French college students’ sports practice and its relations with stress, coping strategies and academic success

Greg Décamps1*, Emilie Boujut2 and Camille Brisset3

1 Laboratory of Health Psychology, University of Bordeaux, Bordeaux, France
2 University Paris Descartes, Paris, France
3 Ecole de Psychologie, Université Laval, Québec, QC, Canada

INTRODUCTION

Perceived as a stressful, yet exciting experience, transition from high school to university is part of most individuals’ life trajectories. It can be viewed both as a developmental and an educational transition. On the one hand, arriving at university is generally characterized by a separation from the family (McNamara, 2000) and corresponds to the stage of life called “emerging adulthood” (Arnett, 2004), the last before adulthood (Towbes and Cohen, 1996). During this time, between when one leaves home and, and when one gets involved in marriage, parenthood, and has a stable job, students have the possibilities to explore different roles in life – different partners – and work – study reorientation, part-time jobs. On the other hand, they have to adapt to a new scholarly environment, often synonymous with anonymity, and to new teaching methods. It can be difficult to go from a classroom of 30–40 familiar peoples to a lecture theater of several hundred unknowns (Coulon, 2000).

Managing this transition can be an uneasy task: college students have to cope with several stressors. Loneliness is frequently experienced and mental-health related symptoms are generally observed (Boujut et al., 2004, 2009), and more specifically to French students, an overall well-being has been observed (USEM and LMDE, 2006). In 2007, 31% of them felt distressed and 35% had lost their self-confidence (versus, 30 and 33% in 2005, respectively). As a consequence, more than 10% have used antidepressant and more than 8% have had suicidal thoughts in the past 12 months. These concerns about students’ conditions are also frequently reported in French daily newspapers: French freshmen also encounter great financial difficulties (Metro, 2007). Twenty percent live under the poverty threshold and 45.5% have to work to finance their studies (Grigon et al., 2000). All in all, half of them generally drop out of university within their first year and only 39% obtain their bachelor in 3 years (Gruel, 2002). While this percentage can be partially explained by curricular reorientation or sabbaticals before seriously getting into studying, it also highlights the difficulties encountered by the French University system in helping its students to deal with academic environment stress-related.

As a response to these conditions, several studies proposed to develop specific questionnaires to assess students’ academic stress (Bojuvoye, 2002) but very few evaluate the specific stress associated with being in first year (Boujut and Bruchon-Schweitzer, 2008a). Many researches have also been conducted to assess how to reduce students’ stress, anxiety, and other mental-health related symptoms (Deckro et al., 2002). Physical activity is one answer, and its adaptive function has been clearly demonstrated (Anshel, 1996; Biddle et al., 2000) in terms of detoxification of stress-related compounds, outlet for anger and hostility, enhanced feelings of self-esteem and self-efficacy, periodic introspection, reduction of muscular tension, increased endorphin or improvement in sleep (Edwards, 2006), and reduction of various stress indices amongst adults (Dunn et al., 2001; Bhuí, 2002). Physical exercise clearly appears as an effective way of coping with stress, and these results provide scientific supports regarding the importance of physical activity promotion as an effective way to help college students cope with the stress-related to their from high school to university. However, most students and young adults do not follow public health recommendations regarding the importance of physical exercise in daily life (Irwin, 2004), and a decrease in such activity has been reported upon entry at university (Butler et al., 2004; Racette et al., 2004; Nelson et al., 2007). For those who do practice, there is no specific arrangement in French Universities regarding academic...
support or accommodation in their timetables, even when listed on the national high-level sportsmen list.

