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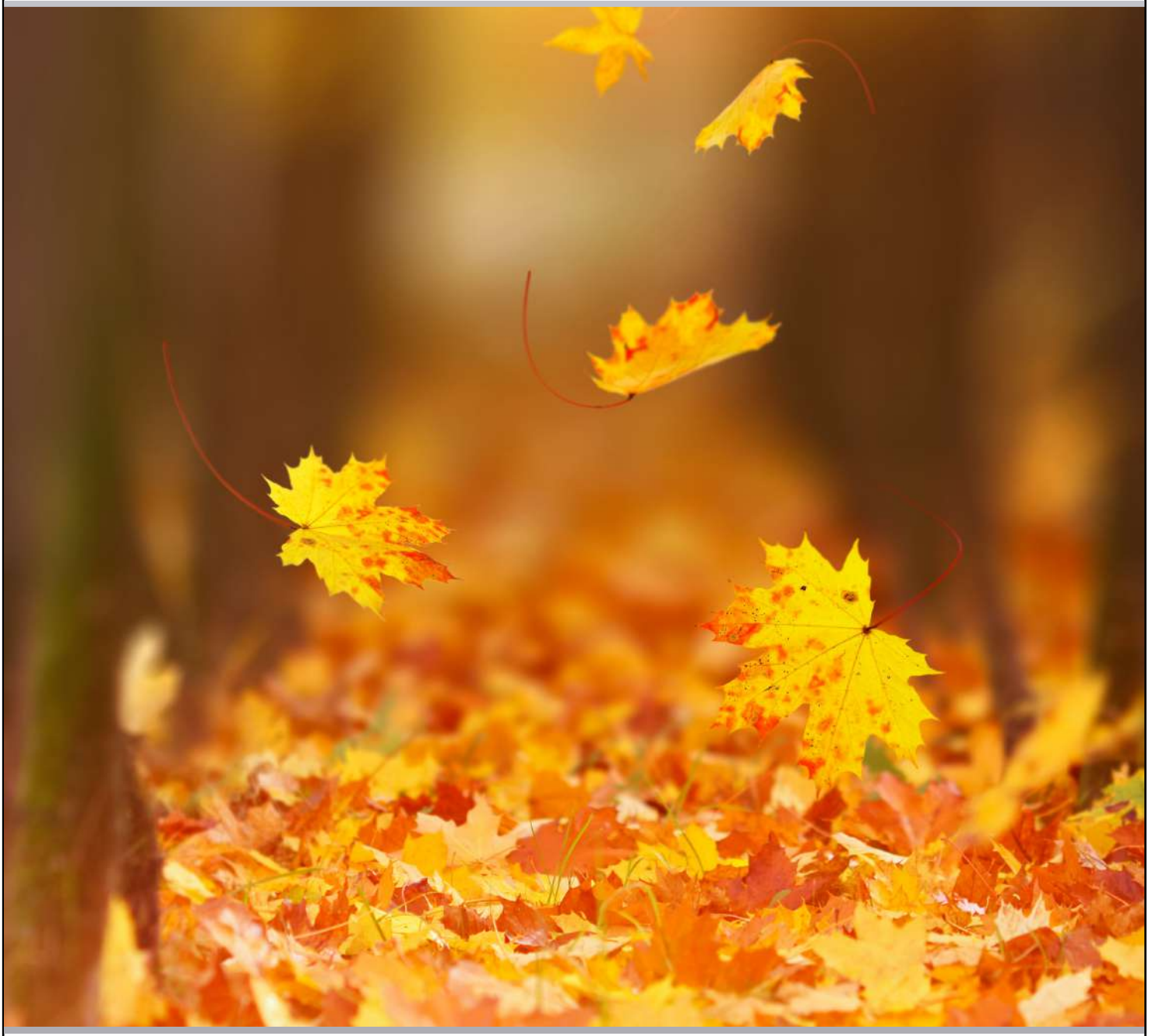

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Editorial

It is a pleasure for our team to collaborate in this journal's implementation which aims to be a scientific dissemination tool for collective psychology. We intend to carry it out with zeal and thoroughness with the great experience of a group of people within the scope of both professors and researchers.

Our fundamental motivation is to transfer the knowledge generated from research to all those people interested in acquiring skills pertaining to their professional and scientific fields and, moreover, do so without boundaries but addressed to all the peoples of the world while offering a serious and respectful treatment of the information.

The first includes six thematic articles and various methodologies which contribute in forming an interesting scope that it is enriching due to its variety. The first article analyzes the personal characteristics, the motivation for selecting and continuing in the activity, as well as the difficulties faced by bowling referees.

The next article has a neuropsychological type approach that carries out an exhaustive and current analysis of cognitive components affected under a Chiari malformation, as well as a review of the existing literature on the description of the surgical treatment effects for its neuropsychological symptoms.

It addresses the relationship between personality traits and the motivational profile in young people from a radically different scope, taking into account the psychosocial risk incidence in the relationship between two variables. The work's contribution is relevant for company managers, as well as for the workers themselves.

On the other hand, self-esteem can be a mediating variable for the success of rehabilitation processes in schizophrenia. Therefore, this next article validates the Spanish short form of the Self-Esteem Rating Scale (SERS), shown as a useful tool for assessing the different positive and negative dimensions of self-esteem.

The relationship between mindfulness and coaching is also an interesting topic since both promote change through awareness-raising and the customer's responsibility. The following work provides a rigorous review on the uses of implementing mindfulness within the field of coaching with an emphasis on its effect on key processes and competences for the effectiveness of coaching.

The last article discusses the relationship between the levels of depression in men and the presence of a traditional male ideology, as well as the role of alexithymia in said relationship. It explores the demands of the traditional male role in today's society, and how they affect everything related to emotional expression by stressing the importance of being strong and not needing help.

We cannot end this editorial without thanking the Iber-American University Foundation (FUNIBER) and sponsoring Universities for the resources and human support they have contributed so that the first issue of this journal could be published. We would also like to thank the entire team who has supervised and contributed for this project to be realized.

I finish by expressing the entire team's commitment for this journal to become a vessel of international expansion for everyone involved in the scientific world.

Dr. Juan Luís Martín Ayala
Editor in Chief

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WHAT ARE THE REASONS FOR THE START AND PERMANENCE AND THE DIFFICULTIES IN THE ARBITRATION OF THE BOLO-PALMA REFEREES?

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Abstract. The study's purpose was to determine the reasons why referees of Bolo-Palma (bowling from hereon) decided to take on the job and the reasons they have stayed refereeing, as well as study the characteristics of said bowling referees and the difficulties they encounter during their refereeing work. A questionnaire was applied that had already been used in samples of other sports officials in a sample of 51 bowling referees from different categories, between the ages of 21 and 76 years, and with different years of experience in refereeing. The results suggest that bowling referees have a number of difficulties in performing their arbitration work and that some of them are linked to age and experience; such as the need for good physical preparation, communication skills, mental control, the need for training, knowledge of its regulation, and arbitration as a hobby or for recreation. Other difficulties do not have to do with arbitration and its environment: such as the pressure that players, the public and company directors impose over the referees.

Keywords: Referee, characteristics, reasons, difficulties

¿CUALES SON LOS MOTIVOS DE COMIENZO Y PERMANENCIA Y LAS DIFICULTADES DEL ARBITRAJE DE LOS ARBITROS DE BOLO-PALMA?

Resumen. El propósito del trabajo es conocer los motivos por los que los árbitros de bolo-palma (en adelante bolos) decidieron serlo y las razones por las que siguen manteniéndose en el arbitraje, así como estudiar cuáles son las características que presentan los árbitros de bolos y las dificultades que encuentran en su labor de arbitrar. Para ello se aplicó un cuestionario utilizado en trabajos sobre árbitros de otras modalidades deportivas en una muestra de 51 árbitros de bolos de distintas categorías, de entre 21 y 76 años y con diferente tiempo de experiencia en el arbitraje. Los resultados indican que los árbitros de bolos tienen una serie de dificultades a la hora de realizar su labor arbitral y que alguna de ellas están vinculadas a situaciones personales de los árbitros a la edad y la experiencia; como son la necesidad de una buena preparación física, las habilidades de comunicación, el control de los pensamientos, la necesidad de formación y el conocimiento del reglamento y el arbitraje como *hobby* o diversión. Otras dificultades son externas al propio árbitro y del entorno: como la presión que ejercen sobre los árbitros los propios jugadores, el público y los directivos de las peñas.

Palabras clave: Arbitro, características, motivos, dificultades

Introduction

The referees in courts, tracks, in sports fields, in bowling alleys embody the law. They are the people who serve justice, who enforce or interpret sports regulations. Referees enable a fair competition. They prevent deceptions and players from win by cheating. Sports are conducted on an equal footing for all athletes, players and teams with their involvement. Without referees, fair competition would be practically impossible.

Refereeing has a far-reaching importance that, on countless occasions, surpasses what is merely sport-oriented. However, notwithstanding their very important role in sports, referees are often denigrated by players as well as by fans, coaches, managers, the media and other sport agents. It seems they are the only athletes who cannot make mistakes. For these reasons, refereeing is a complex task that requires knowledge, physical and mental preparation and various psychological skills to cope with the many situations that sports competitions entail.

From Sport Psychology, the topic of refereeing has been approached from different fields, However, despite the transcendence of the referee figure and the importance of their task, the number of works on the psychology of referees is scarce and far from what can be found in other sports-related fields. More specifically, in the last two national congresses of the Spanish Federation of Sports Psychology (Spanish acronym FEPD) only three papers were presented on different psychological situations regarding the task of refereeing in football and basketball.

However, there is much research that has focused on looking into the figure of the referee and the concept of sports judgment from different angles, fields and challenges. Decision-making in refereeing is one of the areas in which research has been carried out in different sports modalities. Personality is also another topic that appears in papers on referees; stress in refereeing and motivation. The educational and training

aspects of referees have also been addressed from different perspectives by different authors, as well as psychological mediation and counseling.

This work is part of a line of research that seeks to study the most relevant skills that referees from different sports should have, and the difficulties they encounter in their jobs, which began in our country.

In this first approximation to referee psychology and refereeing in bowling we aim to determine the referees' motivations, the persistence in their task of refereeing, bowling referees' general characteristics and the difficulties of the refereeing task in this modality.

As in other sports modalities, the job of the referee in bowling is paramount. Even though refereeing in bowling does not have the transcendence it may have in other sports modalities, which are showier and more socially transcendent, it does comprise the general conditions of every sport refereeing. According to Díaz (2003), the presence of the referee in during bowling is very visible and very close. Their presence and decisions have an impact in the players' psychological behavior. Concerning the referee's importance and transcendence in the bowling modality, we can highlight the rules that regulate and specify every action from them during the competition, dictated by the Regional Committee of Linesmen and Referees (*Comité Regional de Jueces-Árbitros*) of the Spanish and Cantabrian Bowling Federations (*Federaciones Española y Cántabra de Bolos*), and which we consider to have a greater importance for this paper's aim.

The referee's job in bowling, beyond penalizing regulation infringement, will consist of warning about said regulation and protecting its compliance and, thus, every player participating in the competition. The referee must intervene with neutrality at all times, avoiding favoring or disfavoring any player or peña (team). It is a job inevitably subject to the audience's criticism, which they cannot and must not tackle. The referee is the only person with authority in delaying or cancelling competitions. They will not publicly declare when their interventions have caused any kind of controversy, problem or incident. The referee's seriousness shall be evident at all times during their intervention.

In addition to these general principles, referees must follow a certain regulation that will assist their job during competitions, some of which are as follows; caution with their comments, statements and declarations in all sport environment, such as the workplace, media, social networks, etc.

Taking care of their physical appearance, uniform and physical condition. Timeliness and control of the physical and technical features of bowling. Assisting players and teams during warm-up exercises.

Complete focus during the game, paying special attention to the shots and lines. Keeping track of the scores in bowling, bad balls and the persons in charge of setting up the pins and balls.

Be fast. Have a proper treatment with players. Avoid challenging gestures and attitudes, threats and humiliations. Keeping their opinions to themselves and be correct in verbal warnings. Be restrained with gestures.

Be flexible in the application of the rules and treating all players and teams equally, avoiding prejudices and stereotypes.

Validating their authority in case of conflict and avoiding pressure from players and managers. In this respect, Diaz (2003) indicates that during the last season, there have been tensions in bowling, with major impacts in the sport and the mental behavior of players and fans due to the application and interpretation by the referees of some aspects of the rules and regulations.

Therefore, the results of this study would lead to a greater knowledge of the multiple psychological aspects involved in refereeing and in the better training of referees by providing these facts with a better understanding of the psychological conditions that referees should have in order to do their work more efficiently and with the lowest possible psychological and personal costs.

Method

Objectives

In this paper, we wanted to determine the reasons present when they made their decisions to become referees based on the importance it had for them. We also attempted to know the reasons for which they are still refereeing according to their age and experience.

We intend to know the characteristics that referees consider most important in enhancing their refereeing work and what they considered as the main difficulties in their work.

Participants

We have collected a total sample of 51 bowling referees: 49 men and 2 women. Their ages range from 21 years to 76 years and have been refereeing in different categories between 1 year and 36 years. (Table 1)

Table 1
Sample distribution by sex, age, experience and category

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Men	49	96.1	96.1	96.1
	Women	2	3.9	3.9	100.0
	Total	51	100.0	100.0	

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Between 21-45 years	11	21.6	23.9	23.9
	Between 46-65 years	25	49.0	54.3	78.3
	Between 66-76 years	10	19.6	21.7	100.0
	Total	46	90.2	100.0	

Lost	System	5	9.8		
	Total	51	100.0		

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Between 1-10 years	17	33.3	38.6	38.6
	Between 11-20 years	13	25.5	29.5	68.2
	Beetween 21-37 years	14	27.5	31.8	100.0
	Total	44	86.3	100.0	
Lost	Sytem	7	13.7		
	Total	51	100.0		

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	First and honors division	34	66.7	66.7	66.7
	Other categories	17	33.3	33.3	100.0
	Total	51	100.0	100.0	

Instrument

An adaptation of the questionnaire used by Guillen and Jiménez (2001) for their work on the desirable characteristics in refereeing and sports judging was applied.

In order to know the motivations for beginning their path into refereeing and their permanence carrying it out, they were asked to provide a score from 1 to 6 according to the importance that the proposed aspects had for them, in which 1 was the *least important* aspect and 6 *the most important*. In each of the paragraphs there was an open-ended question under the heading; *others, indicate which of them.*

In the sections about the characteristics that bowling referees should have, 28 characteristics were proposed for them which they could score: where 1, *not very important or not important at all*; 2, *important* and 3, *very important*.

In the section on the main difficulties encountered in the refereeing task, 14 situations were proposed, situations that could be assessed in the same way as in the previous section: 1, *Not very important or not important at all*, 2, *important* and 3, *very important.*

Procedure

The questionnaire was administered by one of the authors of the work during a training day for referees organized by the Spanish and Cantabrian Bowling Federations (*Federación Cántabra de Bolos* and the *Federación Española de Bolos*). They were informed about the purposes of the study. Participation was voluntary, anonymous and consensual, and was administered collectively, indicating that their responses would be treated statistically and in compliance with the principle of confidentiality.

Data analysis

Using the SPSS statistical package, we have analyzed the differences according to the referees' age, their time of experience and the category to which they belong regarding the aspects included in the four groups of variables studied in the previous section.

For the sections "Aspects that influenced your decision to be a referee" and "Reasons why you stayed referring" we used non-parametric calculations, since the sample that answered the questions in these sections were 20. We have included three groups to specifically look for differences depending on the referees' age and their experience, nd so have used the Kruskal-Wallis H test, established for K independent samples. In the case of the refereeing category, since we are dealing with two groups, we have applied the Mann-Whitney U test.

In the case of the "Characteristics that a bowling referee should have" and the "Difficulties of the bowling referee's task", the samples include 50 subjects, also having applied parametric tests.

In order to study the differences according to age and experience, we have carried out an analysis of variance (ANOVA); prior to the approach of each ANOVA, we have studied whether the data reflects the characteristic homogeneity of variances or equality of variances in the data from the dependent variable between the levels of the factors by using Levene's test. Regarding the differences if belonging to the refereeing category, we have applied the Student's T-test when considering two groups.

We have established a statistical significance level of at least 0.95 % in all of the contrasts performed, where the independent variables were: the referee's age, their experience and the refereeing category, while the results obtained in the specific questions of the questionnaire are the dependent variables.

Results

The following presents two types of results: descriptive and statistical contrasts; both depending on the referee's age, their length of experience as a referee and the refereeing category.

Descriptive data

Reasons for being a referee

The relationship with the sport is the main reason that prevailed in the decision for being a referee. The two situations that get a higher average are: "Staying involved in the sport" and "Doing the sport". Other situations such as: "Trying something new" and "Making money", got the lowest scores. Between the two types of situations are those that have to do with social relationships such as: "Recreation" and "Being with my friends".

Reasons for remaining refereeing

Refereeing in itself is what motivates the respondents the most, with the first choice being: "I find refereeing exciting" and "I like delving deeper into the technical aspects of refereeing". Below are other options related to refereeing as a "Hobby". The option least chosen by the referees was "I like to continue even if I am criticized".

Characteristics that a bowling referee should have

Of the 28 aspects presented to the referees related to the characteristics that a bowling referee should have, the ones that obtained the most points were: "Seriousness", "Punctuality", "Equal treatment of players", "Impartiality" and "Knowing the rules and how to apply them". On the contrary, the five aspects that obtained the lowest score were: "Open to dialogue", "Diplomacy", "Physical preparation", "Being flexible" and finally, "Leadership ability/charisma".

Difficulties for bowling referees.

