

University student *Burnout*. Conceptualization and study

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Update by topics

SUMMARY

Objective

To update existing knowledge on burnout in university students, in Cuba and worldwide.

Material and methods

Document review and literature from March 2010 to January 2012. The databases searched were Medline and Cochrane through PubMed.

Results and discussion

It is clear that there are multiple possible causes for the existence of university student burnout. They have not been studied and systematized to have a proper answer or solution to protect the future health of our university graduates. In diagnostic instruments, there is not a unanimous view among experts, nor on the prevalence and incidence rates, since criteria vary for each study.

Conclusions

There are very few studies of burnout applied to undergraduate college students, and syndrome difference is not defined in such students regarding mid-level, upper secondary and graduate groups in Cuba and internationally.

Key words: Burnout syndrome, students, university, mental health.

RESUMEN

Objetivo

Actualizar los conocimientos existentes sobre el *burnout* en estudiantes universitarios en Cuba y el mundo.

Material y métodos

Revisión documental y bibliográfica durante marzo de 2010 y enero de 2012. Las bases de datos consultadas fueron Medline y Cochrane mediante PubMed.

Resultados y discusión

Es evidente que son múltiples las posibles causas de la existencia del *burnout* Estudiantil Universitario. No han sido estudiadas y sistematizadas de manera que se le pueda dar una respuesta o solución adecuada al problema, para proteger la salud de nuestros futuros profesionales universitarios. En los instrumentos de diagnóstico no existe un criterio unánime entre los expertos para establecerlo, ni sobre los porcentajes de prevalencia e incidencia, pues los criterios varían para cada estudio.

Conclusiones

Existen muy pocos estudios del *burnout* aplicado a los estudiantes universitarios de pregrado, y no se define y diferencia el síndrome en este tipo de estudiantes con respecto a los grupos de nivel medio, medio superior y de postgrado en nuestro país e internacionalmente.

Palabras claves: Síndrome de *burnout*, estudiantes, universidad, salud mental.

INTRODUCTION

Burnout syndrome, also known as worn-out syndrome or physical and mental exhaustion, is a problem of our times with significant social repercussions. The current interest in *burnout* has facilitated an expansion of its field of study; studies have been carried out in other professional spheres and much more recently on university students.

Many students manage to develop the necessary competencies that favor the achievement of their academic goals during the course of their education, while other young people

present difficulties that are only recorded in indicators of elevated academic mortality. In the latter situation, students generally experience a high level of stress during the course of their education. Some students manage to develop suitable strategies to cope with academic demands, whereas others do not, and begin to feel powerless to change their situation, a consequence of which is the use of escapist or avoidance behaviors as coping mechanisms that are not necessarily appropriate for their situation. As is known to be the case, unresolved problems grow and are accompanied by an accumulative process of prolonged unease.¹

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The above can contribute to causing feelings of not being able to give any more both physically and mentally, a negative critical attitude, devaluation, loss of interest in the significance or value of studies, and growing doubts around the ability to complete them.²

The simultaneous presence of these manifestations is known as "academic *burnout* syndrome." The study of the syndrome has been widely developed in recent years, and has led to the inclusion of stress processes in care work, organizations, and academia, with a view to improving students' quality of life.²

This work is therefore about how *burnout* has been studied in our university students in Cuba and at international level.

The study of *burnout* in university students is a novel and very recent line of investigation. The studies carried out in this vein have been directed towards confirming the incidence of the syndrome in these pre-professional samples.

Higher education institutes are usually extremely stressful places. Every day in these institutes, students face a series of demands that by their own assessment are situations that cause stress. When these are frequent and prolonged, these situations can lead to *burnout* syndrome.

These situations can increase in university students compared to other types of students, as the study programs for the majority of courses are considerably loaded with content, class time, a great deal of self-study, and the completion of independent work, not to mention the knowledge creation process and important feedback that occurs at this level of education. All of this can combine with personal problems particular to each student.