Even if the positive influences of physical activity on health outcomes have been demonstrated, the question of its negative consequences is also well documented. The expected benefits of physical activity are believed to be substituted by physical and emotional difficulties when this activity becomes too intensive, especially for high-level sportsmen (Décamps and Boujut, 2011), and exposure to several stress factors is one of the main consequences of intensive sports practice (Woodman, 2003). The physical effects of these stressors on individuals are generally described in terms of sleep or appetite difficulties (Smith and Thelen, 1984; Silva, 1990), and muscular injuries or overtraining (Mc Kinnon, 2000; Brun et al., 2008). These problems are sometimes associated with severe emotional and psychological troubles such as depressive feelings (Silva, 1990; Gould and Dieffenbach, 2002) and specific forms of burn out (Raedeke and Smith, 2001; Goorder et al., 2007). Consequently, sportsmen have to develop specific coping strategies to reduce the intensity of these negative consequences (Cox, 2005), and such an adaptation is necessary to achieve their intended goals. Indeed, goal achievement is part of any adjustment process and, regarding college students, this achievement is described in terms of academic success (Furnham et al., 2002).

Most of the studies about stress, coping, and health, including the present research, refer to Lazarus and Folkman’s transactional models of stress (Lazarus and Folkman, 1984; Bruchon-Schweitzer, 2002), and recent studies have proposed to examine the influence of transactional factors such as stress and coping strategies upon academic success (e.g., Boujut and Bruchon-Schweitzer, 2008b). Those on the assessment of coping strategies before an examination (from 4 to 20 days before) revealed a positive relationship between problem-focused coping strategies and passing exams (Edwards and Trimble, 1992; Endler and Parker, 1994). The use of such coping strategies 10 days before an examination was also positively correlated to state-anxiety on the day of the examination, but was not found to influence academic performance (Bolger and Kellar, 1990).

Academic success also appears be influenced by dispositional characteristics. A meta-analysis showed that individual characteristics, such as self-efficacy, can explain academic performance (Multon et al., 1991). More precisely, self-efficacy was found to increase perseverance, tenacity, and therefore subsequent performance. Bandura (1997) also stated that it increases motivation by facilitating the adequacy between the goal and the efforts required to achieve it. Self-efficacy is also related to the ability to use coping strategies, especially decision making strategies in order to use effectively its own resources (Betts and Hackett, 1983), to lower scores of anxiety in stressful situations (Chemers et al., 2001), and to greater sensitivity to positive feedback (Bouffard-Bouchard, 1990). Finally, self-efficacy is believed to lead individuals to perceive stressful situations as challenges rather than threats (Chemers et al., 2001).

Considering the literature on the influence of stress and coping strategies upon academic success, and on the positive effects of sports practice on stress, we suggest that sports practice might be liable to influence academic success. While some authors considered that involvement in a sports practice explains sportsmen academic failure (Martin, 2002), rigorous planning of the activities is likely to assist both academic and sport success. As Lassarre et al. (2003) have shown non-academic activities can be considered as a predictor of academic success. Moreover, caution should be taken when investigating the positive or negative effects of the sports practice. As mentioned by Décamps and Boujut (2011), most of the researches were limited to comparisons between sportsmen and the overall population (e.g., Hausenblas and Symons Downs, 2001; Hausenblas and McNally, 2004), but the differences between these two categories of individuals cannot simply be attributed to sports practice. This dichotomization according to sports practice can also be regarded as inadequate since, on the one hand, this practice can be intensive for some sportsmen and moderate for others, and on the other hand, non-sportsmen can have occasional sports practice. One way to overcome this limitation is to study sports practice intensity (rare, regular, or intensive), instead of considering sportsmen versus non-sportsmen only (Décamps and Boujut, 2011). As such, we consider as sports practice, all physical activity associated or not with competition.

The aim of the present research was to examine group differences in sports practice intensity (rare, regular versus intensive) on college students’ academic success, stress, and coping strategies. Specifically, we have formulated the following hypotheses:

1. Students with a regular or intensive sports practice will report lower levels of perceived stress and emotion-focused coping strategies and higher levels of problem-focused coping strategies and self-efficacy than those whose sport practice is rare.
2. There will be a greater proportion of students with a regular or intensive sports practice to success in their studies than of students with a rare practice.