In this section, 14 possibilities were presented to the surveyed referees. Their preferences can be easily divided into two groups. Those that are directly related to the referee, such as: "Not knowing the rules well", "Making difficult decisions", "Being too distracted", "Not having good training", "Having little self-confidence", "Thinking too much about mistakes". And, secondly, the difficulties that have to do with the referee's relationship with others, such as: "Feeling pressure from players", "Unable to interpret the players' gestures", "Feeling pressure from the public", "Protests from the players" and "Being influenced by managers".

Statistical contrasts

Circumstances that were in your decision to be a referee.

In the circumstances for deciding to be a referee, no statistically significant differences appeared in any item. Nevertheless, we observed the following when studying the averages.

In the ***age*** section, we find that the younger the referee is, the greater importance they give to recreation sections: "being with my friends" (or making new friends) and "earning money". On the other hand, the older the referee is, the more importance they give to "doing sports".

The less ***experience*** the referee has, the higher they give a score to "recreation" and "being with my friends" (or making new friends).

Lastly, in the refereeing ***category*** variable, referees in the Honorary Division and first-rate ones gave a higher score than the other categories in "doing sports" and "Staying involved in the sport". It is the other way around with the rest of the aspects, overcoming the other categories within the Honorary Division and *Primera* (first division).

Situations which keep you motivated to continue refereeing.

Statistically significant differences in the experience variable as a referee have shown up, in the sense that the following sentence is more important with increased experience: "Refereeing is my favorite hobby".

By studying the average results in the rest of the variables in these sections, we find that in ***age***, the younger that the referees are, the greater the average for "I like to continue even if I am criticized". Older referees have a greater average in the variable "When I referee, I forget about my everyday problems". However, the referees with less experience are the ones who value this aspect the most.

Lastly, in the refereeing ***category*** variable, referees in the Honorary Division and *Primera* (first division) overcome the ones in other categories in "Refereeing is exciting

for me", "Refereeing is my favorite hobby" and "When I referee, I forget about my everyday problems".

Characteristics that a bowling referee should have.

First of all, statistically significant differences depending on ***age*** in "Being communicative", "Humility" and "Physical training" have been found. The first one means that the older the referee is, the more importance they grant this situation. The "Humility" variable is less valued by younger referees. The importance that referees give to "Physical training" increases with age.

Analyzing the other variables, although without statistically significant differences, we have verified that a number of variables increase with age, the following in particular: "Punctuality", "Equal treatment of players", "Serenity", "Diplomacy", "Knowing the rules and how to apply them", "Knowing to rectify", "Being well placed in space", "Leadership capacity/charisma", "Authority", "Personality and character", "Being flexible", "Self-confidence/conviction", "Objectivity in opinions" and "Having experience". We have not found in any variable that importance gets reduced with age, at least in the others, the age bracket to which more importance is given is the central one: from 46 to 65 years old.

In the ***experience*** section in refereeing, statistically significant differences have been found in two variables: the one that has just been commented, "Physical preparation", and "Having experience". The first of these increases as experience in refereeing increases.

Without reaching statistically significant differences, we have found that the following variables increase as the referee's experience increases: "Ability to concentrate", "Serenity", "Being communicative", "Good character and kindness", "Impartial", "Physical preparation", "Objectivity in opinions". On the contrary, the variable "Knowing the rules and how to apply them" is more important when the referee has less experience. Most of the variables are valued with higher averages by referees with intermediate experience: between 11-20 years.

No statistically significant differences have been found in any aspect related to the refereeing ***category***. In general, it is usual for the referees from the Honor Division and *Primera* (first division) to value the same aspects with lower averages than those referees from other categories.

Difficulties that referees may encounter.

Statistically significant differences depending on ***age*** were found in three variables: "Thinking too much about mistakes", "Not knowing the rules well", and "Not having good training". The difficulties encountered by referees in the first of them increases with age. The intermediate age group, between 46-65 years old, gives more importance in terms of difficulty to the refereeing variable of "Not knowing the rules well". This group is also the one that gives more importance in terms of difficulty in refereeing to the variable "Not having good training".

Without reaching statistically significant differences, the importance given by referees increases as age increases in only two variables: "Being influenced by managers" and "Protests from players". In most variables, the intermediate age group, between 46-65 years old, give this one a higher score.

In terms of ***experience*** in refereeing, the more experience a referee has, the more importance they give to the variables "Thinking too much about mistakes" and "Feeling pressure from the public". On the contrary, the importance that referees give to the variable "Having little self-confidence" decreases as age increases. In the rest of the variables, the highest average appears in the intermediate experience group.

No statistically significant differences depending on the refereeing ***category*** have been found. In most of the variables, the group of referees from other categories finds more difficulties and therefore appears with a higher average than the group of referees from the Honors Division and *Primera*.

Discussion

Coinciding with the works from football referees of Brandao, Serpa et al. (2011) and Alonso and Albiol et al. (2008), there is a tendency to remain involved in bowling as one of the reasons for both refereeing and remaining in it. Being with friends and for recreational are the reasons why they decided to become referees.

The older the referees, the more they like refereeing and it becomes their favorite hobby. For many older referees, bowling has been a deeply rooted hobby since childhood. Many have been players for many years and it has been the sport of their entire lives. To continue refereeing in spite of an advanced age, keeps them active in the sport. It is a great motivational force. Likewise, the works of Vallerand, Rousseau et al. (2006), confirm the results obtained in this study with bowling referees. Individuals who like what they do feel alive and active despite their age and task setbacks: criticisms, tensions.

Having fun and being with friends are also reasons for becoming a bowling referee. Earning money is far from the reasons to referee and to remain refereeing, coinciding with the studies of Alonso-Arbiol et al. (2008) and Regina Brandao et al. (2011) in football referees. Bowling referees are not professionals, and they receive a small financial compensation for each refereed competition. They usually do have another profession or are retired individuals. The compensation for continuing to referee is always the satisfaction of staying involved to an activity that has been an important part of their lives.

The referees surveyed gave the highest scores to: seriousness, punctuality, equal treatment of players, impartiality and knowing the rules and how to apply them.

The lower scores are features of being open to dialogue, diplomatic, physically prepared, flexible and possessing leadership ability. The results of our work coincide to a great extent with the work carried out by Guillen and Jiménez (2001) with referees and judges from different sports modalities.

The lower scores obtained for the need for physical preparation are motivated by the task itself which requires little physical effort as occurs in other sports, although it does require other skills related to the need to maintaining attention-concentration and withstanding mental fatigue, which are valued in another section of this work.

Being open to dialogue, tactful or flexible, which seem to be interesting characteristics for a referee, although they are considered important, are not the most

valued by bowling referees, and perhaps consider flexibility and dialogue as weaknesses before the most shining and important figure for players, the true idols of bowling.

In the category of difficulties in refereeing, bowling referees highlighted two clearly differentiated sections. In the first part, they give high scores to difficulties that come from the referee himself. The main difficulties mentioned by referees are: "Not knowing the rules well", "Making difficult decisions", "Being too distracted", "Not having good training", "Having little self-confidence" and "Thinking too much about mistakes".

In the second part, the bowling referees mentioned difficulties that come from the environment, external factors. "Feeling pressured by players", "Inability to interpret player gestures", "Pressure from the public", "Protests from players", and "Being influenced by managers" are the behaviors that disrupt the work of a bowling referee. The studies of González - Oya and Dosil (2004), with football referees obtained similar results as for the pressure or lack of recognition of managers.

No statistically significant differences were detected in the reasons for being referees by age, experience or category. However, younger people tend to referee for fun, to be with friends and of course, to earn money. The older the referee and the higher level of refereeing, the higher the score for "Doing the sport" and "Staying involved in the sport".

Focusing on the reasons for keeping refereeing, statistically significant differences were found between older and experienced referees and younger referees. The older and more experienced remain in refereeing despite their age because; "Refereeing is my favorite hobby" the younger ones persist; " I like to continue even if I am criticized ".

Younger referees, perhaps because of the evolution of the sport itself, are more sensitive to criticism, but they have no reason to give up. The older experienced and in higher categories, superimpose their passion for refereeing to criticism, which is perhaps related to the evolution of bowling in recent times, requiring more rigid refereeing in the application of some of its rules.

We have also found statistically significant differences between the age and the characteristics that they must possess in order to perform their referee work. Thus, for older referees the most valued and meaningful characteristics are: "Humility", "Being communicative" and "Being physical prepared". These characteristics increase with age. Humility on the other hand is the least scored characteristic in younger respondents.

Although, without statistically significant differences, all the characteristics that have been surveyed tend to get higher scores in the older referees, between 46-65. The older the referees, the more importance they place on preparation and experience in refereeing. The most experienced referees, with 11-20 years of experience, give higher scores to the ability to "Knowing and applying the rules".

As for the difficulties that referees may face, we have found statically significant differences in terms of age. The difficulties that increase with age, specifically in the 46-60 age group, are "Thinking a lot about mistakes", "Not knowing the rules well" and "Not having good training".

Practical applications

This work reveals to us that, just like the referees of other modalities, bowling referees present many similarities with what is reflected by the refereeing collectives from other sports.

One of the clearest differences between bowling and other modalities is that bowling referees remain in refereeing until considerably later ages than their colleagues in other sports modalities. This condition confers differential aspects and is of interest for the psychological training of bowling referees.

The reasons for starting and staying refereeing are the same as they seem in the studies of the referenced works.

There is also a coincidence in the skills that bowling referees must have, both within the technical and personal aspects, although some are specific to bowling refereeing.

As for the difficulties in bowling refereeing, we highlight those that come from the referee them self, from their personality as well as from their training, and those difficulties that come from the environment. This important conclusion discovers an interesting contribution for differentiating the aspects that must be dealt with during referee training. The skills that they must develop and the skills that they must learn in order to be able to tackle those that refer to the more personal ones, as well as to external difficulties.

The significant statistical differences between the characteristics and the difficulties that have come about mainly from age, also opens up another line of work for the permanent training of those older and younger referees for a better adaptation of the continuous change that occurs in this modality.

The continued training of the referee community and the improvement of the content in their psychological training is one of the contributions of this work, which should incorporate providing referees with the tools and psychological support to help withstand pressures from the players, the public and managers, as well as improving the psychological aspects of refereeing. This training improvement will provide a greater assessment of the task, which would bring about a greater consideration that may attract younger people into refereeing, something that is current a need for the collective; its rejuvenation.

Apart from this training improvement, we should deepen into further studies on the possibility of having different referees depending on their ages and those of the players in the different categories and competitive levels, so that referees, players and managers feel more comfortable.

A new line of work would be to deepen or insist on those aspects and issues worked in this study to obtain suitable referee profiles.

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BIBLIOGRAPHIC REVIEW ON THE COGNITIVE SYMPTOMATOLOGY OF TYPE I CHIARI MALFORMATION

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Abstract. Chiari malformation (CM) is a rare pathology with low prevalence. CM is within the group of malformations of the craniocervical junction, it is an anatomical alteration of the cranial base. There are considered to be 6 types of CM, being MC type I the most common one. The symptomatology can be very varied, having been reported cases of totally asymptomatic patients and others with serious neurological affections. Furthermore, recent research shows that congenital pathologies of the cerebellum such as CM can be accompanied by neuropsychological deficits. It is difficult to diagnose it due to the complexity of the lesion and the symptoms present in patients. However, the diagnosis is made by neuroimaging techniques, being the most widely used technique the magnetic resonance. Regarding to treatment, surgery is one of the main actions to be carried out after the diagnosis of CM. This review presents an exhaustive analysis of the existing literature on the cognitive functions affected of type I MC. It also describes the effects of surgical treatments on neuropsychological symptoms. The results show the presence of cognitive deficits; however, there is no agreement about exactly what cognitive functions are affected.

Keywords: Chiari malformation; treatment; surgery; cognitive; neuropsychology

REVISIÓN BIBLIOGRÁFICA SOBRE LA SINTOMATOLOGÍA COGNITIVA EN LA MALFORMACIÓN DE CHIARI TIPO I

Resumen. La malformación de Chiari (MC) es una patología rara de baja prevalencia y cuya patogenia actualmente sigue siendo objeto de debate. La MC está dentro del grupo de las malformaciones de la unión craneocervical, es una alteración anatómica de la base craneal. A día de hoy se considera que hay 6 tipos de MC, siendo la MC tipo I la más común. La sintomatología puede ser muy variada habiéndose reportado casos de pacientes totalmente asintomáticos y otros con graves afecciones de tipo neurológicas. Recientes investigaciones manifiestan que las patologías congénitas del cerebelo como la MC, pueden acompañarse de déficits neuropsicológicos. Es de difícil diagnóstico debido a la complejidad de la lesión y sintomatología presente en los pacientes. No obstante, el diagnóstico se realiza mediante técnicas de neuroimagen siendo la técnica más utilizada la resonancia magnética. En cuanto al tratamiento, la cirugía es una de las principales actuaciones a llevar a cabo ante el diagnóstico de MC. Esta revisión presenta un análisis exhaustivo de la literatura existente sobre las funciones cognitivas afectadas de la MC tipo I. Asimismo, realiza una descripción de los efectos de los tratamientos quirúrgicos en la sintomatología neuropsicológica. Los resultados evidencian la presencia de déficits cognitivos; sin embargo, no hay acuerdo sobre cuáles son exactamente las funciones cognitivas afectadas.

Palabras clave: Malformación de Chiari; tratamiento; cirugía; cognitivo; neuropsicología.

Introduction

Chairi Malformation (CM) is a rare disease of low health problem prevalence in populations. According to the European Commission of Public Health, this occurs when 1 of every 5,000 people is affected (Carbajal, 2015). Although the exact prevalence remains unknown ((Aitken, Lindan, Sidney, Gupta, Barkovich, Sorel and Wu, 2009), it is estimated that about one in 1,100 or one among 1,300 individuals present symptoms of CM-I. This data reveals that CM is as prevalent as multiple sclerosis (Mackenzie, Morant, Bloomfield, MacDonald and O'riordan, 2013; Meadows, Kraut, Guarnieri, Haroun and Carson, 2000; Speer et al., 2003). There is an incidence of about 5 cases per 10,000 inhabitants in the world, declining in Spain for up to 4 per 10,000 inhabitants (Orphanet, 2014). However, thanks to the introduction of the nuclear magnetic resonance (NMR) technique as of 1985, its detection has increased. However, its prevalence may appear to be higher than what is believed (Guerra et al., 2015). CM represents between 1% and 4% of all neurosurgical pathologies (Pérez Ortiz, Álvarez Armas, Rodríguez Ramos and Laud Rodríguez, 2017). According to the research carried out by Wilkinson, Johnson, Garton, Muraszko and Maher (2017), there is a greater prevalence of the disease in female adult patients, whereas an equal number of male and female patients are diagnosed in pediatric cases.

CM falls within a group of the so-called malformations of the skull-cervical union. It consists of a neuromuscular deformity, specifically, an anatomical alteration of the skull base, where in some cases, it manifests a herniation of the cerebellum and brainstem through the foramen magnum up to the cervical canal (Jiménez et al., 2015). It is associated with syringomyelia (Tubbs, 2015) where 10% of patients with CM-I may present hydrocephalus due to an obstruction of the left ventricular outflow (Pindrik and Johnston, 2015).

The symptomatology is diverse, with reported cases of asymptomatic patients and others with serious neurological conditions. Symptoms usually begin in adulthood, especially in those cases that do not present syringomyelia. They begin in an acute form

and continue in a progressive manner. The symptomatology tends to fluctuate, with periods of acuteness and remission (Mestres, 2015). The symptoms may be secondary to the alteration of the cerebrospinal fluid (CSF) fluctuation, to the marrow and bulb compression, to the cerebellar impact and, lastly, to those symptoms caused by the involvement of the cranial nerves (Regal, 2011). CM-I is a complex neurological disorder, with the most common clinical presentations including debilitating headaches, pain or pressure in the neck, a burning sensation in the neck, exhaustion, weakness, dizziness, visual disturbances, and scoliosis (Fischbein et al., 2015; Pindrik and Johnston, 2015). Various areas of the central nervous system are affected within the CM-I symptomatology, including the neuro-auditive system, the visual system, the lower cranial nerves, the cerebellum and motor and sensitive pathways (Perez Ortiz et al., 2017). Therefore, the symptomatology is variable, causing otoneurological, optical, respiratory, psychological and cognitive effects (Fischbein et al., 2015). The literature mainly focuses on the neurological symptomatology, but it should be noted that patients affected by cerebellar pathologies present cognitive and emotional symptoms classified under the cerebellar cognitive affective syndrome (CCAS) (Garriga-Grimau, Aznar Lain, Nascimiento and Petrizan Aleman, 2015). Cognitive comorbidities include difficulties in memory and executive functions (decision making), aphasia, psychological disorders and anxiety (Fischbein et al., 2015). As a result, MC-I has a negative impact on the quality of life of those who suffer from it (Mestres et al., 2012).

6 types of CM are thought to currently exist. CM-I is the most common, characterized by the herniation of the cerebellar tonsils that are greater than 5 mm below the foramen magnum level, though a minor tonsillar herniation does not exclude the diagnosis. There may be no symptoms. (Basaran, Efendioglu, Senol, Ozdogan and Isik, 2018). It has also been classified according to its I and II subtype etiology, based on whether it is respectively congenital or acquired, (National Institute of Neurological Disorders and Stroke, 2017).