Finally, it should be stated that this stems from an insufficient integrated study of *burnout* that occurs in university students. This limits the possibilities for diagnosis and control of the same and therefore its psychosomatic stability.

Objetivo

The objective of this work is to update the existing knowledge of *burnout* in university students in Cuba and the world.

MATERIAL AND METHODS

A book and documentation review was carried out between March 2010 and January 2012. The databases consulted were Medline and Cochrane through PubMed. Searches were carried out through PubMed and classified by two search objects. The following keywords were used: *burnout* syndrome, study, university students.

In order to select the studies, the following criteria for inclusion were adopted: articles on *burnout* of university students, published in Spanish, in the period between 2000 and 2012.

RESULTS AND DISCUSSION

History of study on *burnout*

The concept of *burnout* was first used in the sphere of psychology by Freudenberg (1974), a psychologist who defined it as a state of fatigue or frustration produced by dedication to a cause, way of life, or relationship that does not produce the desired result. Later, Maslach and Jackson (1986) proposed three interrelated dimensions: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). These dimensions are integrated in the Maslach *Burnout Inventory* (MBI) used to measure the syndrome.

This syndrome represents a public and occupational health problem, as it relates to an increase in the rate of accidents at work. It also causes absence from work, which translates into financial loss for the institutes. *Burnout* syndrome (BS) is a response to chronic occupational stress that manifests itself through emotional exhaustion, depersonalization, and hostile and aggressive attitudes towards co-workers and service users, which results in a feeling of poor personal fulfilment.³

For García Ucha (2000), *burnout* is the impact of the perception of stress sustained by a person through years of work, which is reflected in their emotional state, depersonalizing and exhausting them, and reducing their personal perception.

Quigley, Slack, and Smith (1987) found a relationship between the sex of the professors and sporting coaches, their age, and the negative assessment of administrative support, compensation, recognition, and gratification, related with high levels of *burnout*.

According to Almendro: "[...] its common manifestations are: Mental or cognitive: feelings of neglect, failure, and powerlessness. Low self-esteem. Anxiety and difficulty concentrating. Paranoid and/or aggressive behavior towards patients, co-workers, and family. Physical: Tiredness. Osteo-arthritic pain and headaches. Sleep disorders. Digestive and heart disorders. Behavioral: Increased consumption of coffee, alcohol, medicines, and illegal drugs. Absence from work. Low personal performance. Interpersonal conflicts at work and at home."³

Moreno González (2009) claims: "[...] that it has been determined that some personality characteristics can more easily lead a person subjected to an excess of stress to develop a state of *burnout*. These characteristics are: sensitivity to the feelings and needs of others, dedication to work, idealism, anxious personality, and high personal expectations".

In the same way, some of the recognized triggers of *burnout* are: overload of work, unstimulating work or study, little or no participation in decision-making, lack of means to carry out tasks, excessive bureaucracy, loss of identification with the work, and low perception of recognition and value.

For their part, Maslach and Jackson (1986) associate *burnout* with: low self-esteem, negative attitudes, feelings of guilt, lethargy, deterioration of cognitive processes, and lack of concentration (mental state); and decrease in physical immunity, fatigue, insomnia, digestive problems, and headaches (physical state).

Studies around *burnout* syndrome started to be developed in the mid 1970s by researchers concerned with the occupational health of workers who performed activities that were too demanding. This knowledge was transferred to sporting spheres at the start of the 1980s, with the aim of explaining the illness that was afflicting a large number of sportspeople. Individuals were showing symptoms characterized by emotional exhaustion, depersonalization, and reduction in personal accomplishment. As a consequence, this led to a progressive reduction in the levels of sporting performance, even leading to early retirement from the sport. Years later, theoretical models were created with the aim of explaining certain parameters of *burnout* syndrome in sportspeople.⁴

From a psychosocial and procedural perspective, professional worn-out syndrome is currently conceptualized as a response to chronic occupational stress that is developed due to the interaction of characteristics of the occupational and student environment with personal characteristics.⁵

The figures for prevalence of *burnout* syndrome reported by other studies carried out in Mexico among medical personnel range from 42.3% to 50%; in this research, the prevalence was lower and the dimension of emotional exhaustion was the most affected. Civil status was included among the variables that were considered risk factors in our study. Furthermore, working night shifts and providing outpatient services were also related with a greater predisposition to *burnout* syndrome.

