



ISSN: 0976-3031

Available Online at <http://www.recentscientific.com>

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 9, Issue, 6(B), pp. 27320-27326, June, 2018

**International Journal of
Recent Scientific
Research**

DOI: 10.24327/IJRSR

Research Article

POSIBLE PSYCHOSOCIAL RISK FACTORS AT THE COTOPAXI TECHNICAL UNIVERSITY

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DOI: <http://dx.doi.org/10.24327/ijrsr.2018.0906.2235>

ARTICLE INFO

Article History:

Received 17th March, 2018

Received in revised form 21st

April, 2018

Accepted 05th May, 2018

Published online 28th June, 2018

Key Words:

Intervention, psychosocial factors, burnout

ABSTRACT

The purpose of this study is to analyze teachers from the Technical University of Cotopaxi, and the possible psychosocial risk factors during the intervention process, for which the MBI instrument (Maslach 1986) was applied. Population of volunteer teachers, who at the end of the study and statistical analysis determined that the categories with greater relevance are those of Personal Realization followed by Exhaustion. So it can be said that the teachers of the UTC, during the intervention period feel exhausted, but at the same time performed, also have a significant percentage of emotional fatigue (54%), 58% consider not having suffered depersonalization and 89% say they have done it personally.

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INTRODUCTION

The Technical University of Cotopaxi (UTC) is an Ecuadorian Institution of Higher Education (IES), public, secular and free. Alma Mater of the province of Cotopaxi, which began its activities in 1992 as an extension of the North University Technical. Currently it has a university extension in the canton La Maná. The UTC was created by means of the law published in the Official Register N0. 618 of January 24, 1995, and is part of the National System of Ecuadorian Higher Education.

At present, the Technical University of Cotopaxi develops its activities in a five-hectare campus in San Felipe, where human and technical sciences careers operate. In the 82 hectares of the CEASA Salache Agricultural Experimental Center life sciences careers are developed and, in the extension of La Maná, it carries out its activities in its own facilities in which it has an academic campus and an experimental agricultural center called La Playita

Currently forms professionals at the service of society, the following faculties:

Campus Headquarters Matrix

Faculty of Human Sciences and Education

1. Career in Education Sciences, Basic Education.
2. Education Sciences Career mention English.
3. Career Education Sciences mention Nursing Education.
4. Career Sciences of Education mention Physical Culture.
5. Social Communication Career
6. Career Graphic Design.

Faculty of Administrative Sciences

7. Commercial Engineering career.
8. Accounting and Audit Career.
9. Executive and Management Secretarial Career.

Faculty of Engineering and Applied Sciences

10. Electrical Engineering Degree in Electrical Power Systems.
11. Engineering career in Electromechanics.
12. Industrial Engineering career.

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13. Engineering Career in Computing and Computer Systems.

Campus Experimental Farm Center and Production (CEASA)

Faculty of Agricultural Sciences and Natural Resources

14. Career of Veterinary Medicine.
15. Career of Engineering and Environmental Sciences
16. Career of Ecotourism Engineering.
17. Career of Agroindustrial Engineering.
18. Agronomy

Campus

LA MANÁ

19. Career in Education Sciences, Basic Education.
20. Commercial Engineering Degree.
21. Career in Accounting and Auditing.
22. Agronomic Engineering Course.
23. Ecotourism Engineering Course.
24. Engineering career in Electromechanics
25. Career in Electrical Engineering in Electrical Power Systems

In the context of quality improvement established from a public policy on July 3, 2015, the Technical University of Cotopaxi requests institutional recategorization, CEAACES proceeding to issue the corresponding report where it determines, as a result of the evaluation process developed by the CEAACES, that the Technical University of Cotopaxi has obtained a global and integral evaluation of 34.91%. In virtue of the established in the Regulation for the Determination of Results of the Process of Evaluation, Accreditation and Categorization of the Universities and Polytechnic Schools and of their Situation Academic and Institutional, the aforementioned assessment would not enable their respective accreditation. (REPORT)

For this reason, the Higher Education Council (CES) considers necessary and urgent the application of Art. 169 of the LOES to return the Institutionally, prestige and academic quality to the Technical University of Cotopaxi. In this context, on November 17, 2016, the Higher Education Council, through Resolution RPC-SE-15-N ° 055-2016, resolved to provide for the integral intervention of the Technical University of Cotopaxi for having determined the existence of academic irregularities, administrative, financial, causes provided for in paragraph b) of Art. 199 of the Higher Education Law.