CM-I is etiologically heterogeneous. The malformation's pathogenesis is unknown and controversial. The possible etiologies include genetic predisposition, congenital anomalies and acquisition by trauma or disease (Heiss, 2013). Given the clinical, genetic and morphological heterogeneity, it is most likely multifactorial with several mechanisms being involved, among them, early craniosynostosis from the skull base, which seems plausible in most cases (Boronat Guerrero, 2017). CM-I is also suggested as being the result of genetic predispositions to an abnormal mesodermal development (Abbott, Brockmeyer, Neklason, Teerlink and Cannon- Albright, 2017). However, four theories have been accepted to explain the congenital forms. The theories can be categorized as those that invoke the hydrodynamic and mechanical factors of the posterior fossa dysgenesis or bone dysplasia (Meadows et al., 2001). The evidence for a genetic basis has been mentioned by several authors (Coria, Quintana, Rebollo, Combarros and Berciano, 1983, Milhorat et al., 1999; Speer et al., 2000 and Szewka, Walsh, Boaz, Carvalho and Golomb, 2006) with the most probable mechanism being autosomal dominant inheritance with variable penetrance (Boronat Guerrero, 2017). Along this same line, it should be noted that CM-I may be associated with known genetic syndromes. A number of Mendelian disorders coexist with this pathology, presenting involvement of the bone and providing support for the mesodermal origin of the malformation, which include velocardiofacial syndrome, type-1 neurofibromatosis, growth hormone deficiency, klippel-Feil, cleidocranial dysplasia, Paget, Williams syndrome and achondroplasia, among others (Coria et al., 1983; Speer et al., 2000).

Early diagnosis is essential for the favorable evolution of the disease and to prevent damage progression of the central nervous system. However, this is difficult to diagnose due to the injury's complexity and the symptomatology present in patients, with their symptoms considered as unspecified in many occasions (Loved et al., 2009). CM-I is usually diagnosed in adulthood. The diagnosis can be discovered accidentally at around 15-37% of the cases, without the patient presenting a specific symptomatology, or in those patients evaluated by nonspecific symptoms, such as a headaches or dizziness. The average time for the diagnosis as of first visiting the physician is approximately 3 or 4 years, with only 8.46% of the patients having prior knowledge of the disease (Fischbein et al., 2015; Pindrik and Johnston, 2015). In addition, the symptoms often overlap with other disorders such as fibromyalgia and chronic fatigue, hindering the performance of the differential diagnosis (Ellenbogen and Bauer, 2013). Within this same line, it is important to mention the study carried out by Milhorat et al. (1999) in which 59% of the subjects reported having been diagnosed erroneously for mental problems.

The diagnosis is carried out by means of neuroimaging techniques (Pérez Ortiz, Álvarez Armas, Rodríguez Ramos and Laud Rodríguez, 2017). Advanced imaging aims to improve the accurate assessments of the malformation's seriousness and its effects on the dynamics of the cerebrospinal fluid (CSF) (Fakhri, Shah and Goyal, 2015). The degree to which the CSF flow is alternated has been seen to correlate with the severity and the development of clinical symptoms (McGirt, Nimjee, Fuchs and George, 2006). The combination of magnetic resonance imaging, and computed tomography (CT) for cranial scan, provide precise anatomical information. X-ray is also used to identify bony irregularities related to CM (Choudhury et al., Sarda, Baruah and Singh, 2013; National Institute of Neurological Disorders and Stroke, 2017).

Surgery is one of the main actions to be carried out when CM is diagnosed, as long as it is valued as a valid option for decreasing the symptoms and/or preventing the occurrence of future problems associated with it. However, with or without surgery, it is necessary to work together with the patient during their rehabilitation and physical and cognitive improvement (Cesmebasi et al., 2014). The most common treatment is surgery for the posterior fossa decompression. In the case of those patients diagnosed with asymptomatic CM-I, surgical intervention of any kind is generally not carried out. However, there is some controversy among neurosurgeons on the desirability of this. In this sense, it is important to note that between 15% and 30% of adult patients with CM-I are asymptomatic. In contrast, patients with neurological deficits or evolutionary symptomatology are candidates for surgical treatment. Because, although a cranial intervention always entails risks, it has been shown to have multiple benefits. The aim with surgery is to eliminate the pressure generated at the foramen magnum level (Arnautovic, Splavski, Boop and Arnautovic, 2015; Sahuquillo and Poca, 2014). However, with or without surgery, it is necessary to work together with the patient during their rehabilitation and physical and cognitive improvement.

This review includes an analysis of the existing evidence in the cognitive symptoms of patients with CM-I and the effects of surgical treatments in neuropsychological and cognitive symptomatology.

Methodology

To achieve the research objective, a bibliographic review of the currently existing scientific evidence has been conducted. The search was carried out between February and May 2018. We reviewed the following electronic databases: *Pubmed, Medline, EBSCOhost and Google Schoolar.*

Several search strategies were created that combined different descriptors using the controlled medical terminology MeSH (*Medical Subject Headings*) in English and DeCS (*Descriptores en Ciencias de la Salud*) in Spanish, and the Boolean operators AND, OR and NOT. Several filters were also applied (language, time periods, etc.) to narrow down the search based on the main objective. An inverse search was likewise carried out based on the bibliographic references of selected articles within the previously mentioned databases. The search terms used were "Chiari malformation AND treatment AND surgery AND cognitive AND neuropsychology". The inclusion criteria were the following: research written in English or Spanish, published in the year 2000, in a population diagnosed with CM-I. Single case studies were ruled out in terms of the exclusion criteria.

The bibliographic search recovered a total of 458 articles. Some were found to be duplicates from the different databases, and after ruling these out, the figure of recovered articles for the analysis numbered a total of 416 articles. After reading all their titles, 329 articles were ruled out, which did not meet the criteria. The articles that were ruled out were those in which the title did not coincide with the proposed study's objective. In addition, articles that only focused on a surgical perspective without addressing the involvement of the cognitive functions' intervention, were likewise ruled out. 87 were chosen, proceeding with a critical reading based on the titles and summaries, discarding 45 by not adapting to the study's objectives. We fully reviewed 42 bodies of texts from the following databases: *Pubmed* (22 articles), *Medline* (7 articles), *Google Académico* (5 articles) *and EBSCOhost* (8 articles), of which 35 were discarded because they did not meet the inclusion criteria. Those articles that did not analyze the neuropsychological effects of CM were also discarded. In the same way, articles from single case designs were ruled out. CM is a rarely researched disease, by which, due to the scarcity of research, no articles before the year 2000 were found that addressed the neuropsychological aspects nor the possible causes or effects of the disease. Lastly, 7 articles were analyzed from selected scientific journals in the field of neuroscience. At least one standardized instrument was selected in all the articles to measure specific domains or neuropsychological functions.

Results

The entire sample included a total of 862 subjects, divided into two groups from between 5 and 74 years of age. The clinical group was composed of 799 participants diagnosed with CM-I, and the control group by 63 healthy controls, matched by age and years of education (Allen et al., 2014; Garcia et al., 2018). In this sense, we should point out that several studies were characterized by the absence of the control group (Allen et al., 2017; Novegno et al., 2008, Grosso et al., 2001; Lacy et al., 2011 and Riva et al., 2011), and that a study contributed with 638 cases of patients diagnosed with CM-I.

The clinical sample in the studies analyzed is composed of 96 women and 55 men. It should be noted that in the study carried out by Allen et al. (2017) and Novegno

et al. (2008), they make no reference as to the participants' sex, therefore, the participants' gender is unknown in 81.10% of the clinical sample. The control group is formed by 47 women and 16 men. The data obtained is consistent with those provided by Amado et al. (2009) in which he asserts that CM affects both sexes, with a slight predominance in women.

On the other hand, we should mention that 664 of the patients diagnosed with CM-I had undergone decompression surgery (Allen et al., 2014; Allen et al., 2017; Riva et al., 2011). In contrast, 49 subjects were not subjected to surgical intervention (Garcia et al., 2018; Novegno et al., 2008). Within this same line, it should be noted that those studies carried out by Lacy et al. (2011) and Grosso et al. (2001) do not mention whether or not the patients had undergone intervention by posterior fossa decompression.

The following are the studies that analyze those neuropsychological aspects related to CM-I (Table 1).

CM-I correlates with an anxious-depressive symptomatology and pain (Allen et al., 2014; Allen et al., 2017; Garcia et al., 2018).

Garcia et al., (2018). They mostly found deficits in those tasks that involve a complex network of brain structures, in which the frontal lobe plays a key role, together with the connections it has with the cerebellum as, for example, Happe's Strange Stories, which is used to evaluate the theory of mind. The results support the presence of a cerebellar cognitive affective syndrome (CCAS) in patients with CM-I, since they display deficits in executive functioning, verbal fluency, spatial cognition and recall. Within this line, Allen et al. (2017) suggests that future research should distinguish between the cognitive effects resulting from damage to the fiber tract in the cerebellum (CCAS), with the effects of pain (distraction) in cognition. It should be noted that recent studies address the relationship between pain, attention and memory based on the hypothesis that the clinical experience of pain, combined with individual differences in focusing attention, has an impact on memory. Allen et al. (2017) concludes that chronic pain in CM diverts the attention focused on memory processes, or that pain pushes away the ability to focus on memory recovery.

In the study carried out by García et al. (2018), no participant received surgical intervention, or presented hydrocephalus or other specific craneo-cervical malformations. In contrast, participants from the study carried out by Allen et al. (2014) underwent posterior fossa decompression (PFD). They are based on the hypothesis that the herniation descending from the cerebellar tonsils causes structural damage directly related with the pressure from the regional neural circuit, causing dysfunction when generating chronic disorders such as pain. In addition, they pose the hypothesis that such damage in the cerebellum and its efferent/afferent circuits may give rise to cognitive deficits in executive function and episodic memory. Their study found that patients with CM-I showed worse cognitive performance for those tasks requiring reaction time (working memory, inhibitory control and processing speed), but did not observe differences in episodic memory. However, after control of the anxiety and depression effects, the effect of the response to inhibition remained statistically significant, while other tasks known for executive function, such as working memory and processing speed, were not.

Table 1
Neuropsychological Alterations in CM- I

Authors	Sample	Neurological Signal	Neuropsychological Instruments	Neuropsychological Profile	Findings
Allen et al., 2014.	n total: 48 n control: 24 Ages: 15 to 59	Headache, dizziness, and balance problems.	RAVLT; STROOP; Ospan Test and the task of substituting digital signals.	Deficits in inhibition response and processing speed.	Patients with posterior fossa decompression (PFD) present general cognitive dysfunction, persisting even after anxiety control.
Allen et al., 2017.	n: 638 n control: 0 Ages: 18 to 74	Chronic pain.	SF-MPQ-2 (McGill Pain-Short Form-Revised). RAVLT: Rey-Osterrieth verbal learning essay. RRQ: rumination and reflection questionnaire .	Deficits in memory (immediate recall).	Chronic pain is involved in focused attention, affecting cognition. Increases in reflection facilitate memory.
García et al., 2018.	n total:78 n control: 39 Mean: 45.59	Headache, dizziness, muscle pain, muscle weakness and difficulty sleeping.	Zoo map; inverse digits; STROOP; F-A-S; BNT (Boston naming test); TAVEC (Spain-Complutense Verbal Learning Test); SDMT (Symbols and digits tests); Benton Facial Recognition Test; FEEL (Facially expressed emotion labelling test), Happe's Strange Stories.	Lower performance in executive functioning, verbal fluency, recall accuracy, visual and verbal memory, remembrance, processing speed, facial recognition and theory of mind	Cognitive profile associated with cerebellar diseases.
Grosso et al., 2001	n total: 9 n control: 0 Ages: 6 to 13.	Abnormal EEG, seizure and epilepsy disorders.	-Wechsler children's intelligence scale. -Goodenough Test. -Bender visual motor skills.	Intellectual disabilities, speech impairment, visuoperceptual disability.	There is no correlation between the degree of ectopia and its clinical manifestation.

Lacy et al., 2016.	n total: 77 n control:0 Ages: 6 to 17	Headaches, swallowing problems, problems walking, seizures.	Questionnaire for parents BRIEF (The Brief Rating Inventory of Executive Functioning).	Deficits in executive and metacognitive functions, (working memory and difficulties in its induction).	Depression, sex, age, and posterior fossa decompression are not related to executive dysfunction.
Novegno et al., 2008.	n total: 10 n control: 0 Ages:1 to 16	Pain in the upper limbs, vertigo, papilledema, seizure and walking disorders.	Griffith mental development test or the Uzgiris-Hunt scales; Wechsler children's intelligence scale; Rey- Osterrieth Complex Figure Test; Gauthier Test.	Deficits in planning and troubleshooting, verbal fluency and recall, visual attention disorders, dyspraxia. Deficits in visual memory hyperactivity disorder.	Deficits in executive functioning, similar to patients with injuries to the dorsolateral prefrontal cortex and/or cerebellar injury.
Riva, Usilla, Saletti, Esposito y Bulgheroni, 2011.	n total: 2 n control: 0 Ages: 5 to 15	Neurological signs not reported.	Griffith mental development scale; other non-reported instruments that measure intelligence, language and behavior.	Case 1: Deficits in lexical comprehension and production, executive functions and pathological behavior. Case 2: Semantic fluency and phonological deficiency, hyperactivity and distractibility.	The cerebellum's impact on mental functioning is not exclusive, with such influencing factors as genetics and individual characteristics.

Novegno et al. (2008) described 10 children (20% with a borderline intelligence quotient). In contrast, Grosso et al. (2011) detected intellectual disability in all participants. Analogously, the displacement tonsillar fossa displacement was 10.1mm in both studies.

Behavior disorders can also be detected in children (Novegno et al., 2008). It should be noted that those who have headaches, difficulties swallowing and walking disorders as their main symptoms may have a higher risk of cognitive impairment and emotional dysregulation (Lacy et al., 2016).

Although all authors agree in the presence of cognitive deficits, there is no agreement on which of the cognitive functions are the ones exactly to be affected (Table 2).

Table 2
Cognitive Functions Affected by CM-I

Cognitive function	Altered area.
Executive functions	Working memory (Lacy et al., 2016). Initiating a response (Allen et al., 2014; Lacy et al., 2016). Planning and problem solving (Novegno et al., 2008). García et al., 2018.
Memory	Immediate recall (Allen et al., 2017). Visual memory (Novegno et al., 2008; García et al., 2018). Verbal memory (García et al., 2018).
Language	Verbal fluidity (Novegno et al., 2008; García et al., 2018). Recall (Novegno et al., 2008; Grosso et al., 2001). Speech impairment (Grosso et al., 2001). Lexical comprehension and production deficit (Riva et al., 2011).
Attention deficits	Visual attention disorder (Novegno et al., 2008). Hyperactivity and distractibility (Riva et al., 2012).
Processing speed	Allen et al., 2014; Allen et al., 2017; García et al., 2018.
Others	Dyspraxia (Novegno et al., 2008). Hyperkinesia (Novegno et al., 2008). Recall accuracy (García et al., 2018). Facial recognition (García et al., 2018). Theory of mind (García et al., 2018). Intellectual disability (Grosso et al., 2001; Novegno et al., 2008). Visuoperceptual deficits (Grosso et al., 2001). Pathological behaviour (Riva et al., 2012).

Discussion

This review examines the neuropsychological profile of patients with CM-I and carries out a compilation of the benefits found in the various treatments at the cognitive level.

CM is a controversial issue in contemporary literature, which currently continues the debate on pathogenesis, cognitive deficits and the most optimal treatment.

Approximately 80% of patients experience intense headaches, with analgesics used for reducing such pains, some based on opiates, which may have a negative effect on cognition (Allen et al., 2014). In addition, more than 40% of patients with CM-I state as having cognitive symptoms (Fischbein et al., 2015). Mahgoub, Avari and Francois. (2012) assert that there is a high risk of neuropathological processes of dementia in adults with CM-I. However, despite advances in our understanding of CM-I, studies including cognitive symptoms are scarce, with limited evidence being published.

Surgery is the only treatment available for correcting functional anomalies or halting the progression of damage in the central nervous system (Mestres, 2015). However, in spite of the evidence of cognitive alterations, such as in memory (Tavano et al., 2007), executive functions (Koziol and Barker, 2013) or alterations in the language (Fabbro et al., 2004) only four articles addressed cognitive functions after intervention (Allen et al., 2014; Allen et al., 2017; Lacy et al., 2016; Riva et al., 2011). Lacy et al. (2016) indicated that the executive functioning reported by parents was not affected by surgery or depression. Within this same line, Allen et al. (2017) were not able to identify group differences in the memory performance between those subjected to posterior fossa decompression and those who were not. This data could coincide with the study carried out by Kumar et al. (2011), who mention that memory impairment is due to a possible alteration of the tract's integrity. Cognitive disorders are due to the abnormal development of the cerebral white matter and the myelin's integrity. On the other hand, Riva et al. (2011) obtained contradictory results; the language of a child improved considerably but his behavior continued to deteriorate, as opposed to another case where the language worsened after surgery while the attentional deficits improved. The study carried out by Riva et al. (2011) is the only one that made a comparison of cognitive functions before and after surgery.

Schmahmann (2013) asserts that congenital malformations of the cerebellum such as CM, may be accompanied by brain damage that justifies limited cognitive functioning. The cerebellum plays a key role in the control of movement, with extensive cortical connections that are involved in several cognitive processes (Rogers, Savage and Stoodley, 2018). Although, the cerebellum, from a traditional point of view, does not exert a role in cognition, there is currently evidence regarding the cerebellum's participation in various processes and cognitive functions such as in attention, memory, learning, executive functions, language and visuoconstructional skills (Tirapu-Ustárroz, Iglesias Fernández and Hernandez-Goñi, 2011).

There is currently no standard protocol for cognitive assessment in CM-I (Rogers et al., 2018). In this sense, it is important to point out the importance of conducting a neuropsychological evaluation in order to use it as a base line at the beginning of rehabilitation and/or treatment with the aim of decreasing neuropsychological alterations in patients. The results obtained by Allen et al. (2014), García et al. (2018), Novegno et al. (2008) and Riva et al. (2014) reveal that patients with CM-I have a cognitive profile associated with cerebellar diseases. In this sense,

García et al. (2018) provides evidence about the cerebellum's implication in cognitive functioning, and the importance of the cerebellar cortical connectivity. In addition, they also suggest that verbal memory, processing speed, facial recognition and the theory of mind are domains that could be included as areas that are likewise involved in the cerebellar cognitive profile. However, Allen et al. (2014) suggests that working memory and processing speed are not closely related to the role of the cerebellum or brainstem as is the response inhibition (O'Halloran, Kinsella and Storey, 2012). With regard to the possible causes of cognitive dysfunctions, Allen et al. (2014) suggest that cognitive disorders are the result of an injury to the cerebellar tonsils. On the other hand, they pose the hypothesis that damage to the brainstem, in place of injury to the cerebellum, is what causes damage to the fiber tract, affecting the connections between the brainstem and the prefrontal cortex, and causing cognitive deficits, specifically executive dysfunction or more diffused cognitive deficits. The duration (Riva et al., 2011) and the scope (Del Casale et al., 2012) for the understanding of the brainstem is involved when manifesting the cognitive deficits. Grosso et al. (2001) found no correlation between the degree of ectopy and clinical manifestation. Although, the cerebellum's implication in cognitive functioning is unquestionable, there is still controversy regarding what the cerebellum's role is.