MATERIALS AND METHODS

PARTICIPANTS AND PROCEDURE

One thousand seventy-one first year students (381 males and 690 females, average age of 18.7 years old) have participated in this study. Students were asked to complete a self-evaluation questionnaire during their compulsory medical visit at the preventive medicine service of the university. Measures of self-efficacy, perceived stress, and coping strategies were included.

According to the French legal system, ethic approval is not required in studies using non-abrasive methods, such as surveys. However, approval from the head of the university and director of the preventive medicine service were obtained, and students who participated in this study were informed of the aim of the study and all gave their consent. Confidentiality regarding the collected data was respected.

MEASURES

Self-efficacy was assessed using the French validation (Bruchon-Schweitzer, 2002) of Schwarzer’s Self-Efficacy Questionnaire (Schwarzer, 1992). This scale uses four-point Likert scales (1/false to 4/true) and consists of 10 items that evaluate optimistic self-beliefs used for coping with a variety of situations (e.g., “I believe that successful outcomes are due to one’s own actions”). This measure has shown good reliability (α = 0.73).
**Perceived stress** was measured with the Freshmen Stress Scale (Boujut and Bruchon-Schweitzer, 2009). This scale appears to be the only specific questionnaire designed for first year students whose validity has been tested in a French context. Respondents were asked to evaluate their perceived stress in 25 situations on five-point Likert scales (1/4 not at all to 5/a very much). This measure allows for a general score of perceived stress and four specific scores: (1) academic stress (e.g., “examinations revision” or “new working methods”), (2) stress-related to university disorganization (e.g., “monotony of lessons,” “poor organization within the university,” or “lack of attention from teachers”), (3) loneliness (e.g., “feelings of loneliness” or “difficulties to meet new people”), and (4) social perturbation (e.g., “relational difficulties with family and friends”). Cronbach’s alphas for each factor were satisfactory (ranging from 0.71 to 0.82).

**Coping strategies** were measured with the Ways of Coping Checklist – Revised, validated in French by Cousson et al. (1996). This 27 items questionnaire evaluates, on a four-point Likert scale (1/no to 4/yes), three categories of ways of coping with stress: problem-focused strategies, emotional-focused strategies, and social support seeking. Problem-focused coping refers to activities through which problems are directly confronted, whereas emotional-focused coping, to activities that reduce the degree of emotional distress induced by the stressful situation. Participants were asked to respond with respect to a stressful situation whose validity has been tested in a French context. Respondents were asked to specify the frequency of their practice (less than once a week, less than 8 h per week, or 8 h and more per week). According to the literature, sports practice was considered as intensive when occurring more than 8 h per week (Choquet et al., 1998). As such, 406 students (26.4% of male) were considered as having a rare sports practice (rare and not every often); 173 students (33.5% of male), a regular practice (every week but less than 8 h); 492 students (43.9% of male), an intensive practice (8 h or more per week). Table 1 shows the means, SDs, and significant comparisons of students’ scores for self-efficacy, perceived stress, and coping strategies according to their sports practice (see Table 2 for details). As such, Hypothesis 1 was partially confirmed.

**Academic success** was “evaluated” at the end of the academic year. The data was provided by the university administration. They were asked to indicate if each student had succeeded or failed. Academic success was considered for those who were allowed to pass in second year. Once participants’ questionnaire where paired with their academic success/failure, data were irreversibly anonymized.

**ANALYSIS OF DATA**

In order to test the scores differences between the three groups on self-efficacy, stress, and coping, means comparisons were performed with ANOVA and Tukey post hoc tests were conducted in order to determine which groups differ from each other. Chi-square tests were also computed to evaluate the proportion of successful students in each group.

### RESULTS

Significant differences between the three groups were observed on self-efficacy [F(2,1070) = 4.66, p = 0.01], general perceived stress [F(2,1070) = 9.28, p < 0.001], academic stress [F(2,1070) = 13.88, p < 0.001], loneliness [F(2,1070) = 3.01, p = 0.05], social perturbation [F(2,1070) = 6.77, p < 0.001], and emotion-focused coping strategy [F(2,1070) = 6.81, p < 0.001; see Table 1].