Causes of Intervention

The Council of Higher Education (CES) resolved the intervention of the Technical University of Cotopaxi from the following causes:

1. From the documentation compiled at the Technical University of Cotopaxi, as well as that provided by the referred HEI, it can not be established whether the area of knowledge of the academic staff of the institution with a fourth-level academic degree is related to the Chair. taught by the teachers of the institution, in accordance with the provisions of articles 19 and 20 of the Career and Ladder Regulations of the Professor and Researcher of the Higher Education System (Codified):

2. From the information gathered in the investigative process, it has been possible to determine that up to this date, the Technical University of Cotopaxi has not approved its Internal Regulation of Career and Scale of the Professor and Researcher, fact that to more constitute a violation in the Fourth Transitory Provision of the Career and Ladder Regulations of the Professor and Researcher of the Higher Education System (Codified), makes it impossible to determine whether the remunerative scale of the teachers is framed within the normative parameters, nor the procedures adopted to fix them, as well as an adequate management of the recategorization processes of the academic staff carried out by the research institution.
3. There is evidence of an administrative irregularity between the payment and mechanized roles of the IESS with the payroll of teachers, inasmuch as 11 people have been identified who receive remuneration under the figure of "University Professors Higher Education Law", despite the fact that be on the list of academic staff of the IES.
4. From the comparison between the payment and mechanized roles of the IESS, referring to the monthly salary that appears in the personnel actions of the professors who have appointment, an inconsistency between their documents is verified, which would constitute an administrative irregularity.
5. The information analyzed shows that there are academic staff with a third level degree with occasional contracts signed for the academic period 2015-2016, contracts that contravene express rules of the Career Regulations and Scale of the Professor and Researcher, especially as prescribed in articles 24, 25 and 26 of the mentioned normative body:
6. As established in article 82 of the Rules of the CES Academic Regime, the relationship with society refers to continuing education programs, network management, cooperation and development, international relations, dissemination and distribution of knowledge that allow for democratization of knowledge and the development of innovation. For its part, article 89 ibidem, conceptualizes pre-professional practices "as learning activities aimed at the application of knowledge and the development of specific skills and abilities that a student must acquire for an adequate performance in their future profession. These practices must be research-action and will be carried out in the institutional, business or community, public or private environment, suitable for the strengthening of learning. Pre-professional practices or internships are an essential part of the curriculum as regulated in this Regulation.

As evidenced by the aforementioned rule, the relationship with society and pre-professional practices are two processes of a different legal nature, which is not considered by the Technical University of Cotopaxi in terms of the documentation compiled within the investigative process, the IES does not expose differences between the mentioned subjects, which is reflected in an inappropriate execution of the corresponding processes:

7. From the information gathered within the research process, it is not possible to determine sufficient elements to conclude if the budget assigned to the

research component (R & D) is financing specific research projects since, in the budget assigned to each project and its percentage of effective execution.

8. Regarding the research area, it has been possible to conclude from the documentation and information gathered in the investigative process, that it does not constitute sufficient evidence to determine whether the publications made by the IES academic staff comply with the provisions of the numeral 3, of the literal a) of article 71 of the Regulation of Career and Scale of the Professor and Investigator of the System of Superior Education, with respect to the determination of the relevance and pertinence of the works published by the academic personnel of the institution, particularly of works that do not count with ISBN (International Standard Book Number), and:
9. Finally, it has been possible to establish that in 2015 the Technical University of Cotopaxi did not present a strategic plan framed to the strengthening of the administrative and academic management. For the year 2016, a four-year Institutional Development Plan was presented in which objectives and goals projected for 2020 are established, which would reflect a high risk in the management of administrative and academic management, as the search for a higher education of quality is a goal of short-term achievement raised by the Higher Education System, and not as projected by the IES.

For the reasons described above, an integral accompaniment is made to the Technical University of Cotopaxi to achieve the goals planned in the Academic Excellence Plan approved by resolution RPC-50-02-n ° 023-2017, as of January 18, 2017, with a permanence of one year of intervention and a post-intervention work of six months.