As in other studies, this research found a higher level of *burnout* in older professionals. DP and PA presented themselves in workers of a higher working age.⁶

In conclusion, the prevalence of *burnout* syndrome among medical care workers is very high and it is necessary to take measures to avoid the development of this pathology.

The aspect studied is the generalization of the syndrome in the undergraduate student academic environment, and it stems from the presumption that like any professional, university students face pressures and overloads particular to their academic work.⁷ Bresó (2008) indicated that like any worker, students maintain a direct and indirect relationship of compensation with the educational institute, evidenced by economic support, grants, recognitions, or awards. This presumption allows the investigation of the individual's responses to tension and their implications for feelings of wellbeing when faced with studies.^{8,9} The operationalization of academic *burnout* has been possible since the standardization of the MBI-GS in university students, which originated from the *Burnout Inventory-Student Sur-*

vey (MBI-SS) questionnaire by Schaufeli *et al.* (2002).¹⁰ Its application demonstrated the presence of an important proportion of young people that reflect exhaustion due to the demands of study, as well as disinterested attitudes, self-sabotage in the face of academic activities, doubts around the value of study (cynicism), and feelings of incompetency as students (self-effacement).¹¹⁻¹³

Basic concepts of *burnout* syndrome

Although there is no unanimously accepted concept for the explanation of *burnout* syndrome, there does seem to be a consensus that it is a response to chronic occupational stress, a subjective experience that encompasses feelings and attitudes with damaging implications for the person and the organization.

Gil-Monte and Peiró (1997) have affirmed that *burnout* can be studied from two perspectives: clinical and psychosocial.

From the clinical perspective, Freudenberger (1974) used the word *burnout* for the first time to describe a set of physical symptoms suffered by healthcare staff as a result of their working conditions. According to the author, it is typical of the care service profession and it is characterized by a state of exhaustion as a consequence of the work. This focus argues that *burnout* appears more frequently in more committed professionals, and in those who work more intensely under the pressure and demands of their job, putting their own interests second. It is about the inadequate relationship between professionals who are excessively zealous in their work, and excessively needy clients, which causes a response of overstraining in the care professional.¹³

In the same vein, Fischer (1983) considered *burnout* the state resulting from a narcissistic trauma that brings about a reduction in the subject's self-esteem, while Pines and Aronson (1988) conceptualize it as a state in which emotional, physical, and mental fatigue are combined with feelings of powerlessness and uselessness that include physical emptiness, feelings of neglect and hopelessness, disillusion, and the development of a negative self-image and attitude towards work and life. In its most extreme form, *burnout* presents a breaking point beyond which the capacity to face up to one's environment becomes drastically diminished and this is especially hard for enthusiastic and idealistic people.

Supporters of the psychosocial perspective affirm that *burnout* syndrome must be understood as a process that is developed sequentially to the appearance of its characteristics and global symptoms.

While the majority of current researchers accept the psychosocial perspective, some authors dispute the suppositions considered by Maslach and Jackson (1981), including Price and Murphy (1984), Ferber (1985 and 1991), and Golembiewski *et al.* (1991). In (1983-1986), the latter claimed that *burnout* affects all types of professionals, not just those in care organizations, and in fact a large part of Golem-

biewski's research uses samples of sales managers and other professionals.¹⁴

Gil-Monte and Peiró have confirmed that *burnout* remains established as a response to chronic occupational stress combined with negative attitudes and emotions towards people they work with and towards their professional role itself, as well as by the experience of finding oneself emotionally exhausted.¹⁵

One of the essential aspects covered in this study of *burnout* syndrome has been its definition, a discussion which has been very polarized from the different perspectives that approach the explanation of the appearance of *burnout*, as illustrated above. Conceptualizing a process as complex as this syndrome, as well as its similarity, if not equality, with the concept of stress applied to organizations, has necessitated continuous questioning of its theories.