More specifically, Tukey post hoc indicated that college students with an intensive sports practice reported significantly low scores of general perceived stress than those with a rare and regular practice; and this comparison holds for academic stress and emotion-focused coping strategy. Significant differences between the two extreme groups were also observed. College students whose practice is rare reported lower scores on self-efficacy, loneliness, and social perturbation than those with an intensive practice (see Table 1 for details). As such, Hypothesis 1 was partially confirmed.

While 54% of students have passed their examination, chi-square analysis revealed no differences in terms of success/failure and sports practice [x²(2) = 2.82, ns; see Table 2]. Hypothesis 2 was not confirmed. Students with rare practice are not less successful.

### Table 1 | Means, SDs, and comparisons of students’ scores for self-efficacy, perceived stress, and coping strategies according to their sports practice (n = 1071).

| Sport practice            | Rare (n = 406) | Regular (n = 173) | Intensive (n = 492) | F(2,1070) |
|---------------------------|----------------|-------------------|---------------------|-----------|
| Self-efficacy             |                |                   |                     |           |
| Perceived stress          |                |                   |                     |           |
| General score             | 270.4a (3.63)  | 270.7b (4.23)     | 278.0 (4.04)        | 4.66**    |
| Academic stress           | 175.9 (5.14)   | 176.3 (5.37)      | 15.81 (6.5)         | 13.88***  |
| Stress-related to university disorganization | 75.1 (2.96)    | 75.6 (3.05)       | 7.19 (2.97)         | 1.64      |
| Loneliness                | 8.64 (3.71)    | 8.37 (3.47)       | 8.04 (3.59)         | 3.01*     |
| Social perturbation       | 7.66 (2.93)    | 7.32 (2.95)       | 6.95 (2.75)         | 6.77***   |
| Ways of coping            |                |                   |                     |           |
| Problem-focused strategies | 28.8 (4.02)    | 29.2 (4.26)       | 29.15 (4.09)        | 1.06      |
| Emotion-focused strategies | 23.37 (4.6)    | 23.24 (5.01)      | 22.21 (4.97)        | 6.81***   |
| Social support seeking    | 21.4 (4.05)    | 21.46 (3.92)      | 21.35 (4.16)        | 0.05      |

*p ≤ 0.05; **p ≤ 0.01; ***p < 0.001.

The means in columns with exponents (a, b) represent significant differences at p < 0.05, using Tukey post hoc.
successful in their academic studies that those with regular or intensive sports practice.

**DISCUSSION**

**THE ROLE OF SPORT PRACTICE**

The present study has shed some light on sports practice and its relation to two sets of variables, which, it was suggested, would play a role in students' academic success. The first set consists of dispositional variables, such as self-efficacy. The set includes transactional variables, like coping strategies and perceived stress.

Self-efficacy, as a dispositional variable, was found to be linked to sports practice: the more intense sports practice is, the higher self-efficacy is. While we were expecting differences between students with regular/intensive versus rare practice, our results indicated a regular practice has the same benefit on self-efficacy than a rare one. And as such, an intensive sports practice has beneficial effects on individuals. Since psychological and physical issues may occur when sports practice becomes too intensive (Silva, 1990; Gould and Dieffenbach, 2002), our findings suggest that positive and negative consequences of such practice might coexist. Additional research is required in order to test this statement with a more complex research protocol based on the assessment of these two types of consequences, with, for example, addiction to sport practice (Kernn, 2007) or over-investment syndrome (Goedger et al., 2007) versus well-being (Deckro et al., 2002) or coping self-efficacy (Chesney et al., 2006).