At this time the psychosocial dynamics around this phenomenon can be evidenced (intervention), for which reason it is considered to carry out a parallel study of the organizational and psychosocial aspects and the relation with the occupational health in the teachers of the Technical University of Cotopaxi. Since as we see in the literature both in the national and international context, this topic is not new, and the importance and recognition that it has acquired in recent years has had a rebound due to the important changes in organizations and globalization processes current, also considering that exposure to psychosocial risks, has become more frequent and intense, making it convenient and necessary to identify, evaluate and control, in order to avoid the associated risks to health, and safety at work.

As an appointment (Monte, 2009) it has been concluded in a study carried out in the European Union (EU) that work-related stress is a major problem and that it involves an economic and social cost, occupies work stress according to the European Agency for Safety and Occupational health (<http://osha.europa/en/topics/stress>) the second most frequently reported work-related health problem, up to 2005, materializing losses due to health expenses and lost time. On the other hand The International Labor Office ILO, notes that the economic impact of occupational diseases and accidents at the global level, constitute 4% of gross domestic product (Charria, Sarsosa, & Arenas, 2011)

It is established that a healthy and safe work environment is the best guarantee of work performance, the health of its employees and the motivation and organizational involvement. The loss of quality of work entails costs sometimes difficult to observe in the short term, but always present in the medium and long term. After a review of the literature Melamed *et al.* conclude that the SQT can be considered a relevant problem for health public and an issue of concern for the politicians responsible for health. The conclusion of these authors is not wrong. The dimension of the problem is worthy of attention as a public health problem, as it is considered a pathology (Melamed, *et al.*, 2006)

Therefore, we have analyzed the three components of the Burnout under the three components that are (Work Stress, Depersonalization and Personal Realization) in the teachers during the intervention process of the Technical University of Cotopaxi

Work Tires

The literature gathers growing evidence that teachers experience a high level of stress, which would adversely affect their physical and mental health, the learning environment and the achievement of educational objectives. This phenomenon is linked to lack of involvement, alienation, absenteeism, lower performance, losses, high spending on substitutions and abandonment of the profession (Durán, Extremera, Montalbán, & Rey, 2005)

On the other hand we see that job insecurity could be defined as a general concern about the existence of work in the future, and also as a perceived threat of different work characteristics, such as position within an organization or career opportunities. And Burn Out or Professional Wear is the result of a process of chronic occupational and organizational stress that ends in a state of emotional exhaustion and fatigue demotivating for work tasks. Therefore, health not only means the absence of diseases, accidents or disabilities, but an optimal state of physical, mental and social well-being.

Causes of stress: External Causes:

Psychosocial: conflicts, economic hardships, loss or change of work, personal losses, pressure of time, work pressure, retirement, disappointments, climate, noise.

Psychophysiological of stress

Alarm phase: The body is prepared to combat the threat and significantly increases energy consumption.

Action phase: The body executes the necessary actions to eliminate the threat or danger.

Relaxation phase: The body returns to its equilibrium (physical - mental).

They lower the energy levels. Feel physical relief.

Depersonalization,

This process describes it (Schiler, 1928. p 120) As a complaint of patients who say they no longer feel their self, of feeling like automatons, what they do seems to be doing it mechanically; They are unable to experience feelings such as joy, sadness, hate or love. It would be defined as the development of a certain insensibility because they feel as if they were not alive, as if they were not real; They are unable to imagine their bodies, they seem insensitive and do not experience hunger,

thirst or any bodily need. They cannot evoke images or remember or intuit the appearance of their relatives. For some, the objects seem as if they were from another planet. In a word there is a perceptual alienation.

On the other hand Maslach and Jackson (1986) defined the Burnout as "a gradual loss of concern and emotional feelings towards the people with whom they work and which leads to isolation or dehumanization." On the other hand, they laid the foundations for conducting studies in different communities and societies, as they devised a measuring instrument, called Maslach Burnout Inventory (MBI)

Personal Fulfillment. Include theoretical foundations
In relation to stress at work, this has become a complex problem to address and is one of the effects derived from the most studied psychosocial factors. As stated by Houtman, Jettwghoff & Cedillo (2008), in Latin America, for example, work stress is currently recognized as one of the great epidemics of modern working life. Recently, more interest has been awakened in studying the phenomenon of the syndrome of being burned by work or emotional exhaustion (Burnout Syndrome) and work harassment (moobing syndrome). All these effects derived from exposure to negative psychosocial factors directly affect the health and safety of workers.