Burnout is an English term with synonyms such as to exhaust, fatigue, or tire oneself; to feel exhausted, consumed, lackluster, overwhelmed, or "to become useless due to overuse". According to the authors, this last aspect is the one that best reflects or summarizes all the preceding ones.

What follows are some of the most widely accepted definitions around *burnout* syndrome:^{16,17}

- Freudenberger (1974) describes *burnout* as a "feeling of failure and an exhausted or spent existence resulting from an overload due to the demands on energy, personal resources, or spiritual strength of the worker." The author affirms that *burnout* is a syndrome that causes "workaholism".
- Pines and Kafry (1978) define *burnout* "as a general experience of physical, emotional, and attitudinal exhaustion".
- Machlowitz (1980) defines it as "a state of total devotion to one's occupation, meaning their time is dedicated to serve this purpose", which causes a productive imbalance, and as a consequence, the emotional reactions of aversive stimulation to work.
- Cherniss (1980) is one of the first authors to emphasize the importance of work as a premise in the appearance of *burnout* and they define it as "negative personal changes that occur over time in workers with frustrating or excessively demanding work." The same author states that it is a transactional process of stress and tension at work and psychological accommodation, highlighting three moments: a) imbalance between the demands of work and individual resources, b) a short term emotional response to the above imbalance, characterized by anxiety, tension, fatigue, and exhaustion (tension), and c) changes in attitude and behaviors (a defensive front).

In 1981, Maslach and Jackson understood *burnout* to be "a three-dimensional syndrome characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment." This definition, which does not depart from

the assumption that the variables of work are the ultimate determinants of the appearance of *burnout*, is important due to not being theoretical; rather, it is the empirical consequence of the study carried out by the authors in 1984.

In 1981, Pines *et al.* indicated that *burnout* is "the state of mental, physical, and emotional exhaustion produced by chronic involvement in work in emotionally demanding situations."

In 1981, the still-emerging theoretical development of this syndrome split into two conceptually different focuses. The first originated in the work of Maslach and Jackson and its dissemination allowed this syndrome to be defined by means of a three-dimensional construct: emotional exhaustion, depersonalization, and low self-accomplishment.

The second focus was initiated by the work of Pines, *et al.* and its development provided a definition of the syndrome by means of a one-dimensional construct: emotional exhaustion. This form of conceptualizing *burnout* syndrome received strong impetus with the work of Shirom (in Appels, 2006), who made a revision of all the assessment studies of the Maslach Burnout Inventory, which allowed them to observe that, of the three scales from which the inventory is comprised, it was the scale of emotional exhaustion that best correlated with the variables related to work and with observations made by spouses and managers.

From this study it was possible to conclude that the central content of *burnout* is to do with a loss of the subject's energy reserves, which can be defined as a combination of physical fatigue, emotional tiredness, and cognitive tiredness. The main benefit of this conceptualization was avoiding confusion of this concept with other terms already established in psychology.¹⁸

From this conceptual focus, *burnout* syndrome can be defined as a state of physical, emotional, and cognitive exhaustion produced by prolonged involvement in stress-generating situations.

The definition of *burnout* syndrome has an important impact on the global student population, and Cuba is no exception.

Up to now, the study of *burnout* syndrome in university students has taken the same form as student samples from mid-level, upper secondary, and post-graduate level, with those four being defined as student *burnout*. The term academic or university *burnout* has also been used to study students and professors from universities and post-graduate students without a clear distinction between these groups.

Symptomatology of the Syndrome

According to various studies, the most common manifestations of student *burnout* are:¹⁸⁻²¹

- Physical and mental exhaustion.
- Abandonment of studies.
- Reduction in academic performance.