The benefits of an intensive practice can also be associated to transactional variables. Accordingly to the obtained scores of perceived stress and coping, college students with an intensive practice's general perceptions and strategies appeared to be more adaptive than those whose practice is rare. This is congruent with previous researches (Anshel, 1996; Biddle et al., 2000). However, this statement is based on specific perceived stress dimensions and it shall be reminded that no difference was observed between the three groups for stress-related to the university disorganization, problem-focused coping strategies and social support seeking. Subsequent researches are required in order to confirm these findings or precise its specificities. Moreover, since intensive sports practice might be harmful as it expose sportmen to high sources of stress (Woodman, 2003), this practice might have a positive effect for individuals who progressively learn to face the stressors with the use of functional coping strategies (Cox, 2005).

The most interesting finding concerns the absence of difference between college students with rare practice and those whose practice is regular. It suggests that the benefit of a sport practice should not be over-generalized, and that it is not the presence or absence of a regular sports practice that might influence college students' perceived stress and coping strategies, but the intensity of the practice: students with a regular practice did not perceive less stress and did not cope more efficiently than those whose practice is rare. However, lower levels of stress and dysfunctional coping were observed for those with an intensive sports practice. These results seem to be in contradiction with the literature on the positive effects of sports practice (Edwards, 2006), and on the negative effects of an intensive practice (Mc Kinnon, 2000; Brun et al., 2008).

**LIMITATIONS**

The research counts several limitations. Students' personal characteristics with an intensive practice may be different from those in the studies about intensive sportmen physical or psychological difficulties. These appear when sports practice exceed 15 h per week (Décamps et al., 2011), and the question used in this research only allows for a distinction between students practicing more than 8 h per week and those practicing less than 8 h per week. Further investigation is required in order to determine if differences can be observed between an intensive sports practice (around 8–12 h a week) and a "very intensive" practice (15 h or more). Our three-group-classification of sports practice can also be criticized as there is no mean to distinguish students with rare sports practice (less than once a week) and those who never practice any kind of sports. However, this decision was taken in response to the literature that neglects the importance of the intensity of sports practice when comparing sportmen to the overall population (Décamps and Boujut, 2011). Replication of this study with another sample of students will provide a great consistency of these findings, and the use of a four-group-classification would provide for additional understanding on the influence of sports practice intensity on students' stress, coping strategies, and academic success.

Nevertheless it should be reminded that intensive sports practice, generally identified as a vulnerability factor (Mc Kinnon, 2000; Goedger et al., 2007; Brun et al., 2008), may not be a real vulnerability for college students. However, the benefit of an intensive sports practice in our study stays limited to a decrease in perceived stress and in the use of dysfunctional coping strategies. Therefore, an increase in the use of functional coping strategies is required to conclude that intensive sports practice has a real positive influence on college students. Additional studies investigating specific coping strategies, such as problem solving, planning activities, and other functional strategies would be relevant to complete our findings.

**RESEARCH PERSPECTIVES**

The relationship between self-efficacy and sports practice would also require further investigations. According to theoretical models in health psychology (Bruchon-Schweitzer, 2002), personality, and other dispositional characteristics such as self-efficacy are considered as stable and unlikely to evolve with time. As such, sports practice cannot be considered as liable to enhance or decrease self-efficacy, and the relations between self-efficacy, perceived stress, coping strategies, and sports practice merits further examination: the observed differences within the three groups can be attributed to the intensity of sports practice, but to different levels.
of self-efficacy. Two different interpretations can be proposed and will merit subsequent researches. On the one hand, and from a dispositional point of view (Torres and Solberg, 2001), the transactions between an individual and its environment may be influenced by self-efficacy, and more precisely the way this environment is perceived. A high-level of self-efficacy will then be considered as predicting a low level of perceived stress and, consequently, a low level of emotional coping strategies. On the other hand, and from a dynamical point of view (Rodgers et al., 2002), the interaction between sports practice and self-efficacy may enhance individuals' capacity to cope with sports environment stressors by using or selecting coping strategies identified as functional. This second interpretation assumes the existence of a learning phenomenon that could appear faster when individuals, such as sportmen, are used to face stressful or hostile environments. This learning phenomenon refers to the distinction proposed by Lassarre et al. (2003) between short-term and long-term coping strategies in the stress episode model, which suggest that learning can be considered as a long-term adaptation. Additional researches should thus attempt to determine the respective influence of self-efficacy and sports practice upon perceived stress and coping strategies.