Mobbing or workplace harassment

For (Ortiz Montalbán, 2013, p.3) is considered psychological violence one of the constitutive elements of the work phenomenon called mobbing; it is in itself violence in the workplace, expressed through a pattern of acts, events and circumstances that physically, emotionally and mentally affects the person who suffers it.

These aggressions can be categorized according to (Ortiz Montalván, 2013, p2.) In Psychological Abuse and this to have two facets, in passive abuse and active mistreatment

METHODOLOGY, MATERIALS AND METHODS

When labor stress, fatigue and moobing are the triggering factors in the performance of workers and in the specific case of the Technical University of Cotopaxi being involved, it has been considered to conduct a study using the MBI as a tool to a group of 75 teachers who voluntarily participated and of which 55 were validated based on the fact that 20 presented inconsistencies in the presentation of the surveys, this test contains 22 items that allows measuring the following aspects: Exhaustion, depersonalization and personal fulfillment

The MBI (Maslach, 1986), is the most widely used instrument to collect information from the BURNOUT. This questionnaire has a high internal consistency and a reliability close to 90%. It is made up of 22 items in the form of affirmations, about the feelings and attitudes of the professional in his work and towards patients; its function is to measure professional burnout.

This instrument allows to measure emotional fatigue through the description of feelings and valued on a Likert scale where states are measured as being overwhelmed and exhausted Emotionally by work. 1-2-3-6-8-13-14-16-20

To measure Depersonalization, an impersonal response and lack of feelings towards the subjects receiving attention are described. 5-10-11-15-22; To establish personal fulfillment,

feelings of competence and successful accomplishment in working towards others are described. 4-7-9-1.

Therefore there are three major categories on which will break down each item and are: emotional fatigue, depersonalization and personal fulfillment.

In theory, the possible results to which the human being is presented with stress is: an abnormal response to stress, also known as General Adaptation Syndrome. The presence of concurrent signs and symptoms of physical, mental and behavioral type can be appreciated. The staff of juvenile detention centers often bring their problems to their homes; there is the possibility of reacting violently to any situation with their relatives; Alcohol abuse is also common

There is also the resistance phase, which consists of adaptation: the body tries to adapt and repair the damage; there is tension and muscle pain (neck, shoulders, back); Frequent fatigue is experienced; discomfort in the chest. You may experience digestive disorders, insomnia and nightmares. There is a tendency to irritability, fears, phobias, cravings for something; lack of concentration.

In the exhaustion phase, balance is broken and alterations occur in one or more systems or organs. The body tends to collapse and give in to the disease, it has been noted that the security personnel in the centers can experience high blood pressure, asthma, migraine.

Analysis of Results - MBI (Inventory of Burnout De Maslach)

GENERAL RESULTS

To establish a general and clear overview of the results of the application of the MBI (Maslach Burnout Inventory), the general results are summarized in the following table.

Table of general results.