Recent publications, such as the review conducted by Rogers, Savage and Stoodley (2018) on cognition in CM-I, agree with the results of Allen et al. (2014), García et al. (2018), Lacy et al. (2016), Novegno et al. (2008), and Riva et al., (2011), in which they confirm that CM will probably incur cognitive deficits. However, there is insufficient evidence to describe a valid cognitive deterioration profile in CM-I. It would be necessary to conduct more research in this field in order to confirm these results and to integrate them with the pathophysiological model. The negative day-to-day impact that CM incurs should also be noted. Within this same line, Mestres et al. (2012) reveal that CM adversely affects the quality of life, especially in the work environment.

With regards to limitations, the scarcity of studies that analyze neuropsychological consequences after surgical intervention in people with CM-I is worth noting. It is necessary to continue building over the neuropsychological alterations with or without surgical intervention. Secondly, those articles in which the patients had comorbid neuropathology, such as spina bifida, basilar imprint, hydrocephalus or syringomyelia, were not excluded (Lacy et al., 2016; Novegno et al., 2008; Riva et al, 2011). The heterogeneity in the analyzed neuropsychological functions, along with the diversity of the neuropsychological instruments used in the various articles to measure an equal cognitive function, makes it difficult to compare results between studies. On the other hand, the sample size for most of the articles is characterized as being small. This may be due to the low prevalence of the disease in the population.

CM is a rare disease that has not reached the highest organizational level required to be carried out in multicenter studies, by which there is a lack of high evidence studies (De Oliveira Sousa et al., 2018). For a complete assessment of its impact on neurocognitive functioning and behavior, prospective and longitudinal studies must be designed in series (Riva et al., 2011).

In short, this review demonstrates the paucity of studies related to CM outside the clinical and surgical context, ignoring the neuropsychological aspects and emotional deficits. In relation to the overall objective of this work, it concludes that surgical treatments reduce the physical symptoms associated with CM, yet, few articles were found addressing the benefits of treatment based on cognition. The purpose of this study

was to undertake a comprehensive review of the literature to evidence the generalized cognitive impairment or specifically damaged neuropsychological functions in patients with CM. The possible day-to-day negative impact of cognitive impairment in patients, makes the detection and control of CM an important one. Ryan and Pealmen. (2004) reported that the quicker and more accurate that a patient receives their diagnosis and treatment, the better they will control their symptoms and return to a normal lifestyle. It is important to note, in this connection, the importance of the clinician to recognize the early signs of both the physical and neuropsychological disorders of CM-I. As such, extensive tests should be carried out on the patient's physical, neurological, cognitive and affective state. Early identification will assist in developing a treatment, as well as the appropriate referrals for more profound neuropsychological evaluations. Even though neuroimaging technologies have led to improved anatomical diagnoses, little is known about the cognitive symptom's incidence, since there are few articles that examine its neuropsychological, evolutionary and behavioral impact in patients with CM. Therefore, it is necessary for future research to not only focus on the surgical treatment or the neurological symptomatology, but also the cognitive consequences through an interdisciplinary perspective.

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FACTORS THAT INFLUENCE THE WORK MOTIVATIONAL PROFILE OF MILLENNIALS

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Abstract. The present research examined the possible relationships between personality traits and the motivational work profile; taking into account the incidence of psychosocial risks in the relationship between both variables. It is an ex post facto, cross-sectional design of a descriptive and correlational type, observational of an analytical and non-experimental type. This study was composed of a sample of 50 workers, belonging to the millennial generation, aged between 22 and 37 years; and was made up of 29 women and 21 men. It has been recorded that there is a significant and positive correlation between the personality traits of Openness and Responsibility, with the motivational features of Achievement, Exploration and Contribution. Likewise, a significant and negative relationship was also found between the personality traits of Openness and Responsibility, and the motivational features of Hedonism, Safety and Conservation. On the other hand, it was found that in this relationship, the mediating factors of psychosocial risks such as Insecurity, Leadership, Development and Estimation are related to the personality traits of Hedonism, Education and Responsibility, the Hedonism, Exploration, Security and Contribution.

Keywords: Millennials, personality traits, work motivational profile, psychosocial risks.

FACTORES QUE INFLUYEN EN EL PERFIL MOTIVACIONAL LABORAL DE LOS MILLENNIALS

Resumen. La presente investigación examinó las posibles relaciones existentes entre los rasgos de personalidad y el perfil motivacional laboral; teniendo en cuenta la incidencia de los riesgos psicosociales en la relación entre ambas variables. Se trata de un diseño ex post facto, transversal de tipo descriptivo y correlacional, observacional de tipo analítico y no experimental. Este estudio se compuso de una muestra de 50 personas trabajadoras, pertenecientes a la generación millennial, en edades comprendidas entre los 22 y los 37 años; y estuvo conformada por 29 mujeres y 21 hombres. Se observó que existe una correlación significativa y positiva entre los rasgos de personalidad; Apertura y Responsabilidad con los rasgos de motivación; Logro, Exploración y Contribución. Así mismo, se encontró una relación significativa y negativa entre los rasgos de personalidad; Apertura y Responsabilidad y los rasgos de

motivación; Hedonismo, Seguridad y Conservación. Por otro lado, se comprobó que en esta relación mediaban ciertos factores de riesgos psicosociales como son la Inseguridad, el Liderazgo, el Desarrollo y la Estima, los cuales mediaban la relación entre los rasgos de personalidad Apertura y Responsabilidad y los rasgos de motivación, Hedonismo, Exploración, Seguridad y Contribución.

Palabras clave: Millennials, rasgos de personalidad, perfil motivacional laboral, riesgos psicosociales.

Introduction

Traditionally, when we speak of a generation, we refer to the time in which someone was born (Bongiovanni & Soler, 2016). However, other definitions refer to lived experiences, which could be interpreted in a general way, since different generations may share the same experiences (Pozzi, 2013). Each generation has a specific generational personality, which determines its values, beliefs and attitudes, which are in turn connected to their work expectations and the desired working environment. These characteristics change with each generation. Therefore, they differ from previous generations due to political, economic and social changes (Golik, 2013). However, a generational group or cohort includes people who were born in a certain time period, and people who share life experiences on a historical and social level. Despite the fact that a certain generation differs from the previous ones, it has been observed that they can develop similar behavior patterns and share certain characteristics (Pozzi, 2013).

Nowadays, three generations coexist in the workplace: the Baby Boomers, Generation X and Generation Y or Millennials (Bongiovanni & Soler, 2016). This phenomenon is known as generational turbulence or generational overlap, because there are people who belong to different generations in such companies, and who, due to this reason, have different beliefs, values and behaviors about their workplace (Pozzi, 2013). It is safe to say that there is agreement in the fact that millennials are those who were born between 1980s and 2000s (Bongiovanni & Soler, 2016). The period that corresponds to this generation coincides with the development of Information and Communication Technologies (ICT), by which they are also known as digital natives (Bongiovanni & Soler, 2016). Over the years, the values that each generation has adopted have changed and, consequently, so have their expectations. It has been observed that leisure values have gradually increased in each generation. Likewise, more importance is given to personal life, with work taking a second place. Interestingly, the cited study concluded that extrinsic values reached their highest point among millennials. Moreover, contrary to what is commonly thought, they do not tend toward altruistic work more than previous generations. Finally, Millennials scored lower on social and intrinsic values than Baby Boomers (Twenge, Campbell, Hoffman, & Lance, 2010).

After knowing the characteristics of Millennials, it is necessary to define their motivation to later place focus on work motivation. Motivation is an adaptive process that drives and directs behavior toward an objective or goal (Huilcapi-Masacon, Castro-López, & Jácome-Lara, 2017). Therefore, the motivational process is derived from two fundamental aspects; the needs, which activate the behavior, and the objectives, which direct it (Rubió, 2016).

Regarding work motivation, it is one of the main constructs in the Organizational Psychology and the main determinant of work behavior, together with

the worker´s capacity and psychosocial risks (Muchinsky, 2000). Work motivation is the "set of energy forces that initiate and determine the form, direction, intensity and duration of work behaviors" (Latham & Pinder, 2005; Valderrama, Escorial & Luceño, 2015, page 17). This work motivation is influenced by both external and internal stimuli. Intrinsic motivation is considered a more effective and necessary human quality; monetary rewards have been shown as not improving this type of motivation (Olafsen, Halvari, Forest, & Deci, 2015). Therefore, it is necessary to consider human capital as one of the most important factors of an organization, with the objective that people work effectively and efficiently facilitating the appearance of both types of motivation (Ristic, Selakovic, & Quereshi, 2017). In relation to intrinsic motivation, a distinction is made between the motivational profiles of approach and avoidance (Valderrama, Esocrial, & Luceño, 2015). Approach motivation guides behavior towards the positive, both in terms of objectives and results, including indicators such as extraversion and is associated with the behavior activation system (Kanfer, Frese, & Johnson, 2017). Some approximation motivations to be considered are: autonomy, which is the degree to which a person values their independence, prefers to follow their own criteria and make decisions for themselves; power, which is considered the interest to direct others, compete and win, promote, receive admiration, gain popularity and prestige; achievement, which is considered the degree to which a person encourages them self to overcome challenges, achieve professional success and high standards of excellence. Exploration, defined as the degree to which a person prefers novelty and variety, seeking to learn and discover new ways of doing thing; And contribution, which is defined as the desire to help others, contributing to society and having a positive impact in the lives of others (Valderrama, Esocrial, & Luceño, 2015). Avoidance motivation guides the behavior towards negative objectives and results, and includes neuroticism, which is associated with the inhibitory behavior system (Kanfer, Frese, & Johnson, 2017).

When we talk about countermotives we refer to affiliation, defined as the degree of preference in being with other people, being part of a group and feeling accepted; cooperation, which is the desire to maintain egalitarian relationships, avoiding inequity, power gap, rivalry and abuse of power; hedonism, defined as the individual's degree of preference in guarding against efforts and stress, avoiding the sacrifice of well-being to achieve goals; safety, understood as the extent to which an individual aims to keep stability in their environment, avoiding changes and uncertainty; and conservation, which represents the desire to protect oneself, earn money and keep material assets (Valderrama, Esocrial, & Luceño, 2015). In order to differentiate approximation motives from avoidance countermotives, we use the Motivational Profile Analysis based on the wheel of motives model by Valderrama (2010). Said model provides a new theoretical framework for the classification of motivation that gives an empiric explanation to human variability and is suitable for work environment and vocational orientation.

These have been considered the predisposing factors for occupational motivation, psychosocial risks and personality traits, as are described below. Regarding psychosocial risks, their presence is linked to multiple harmful effects on health, which is why both their measurement, as well as their prevention have gained importance in the last few years (Benavides et al., 2002). According to The National Institute of Occupational Safety, Health and Wellness (NIOSH, *INSSBT, Instituto Nacional de Seguridad, Salud y Bienestar en el Trabajo*), psychosocial risks are those conditions given under those work situations directly related to job organization and social

environment, job content and task performing, and that have the ability of affecting the work progress and the worker's physical, mental or social health. The term 'psychosocial' is generally used to represent the interaction between several factors that cause disturbances in psychological and mental mechanisms (Neffa, 2015). The main psychosocial risk factors are especially taken in account to relations with psychological exigences, which comprise the amount of work, including the available time for its performance and the type of task; the active work and its development possibilities, which consists of two dimensions, influence and skill development; job uncertainty, which refers to concern about the future in relation to the occupation; leadership, which involves the existence of quality leadership, reflected in the line manager's course of action; double presence, referred to the concern for fulfilling household chores in addition to occupational tasks; and esteem, which means recognition and support from superiors and colleagues for the effort made in performing the job (Candia, Pérez-Franco, & González, 2016).

On the other hand, personality features have been taken into account as predictors of work motivation style, since these are considered predispositions or tendencies expressed in relatively stable and consistent patterns of behavior, thoughts and/or feelings throughout life (Romero, 2005). In relation to the stability and consistency of features, it is necessary to differentiate between personality and temperament features, since even though both imply long-term behavioral dispositions, there are differences between them (Deckers, 2014). Temperament refers to individual emotional differences, which occur as a result of genetically inherited characteristics, manifesting earlier in infancy, and is more stable; whereas personality is a way of behaving, derived from the interaction between temperament characteristics and social experience, manifesting later in life and modified through experience (Deckers, 2014). Given its pliancy, personality traits are taken into consideration, which refer to consistency in a specific set of behaviors over time and within relevant situations. There is a current consensus about the personality structure that has emerged around the five major personality factors (Costa & McCrae, 1978). These factors are Neuroticism, which is opposed to adjustment and emotional stability and carries a general tendency toward experiencing negative feelings; Extroversion, which refers to sociable people who prefer to bond with other people, groups and meetings; Openness, which refers to people who want to consider new ideas and unconventional values, have intellectual curiosity and experience emotions more deeply; Kindness, which refers to altruistic people who sympathize with others and are willing to help them; and finally, Responsibility, which refers to people who are willing, stubborn, and determined. Digma and Takemoto-Chock (1981) refer to this factor as Will to Achieve (Costa & McCrae, 1978; Cordero, Pamos, & Seisdedos, 1999; Said Diez & Sánchez, 2017).

Relationship between personality, psychosocial risks and work motivational profile.

The relationship between personality has been studied from the model of the five factors (McCrae & Costa, 1987) and work motivation. The purpose of these studies has been to identify reliable predictors of work motivation. However, a weak correlation has been obtained between personality traits (measured with the Big Five) and work motivation, possibly because the measured personality traits are too general (Sjöberg, 2016). Other studies have concluded strong correlations, using the UPP-Personality, which measures different dimensions of work (Moresi, 2009). Consistent relationships have been found between personality and job performance.

Analyses revealed that motivational variables are influential mechanisms through which personality traits affect job performance (Barrick, Stewart, & Piotrowski, 2002). Further studies have taken into account the breadth of the five personality factors mentioned above, and the limited relationship they have shown with work motivation (Yahaya, 2012; Chegeni, Neisi, & Arshadi, 2015). For this reason, meta-analytical research has taken the Responsibility trait as a predictor of motivation and, consequently, professional performance (Dudley, et al, 2006).

Personality has been observed to influence the way we address emerging adverse working conditions. The key factor is that high scores in Affability or Kindness decrease psychosocial risks (Jaén, 2010). A second study has shown that proactive personality influences work-family interaction but is only beneficial when personal control over occupational stress factors can be achieved (Cunningham & De La Rosa, 2008). This study takes into account the double presence variable, in relation to work-family interaction, as a psychosocial risk; the proactive personality is not measured in itself but could be similar to the variables for Responsibility and Openness, therefore, it is important to know the relationship between these two. On the other hand, there are no general theories on the relationship between personality and subjective well-being, although Neuroticism and Extraversion factors have been related to well-being, positive and negative affection, and life satisfaction (Morán, Fínez, & Fernández-Abascal, 2016). All of the five mentioned trait factors have been taken into account. However, the factors of Openness and Responsibility receive more importance because they are considered to be more related to work motivation; although other studies only use the Responsibility variable (Yahaya, 2012; Chegeni, Neisi, & Arshadi, 2015).

In recent years, great importance has been given to the prevention of psychosocial risks by promoting organizations with "healthy" environments. For this purpose, coaching techniques are used in pursuit of increasing personal awareness and responsibility and, consequently, intrinsic professional motivation. In addition, it has been shown that there is a close relationship between both variables and that reducing psychosocial risks increases professional motivation (Gómez, 2017). Nevertheless, most of the studies related to psychosocial factors have focused on studying their relationship to stress (Cooper, 1998; Dunham, 2001; Jaén, 2010).

This research has the following objectives: firstly, to relate personality traits with the approximation or evasive work motivational profile. Secondly, personality traits with psychosocial risks and finally, these psychosocial risks with the approximation or evasive work motivational profile. Moreover, we want to see how psychosocial risks are measured in the relationship between personality traits and work motivational profiles.

Methodology

Participants

For this study, a heterogeneous sample of 50 people, all of them residents in Cantabria (Spain), was used. The group consisted of 29 women (58%), and 23 men (42%) with their average age ranging from 22 to 37 years (M = 29.22, SD = 3.54). The educational level of the sample was differentiated (High School, Professional Development (mid-level), Professional Development (higher level), Bachelor's and Post-graduate). As required, their jobs were varied. However, the existing relationship

between the job performed and the academic training was taken into account; this indicated that the jobs were mostly not related to the studies undertaken (66%). As for the sample allocation, the systematic sampling technique was used, since a list of the study population was obtained, with the first being chosen randomly, and the subsequent subjects being chosen equally spread. All current ethical and legal guidelines for human research and data protection were followed.

Instruments

The informed indexes from the internal consistency of the diverse scales (α of Cronbach) correspond to the data from the current research.

NEO-FFI (Neuroticism-Extraversion-Openness Five-Factor Inventory), Personality inventory.

The Spanish short version was applied, composed of 60 items (Cordero, Pamos, & Seisdedos, 1999). The original inventory (Costa & McCrae, 1978), and its Spanish adaptation (Cordero, Pamos, & Seisdedos, 1999) are composed of 5 factors: Neuroticism (α = .84), Extraversion (α = .76), Openness (α = .84), Kindness (α = .70) and Responsibility (α = .85); presenting the version used of 12 items for each factor. The answer is given by means of a 5-point Likert scale (0 = Completely disagree 4 = Completely agree).