The proportion of successful students did not differ significantly between the three groups of sports practice. This result appears contrary to the literatures. While sports practice can be viewed as a handicap for college students in their academic success (Martin, 2002), non-academic activities are considered as likely to increase chances of success (Lassarre et al., 2003). Our findings provide support for an indirect association between sports practice and success. Although not significant, there appear to be a greater number of successful students in the intensive sports practice group. Additional studies are required to test this observation with other groups of participants. These future studies should be based on more refined measures of academic success (such as the exact grade) which would clarify the relationships between sports practice and academic success. If confirmed, such a result could permit to consider college students' involvement in sports to be as beneficial as part-time jobs, just like any other non-academic activities (Lassarre et al., 2003). The way freshmen success was apprehended is also questionable. Even if our data confirm the failure rates observed in France, the low tuition fees in French Universities might be responsible for the lack of students' involvement in their academic studies; and one also to be careful when talking about academic failure regarding this population of emerging adults. This stage of life described by Arnett (2004) as the age of exploration and instability. What is viewed as academic failure can just be a change of plans (academic reorientation, sabbatical, etc.). In future researches, this should be controlled by the evaluation of students' motivational processes and career goals.

While we cannot conclude on the causal effects between the studied factors, comparative studies appear as the first step in identifying the main psychological variables that relate to sports practice. They allow for the detection of specific students' profiles that can be considered as more vulnerable than others to health issues. Consequently, our results give a more refined understanding of the literature on sports practice influence with group comparisons (Hausenblas and Symons Downs, 2001; Hausenblas and McNally, 2004). Additional comparative studies remain necessary to investigate the links between sports practice and other psychological factors before testing any predictive models with statistical tests such as path analysis.

CONCLUSION

This study has given evidence for the assessment of sports practice intensity and not only its presence or absence. It also suggested that dichotomizing the consequences of college students' sports practice into positive and negative is too reductive to describe the multiplicity of its impact, and that the consequences of such coexistence of positive and negative effects is not necessarily contradictory. This result gives new perspectives for health prevention campaigns or for health promotion with physical activities for college students, teenagers, and young adults.