GENERAL RESULTS OF THE APPLICATION OF THE MBI (INVENTORY OF BURNOUT DE MASLACH)							
EMOTIONAL EXHAUSTION							
COD.	ITEMS	NEVER	EVERY TIME A YEAR	EVERY MONTH TO THE MONTH	EVERY TIME A WEEK	DAILY	Total
AE.1.1	FEEL EMOTIONALLY DEFRAUDED IN MY WORK.	59%	29%	8%	2%	2%	100%
AE.1.2	WHEN I FINISHED MY WORK DAY I FEEL SOLD OUT	22%	14%	37%	20%	7%	100%
AE.1.3	WHEN I GET UP IN THE MORNING AND I FACE ANOTHER WORK DAY I FEEL SOLD OUT.	62%	16%	14%	4%	4%	100%
AE.1.4	FEEL THAT WORKING ALL DAY WITH PEOPLE CANSA ME	70%	24%	2%	2%	2%	100%
AE.1.5	FEEL THAT MY WORK IS WEARING.	56%	29%	14%	2%	0%	100%
AE.1.6	FEEL FRUSTRATED BY WORK.	65%	16%	8%	7%	4%	100%
AE.1.7	FEEL THAT I AM TOO MUCH TIME IN MY WORK.	33%	16%	18%	7%	26%	100%
AE.1.8	FEEL THAT WORKING IN CONTACT WITH PEOPLE TIRED OUT ME.	76%	14%	10%	0%	0%	100%
AE.1.9	FEEL LIKE IF I WAS AT THE LIMIT OF MY POSSIBILITIES.	39%	18%	14%	7%	22%	100%
TOTAL		54%	20%	14%	6%	7%	
DEPERSONALIZATION							
COD.	ITEMS	NEVER	EVERY TIME A YEAR	EVERY MONTH TO THE MONTH	EVERY TIME A WEEK	DAILY	Total
D.1.1	FEEL THAT I AM TREATING SOME BENEFICIARIES OF ME AS IF THEY WERE IMPERSONAL OBJECTS.	66%	4%	14%	4%	12%	100%
D.2.2	FEEL THAT I HAVE MADE HARDER WITH PEOPLE.	43%	31%	12%	4%	10%	100%
D.2.3	FEEL THAT THIS WORK IS EMOTIONALLY HARDENING ME.	56%	18%	12%	2%	12%	100%
D.2.4	FEEL THAT I REALLY DO NOT CARE ABOUT WHAT HAPPENS TO PEOPLE THAT I HAVE TO CARE PROFESSIONALLY.	74%	12%	4%	2%	8%	100%
D.2.5	IT SEEMS TO ME THAT THE BENEFICIARIES OF MY WORK BLAME ME OF SOME OF ITS PROBLEMS.	51%	29%	8%	4%	8%	100%
TOTAL		58%	19%	10%	3%	10%	
PERSONAL FULFILLMENT							
COD.	ITEMS	NEVER	EVERY TIME A YEAR	EVERY MONTH TO THE MONTH	EVERY TIME A WEEK	DAILY	Total
RP.3.1	FEEL THAT I CAN EASILY ATTEND THE PEOPLE I HAVE TO ATTEND.	6%	2%	10%	8%	74%	100%
RP.3.2	FEEL THAT I TREAT WITH MUCH EFFECTIVENESS THE PROBLEMS OF THE PEOPLE I HAVE TO ATTEND.	6%	6%	8%	12%	68%	100%
RP.3.3	FEEL THAT I AM POSITIVELY INFLUENCING THE LIVES OF OTHER PEOPLE THROUGH MY WORK.	8%	0%	8%	8%	76%	100%
RP.3.4	FEEL VERY ENERGETIC AT MY JOB.	18%	16%	10%	12%	44%	100%
RP.3.5	FEEL THAT I CAN EASILY CREATE A PLEASANT CLIMATE AT MY WORK.	18%	2%	0%	8%	72%	100%
RP.3.6	FEEL STIMULATED AFTER I HAVE WORKED INTIMATELY WITH THOSE WHO HAVE TO ATTEND.	6%	0%	8%	14%	72%	100%
RP.3.7	THINK I GET MANY VALUABLE THINGS IN THIS JOB.	4%	2%	8%	6%	80%	100%
RP.3.8	FEEL THAT IN MY WORK EMOTIONAL PROBLEMS ARE TREATED ADEQUATELY.	27%	14%	16%	4%	39%	100%
TOTAL		11%	5%	9%	9%	66%	

Source: The authors

Relevance in Periodicity

Through the use of the Completely Random Design (DCA), it was determined in each of the three major categories, which of the classifications starting from Never until daily had greater

relevance. This was determined by taking as a unit of study each person and the periodicity classifications: Never, once a year, once a month, once a week, daily; as treatments within the DCA design, to finally analyze the data obtained when executing in the Infostat statistical software.

Emotional tiredness

Next, the results of the DCA are shown, obtaining in the p-value of periodicity a value less than 1%, indicating that there is a difference between the different periodicities, as indicated in table 1.