APM, Análisis del perfil motivacional (Motivational Profile Analysis) by B. Valderrama, S. Escorial and L. Luceño.

The original version of the survey from the *Motivational Profile Analysis* (Valderrama, Esocrial, & Luceño, 2015) was applied. This is a 6-point Likert scale (1=Extremely dissatisfied; 6= Extremely satisfied), composed of 80 items, which evaluate various motives that may influence performance and other work behaviors based on the Rueda de los Motivos (*Motives Wheel*) by Valderrama (2010). 10 factors are presented, divided into 5 motives and 5 non-motives. On the one hand, the five motives are equivalent to the approximation motivational profile, which are Autonomy (α = .76), Power (α = .83), Achievement (α = .94), Exploration (α = .91), Contribution (α = .77). On the other hand, the five non-motives are related to the avoidance motivational profile, which are the following ones: Affiliation (α = .53), Cooperation (α = .75), Hedonism (α = .90), Security (α = .80) and Conservation (α = .87).

Copenhagen Psychosocial Questionnaire (COPSOQ) or ISTAS-21 COPSOQ.

The short version was applied in Spanish, which was created by the Union Institute of Work, Environment and Health (*ISTAS* for the Spanish acronym); the authors of the original version come from the National Institute for Occupational Safety and Health of Denmark (AMI). It is comprised of 38 items with a Likert-type answering style of 4 points (1 = Never; 4= Always). The psychosocial risks presence level is assessed through 6 factors: Psychological exigences at work (α = .59), Control over work (α = .84), Insecurity (α = .69), Social support and leadership quality (α = .85), Double presence (α = .74) and Esteem (α = .84).

Procedures

This research was carried out through email. The mentioned instruments and some demographical questions (age, sex, education and occupation), which were included in a Microsoft Office Excel 2003 file that were sent. Answering the questionnaires was spaced throughout three weeks as a way of preventing a loss of

focus, as well as providing enough time for returning them. The NEO-FFI was sent in the first week, which had an estimated duration of 15 minutes; the APM was sent in the second week, which had a planned duration of 25 minutes; and the ISTAS-21 COPSOQ was sent in the last week, which had a planned duration of 20 minutes. The email address was created specifically for this research and the participants had to resubmit the three completed files within the planned period.

Data analysis

According to Kerliner and Lee (2002), the research was non-experimental, with its design being ex post facto, due to the fact that the research is carried out once the studied events happened. Thus, it is an analytical observational study because, in addition to describing the variables, it looks for relationships between them. In this research, the independent variable is organic or of the state, because they are the internal characteristics of the subject; in this case, the personality characteristics. In addition, the dependent variable of this study references the subject's internal and external characteristics, such as the working motivational profile. The presence of a mediating variable as are psychosocial risks, will be subsequently analyzed (Figure 1).

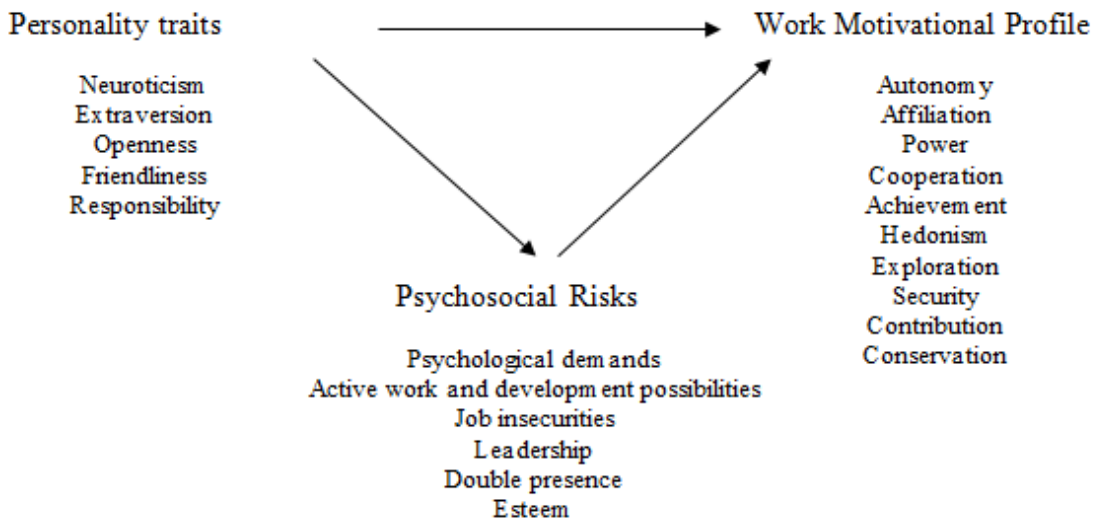

Figure 1. Diagram which shows the direct and indirect relationship between the studied variables. Personality features: independent variable. Psychosocial features: mediating variable. Working motivational profile: dependent variable.

According to the number of measurements, this research is a cross-sectional design, of a descriptive and co-relational type because measurements are taken only at a moment. Therefore, it is co-relational because it intends to establish and analyze the relationship between two or more variables. Therefore, the statistical analysis used were, firstly, bivariate correlations (Pearson's r) followed by the analysis of the mediating effect; assessing the significance in each statistical analysis. The SPSS software was used for recording and analyzing the data.

Results

Firstly, the relationship between the personality and motivation variables were analyzed (Table 1). As we can see, there is a significant positive relationship between the personality characteristics of Openness and Responsibility, and the motivation characteristics of Achievement, Exploration and Contribution. In this same way, there is a significant negative relationship between the personality characteristics of Openness and Responsibility, and the motivation characteristics of Hedonism, Security and Conservation.

Table 1
Bivariate correlations (Pearson's r) between the Personality and Motivation variables

	Neurotisicm	Extraversion	Openness	Friendliness	Responsibility
Autonomy	.02	.07	.29*	-.21	.33*
Affiliation	.31*	.16	.12	.33*	-.11
Power	.21	.12	.25*	-.24	.29*
Cooperation	.00	.14	.07	.46**	.00
Achievement	.28*	.21	.49***	.09	.56***
Hedonism	-.05	-.22	-.55***	-.15	-.61***
Exploration	.19	.16	.50***	.17	.53***
Security	-.01	.00	-.35*	.11	-.32*
Contribution	.30*	.28*	.46**	.54***	.17
Conservation	-.07	-.20	-.46**	-.37**	-.25

Note: *p<.05,** p<.01,*** p<.001.

Secondly, the relationship between the variables of personality and psychosocial risks was analyzed (Table 2). Again, there are significant correlations with the personality characteristics of Openness and Responsibility; Openness has significant positive correlations with the Development, Leadership and Esteem factors; and negative correlation with the Insecurity factor; Responsibility has significant positive correlations with the Development, Leadership, Double Presence and Esteem factors.

Table 2
Bivariate correlations (Pearson's r) between the Personality and Psychosocial Risk variables

	Neurotisicm	Extraversion	Openness	Friendliness	Responsibility
PSYDM	-.11	.06	.03	-.22	.02
DEV	.26	.13	.36*	.25	.38**
INS	-.07	-.20	-.32*	.00	-.19
LEADER	.33*	.18	.35*	.22	.30*
DOUBLEPR	.02	-.07	.19	.05	.53***
ESTEEM	.21	.06	.35*	.18	.25*

Note: *p<.05,** p<.01,*** p<.001.PSYDM: (Psychological demands); DEV: (Development); INS: (Insecurity); LEADER: (Leadership); DOUBLEPR: (Double presence); ESTEEM: (Esteem).

Lastly, the relationship between the motivation and psychosocial risk variables was analyzed (Table 3). There is a significant and positive relationship between Hedonism and Insecurity; however, there is a significant negative correlation between Hedonism and the variables for Development, Leadership and Double Presence; on the other hand, there is a significant negative correlation between the variables of Contribution and Psychological Requests; and a significant positive correlation between the variables of Contribution and Development, Leadership and Esteem.

Table 3
Bivariate correlations (Pearson's r) between the Motivation and Psychosocial Risks variables

	PSYDM	DEV	INS	LEADER	DOBLEPRE	ESTEEM
Autonomy	.24	.09	-.22	.02	.07	-.01
Affiliation	-.25	.07	.04	.14	-.05	.05
Power	-.01	.09	.00	-.03	-.20	-.09
Cooperation	-.28*	.21	-.05	.22	.08	.18
Achievement	-.04	.29*	-.21	.24	.36**	.09
Hedonism	-.11	-.31*	.36*	-.32*	-.37**	-.16
Exploration	-.07	.37**	-.26	.26	.34*	.17
Security	-.14	-.16*	.43**	-.13	-.17	-.10
Contribution	-.32*	.34*	-.16	.35*	.08	.28*
Conservation	-.02	-.33**	.32*	-.35*	-.06	-.27

Note: *p<.05,** p<.01,*** p<.001.PSYDM: (Psychological demands); DEV: (Development); INS: (Insecurity); LEADER: (Leadership); DOUBLEPR: (Double presence); ESTEEM: (Esteem).

After the above correlations were carried out, ten mediation models between the variables that had significant correlations were carried out. Those models in which at least one variable of psychosocial risks appeared were taken into consideration. For this reason, five mediation models are shown below.

Firstly, variables where the relationship between Openness and Hedonism appeared were analyzed (Figure 2). The Insecurity and Leadership variables were shown to explain the relationship between Openness and Hedonism.

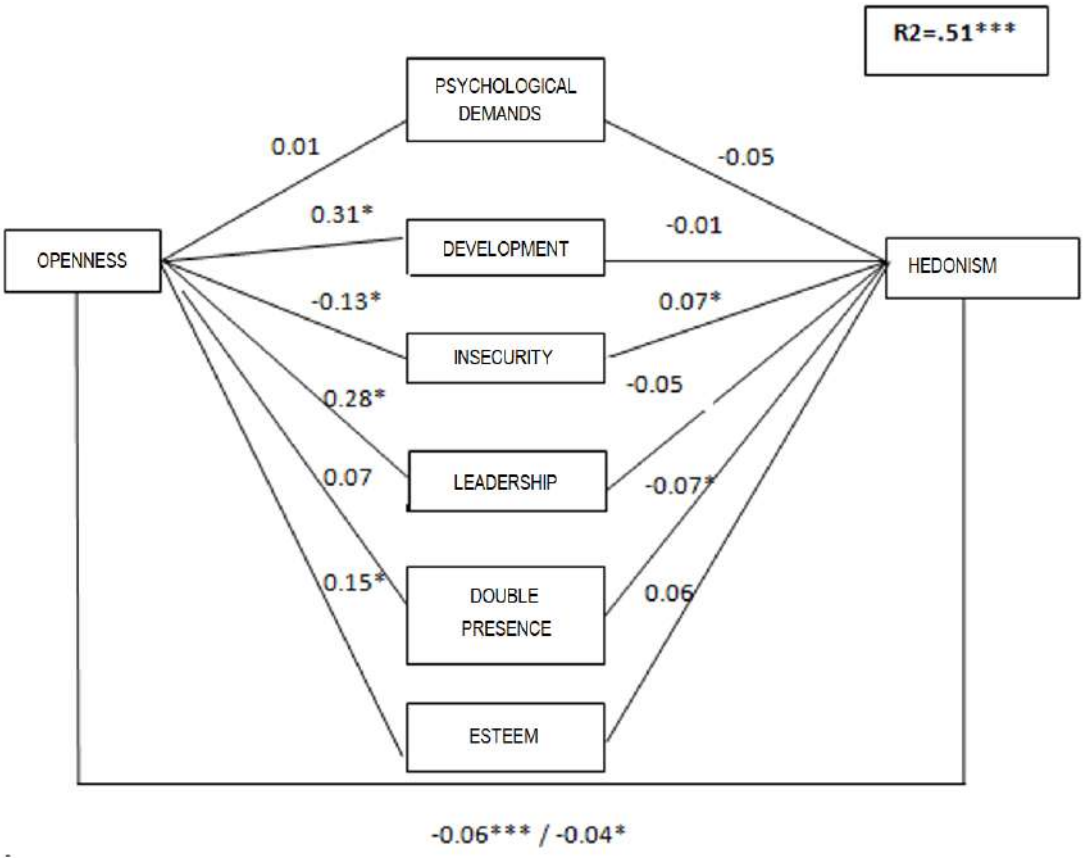

Figure 2. Analysis of the mediating effect of psychosocial risks in the relationship between Openness and Hedonism.

Note: *p<.05,** p<.01,*** p<.001. Psychological demands: b = -.0007 (I.C. 95%: -.0114/.0076); Development: b = -.0019 (I.C. 95%: -.0175/.0131); Insecurity: b = -.0095 (I.C. 95%: -.0254/-.0001); Leadership: b = -.0146 (I.C. 95%: -.0378/-.0022); Double Presence: b = -.0054 (I.C. 95%: -.0185/.0021), Esteem: b = .0100 (I.C. 95%: -.0022/ .0334)

Secondly, it was shown that the variables of Development and Esteem have significant importance in the relationship between Openness and Exploration (Figure 3).

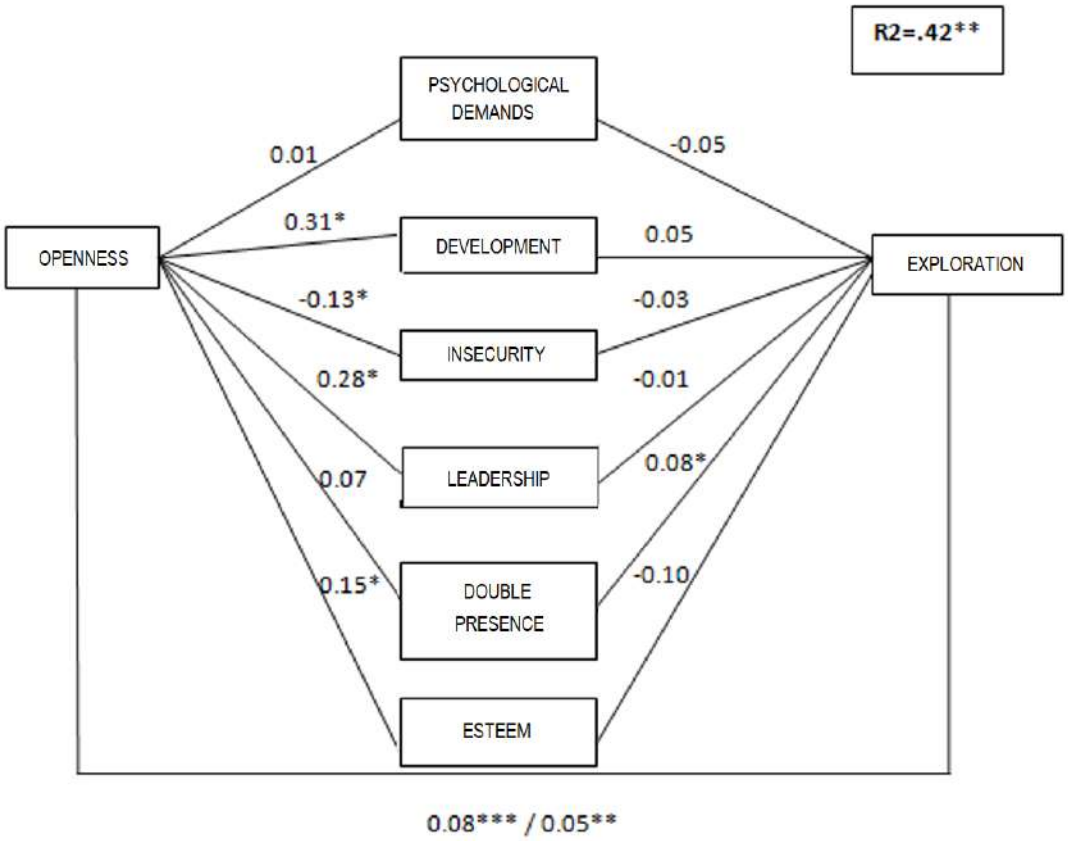

Figura 3. Analysis of the mediating effect of psychosocial risks in the relationship between Openness and Hedonism.

Note: *p<.05,** p<.01,*** p<.001. Psychological demands: b = -.0007 (I.C. 95%: -.0138/.0070); Development: b = .0158 (I.C. 95%: .0008/.0391); Insecurity: b = .0032 (I.C. 95%: -.0054/.0172); Leadership: b = -.0009 (I.C. 95%: -.0276/.0168); Double presence: b = .0055 (I.C. 95%: -.0018/ .0195); Esteem: b = -.0158 (I.C. 95%: -.0468/ -.0004)

Third, it was found that the Insecurity variable significantly mediated the relationship between Openness and Security (Figure 4).