According to the above studies, these manifestations can be divided into three fundamental groups:

Psychosomatic: cardiovascular disorders (tachycardia, hypertension), chronic fatigue, headaches, gastro-intestinal disorders, abdominal and muscular pain, breathing and sleep disorders, dermatological and menstrual disorders.

Behavioral: Drug, alcohol, and tobacco abuse, class absenteeism, poor eating habits, inability to relax.

Emotional: Impatience, wishing to abandon studies, irritability, difficulty concentrating due to anxiety experienced, depression, low self-esteem, lack of motivation.

This symptomatology is an unequivocal profile of a state of great psychosomatic stress, which can bring about serious consequences, both for the psychological and physical integrity of students.

A search was therefore made of the causal elements of this situation:

- High expectations being set.
- Financial difficulties being faced, even with support from the institute.
- Physical condition and state of health.
- Lifestyles.
- Characteristics of personality.
- Level or classification of the nervous system.
- Motivations or reasons for undertaking higher education.

Discrimination from other constructs

The concept of *burnout* has given rise to many discussions due to the confusion that arises when differentiating it from other concepts, but Shirom (1989) affirms that *burnout* does not overlap with other psychological-type constructs.

1. General stress

In the different diagnoses between general stress and *burnout* syndrome it is noted that the first is a psychological process that brings about both positive and negative effects, while *burnout* only makes reference to negative effects for the subject and their environment. It is also evident that general stress can be experienced in all possible spheres of human life whereas BS is a syndrome exclusive to a working context.

2. Physical fatigue

To differentiate physical fatigue from *burnout* syndrome, the recovery process is taken into consideration; whereas *burnout* is characterized by a slow recovery, accompanied by profound feelings of failure, in physical fatigue the recovery is quicker and can be accompanied by feelings of personal accomplishment and sometimes success.

3. Depression

Oswin (1978), Maher (1983), and Firth *et al.* (1986) suggest that it is probable that there is an overlap between the terms de-

pression and *burnout*. On the contrary, McKnight and Glass (1995), Leiter and Durup (1994), and Hallsten (1993) demonstrate through empirical research that the patterns of development and etiology are different, although these phenomena can share some symptomatology. It has been confirmed that depression has a significant correlation with emotional tiredness, but not with the other two dimensions of BS (low personal accomplishment and depersonalization).^{22,23}

Along this same vein, it is indicated that one of the most overarching symptoms of depression is the feeling of guilt, whereas in BS the predominant feelings are of anger or rage. However, on the other hand, we find that Freudenberg (1974) considered that that depression is one of the most characteristic symptoms of BS. Hobfoll, and Shirom's COR theory (2001) suggests another approach when they explain that the symptoms of depression can emerge some time after BS; that is, when the losses add up.^{24,25}

Consequences of *burnout* syndrome

The consequences of suffering *burnout* syndrome can be quite serious. It generates personal, family, and occupational consequences, which are found in the most relevant studies of the literature on the subject. Once again, numerous discrepancies appear between various authors as to the main consequences that affect lecturers in their work environment. Personal consequences that stand out include incapacity to switch off from work; problems with sleep; tiredness that increases susceptibility to illness; gastro-intestinal, back, and neck problems; headaches; heart disease; cold sweats; nausea; tachycardia; increase in viral and breathing illnesses often related to tranquilizing or stimulating medications, coffee, tobacco, alcohol, and other drugs; in particular the literature highlights the proliferation in figures for consumption of alcohol among professors. Along the same lines, some authors find that higher scores in depersonalization give rise to an increase in psycho-physiological disorders, while others indicate that a high level of stress predicts problems with physical and mental health.

Furthermore, García and Matud (2002) indicate that job role and pressure at work correlate with somatic, depressive, anxiety, and insomniac symptomatology.