REFERENCES

Anshel, M. H. (1996). Effect of chronic aerobic exercise and progressive relaxation on motor performance and affect. Behav. Med. 21, 186–197.
Arnett, J. J. (2004). Emerging Adulthood: The Winding Road from the Late Teens through the Twenties. Oxford: Oxford University Press.
Bandura, A. (1997). Self-Efficacy: The Exercise of Control. New York: Freeman.
Betts, N. E., and Hackett, G. (1983). The relationship of mathematics self-efficacy expectations to the selection of science-based college majors. J. Vocat. Behav. 23, 329–345.
Bliu, K. (2002). "Physical activity and stress," in Stress and the Heart: Psychosocial Pathways to Coronary Heart Disease, eds S. A. Stansfeld and M. G. Marmot (Williston, VT: BMJ Books), 158–167.
Biddle, S. J., Fox, K. R., and Boutcher, S. H. (2000). Physical Activity and Psychological Well-Being. London: Routledge.
Boisjoly, O. (2002). Stressful experiences of first year students of selected universities in South Africa. Can. Psychol. Q. 15, 277–290.
Bolger, N., and Kellaghan, T. (1990). Method of measurement and gender differences in scholastic achievement. J. Educ. Meas. 27, 165–174.
Bouffard-Bouchard, T. (1990). Influence of self-efficacy on performance in a cognitive task. J. Soc. Psychol. 130, 353–363.
Boujut, E., and Bruchon-Schweitzer, M. (2008a). “Review of psychosocial predictors in academic achievement,” in Psychology in a Positive World: Resources for Personal, Organizational and Social Development, ed. E. Avram (Bucarest: Editura Universitaria), 140–156.
Boujut, E., and Bruchon-Schweitzer, M. (2009). A construction and validation of a freshman stress questionnaire: an exploratory study. Psychol. Rep. 104, 680–692.
Boujut, E., Bruchon-Schweitzer, M., and Rascle, N. (2004). Stress and health in a student population: a transactional model perspective. Psychol. Health 19, 25–26.
Boujut, E., Koleck, M., Bruchon-Schweitzer, M., and Bourgeois, M. (2009). La santé mentale chez les étudiants: enquête auprès d’une cohorte de 556 étudiants de 1ère année. Ann. Med. Psychol. (Paris) 167, 662–668.
Bruchon-Schweitzer, M. (2002). Psychologie de la santé: Modèles, concepts et méthodes. Paris: DUNOD.
Brun, J. F., Pégot, J. M., and Mercier, J. (2008). Overtraining syndrome: la piste de la superactivité ? Sci. Sports 23, 310–312.
Butler, S. M., Black, D. R., Blue, C. L., and Gretebeck, R. J. (2004). Change in diet, physical activity, and body weight in female college freshman. Am. J. Health Behav. 75, 552–554.
Chermers, M. M., Hu, L.-T., and Garcia, B. F. (2001). Academic self-efficacy and first-year college student performance and adjustment. J. Educ. Psychol. 93, 55–64.
Chesney, M. A., Neiliands, T. B., Chambers, D. B., Taylor, J. M., and Folkman, S. (2006). A validity and reliability study of the coping self-efficacy scale. Br. J. Health Psychol. 11, 421–437.
Choquet, M., Bourdessol, H., Arvers, P., Guibbert, P., and De Peretti, C. (1998). Jeunes, sport et conséquences à risques. Paris: Enquête INSERM, Équipe 472.

Coulon, A. (2000). Le métier étudiant, l’entrée dans la vie universitaire. Paris: Economica.

Cousson, F., Bruchon-Schweitzer, M., Quintard, B., and Nuisssier, J. (1996). Analyse multidimensionnelle d’une échelle de coping: validation française de la W.C.C. (ways of coping checklist). Psychol. Française 41, 155–164.

Cox, R. H. (2005). Psychology du sport. Bruxelles: De Boeck editions.

Décamp, G., and Boujut, E. (2011). "Performances académiques et adaptation psychologique des étudiants à l’université," in Psychologie du sport et de la santé, ed. G. Décamp (Bruxelles: De Boeck editions), 171–204.

Décamp, G., Mette, A., Dominguez, N., and Rasché, N. (2011). "Les troubles de l’investissement dans la pratique sportive: addiction, surentraînement et épuisement psychologique," in Psychologie du sport et de la santé, ed. G. Décamp (Bruxelles: De Boeck editions), 277–294.

Deckro, G. R., Ballinger, K. M., Keli, M., Décamps, G., Mette, A., Dominguez, J. M., and Trimble, K. (1992). Conditions de vie des étudiants. Paris: Cahiers de l’OVE.

Grigon, C., Gruel, L., and Bensoussan, B. (2000). Les conditions de réussite dans l’enseignement supérieur. OVE Infos 1, 1-7.

Hausenblas, H., and McNally, K. D. (2004). Eating disorder prevalence and symptoms for track and field athletes and nonathletes. J. Appl. Sport Psychol. 16, 274–286.

Hausenblas, H., and Symons Downs, D. (2001). Comparison of body image between athletes and nonathletes: a meta-analytic review. J. Appl. Sport Psychol. 13, 323–339.

Irwin, J. D. (2004). Prevalence of university students’ sufficient physical activity: a systematic review. Percept. Mot. Skills 98, 927–943.

