social experiences quality (and vice versa), in spite of the collateral damages.

These results provide important information for planning an initiative focused on promoting health and academic success in a higher education setting, among "students in transition": the purpose of some negative HBA should be deconstructed and sample's preferences regarding lifestyle changes should be taken into consideration when establishing the intervention goals.

References

Almeida, L., Soares, A., & Ferreira, J. (2000). Transição e adaptação à universidade: apresentação do Questionário de Vivências Académicas (QVA). *Psicologia, 14*(2), 189-208.

Bray, S., & Born, H. (2004). Transition to university and vigorous physical activity: implications for health and psychological well-being. *Journal of American College Health*, *52*(4), 181-188. doi: 10.3200/JACH.52.4.181-188

DeBerard, M., Spielmans, G., & Julka, D. (2004). Predictors of academic achievement and retention among college. *College Student Journal, 38*(1), 66-80.

Dusselier, L., Dunn, B.,Wang, Y., Shelley II, M., & Whalen, D. (2005). Personal, health, academic, and environmental predictors of stress for residence hall students. *Journal of American College Health, 54*(1), 15-24. doi: 10.3200/JACH.54.1.15-24

Elias, A., Azevedo, V., & Maia, A. (2009). Saúde e rendimento académico nos estudantes da Universidade do Minho: percepção de áreas problemáticas. In C. Sequeira, I. Ribeiro, J. Carvalho, T. Martins, & T. Rodrigues (Coords.), *Actas do IV Congresso Saúde e Qualidade de Vida* (pp. 292-302). Porto: Escola Superior de Enfermagem do Porto.

Fleck, M. (2008). Problemas conceituais em qualidade de vida. In M. Fleck et al. (Eds.), *A avaliação de qualidade de vida: guia para profissionais da saúde* (pp. 19-28). Porto Alegre, BR: Artmed.

Fletcher, P., Bryden, P., Schneider, M., Dawson, K., & Vandermeer, A. (2007). Health issues and service utilization of university students: experiences, practices & perceptions of students, staff and faculty. *College Student Journal, 41*(2), 482-493.

Gaspar, P. (2004). *Efeitos do sedentarismo a nível cardiovascular: A importância da actividade física na manutenção da saúde* (Academic paper). Instituto Politécnico de Leiria, Leiria.

Grant, N., Wardle, J., & Steptoe, A. (2009). The relationship between life satisfaction and health behavior: A cross-cultural analysis of young adults. *International Journal of Behavioral Medicine, 16*, 259-268. doi: 10.1007/s12529-009-9032-x

Ogden, J. (2004). *Psicologia da saúde* (2nd ed). Lisboa: Climepsi.

Pinheiro, M. (2004). O desenvolvimento da transição para o ensino superior: O princípio depois de um fim. *Aprender, 29*, 9-20.

Pittman, L., & Richmond, A. (2008). University belonging, friendship quality, and psychological adjustment during the transition to college. *The Journal of Experimental Education, 76*(4), 343-361. doi: 10.3200/JEXE.76.4.343-362

Precioso, J. (2004). Educação para a saúde na universidade: um estudo realizado em alunos da Universidade do Minho. *Revista Electrónica de Enseñanza de las Ciencias, 2*(3), 161-170. Retrieved from http://hdl.handle.net/1822/3986

Rayle, A., & Chung, K. (2008). Revisiting first-year college student's mattering: social support, academic stress, and the mattering experience. *Journal of College Student Retention, 9*(1), 21-37.

Reich, W., Harber, K., & Siegel, H. (2008). Self-structure and well-being in life transitions. *Self and Identity*, *7*, 129-150. doi: 10.1080/15298860601119940

Seabra, A. (2007). *Queixas de saúde subjectivas e preocupações modernas de saúde: Um estudo comparativo entre alunos de diferentes licenciaturas* (Unpublished master's thesis). Braga: Escola de Psicologia da Universidade do Minho.

Seco, G., Casimiro, M., Pereira, M., Dias, M., & Custódio, S. (2005). *Para uma abordagem psicológica da transição do ensino secundário para o ensino superior: pontes e alçapões.* Leiria: Instituto Politécnico de Leiria.

Soares, A. M., Pereira, M. D., Canavarro, J. M. (in press). Transição para o ensino superior: estilo de vida, estado de saúde e qualidade de vida do primeiranista. *Psicologia, Saúde & Doenças*.

Trockel, M. T., Barnes, M. D., & Egget, D. L. (2000). Health-related variables and academic performance among first-year college students: Implications for sleep and other behaviors. *Journal of American College Health, 49*(3), 125-131. doi: 10.1080/07448480009596294.

Upcraft, M., Gardner, J., Barefoot, B., & Associates. (2005). *Challenging and supporting the first-year student: A handbook for improving the first year of college.* EUA: John Wiley & Sons.

Vaez, M., & Laflamme, L. (2003). Health behaviors, self-rated health, and quality of life: A study among first-year Swedish university students. *Journal of American College Health, 51*(4), 156-162. doi: 10.1080/07448480309596344.

(Página deixada propositadamente em branco)