On the other hand, Calvete and Villa (2000) present significant coefficients of correlation between emotional tiredness and symptoms of depression, somatization, anxiety, cognitive difficulties, and interpersonal sensitivity. They also indicated that there were psychological consequences that affected the professors suffering *burnout*: lack of self-accomplishment, low self-esteem, isolation, tendency to self-blame, negative attitudes towards themselves and others, feelings of inferiority and incompetence, loss of ideals, irritability, to more extreme cases of suicide attempts, serious depressive symptoms, generalized anxiety, social phobia and agoraphobia.

Finally, job and/or academic dissatisfaction should be pointed out as an evident consequence of stress and *burnout* syndrome, cited by a number of authors.²⁶

Instruments to diagnose *burnout*

In terms of instruments for assessment of the syndrome in students and in general, various questionnaires are seen to be accepted in the academic community, such as the Maslach Burnout Inventory (MBI) of Maslach and Jackson (1981), used to assess the syndrome in the care work field; the Maslach Burnout Inventory MBI-GS (General Survey) published in 1996 by Schaufeli et al., used to assess the syndrome from a more generic perspective, making possible the assessment of the syndrome in different professions and occupations; and finally, the Maslach Burnout/Inventory-Student Survey (MB/-SS), by Schaufeli et al. (2002), made it possible to assess academic *burnout*.^{27,28}

The prevalence of *burnout* syndrome in academic spheres varies considerably, and depends, among other variables, on the instrument used, the criteria for diagnosis, and the course or specialization of the student's course.

In general, there is a great deal of information on the prevalence of *burnout* in students who come from an occupational context. From this perspective, there are studies that indicate the prevalence of the syndrome taking into account its different dimensions separately. An example of this type of work is presented by Acioli and Beresin (2007) who indicate that students in the nursing faculty of the Israeli Albert Einstein hospital showed *burnout* in the following way: 73.51% suffered emotional exhaustion, 70.56% depersonalization, and 76% low self-accomplishment.²⁹

Other studies diagnose *burnout* presenting each of the dimensions that assess it separately. For example, Dyrbye y Shanafelt (2002) affirm that in recent years 45% of students in three faculties of medicine in the Minnesota Clinic present the syndrome, and Bittar (2008) indicated that 56.9% of post-graduate students of public health in the Universidad de Guadalajara present *burnout*. According to this researcher, the syndrome was distributed in accordance with course as follows: 34% of Law students, 13% of Psychology, 13% of Administration, 10% of Commercialization, 9% of Public Accountancy, 8% of International Relations, 6% of IT systems, 3% of Tourism, and 2% of Communication. Other studies present information on the prevalence of the syndrome, assessing such that high levels of exhaustion and cynicism, and low levels of self sufficiency diagnose the presence of academic *burnout* syndrome. In this sense, Salanova et al. (2004) found that 8% of students in past courses of the faculties of Legal Science and Economy at the Universidad Jaime I de Castellón (Spain) presented *burnout*.³⁰

In Colombia, there are various studies: Paredes and Sanabria (2008) indicate medium levels of the syndrome in 12.6% of the residents of medico-surgical specialties at the

Universidad Militar Nueva Granada (Bogotá). On the other hand, Guevara et al. (2004) affirm that of 105 resident and specialist clinical and surgical doctors in the city of Cali, 85.3% presented a moderate or serious level of *burnout*. In another study, Pérez et al. (2007) found that medical intern students in the city of Barranquilla had a prevalence of 9.1%, while its component dimensions were distributed between 41.8% emotional exhaustion, 30.9% depersonalization, and 12.7% of low personal accomplishment.³¹

Specifically with regard to academic *burnout*, a study by Caballero et al, showed the presence of the syndrome in psychology students in 41.6% of cases. These students experienced the feeling of not being able to give any more of themselves and a cynical attitude towards the value and sense of their tasks as students. 38.2% experienced exhaustion, 29.7% cynicism, and 48.6% a feeling of ineffectiveness. The variation of the results shows the difficulties derived from using the current instruments to determine *burnout* syndrome, which shall be covered later.