Kerrn, L. (2007). Validation de l’adaptation française de l’échelle de dépendance physique: l’EDS-R. Prat. Psychol. 13, 425–441.

Lassarre, D., Girou, C. L., and Paty, B. (2003). Stress des étudiants et réussite Universitaire: les conditions économiques, pédagogiques et psychologiques du succès. Orientation Scolaire Professionnelle 32, 669–691.

Lazarus, R., and Folkman, S. (1984). Stress, Appraisal and Coping. New York: Springer.

Martin, J. M. (2002). "Etudiant et sportif de haut niveau: faire face au double projet," in Stress et Société, ed. D. Lassarre (Reims: Editions des Presses Universitaires de Reims), 203–220.

McKinnon, L. T. (2000). Chronic exercise training effects on immune function. Med. Sci. Sports Exerc. 32, 69–76.

McNamara, S. (2000). Stress in Young People: What’s New and What Can We Do? London: continuum.

Melo, G., and Décamps, G. (2011). Burnout and psychological distress in college students in the United States. J. Phys. Act Health 8, 495–508.

Racette, S., Deusinger, S., Strube, M., Highstein, G., and Deussinger, R. (2004). Weight changes, exercise, and dietary patterns during freshman and sophomore years of college. J. Am. Coll. Health 53, 245–251.

Raeddeke, T. D., and Smith, A. L. (2001). Development and preliminary validation of an athlete burnout measure. J. Sport Exerc. Psychol. 3, 63–67.

Rogers, W. M., Hall, C. R., Blanchard, C. M., Mauleau, E., and Munroe, K. J. (2002). Task and scheduling self-efficacy as predictors of exercise behavior. Psychol. Health 17, 405–416.

Schwarzer, R. (1992). Self-Efficacy: Thought Control of Action. Washington, DC: Hemisphere.

Silva, J. M. (1990). An analysis of the training stress syndrome in competitive athletics. J. Appl. Sport Psychol. 2, 5–20.

Smith, M. C., and Thelen, M. H. (1984). Development and validation of a test for bulimia. J. Consul. Clin. Psychol. 52, 863–872.

Torres, J. B., and Solberg, V. S. (2001). Role of self-efficacy, stress, social integration, and family support in Latino college student persistence and health. J. Vocat. Behav. 59, 53–63.

Tobes, L. C., and Cohen, L. H. (1996). Chronic stress in the lives of college students: scale development and prospective prediction of distress. J. Youth Adolesc. 25, 199–217.

USEM and LMDE. (2006). La santé des étudiants passée au crible. Available at: http://uned.fr/wp-content/uploads/2011/08/UNEF-Enquete-sur-le-cout-de-la-vie-e6%CC%81tudiant-2011.pdf

Vitaliano, P. P., Russo, J., Carr, J. E., Mauro, R. D., and Becker, J. (1985). The ways of coping checklist: revision and psychometric properties. Multivariate Behav. Res. 20, 3.

Woodman, T. (2003). "Le stress organisationnel dans le sport de haut niveau (Organisational stress in high-level sport)," in Le Manuel de Psychologie du Sport: L’intervention en Psychologie du Sport (The Handbook of Sport Psychology: Sport Psychology Interventions), ed. C. Le Scanff (Paris: EPS), 357–375.

Conflict of Interest Statement: 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.

Received: 22 September 2011; accepted: 22 March 2012; published online: 11 April 2012.

Citation: Décamps G, Boujut E and Brisset C (2012). French college students’ sports practice and its relations with stress, coping strategies and academic success. Front. Psychology 3:104. doi: 10.3389/fpsyg.2012.00104

This article was submitted to Frontiers in Educational Psychology, a specialty of Frontiers in Psychology.

Copyright © 2012 Décamps, Boujut and Brisset. This is an open-access article distributed under the terms of the Creative Commons Attribution Non Commercial License, which permits non-commercial use, distribution, and reproduction in other forums, provided the original authors and source are credited.