Table 1 Anova DCA applying to the periodicity

Variance analysis

Variable	N	R ²	R ² Aj	CV
Amount	45	0,74	0,72	54,18

Variance analysis table		SC type III)			
F.V.	SC	gl	CM	F	p-value
Model	3267,42	4	816,86	28,97	<0,0001
Periodicity	3267,42	4	816,86	28,97	<0,0001
Error	1127,78	40	28,19		
Total	4395,20	44			

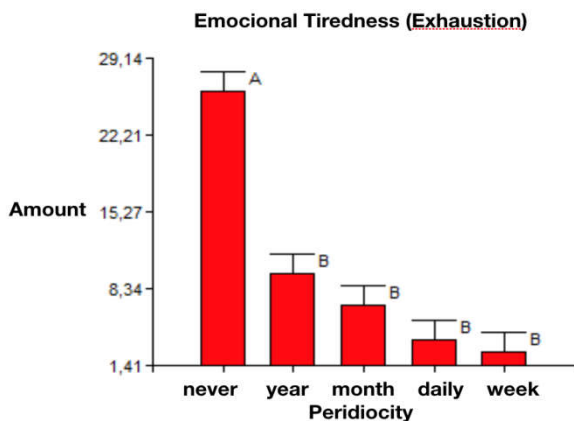
Once the difference between periodicities was determined, with the application of the means test such as Tukey, it was determined which was the most relevant periodicity, in Table 2 and Graph 1 it can easily be seen that the periodicity: never; is the one that had the most relevance, concluding in this way that in UTC they do not find themselves with emotional fatigue.

Table 2 Tukey test applied to the periodicity

Test: Tukey Alfa=0,05 DMS=7,14904
 Error: 28,1944 gl: 40
 Average periodicity

n	E.E.
never	26,11 9 1,77 A
year	9,67 9 1,77 B
month	6,89 9 1,77 B
daily	3,67 9 1,77 B
week	2,67 9 1,77 B

Stockings with a common letter are not significantly different (p > 0,05)



Graph 1 Averages and significance test using Tukey Depersonalization

Next, the results of the DCA are shown, obtaining in the p-value of periodicity a value lower than 1%, indicating that there is a difference between the different periodicities, as indicated in table 3.

Table 3 DCA applied to the periodicity

Variance analysis

Variable	N	R ²	R ² Aj	CV
Amount	25	0,89	0,87	38,10

Variance analysis table		SC type III)			
F.V.	SC	gl	CM	F	p-value
Model	2261,20	4	565,30	40,55	<0,0001
Periodicity	2261,20	4	565,30	40,55	<0,0001
Error	278,80	20	13,94		
Total	2540,00	24			

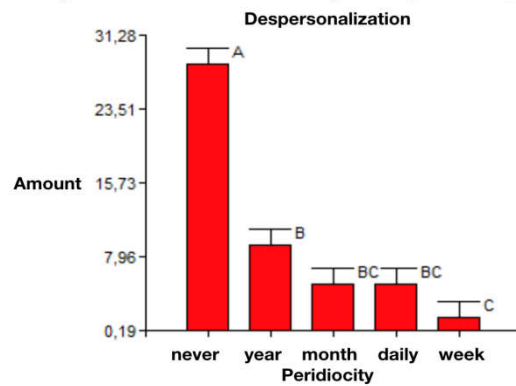
Once the difference between the periodicities was determined, with the application of the media test, Tukey, it was determined which one was the periodicity with the greatest relevance, in table 4 and in graph 2 you can easily see the periodicity: never; it is the one with the most relevance, concluding in this way that in UTC they did not encounter depersonalization.

Table 4 Tukey test applied to periodicity

Test: Tukey Alfa=0,05 DMS=7,06606
 Error: 13,9400 gl: 20
 Average periodicity

n	E.E.
never	28,20 5 1,67 A
year	9,20 5 1,67 B
month	5,00 5 1,67 B C
daily	5,00 5 1,67 B C
week	1,60 5 1,67 C

Stockings with a common letter are not significantly different (p > 0,05)



Graph 2 Averages and significance test using Tukey

Personal fulfillment

Next, the results of the DCA are shown, obtaining in the p-value of periodicity a value lower than 1%, indicating that there is a difference between the different periodicities, as indicated in table 5.