The results of another study indicate that students who work perceive themselves as much more self-effective and dedicated than those who do not. Furthermore, there were no differences shown in the academic average, nor the number of vacations taken or semesters lost among the two groups of students, but those people who did not work had failed a higher number of exams (Caballero, 2006). Unfortunately a unanimous criteria does not exist among other instruments to establish a diagnosis, nor on the percentages of prevalence and incidence, since the criteria vary for each study.³²

Due to this absence of clear criteria, many studies have resorted to determining the syndrome using statistical criteria linked to the sample: the use of one or half standard deviation around the mean, or the use of a predetermined number of percentiles (the tertile or top quartile are the most frequent), which biases the appearance of the syndrome in the sample without this stemming from the need to establish indicators that help through objective and subjective criteria, and establish the cut-off points of the instruments that determine the presence of the syndrome.

Furthermore, academic ineffectiveness or low effectiveness should be the third dimension of *burnout* in students; not self-efficiency as has been the case up till now, since this is a factor of defense against the syndrome. In this case, the reactivities of the instrument in this dimension should be recorded as negative.

The above demonstrates the need to carry out a longitudinal study in academic contexts where the syndrome is assessed from a clinical viewpoint through instruments validated in Latin America and using qualitative techniques such as individual interviews and focus groups, among others. In this way, it will be possible to initially establish the prevalence and incidence of the syndrome and carry out a clinical assessment of the interactions of the associated variables.

Universities' preoccupation with offering quality teaching implies taking into consideration all the variables involved in the teaching-learning process. In this sense, it is important to identify the obstacles and facilitators encountered by students in the completion of their studies and the relation of these to their psychological wellbeing and academic performance. An investigation was therefore performed on 872 students of the Universitat Jaume I, from 18 courses belonging to three centers at the university. The results obtained by means of a self-completed questionnaire and qualitative techniques (*brainstorming* and *focus groups*) showed a positive relationship between obstacles in study, *burnout*, and a tendency to abandon their studies. Facilitators in the study related positively with commitment, self-effectiveness, satisfaction, and happiness in relation to their studies. In terms of academic performance, the research found both positive and negative cycles of spirals in the relationships between past failure/success, psychological wellbeing/unease, and future success/failure respectively. Finally, methods of intervention were proposed with a view to reducing obstacles and optimizing the facilitators within the teaching-learning process.³²

In 2008, Barraza *et al.* created and validated the One-dimensional Student *Burnout* Scale [in Spanish: Escala Unidimensional de *Burnout* Estudiantil]. This consisted of 15 reactivities that measured the level of physical, emotional, and cognitive exhaustion in students with regard to the one-dimensional concept of *burnout* syndrome. It found a confidence level of 91 in Cronbach's alpha, and a confidence level of 90 in split half reliability according to the Spearman-Brown formula.

In some important studies where student *burnout* is studied and diagnosed one-dimensionally in students, the One-dimensional Student *Burnout* Scale was applied during November 2007 to a non-probabilistic sample of 51 students of the Faculty of Nursing and Obstetrics at the Universidad Juárez del Estado de Durango, Mexico, which found that 9.8% were male and 90.2% female. 70.6% were of an age that ranged between 18 and 21 years; 13.7% were between 22 and 25 years; and 15.7% were between 26 and 29 years. The results obtained enabled affirmation that all of the students questioned showed *burnout* syndrome, although this was mostly shown to be at a mild level (84% of those questioned).³³

An analysis of the different groups recognized how the questioned students mostly considered that they were easily depressed by their academic problems; furthermore, they advised that they had more trouble than their peers remembering what they had studied. It was therefore possible to note that the age variable does not establish significant differences in the reactivities that make up the One-dimensional Student *Burnout* Scale.

In June 2009, a second study was made of 60 students in the Escuela Secundaria Técnica No. 57, located in the Azcapotzalco suburb of the city of Durango, Mexico. The general

mean obtained was 1.90, which allowed the author to affirm that interviewed students showed a mild level of *burnout*.