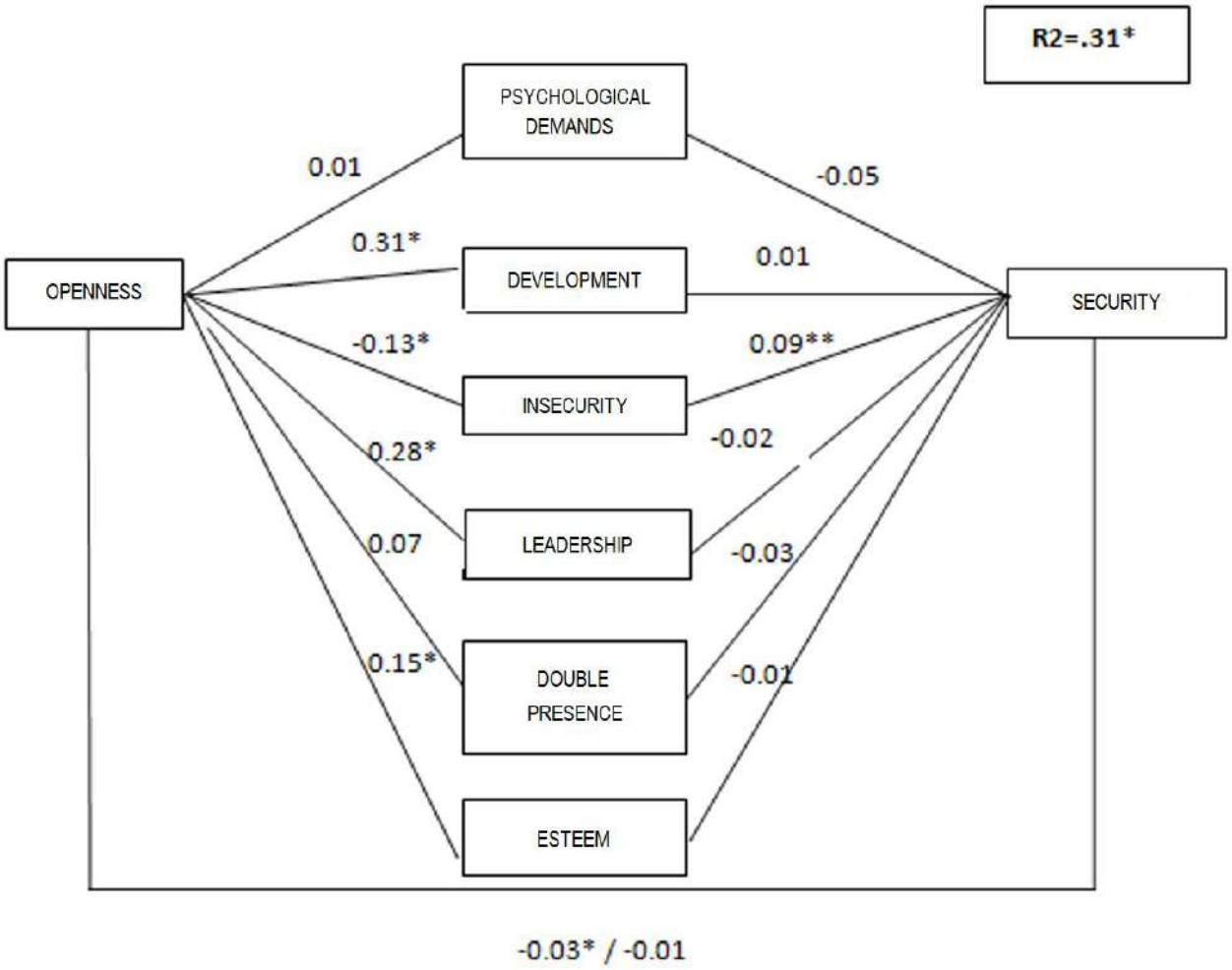

Figure 4. Analysis of the mediating effect of psychosocial risks in the relationship between Openness and Safety.

Note: *p<.05,** p<.01,*** p<.001. Psychological demands: b = -.0007 (I.C. 95%: -.0111 / .0076); Development: b = .0039 (I.C. 95%: -.0045 / .0197); Insecurity: b = -.0116 (I.C. 95%: -.0259 / -.0022); Leadership: b = -.0048 (I.C. 95%: -.0274 / .0061); Double Presence: b = -.0025 (I.C. 95%: -.0130 / .0017); Esteem: b = -.0018 (I.C. 95%: -.0180 / .0155)

Fourth, it was found that said variable significantly mediated the relationship between Openness and Contribution (Figure 5).

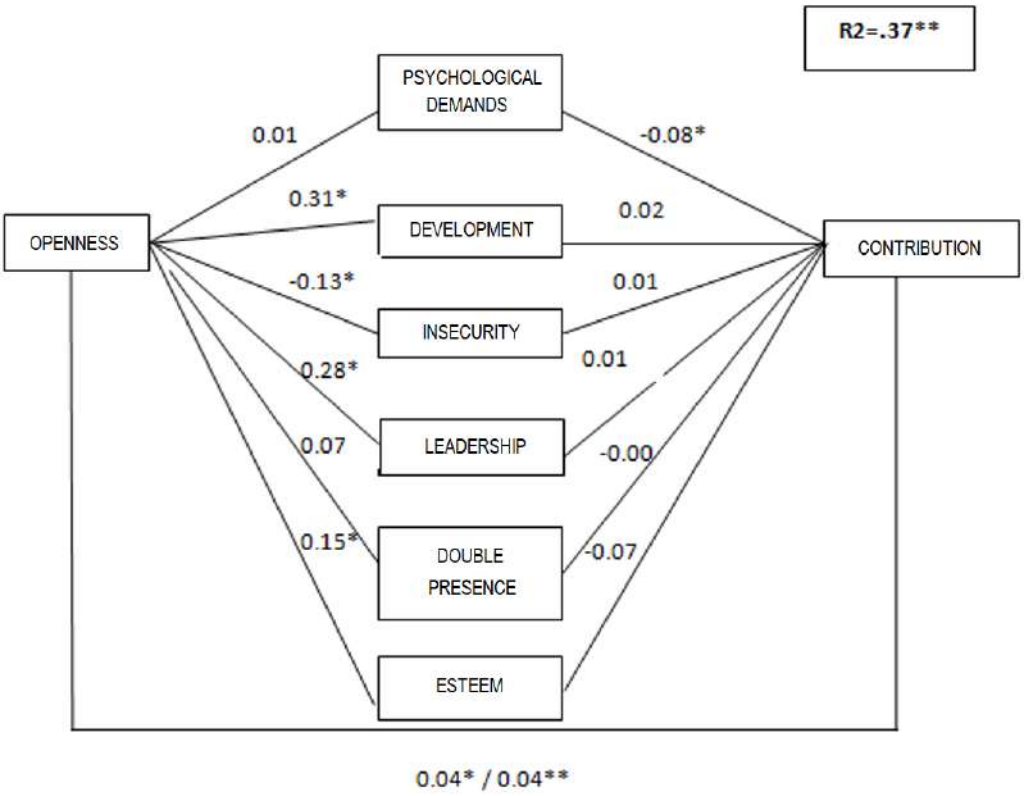

Figure 5. Analysis of the mediating effect of psychosocial risks in the relationship between Openness and Contribution.

Note: *p<.05,** p<.01,*** p<.001. Psychological demands: b = -.0011 (I.C. 95%: -.0154 / .0110); Development: b = .0070 (I.C. 95%: -.0063 / .0212); Insecurity: b = -.0016 (I.C. 95%: -.0112 / .0053); Leadership: b = .0018 (I.C. 95%: -.0160 / .0181); Double Presence: b = -.0003 (I.C. 95%: -.0070 / .0027); Esteem: b = -0109 (I.C. 95%: -.0281 / -.0007)

Finally, it was observed that the Leadership variable significantly mediates the relationship between Responsibility and Hedonism (Figure 6).

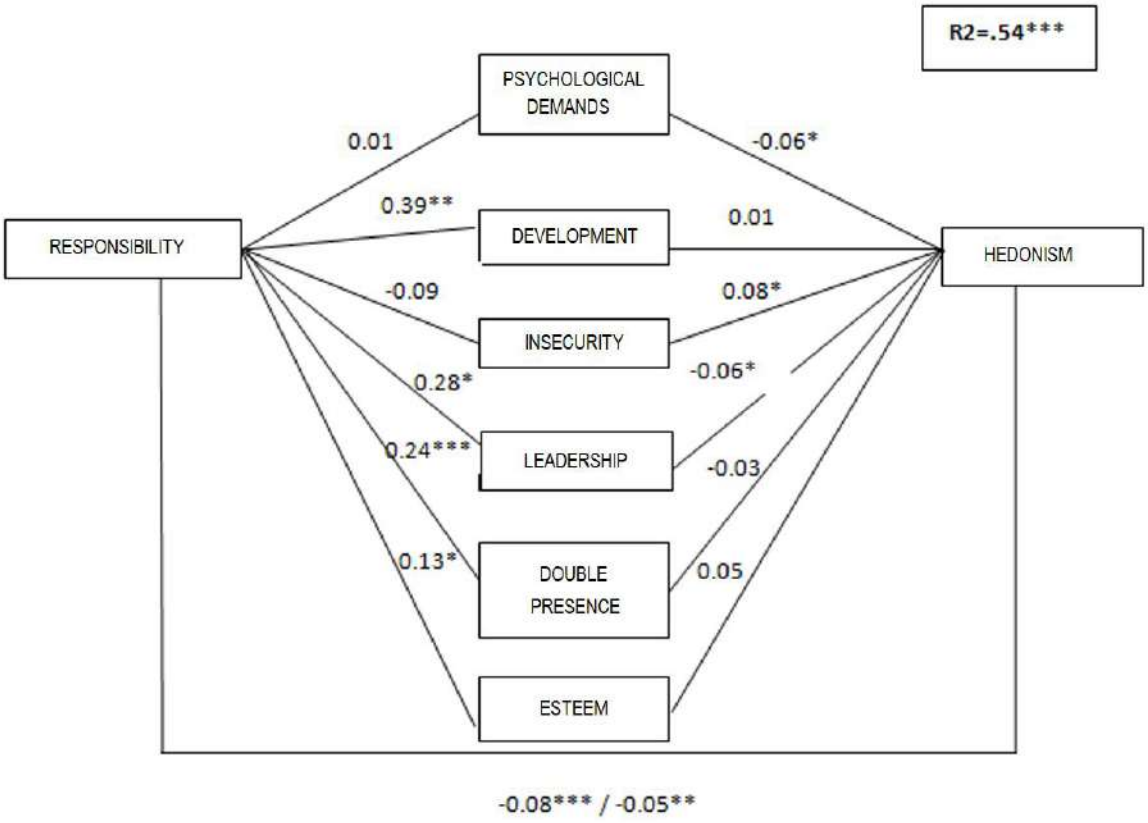

Figure 6. Analysis of the mediating effect of psychosocial risks in the relationship between Responsibility and Hedonism.

Note: *p<.05,** p<.01,*** p<.001. Psychological demands: b = -.0008 (I.C. 95%: -.0151 / .0092); Development: b = .0032 (I.C. 95%: -.0113 / .0385); Insecurity: b = -.0075 (I.C. 95%: -.0254 / .0020); Leadership: b = -.0172 (I.C. 95%: -.0448 / -.0032); Double Presence: b = -.0070 (I.C. 95%: -.0295 / .0098); Esteem: b = .0059 (I.C. 95%: -.0039 / .0268)

The models explained a variance between .31 and .54.

Discussion

The objective of this research was to analyze the possible relationships between personality features and the work motivation of Millennials, taking into account the incidence of psychosocial risks in the relationship between both variables. This study contributes to the field of organizational psychology, since useful information is provided, both to the leaders of companies and to its workers, with the results obtained.

The most similar study found uses Personality, Motivation and Psychosocial Risks as independent variables and Labor Performance as a dependent variable. That is, the three variables used in this research are considered predictors of work performance, however, no significant results were obtained (Jaén, 2010). In the case of this research, the Personality variable is taken as an independent variable, Psychosocial Risks as a mediating variable and Motivation as a dependent variable. The main differences found between the two studies may be due to the number and categorization of the variables, since three independent and one dependent variable were used in the aforementioned study, and we choose to include a mediating variable in this research; all of them which

categorized differently. On the other hand, these differences could also derive from the use of different measuring instruments.

The results of another study, which uses NEO-FFI inventory, like this research, indicate that the Responsibility variable correlates positively with work motivation and on the other hand, that the Neuroticism variable correlates negatively with work motivation (Chegeni, Neisi, & Arshadi, 2015). However, the results of this study show that Neuroticism does not correlate negatively with the motivational profile of approximation, but with three variables of the avoidance profile. On the other hand, the Responsibility variable correlates positively in all cases with the motivational profile of approximation, which would correspond to the existence of work motivation. In this case, the measurement instrument used for the personality traits is the same, however, in the mentioned study, work motivation is measured as a general feature and in this research, it is divided into ten factors, so this difference in the measure of work motivation could be the cause of the difference in the type and significance of the correlation.

In this research we have taken into account the five major factors of personality (Costa & McCrae, 1978). However, before obtaining the results, the Openness and Responsibility variables were considered as those most related to work motivation, due to the analysis of their definition. According to the predictions, the variables that significantly correlate in most cases are Openness and Responsibility, as expected. We have not found any study that takes both variables into account. However, some take Responsibility as a predictor of work motivation (Yahaya, 2012), and others, both Responsibility and Neuroticism (Chegeni, Neisi, & Arshadi, 2015). The omission of the Openness variable in other studies may be due to the fact that it can be considered a personality trait related to an openness toward experience, in a general sense. However, this research has been taken Openness into account, since it is directly related to intellectual aspects, such as divergent thinking, which contributes to creativity (McCrae, 1987).

On the other hand, Openness and Responsibility have been seen to correlate negatively with certain variables of the avoidance motivational profile. These findings could be likened to a study that found a positive relationship between proactive personality and commitment to the organization (Marjolein, Caniëls, & Semeijn, 2018), since the characteristics of the proactive personality correspond to those with high levels of Openness and Responsibility.

Likewise, in an aforementioned research, Motivation and Psychosocial Risks are related inversely to the current research, since high motivation is considered as a predictor of low psychosocial risks. However, in this research, the expected correlation is not achieved, by which we can only assume that the greater the motivation, the greater the perception of work demands (Jaén, 2010). Contrarily, this research has focused motivation in a dependent variable and psychosocial risks within a mediating variable that affects the relationship between personality and motivation. The difference between the two studies is clear, since the motivation variable in the current research is not assumed as a predictor of psychosocial risks, since these risks are considered as not being completely controlled by the individual.

Finally, in the aforementioned research by Marian Jaén Díaz, the variables of Personality and Psychosocial Risks are related in a similar way to this research, since it is considered that high scores in certain personality traits help to face certain psychosocial risks in a more positive manner. In the aforementioned study, it is the

Affability variable that obtained the highest values in relationship to psychosocial risks (Jaén, 2010). In this research, instead, the Opening and Responsibility variables are again those that present higher values in relationship to psychosocial risks. This difference is most likely due again to the use of different instruments in the personality measure.

With everything that was previously mentioned, it is possible to conclude that the for new research is open due to the results obtained on those work motivation factors for Millennials. Said results reveal that the traits personality traits of Openness and Responsibility correlate in a positive and significant way with the approximation motivation profile, and that this relationship may be altered if psychosocial risks are present in relationship to development, insecurity, leadership and esteem. The data obtained contributes information for effective recruitment within companies. Because of this, applying these discoveries to the staff hiring area is of great importance, since today's jobs require personality traits with similar characteristics as those measured by Openness and Responsibility. Taking this into consideration, it is important for the personnel in charge of hiring workers and business leaders to take these aspects into account, thus avoid hiring individuals not suitable for a specific post and provide the necessary training to acquire these traits where appropriate. Likewise, managers or senior members from any type of organization may become aware of the need to avoid the presence of certain psychosocial risks, while also strengthening the possibilities of on-the-job development and esteem toward workers. This can also be a facilitator for Millennials, because it allows them to know them self in relationship to work and as the awareness of the importance of having a work motivation profile approximation expands, it will be easier to adapt to the new demands from work environments, due to the rise of new technologies.

This technological boom and the arrival of the fourth industrial revolution, warn that further research is needed on this topic, since it is necessary to research further by taking into account the practical applications with which this research could count upon, in the case of having the necessary means. In the first place, it could add more variables such as job satisfaction or job performance, with this last being very much studied in the current literature. Likewise, it is necessary to use an instrument to measure personality traits in relationship to a more specific form of work. On the other hand, the quantitative analysis provides an objective data of the studied phenomenon. However, it would be interesting to conduct qualitative analysis with the aim of confirming or rejecting the data collected in the study sample. Lastly, we must state that this research has been carried out with young working people, so that their job descriptions and training differed widely. As such, it would be interesting to apply it to specific companies or departments.

Due to the shortage of resources in terms of time and money, certain limitations needed to be dealt with. The main limitation for this research has been access to the sample; it would be useful to enlarge it, for the sake of checking the replicability of the results. Also, the use of a general and descriptive personality inventory has been able to weaken the significance of the test results. Finally, the indexes informed of the internal consistency of the different scales (Cronbach's α) correspond to the data for the present research. These rates have been higher than .70 except in two cases; in a variable of the avoidance motivational profile, Affiliation (.53); and in a variable of psychosocial risks, Psychological Demands (.59); which indicates that the items belonging to these variables do not measure the construct in the consistent way that is sought. This can be

due to the influence for social desirability, since people are often considered to be part of a group and that any work involves a certain psychological requirement.

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SPANISH ADAPTATION OF THE ABBREVIATED FORM FOR THE SELF-ESTEEM RATING SCALE

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Abstract. Introduction: self-esteem could be a mediating variable in the success of the rehabilitation in schizophrenia. Some authors recommend the use of scales that differentiate between the positive and negative dimensions of self-esteem, such as the Self-Esteem Rating Scale (SERS). This study aims to validate the abbreviated form of this scale into Spanish (SERS-SF). Method: the study was carried out with 370 participants, 328 control subjects and 42 belonging to a clinical group (diagnosis of schizophrenia). The existence of two dimensions of self-esteem was analyzed by means of a confirmatory factorial analysis, and the test-retest reliability, the criterion validity and the internal consistency for each dimension were calculated. The relationships between self-esteem and socio-demographic variables were also analyzed in both samples, as well as the symptomatology in the patients' case. Lastly, the level of self-esteem between the controls and patients was compared. Results: the Spanish version of the SERS-SF showed good psychometric properties in both samples. No significant relationships were obtained with any socio-demographic variable. In the case of the patients, the positive dimension of self-esteem was related to symptoms of grandiosity, lack of judgment and insight, and depression. The comparison between the control subjects and the patients showed that the latter had worse self-esteem, although it was within normalized values in a high percentage. Discussion: The results obtained enable us to conclude that the Spanish version of the SERS-SF is a good test for evaluating the positive and negative dimensions of self-esteem in a differentiated way.