Table 5 DCA applied to the periodicity

Variance analysis

Variable	N	R ²	R ² Aj	CV
Amount	40	0,89	0,87	43,54

Variance analysis table		SC type III)			
F.V.	SC	gl	CM	F	p-value
Model	4965,15	4	1241,29	68,18	<0,0001
Periodicity	4965,15	4	1241,29	68,18	<0,0001
Error	637,25	35	18,21		
Total	5602,40	39			

Once the difference between periodicities was determined, with the application of the means test such as Tukey, it was determined which was the periodicity with greater relevance, in table 6 and graph 3 it can easily be seen that the periodicity: daily; It is the one that had the most relevance, concluding in this way what in UTC, the staff feels personally accomplished.

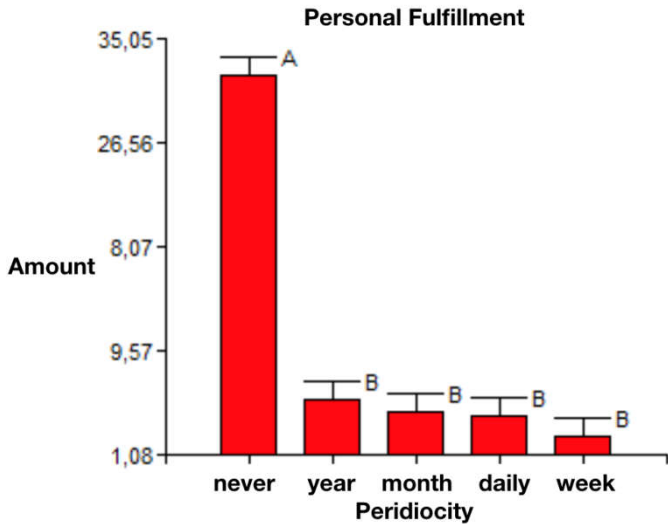
Table 6 Tukey test applied to the periodicity

Test:Tukey Alfa=0,05 DMS=6,13392

Error: 18,2071 gl: 35

Average periodicity	n	E.E.
never	32,00	8 1,51 A
year	5,63	8 1,51 B
month	4,50	8 1,51 B
daily	4,25	8 1,51 B
week	2,63	8 1,51 B

Stockings with a common letter are not significantly different (p > 0,05)



Graph 3 Averages and significance test using Tukey

General Analysis

For the analysis between the three major categories that would become the treatments to be applied, a Completely Random Design DCA was carried out, where the total number of people (50 people) was chosen as an experimental unit and a summation of the answers was obtained.

First we weigh each of the periodicities as follows:

- Never has a value of 1
- Once a year it has a value of 2
- Once a month has a value of 3
- Once a week has a value of 4
- Daily has a value of 5

Once weighted, its corresponding value was multiplied by the number of people who answered at the indicated periodicity.

To obtain the repetitions for the DCA, a summation was made with respect to each question, each question being converted into a repetition of each applied category, as shown in table 7.

Table 7 Shows the process to obtain the repetition values for the Depletion category

#	1 never	2 year	3 month	4 week	5 daily	Repetitions
1	29 x 1	14 x 2	4 x 3	1 x 4	1 x 5	78
2	11	14	54	40	15	134
3	30	16	21	8	10	85
6	34	24	3	4	5	70
8	27	28	21	4	0	80
13	32	16	12	12	10	82
14	16	16	27	12	65	136
16	37	14	15	0	0	66
20	19	18	21	12	55	125

Once the Completely Random DCA Design has been applied, the calculation of the ADEVA table is performed under the Infostat software, obtaining a p-value of less than 1%,

considered highly significant and confirming that there is a difference between the results obtained between the three categories, as indicated in table 8.

Table 8 DCA applied to the three categories: Exhaustion, Depersonalization and Personal Realization

Variance analysis

Variable	N	R²	R² Aj	CV
Repetitions	22	0,57	0,53	23,52

Variance analysis table

F.V.	SC	gl	CM	F	p-value
Model	42590,39	2	21295,19	12,73	0,0003
Periodicity	42590,39	2	21295,19	12,73	0,0003
Error	31787,43	19	1673,02		
Total	74377,82	21			

Once the difference between the categories was determined, when applying the means test like Tukey, it was determined that the categories with the most relevance are those of Personal Realization followed by Exhaustion, in table 9 and the graph 4 can easily be observed. So it can be said that the teachers of the UTC, during the intervention period feel exhausted, but at the same time made personally, as well as the depersonalization has not had major influence.