In a third study made of students of the Universidad de Vallarta, 2009, it was seen that the large majority of students were diagnosed with mild *burnout*.³³

Another situation encountered is that there are very few studies on the incidence of *burnout* in students of physical culture, who are characterized and diagnosed in this particular group. It has primarily been studied in students of medicine, nursing, psychology, and law, in that order of relevance and quantity.²⁹⁻³⁵

Conversely, in students of physical culture and sports, there is only the study carried out by Professor Moreno González (2009) in students of physical education and sports of the Universidad del Tolima, Colombia. Here, the results obtained showed moderate student *burnout* among females, in the category of depersonalization. With regard to age, those who were younger appeared to be more affected. It was seen that the dimension most affecting males, although low, was emotional exhaustion, followed by the dimension of depersonalization. In the area of personal accomplishment, it was low in both men and women, which is to say that it remained at diagnosis level with the instruments currently applied.

In the case of Cuba, research in this field has been very scarce. It is currently considered very important, specifically in areas of sport, education, and health. However, there are some Cuban researchers who have completed works and investigations on *burnout*. In 1997, García Ucha *et al.* published the results of their studies entitled: "Preliminary study on stress in high-level sports coaches", carried out in Havana, Cuba. It covered a group of characteristics typical of *burnout* that are predominant among trainers in high-level sports coaching during their work with athletes.

In 2003, the *Revista Cubana de Salud Pública* published an article by Román which discussed *burnout* in health professionals at primary and secondary levels of care. The article highlights a study carried out in medical centers in the country in which a behavioral inventory was applied in order to explore the levels of *burnout* present in medical professionals.

In the case of students, research is even more scarce. In one study carried out on working student nurses in Cienfuegos, Cuba, nursing staff had a high predisposition to suffering from *burnout* syndrome, especially when they were university students.²⁴

In another study performed in the Universidad de Ciencias Médicas in Holguín, Cuba, the majority of students were diagnosed with mild *burnout* syndrome, with females being more affected (Rosales Ricardo, 2012). The One-dimensional Student *Burnout* Scale was applied to 70 students randomly selected from the first year population; 35 of each gender (85% of the first year student population in medicine at the university headquarters).³⁵

Females (no *burnout* 0, mild *burnout* 25, moderate *burnout* 10, severe *burnout* 0) had a higher incidence of *burnout* compared to males (no *burnout* 10, mild *burnout* 24, moderate *burnout* 1, severe *burnout* 0).

As shown, there was a mild predominance of *burnout* in both sexes. Students without *burnout* were found among the males, and only one had moderate *burnout*. All of the females studied had *burnout*, with a considerable proportion of them moderate. Severe cases of *burnout* were not found in either sex. The majority of the students were therefore affected by *burnout* syndrome, with females more affected than males.^{35,36}

This bibliographic review has made it possible to note the relevance of the *burnout* phenomenon among undergraduate students, its differentiation and specificity with that shown in other student groups, and that its early detection of significant levels of symptoms can be an indicator of possible future difficulties, in terms of academic or professional success, and moreover, and excellent opportunity for early intervention.

It is clear that there are multiple causes for the existence of university student *burnout* syndrome, but they have not been studied and systematized in a way that allows for an adequate response or solution for protecting the health of our future graduate professionals.

The fundamental contradiction is therefore reflected in the existence of *burnout* in university students, its negative effect, and the insufficient diagnosis and control of it.

The time has therefore come to differentiate, characterize, and conceptualize *burnout* syndrome in university undergraduate students, creating a new framework for the study and treatment of university student *burnout* (USB), given that this important group has its own particularities and specificities, and is hugely important for the population of Cuba and many other countries besides.

It is undeniable that there are very few studies on *burnout* applied to undergraduate university students, and the syndrome is not defined or differentiated in this group with regard to mid-level, upper secondary, and post-graduate both in Cuba and internationally. However, the manifestations of the phenomenon's occurrence in this important student population are obvious, and so too are the specificities of its study and treatment.

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