Keywords: Self-esteem, schizophrenia, scales

ADAPTACIÓN AL ESPAÑOL DE LA FORMA ABREVIADA DE LA SELF-ESTEEM RATING SCALE

Resumen. Introducción: la autoestima puede ser una variable mediadora en el éxito de los procesos de rehabilitación en esquizofrenia. Algunos autores recomiendan el uso de escalas que diferencien entre las dimensiones positiva y negativa de la autoestima, como la Self-Esteem Rating Scale (SERS). El presente estudio pretende validar en español la forma abreviada de esta escala (SERS-SF). Método: el estudio se llevó a cabo con 370 participantes, 328 sujetos control y 42 pertenecientes a un grupo clínico (diagnóstico de esquizofrenia). Se analizó la existencia de dos dimensiones de la autoestima mediante un análisis factorial confirmatorio, y se calcularon la fiabilidad test-retest, la validez de criterio y la consistencia interna para cada dimensión. También se estudiaron las relaciones entre autoestima y variables sociodemográficas en ambas muestras, así como con la sintomatología en el grupo clínico. Por último, se comparó el nivel de autoestima entre ambos grupos. Resultados: la adaptación al español de la SERS-SF mostró buenas propiedades psicométricas en ambas muestras. No se obtuvieron relaciones significativas con ninguna variable sociodemográfica. En el grupo clínico, la dimensión positiva de la autoestima se relacionó con los síntomas de ideas de grandeza, conciencia de enfermedad y depresión. La comparación entre sujetos control y clínicos mostró que éstos tenían peor autoestima, aunque en un alto porcentaje estaba dentro de valores normalizados. Discusión: estos resultados permiten concluir que la versión en español de la SERS-SF es una prueba adecuada para valorar de manera diferenciada las dimensiones positiva y negativa de la autoestima.

Palabras Clave: Autoestima, esquizofrenia, escalas

Introduction

Compared to such areas as cognitive functioning or social cognition, self-esteem is a variable that has received less attention in schizophrenia research. However, studies have shown that it too is an important variable due to its connection with such concepts as internalized stigma (Lysaker, Roe, Ringer, Gilmore & Yanos, 2012; Segalovich, Doron, Behrbalk, Kurs & Romem 2013) and quality of life (Costa et al., 2018; Wartelsteiner et al., 2016), or its influence as a mediating variable in patients' success for rehabilitation and social adjustment processes (Davis, Kurzban & Brekke, 2012; Lysaker, Ringer & Davis, 2008; Roe et al, 2003). For example, Holding, Tarrier, Gregg and Barrowclough (2013) observed that the level of self-esteem related to the amount of time that the patients were without relapses. In their study, in which they found a relapse rate of 92% in a 5-year follow-up period, patients with low self-esteem relapsed earlier that those with high self-esteem. Thus, they concluded that favorable self-esteem can act as a protective factor. Research, such as that of Kao et al. (2017) link self-esteem with resistance to stigma, which in turn is related to the pateint's quality of life and empowerment. Lastly, Jones, Hansen, Moskvina, Kingson and Turkington (2010) have observed that patients with high self-esteem express feelings of confidence and optimism, show a greater ability to adapt and are more likely to succeed in a job. However, patients with low self-esteem report feelings of loneliness, take a defensive attitude in their relationships with others, experience greater anxiety and underestimate their own abilities.

Likewise, different studies have assessed the link between self-esteem and positive-type symptoms, proposing two explanations in general about the connection between both variables. On one side, Bentall's team argues that paranoid delusions are the result of a psychological defense mechanism that protects patients from feelings of low self-esteem (Bentall et al., 2008; Kinderman & Bentall, 1996). In support of this

idea, a loss in the level of self-esteem, as well as greater instability in the evaluation of oneself, have been observed as being associated with an increase of paranoid ideas (Erikson & Lysaker, 2012; Jongeneel, Pot-Kolder, Counotte, van der Gaag & Veling, 2018; Thewissen, Bentall, Lecomte, van Os & Myin-Germeys, 2008). On the other hand, Garety's team defends that self-esteem contributes to the formation and persistence of delusions and hallucinations, which are coherent with the self-esteem level that patients display, regardless of the presence of a defensive mechanism in the symptoms (Freeman et al, 1998; Freeman & Garety, 2003; Garety, Kuipers, Fowler, Freeman & Bebbington, 2001). In this respect, research as carried out by Smith et. Al. (2006) has found that low self-esteem is associated to a more acute degree of auditive hallucinations with negative content and delusions of persecution, while high self-esteem is associated to a more acute level of delusions of grandeur. Besides these theories, low self-esteem has also been associated with more symptoms of disorganization and higher levels of psychopathology in general (Justo, Risso, Moskowitz & Gonzalez, 2018).

Due to all of these reasons, several authors consider that self-esteem training should be included in schizophrenia treatment protocols (Benavides, Brucato & Kimhy, 2018; Costa et al., 2018), since good self-esteem can act as a protection factor in the progression of the disease (Benavides et al., 2018; Jongeneel et al., 2018).

The research has also compared the self-esteem level in patients with schizophrenia, with that of the non-clinical population. The results obtained were not conclusive. Some authors state that patients have low self-esteem (Freeman et al, 1998; Hall & Tarrier, 2003; Lecomte, Corbière & Laisné, 2006; Lincoln, Mehl, Kesting & Rief, 2011; Romm et al, 2011), due, among other factors, to the fact of having a mental disease or the need for psychiatric hospitalization (Birchwood & Iqbal, 1998; Iqbal, Birchwood, Chadwick & Trower, 2000). However, other authors haven't found significant differences when comparing it with the normalized population, or the scale of the control subjects (Berge & Ranney, 2005; Costa et al., 2018; Justo et al., 2018; Kao et al., 2017; Ringer, Buchanan, Olesek & Lysaker, 2014). The differences between the results might be due to the patients' clinical status while the study was being carried out, given that, as stated earlier, different authors have found that patients with an active symptomatology have higher self-esteem (Lyon et al, 1994; Smith et al, 2006). Cella, Swan, Medin, Reeder and Wykes (2013). They also associate self-esteem with consciousness about one's own cognitive deficiencies, by which patients that are aware of their symptoms display lower self-esteem. These authors suggest that this should be taken into account in those interventions working with metacognition abilities, since an improvement in these abilities could negatively affect self-esteem.

Another explanation could be found in the use of different self-esteem assessment tools. Rosenberg's Self-Esteem Scale (RSES; Rosenberg, 1965), is one of the most used tests, offering a global and stable measure of this variable. However, some authors consider that it is better to differentiate between a positive and a negative dimension of self-esteem within the clinical population, which is why they discourage the use of RSES for clinical use (Barrowclough et al, 2003; Lecomte et al, 1999; Lecomte et al, 2006; Torrey, Mueser, McHugo & Drake, 2000). The Self-Esteem Rating Scale is found among the scales that value the two dimensions of self-esteem (SERS; Nugent & Thomas, 1993). The SERS is composed of 40 items, 20 for the positive dimension and 20 for the negative dimension. Lecomte et al. (2006) developed a reduced version of 20 items (SERS-SF), 10 for each dimension.

The main objective of this study is to adapt and validate the SERS-SF into Spanish. It is also aimed at analyzing the relationship between symptoms and self-esteem and compare the level of the self-esteem of those patients with schizophrenia against the control subjects.

Methodology

Participants

A total of 370 subjects participated in the study: 328 were selected from the general population and the rest (n=42) were patients diagnosed with schizophrenia or schizoaffective disorder as diagnosed by their psychiatrist from the Cantabrian Health Service. The inclusion criteria for both samples required subjects to be between the ages of 18-65 years old and not present a diagnosis for an organic disorder or intellectual disability. In the case of those subjects from the general population, they should not have a mental disorder diagnosis either.

A freely accessible web page was designed, which was disseminated through social networks and email to collect information from the control subjects. From the 328 subjects that participated in the study, 72.26% were women, between the ages of 30 and 39 years (33.23%) with university education (80.18%). In the case of the patients, the test was made in person in paper and pencil format. The 42 participants were outpatients who attended the Padre Menni Psychosocial Rehabilitation Center in Santander, Spain. They were all under treatment with antipsychotic medication, with training in social skills, psychoeducation, cognitive training and activities in daily living. Most of the sample was characterized as being female (52.38%), between the ages of 30 and 39 years (54.70%) with higher education (69.03%). The characteristics of the two samples are specified in Table 1.

Table 1
Socio-demographic and Clinical Characteristics

	Controls (n = 328)	Patients (n = 42)	X^2
Sex			
Male	91 (27.74%)	20 (47.62%)	
Female	237 (72.26%)	22 (52.38%)	5.14*
Age			
18-29	87 (26.52%)	3 (7.14%)	
30-39	109 (33.23%)	23 (54.76%)	12.51*
40-49	88 (26.83%)	9 (21.43%)	
50-64	44 (13.41%)	7 (16.67%)	
Studies			
Primary	8 (2.44%)	8 (19.05%)	
Secondary	57 (17.38%)	29 (69.05%)	82.92**
University	263 (80.18%)	5 (11.90%)	
		Media ± d.t	
Age first diagnosed			
Evolution years			
PANSS			

Positive Scale	12.10 ± 5.03
Negative Scale	14.30 ± 4.85
General Psychopathology	26.07 ± 8.03
Total Score	51.96 ± 13.10

Note: *p<.05, **p<.01

Both groups completed the test on two occasions, with a difference of 15 days between administrations. A total of 204 control subjects and 40 patients participated in the retest administration.

Instruments

Self-esteem

Two self-esteem tests were used: SERS-SF and RSES. The SERS-SF (Lecomte et al., 2016) is a 20-item test consisting of two subscales: positive self-esteem and negative self-esteem, each composed of 10 items scored on a Likert scale of 7 choices (never, rarely, seldom, sometimes, quite a few times, almost always, always). The two scales have a score of 10 to 70 and -10 to -70 respectively, and in both cases, the higher the score the higher the self-esteem, either negative or positive. Consequently, good self-esteem would be characterized by a high score on the positive scale and a low score on the negative scale. The positive and negative scales have an internal consistency of .91 and .87 respectively, and a test-retest reliability of .90 and .91.

The RSES (Rosenberg, 1965) consists of 10 items that value the degree of agreement with respect to a series of affirmations in a Likert scale of 4 choices (strongly agree, agree, disagree, strongly disagree). The score ranges from 10 to 40, with 25 being the cut-off score indicating good or bad self-esteem. Although it includes 5 positive and 5 negative phrases, the test is considered an overall measure of self-esteem. The RSES has shown good psychometric properties in the Spanish population, with an internal consistency of .87 and a test-retest reliability of .72 (Vázquez-Morejón, Jiménez García-Bóveda & Vázquez-Morejón Jiménez, 2004). The RSES was used to assess the criterion's validity.

Psychopathology

To assess psychopathology, the Positive And Negative Syndrome Scale (PANSS; Kay, Fiszbein & Opler, 1987) was used in the Spanish version by Peralta and Cuesta (1994). It consists of a 30-item test that evaluates the positive and negative symptomatology and psychopathology in general. All the symptoms are assessed regarding a Linkert-based scale that ranges from 1 (missing) to 7 (extreme). The positive and negative scales consist of 7 items each, so the scoring range is from 7 to 49 for both. For its part, general psychopathology is valued by 16 items, so the score ranges between 16 and 112. The internal consistency for each of the scales (positive, negative and general psychopathology) is .62, .92 and .55, while the interjudge reliability shows values of .71, .80 and .56 respectively.

PANNS was only applied to the patient sample.

Procedure

To carry out the adaptation and validation for the SERS-SF the first step was to translate the original test from English into Spanish. The translation was done

independently by three mental health professionals. Each translation was compared, and a version of the test was selected (see Annex 1), of which a retro-translation was carried out by a person with a degree in English philology from outside the first group of translators. Both the Spanish version and the retro-translated version were supervised and approved by one of the authors from the reduced version of the SERS, Dr. Lecomte. The SERS-SF was translated into Spanish as *Escala de Valoración de la Autoestima (EVA)*.

Once the translation process was completed, the psychometric properties for the EVA were assessed, both with the control subjects and with the patients. The first assessment was whether the Spanish version also maintained the two dimensions from the original test. Internal consistency, test-retest reliability and criterion validity were also analyzed. Likewise, the EVA relationship with the socio-demographic variables (sex, age and educational level) were also evaluated in both samples, as was the case for the patients with the symptoms.

Statistics Analysis

A confirmatory factorial analysis with varimax rotation was used to see if two dimensions for self-esteem were confirmed. Internal consistency was assessed using Cronbach's alpha, and test-retest reliability and criterion validity with Pearson's correlation coefficient.

The relationship with sex was analyzed using chi-square, while a one-way ANOVA test was used to assess the relationship with the age and educational level variables. Lastly, the relationship between psychopathology and self-esteem was analyzed using the Pearson correlation coefficient.

Differences in the level of self-esteem between the two samples were assessed with the mean difference *t* test for independent samples.

Statistical analyses were carried out with the SPSS, version 22.0

Ethical issues

Every patient was given an information sheet that explained the study objectives, and where they signed an informed consent document to participate in the study. Likewise, this document and the study's design itself were approved by the Ethics Committee from the Hospitalario Padre Menni Center in Santander.

Results

Control Subject Sample

In the control subject sample, the factorial analysis confirmed the existence of two factors, which explained 46.09% and 10% of the variance. The first factor was composed of those items that value the negative aspects of self-esteem, while the second factor was composed of those items that value the positive ones (see Table 2). The rest of the statistical analyses were carried out with each factor separate, referred to as a positive and a negative scale respectively.

Cronbach's alpha coefficient was .91 in both the positive and negative scales. Both scales showed a good test-retest reliability (positive scale): r=.86, p<.001; negative

scale: r=.92, p<.001), as well as a statistically significant relationship with RSES (positive scale): r=.50, p<.001; negative scale: r=.67, p<.001).

Regarding the relationship with the socio-demographic variables, neither the positive nor the negative scale was significantly related to any of the analyzed variables (sex, age and educational level). Since there were no significant differences in terms of any of the socio-demographic variables, comparative scales were calculated for the sample total (see Table 3)

Schizophrenia Patient Sample

The factor analysis resulted in the existence of 6 main factors, although Factors 5 and 6 were composed of only two items each and only explained 5.34% and 4.88% of the variance. Because of this, it was decided to force a factorial analysis of two-factors. The distribution of the items in each factor coincided with the two factors obtained in the control subject sample (see Table 2), although in this case, Factor 1 grouped the positive items and Factor 2 the negative items. Each factor explained the 40.80% and the 14.41% of the variance. Validity and reliability analyses were also carried out for each factor separately with the schizophrenia patient sample.

Table 2
Confirmatory Factorial Analysis SERS-SF

Items	Controls (n = 328)		Patients (n = 42)	
	Factor 1	Factor 2	Factor 1	Factor 2
Positive Scale				
2. I believe in my ability to deal with people		.80	1.16	
4. I think that people like talking with me		.81	1.90	
5. I believe I am a very competent person		.69	.91	
6. When I am with other people, I have the impression that they enjoy my presence		.71	.87	
7. I think I create a good impression upon others		.75	.84	
8. I believe I can begin new relationships if I want		.90	.90	
11. I think my friends find me interesting		.87	1.15	
12. I believe I have a good sense of humor		.68	.80	
14. My friends value me very much		.68	1.17	
19. I believe people enjoy them self with me		.82	.99	
Negative Scale				
1. I think other people do things better than me	.64			.52
3. I feel that I am likely to fail the things I do	.73			.73
9. I am ashamed of myself	.98			.98
10. I feel inferior to others	1.01			.93
13. I am angry at my own way of being	.94			1.04
15. I am afraid of appearing stupid to others	1.16			1.01
16. I wish I could disappear when I am surrounded by other people	.76			1.05
17. I think I would be happier with myself if I could be like other people	.96			1.54
18. I think I let myself be stepped over more than other people	.87			.83
20. I wish I could be someone else	.85			1.17

Cronbach's alpha coefficient was .92 for both for the positive and negative scales. Good test-retest reliability values were also obtained for both scales (positive scale): r=.92, p<.001; negative scale: r=.91, p<.001), and both of them showed a statistically significant relationship with the RSES (positive scale): r=.50, p=.001; negative scale: r=.47, p=002). As in the case of the control subjects, no significant differences were found between the patients in terms of any of the socio-demographic variables analyzed.

Regarding the relationship with symptomatology, the only statistically significant relationship found was between the positive EVA scale and PANSS item G12 on absence of judgment and introspection (r=.40, p=.027). To carry out a more detailed analysis between self-esteem and symptomatology, the first step was to dichotomize the sample of patients according to the level of self-esteem they presented, taking as cut-off value the direct score equivalent to the 15th and 85th percentiles of the scales developed with the control subjects (Ardila y Ostrosky, p.25). Therefore, a low self-esteem was equivalent to scores equal to or lower than 44 on the positive scale, and equal to or higher than -36 on the negative scale (see Table 3). In this way, the aim was to analyze if there were differences in symptoms between patients with good and bad self-esteem. The correlation with the symptoms was assessed through the t test for the mean difference for the independent samples. There were only significant correlations between the positive scale and the depression item (G6) on the PANSS. In this case, patients with low self-esteem on the positive scale had a significantly higher mean score on the depression item than patients with normal self-esteem on the positive scale (t(28)=2.912, p=.007, d=1.21). There were no significant differences on PANSS items between patients with high self-esteem and patients with normal self-esteem on the EVA negative scale.