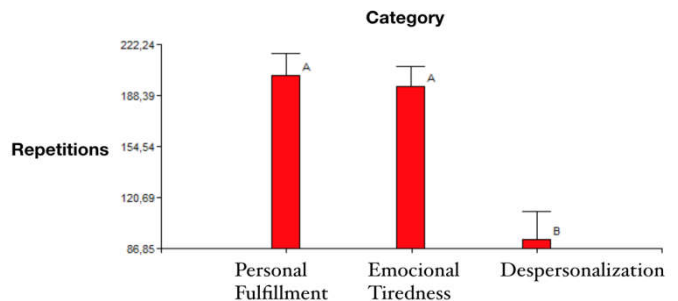
Table 9 Tukey media test

Test:Tukey Alfa=0,05 DMS=56,02921

Error: 1673,0227 gl: 19

Treatment	Average	n	E.E.
Personal Fulfillment	201,63	8	14,46 A
Emocional Tiredness	194,22	9	13,63 A
Despersonalization	93,00	5	18,29 B

Stockings with a common letter are not significantly different (p > 0,05)



Graph 4 Averages and significance tests applying Tukey to the different categories

Bibliografy

Charria, Sarsosa , K., & Arenas , F. (2011). Factores de riesgo psicosocial laboral: métodos e instrumentos de evaluación. *Fac. Nac. Salud Pública*, 29(4): 380-391.

Durán, M. A., Extremera , N., Montalbán , M. F., & Rey, L. (2005). Engagement y Burnout en el ámbito docente: Análisis de sus relaciones con la satisfacción laboral y vital en una muestra de profesores. *Revista de Psicología del trabajo y de las Organizaciones - 2005*, 147.

Melamed, S., Shirom , A., Toker , S., Berliner, S., Shapira, I., & Melamed, S. (2006). Burnout and risk of cardiovascular disease: evidence, possible causal paths, and promising research directions. *Psychol Bull*, 53.

Monte, P. R. (2009). Algunas razones para considerar los riesgos psicosociales en el trabajo y sus consecuencias en la salud pública. *Revista Española de Salud Pública*, 2.

- Armand Grau, Daniel Flichtentrei, Rosa Suñer, Silvia Font-Mayolas, María Prats y Florencia Braga Fuente: *IntraMed Rev Esp Salud Pública* 2009; 83: 215-230, N.º 2 - Marzo-Abril 2009
- Caballero J., 2005, “Acoso psicológico en el trabajo: mobbing”, *Revista Paceyña de medicina familiar*.
- Centro nacional de condiciones de trabajo, 2006 “Acoso psicológico en el trabajo: mobbing”, España.
- León M., Muñiz I., Martín L. 2012 “El acoso psicológico en el trabajo o mobbing: patología emergente”, Valladolid-España,
- Moreno B., Rodríguez A., Morante M., 2008, Garro “Evaluación del acoso psicológico en el trabajo: desarrollo y estudio exploratorio de una escala de medida”, Madrid-España.
- Schilder P. Depersonalization. In: *Introduction to psychoanalytic psychiatry*. Nervous Mental disease monograph. Series 50. 1928. p 120.
- Maslach C, Jackson S. *Maslach Burnout inventory*. Palo Alto: Consulting Psychologist Press; 1986.
- Feldman, Lya, & Blanco, Gisela. (2012). Una aproximación al estudio de los factores psicosociales laborales en Venezuela. *Salud de los Trabajadores*, 20(1), 75-92. Recuperado en 17 de mayo de 2018,
- Moobing y Estrés en Docentes Universitarios (2017), Lara Sotomayor, J.E; Pando Moreno, M.; Aranda Beltrán, C. & Lalama Aguirre, JM.

How to cite this article:

José M. Lalama *et al.* 2018, Posible Psychosocial Risk Factors At The Cotopaxi Technical University. *Int J Recent Sci Res.* 9(6), pp. 27320-27326. DOI: <http://dx.doi.org/10.24327/ijrsr.2018.0906.2235>