Table 3
Comparative Table of the Control Subjects (n = 328)

Positive Scale [a]		Negative Scale [b]	
Direct Score	Percentil	Direct Score	Percentil
69-70	99	≥ -55	99
64	95	-43	95
62	90	-40	90
61	85	-36	85
60	80	-33	80
59	75	-31	75
58	70	-29	70
57	65	-27	65
56	60	-26	60
55	55	-25	55
54	50	-24	50
53	45	-23	45
52	40	-22	40
51	35	-21	35
50	30	-20	30
48	25	-19	25
47	20	-18	20
44	15	-17	15
42	10	-16	10
38	5	-14	5
≤ 29	1	≤ -11	1

Note: [a] A higher score corresponds to a more positive self-esteem; [b] A higher score corresponds to a lower self-esteem

Secondly, the reverse was done, assessing if there were differences in self-esteem levels depending on the presence or the absence of symptoms. For said purpose, the sample was divided into two groups: absence of the symptom (direct scores from 0 to 2 on the PANSS) and presence of the symptom (direct scores from 3 to 7). In this case, there were significant differences on the EVA positive scale according to the PANSS items that assess grandiosity (P5) and the lack of judgement and insight (G12). In the P5 item case, patients with grandiose delusions presented better self-esteem than those who did not have this symptom ($t(28)=-2.216$, $p=.048$, $d=.80$). In the G12 item case, patients with lack of judgement and insight had higher scores than those with good judgement and insight ($t(28)=-2.384$, $p=.024$, $d=.80$).

Comparison between Samples

With the data taken all together, significant differences were found between those subjects from the general population and patients with schizophrenia in the two self-esteem tests used for the study, RSES and EVA, both on the positive and the negative scale. The results are shown in Table 4.

However, as it can be seen in Table 4, the patient mean score in the RSES is higher than the cut-off value, indicating low self-esteem. In this same way, using the 15 and 85 percentiles from the positive and negative EVA scales as a reference, only 43.8% of patients scored within the normalized values in the positive scale (direct score over 44), percentage which increases to 68.8% in the negative scale (direct score below -36).

Table 4
Self-esteem Differences between the Control Population and the Patients

	Controls (n = 328)	Patients (n = 42)	*t*	*d*
	(media ± dt)			
RSES	32.35 ± 4.47	27.25 ± 7.13	4.90**	.85
EVA				
Positive Scale	52.97 ± 8.22	42.91 ± 11.31	6.37**	1.01
Negative Scale	-25.81 ± 9.55	-31.63 ± 10.60	3.25**	-.57

Note: $^{**}p<.01$

Discussion and Conclusions

The main goal of the present study consisted in validating the abbreviated form of the Self-Esteem Rating Scale in Spanish, which was translated as *Escala de Valoración de la Autoestima* (EVA). The EVA has demonstrated as having good psychometric properties, both in the control subject sample and in the clinical group. The factorial analysis agrees with the results obtained in the English and French versions of the trial (Lecomte et al., 2006) and confirmed that it is a suitable trial for assessing the positive and negative dimensions of self-esteem through two different sub-scales. Both sub-scales, the positive and the negative ones, showed good internal consistency and test-retest reliability values, as well as acceptable validity criteria values.

As it was pointed out in the introduction, one of the most used tests to assess self-esteem, both nationally and internationally, was the RSES. However, in some

authors' opinion, (Barrowclough et al., 2003; Lecomte et al., 1999; Lecomte et al., 2006; Torrey et al., 2000;), this trial provides a global and stable measure of self-esteem which is unhelpful for its use with patient populations, especially for collecting possible changes from therapeutic procedures aimed at improving this variable. In its place, they propose the use of such scales as the EVA, which provides a differentiated assessment of the positive and negative self-esteem characteristics. As support for this approach, Barrowclough et al. (2003) observed that schizophrenic patients can present simultaneous high scores in scales that assess both the positive self-esteem and the negative one; in other words, they can have a high positive self-esteem and a negative one at the same time. This data could be taken as evidence of the fact that schizophrenic patients do not carry an overall and uniform assessment of their self-esteem (a uniform assessment would be understood as having a high score in positive self-esteem characteristics and a low score in negative characteristics, or rather the contrary. The data obtained in the present study would support this conclusion, due to 43.75% of schizophrenic patients carrying out a non-uniform assessment of their self-esteem against only 15.54% of the control subjects. As shown in Figure 1, the main difference between the controls and the patients is provided in the low-low column, which indicates that low scores have been obtained both in the positive scale and in the negative scale. Remember that in the positive scale, a low score reflects bad self-esteem; however, in the negative scale, this is equivalent to a self-esteem within normal values.

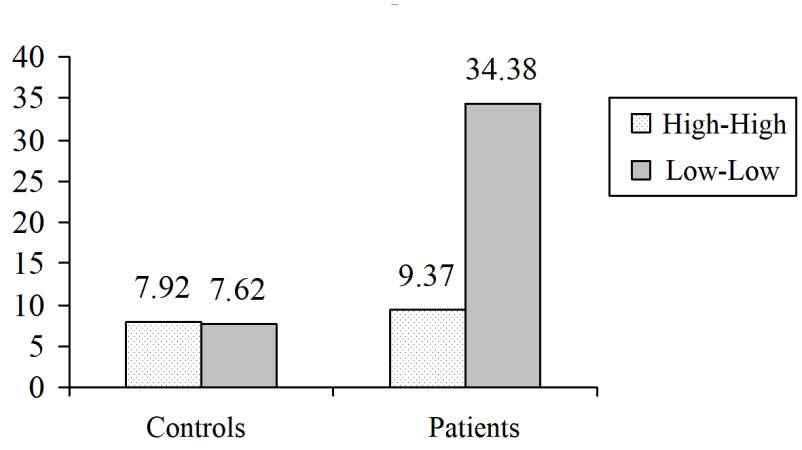

Figure 1. Percentage of patients and control subjects who carried out a non-uniform assessment of their self-esteem

Regarding the relationship between self-esteem and psychopathology, the results obtained offer isolated relationships between positive self-esteem and specific symptoms such as delusions of grandeur, level of depression and disease awareness (items P5, G6 and G12 of the PANSS). As for delusions of grandeur, patients with this symptom were those who had a higher score on the EVA positive scale. This data is in line with the previous results (Smith et al., 2006) and would partially support the hypothesis from Garety's team (Freeman and Garety, 2003, Garety et al., 2001) on the congruence between the content of delirious ideas and the level of self-esteem. The fact that the entire sample of patients has a low symptom profile (see Table 1), and that it is a cross-sectional study, means that this conclusion should be taken with caution. The

results regarding the relationship between the level of depression and the EVA positive scale support the data found by Karatzias, Gumley, Power and O'Grady (2007), which conclude that low self-esteem can be related to the development and maintenance of anxious and affective type symptoms. In this case, patients with lower positive self-esteem showed higher levels of depression.

Lastly, and in line with the previous research (Aghababian, Auguier, Baumstarck-Barrau & Lançon, 2011, Lysaker et al., 2013), the association observed between the EVA positive scale and the absence of judgment and introspection item, indicates that patients with good awareness of their disease carry out a worse evaluation of positive aspects of themselves. Based on what was said in the introduction about the relationship between self-esteem and success in rehabilitation processes, this data would highlight the importance of taking into account the possible impact of self-esteem programs aimed at increasing disease awareness. While the importance of patients accepting and acknowledging that they have a disease and the consequences derived from it is undoubtedly important, it would also be important to accompany this type of intervention with programs that reinforce or improve self-esteem. Some of these programs have already their effectiveness for increasing the levels of self-esteem from those patients suffering schizophrenia (Borras et al., 2009; Hall & Tarrier, 2003; Lecomte et al., 1999). Unlike the results obtained by other authors (Barrowclough et al., 2003), significant relationships between positive self-esteem and negative symptoms have not been observed.

On the other hand, the data from the following study would support the concept that patients with schizophrenia have low self-esteem than those from the control group, since they have significantly lower scores in both the RSES, as well as in the positive and negative EVA sub-scales. However, in the RSES case, more than 70% of the patients had a score higher than the cut-off score (25), by which if they do have worst self-esteem than the control subjects, it cannot be concluded that they do have lower self-esteem. This data changes when the EVA is used as a reference. In this case, more than half of the patients had scores indicative of low self-esteem within the positive sub-scale, something that occurred in less than 30% of the negative sub-scale sample. If we combine the data from the two, we may conclude that the patients with schizophrenia carried out a good assessment of themselves when evaluating their overall self-esteem, but the use of the tests that differentiate between the self-esteem's positive dimension and negative dimension allows for a more precise assessment. In this case, we can see that the self-esteem problems appear above all within the positive dimension, and no so much in the negative dimension. This is to say, patients in general do not carry out a negative assessment of themselves ("I feel inferior to everyone else", for example), but rather, consider themselves to lack positive abilities or competencies. The difference between the results obtained through RSES or through the EVA, would reinforce the convenience of using scales that separately assess the two self-esteem dimensions.

Lastly, based on the results from the present study, sex, age or educational level do not appear to be variables significantly related with self-esteem, neither in the control subjects or patients with schizophrenia. However, it is important to consider this data with caution in the case of the patient sample, for as can be seen in Table 1, only 3 of the subjects were between the ages of 18-29 years, or only 5 subjects had a university education.

In a future research, it would be convenient to analyze with more detail the possible differences between those patients that maintain normal levels of self-esteem

and those that have low positive self-esteem or high negative self-esteem. It would also be of interest to assess why patients with schizophrenia have an unequal valuation before their self-esteem in comparison with subjects from the control group, whom have a more uniform valuation of their self-esteem levels.

The main limits for the study is the sample size of those patients with schizophrenia, as well as the low profile of the present symptoms and the fact that all patients were interned in a Psychosocial Rehabilitation Center. Because of this, the data obtained cannot be generalized before other simples with other characteristics, such as hospitalized patients or those with greater symptomatic levels. In addition, by being a cross study, we must have caution with the relationships found with the specified.

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MINDFULNESS AND COACHING: PROMOTING THE DEVELOPMENT OF PRESENCE AND FULL AWARENESS

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Abstract. Mindfulness and Coaching are two relatively recent disciplines that have developed in parallel during the last decades. More and more coaches are interested in the practice of Mindfulness, both as a technique for their own personal development, as a tool to offer their coachees. Our purpose with the present article is to offer a review of the literature on the possible utilities that the implementation of Mindfulness in the field of Coaching can have. To this end, the information has been organized, initially presenting the essential elements of both disciplines, as well as the similarities and differences between them. Subsequently, the possible utilities of this implementation are raised, with special emphasis on its effect on processes and key competences for the effectiveness of Coaching, such as presence, awareness and the relationship of Coaching. Finally, the conclusions of this work are presented. In short, Mindfulness can contribute to develop in a practical way the competences of presence and conscience that characterize the authentic Coaching. In this way Mindfulness contributes to strengthen the relationship of Coaching, that relationship between the coach and the coachee in which this can feel felt, connect with their own resources and generate the changes that allow them to develop their potential. In this way Mindfulness can be a powerful tool to contribute to the well-being of coaches, as well as that of the coachees and, therefore, that of society as a whole.

Keywords: Mindfulness, Coaching, coaching relationship, presence, embodiment

MINDFULNESS Y COACHING: PROMOVIENDO EL DESARROLLO DE LA PRESENCIA Y LA CONCIENCIA PLENA

Resumen. Mindfulness y Coaching son dos disciplinas relativamente recientes que se han desarrollado de forma paralela durante las últimas décadas. Cada vez son más los coaches que se interesan por la práctica de Mindfulness, tanto como técnica para su propio desarrollo personal, como herramienta para ofrecer a sus coachees. Nuestro propósito con el presente artículo es ofrecer una revisión de la literatura sobre las posibles utilidades que puede tener la implementación de Mindfulness en el ámbito del Coaching. Para ello se ha organizado la información presentando de forma inicial los elementos esenciales de ambas disciplinas, así como las semejanzas y diferencias que mantienen entre sí. Posteriormente se plantean las posibles utilidades de dicha implementación haciendo especial hincapié en su efecto sobre procesos y competencias clave para la eficacia del Coaching, tales como la presencia, la conciencia y la relación de Coaching. Para finalizar, se presentan las conclusiones de este trabajo. En definitiva, Mindfulness puede contribuir a desarrollar de forma práctica las competencias de presencia y conciencia que caracterizan al auténtico Coaching. De esta forma Mindfulness contribuye a fortalecer la relación de Coaching, esa relación entre el coach y el coachee en la que este puede sentirse sentido, conectarse con sus propios recursos y generar los cambios que le permitan desarrollar su potencial. De esta manera Mindfulness puede constituir una poderosa herramienta para contribuir al bienestar de los coaches, así como el de los coachees y, por ende, al de la sociedad en su conjunto.

Palabras clave: Mindfulness, Coaching, relación de coaching, presencia, encarnación

Introduction

Throughout history, the search for a full, healthy and meaningful life has led humans to look within themselves. Numerous disciplines have emerged over the centuries with that same purpose, among them Mindfulness and Coaching. Both are closely related with Psychology and their common goal is to try and contribute to human development and well-being. More and more coaches are interested in the practice of Mindfulness both as a tool for their own personal development, and as a tool to offer their coachees. From our experience, the implementation of the characteristic skills of Mindfulness to the Coaching process has the potential of optimizing the latter's effectiveness by encouraging the coach with the essential skills recognized by the ICF, such as full awareness and presence.

In this regard, Mindfulness is a mental training that teaches us to increase the degree of awareness and presence in our lives, by helping us to learn how to live our lives with greater balance and fulfillment. The interest of western science for this millenary practice has experienced an exponential growth in the last decades. In general, scientific research shows that training in Mindfulness is effective for promoting mental, emotional, physical and social health and well-being both in the general population and in the clinical population (Grossman, 2004; Chiesa & Serreti, 2011; Keng, Smoski &Robins, 2011; Khoury et al., 2015; Carlson 2012). Among the main benefits associated with its practice are an increase in emotional regulation capacity, the strengthening of attention and concentration capacities, and the reduction of stress and discomfort levels (for a review, see Chiesa & Serreti, 2011; Keng, Smoski & Robins, 2011; Khoury et al., 2015). These results have led to Mindfulness having a great impact at a social level. Thus, numerous media outlets around the word, such as *The Economist, Forbes, Harvard Business Review* or *Time*, have echoed what has come to be called the "*Mindfulness Revolution.*"

Meanwhile, Coaching has also experienced a great development as a discipline to promote change and well-being in people and organizations around the world. In recent decades, this development has been reflected in the increase number of programs and interventions of Coaching, the development of scientific research in this area and the emergence of international organizations aimed at regulating ethical and quality standards in the Coaching profession, such as the *International Coach Federation* (ICF).

Our aim in this article is to review the possible benefits of implementing Mindfulness in the context of Coaching. For said purpose, a review of the literature on the topic has been carried out. It has been structured presenting the essential features of both fields, as well as the similarities and differences between them. Subsequently, the possible benefits of said implementation are presented, highlighting its effect on key processes for Coaching effectiveness, such as presence, and the coach-coachee relationship. Finally, the conclusions of this paper are presented at the end.

Methodology

This bibliographical review is mainly based on original articles, books and papers that have been published, and include Mindfulness in the practice of Coaching. The researches were conducted through the following databases: PubMed, Scielo, Ebsco, Medline, Psycarticles and Google Scholar. The following keywords and operators were used: "OR" ("mindfulness" "mindful") "AND" ("Coaching" "Coach" "Coachee" "Coaching relationship"). No annual criteria were established for this search, since our aim was to locate the entirety of publications because of the recent use of Mindfulness in the context of Coaching.

The initial search generated 329 results. In order to conduct the selection, the abstracts were reviewed, as well as the complete papers when necessary. This was done in order to determine whether they were linked to the application of Mindfulness in the context of Coaching or not. Those articles and books that provided information and/or data about this implementation were included, and those that did not were excluded. After filtering the results, selecting those that referred to the contributions of Mindfulness in the context of Coaching as an intervention discipline, six books were discovered, among which five were in English and one in Spanish, as well as five articles, all of them in English.

Results

After analyzing the results, we can say that the 'Mindful revolution' has also reached the context of Coaching. Several studies show that the implementation of Mindfulness in the context of Coaching is effective for enhancing the coach's efficiency to promote change (Spence, Cavanagh & Grant, 2008), authentic leadership (Kinsler, 2014) or physical and mental health (Robins, Holt & McCain, 2014). In order for the reader to understand how both disciplines can interrelate with each other, the information in the 'Results' section has been structured by first identifying the similarities and differences between both disciplines, and subsequently describing the

possible benefits of said implementation for the coach, the coachee, and the relationship between them.

Mindfulness

There is currently an agreement to consider that Mindfulness is much a state, as to say, a trainable skill, such as a trait, understood as a stable and inherent capacity of the human mind (Hervás, Cebolla and Soler, 2016). This trait has been described by all the spiritual and/or religious traditions, and considers that all people, by the mere fact of being human, possess it in an innate way to a greater or lesser extent (García Campayo and Demarzo, 2015). In fact, the components of this Mindfulness trait began to be identified as its research progressed. Some of these are observation, acceptance, the tendency to act with awareness or non-reaction (Hervás, Cebolla and Soler, 2016).

Mindfulness is also conceptualized as a mental training that, through the activation of *"mindful"* states, enables us to develop this mental trait. Research shows that during this training, the practice of Mindfulness states leads practitioners to develop a series of *"mindful"* capabilities or traits (Kiken, Garland, Bluth, Palsson and Gaylord, 2015).

As a practice, Mindfulness has its origin in ancestral traditions that cultivate the observation and training of the mind. It is currently considered one more in the great family of the so-called contemplative practices, which constitute a heterogeneous group of practices, that have been defined as "a type of mental training aimed at enacting a psychological transformation that leads to a state of lasting well-being" (Davidson and Dahl, 2017). Within the wide range of contemplative practices, the most studied by scientific research has been Mindfulness Based Interventions, MBI. As Figure 1 shows, the number of scientific publications on Mindfulness continues to grow exponentially and now exceeds 3,000 publications.

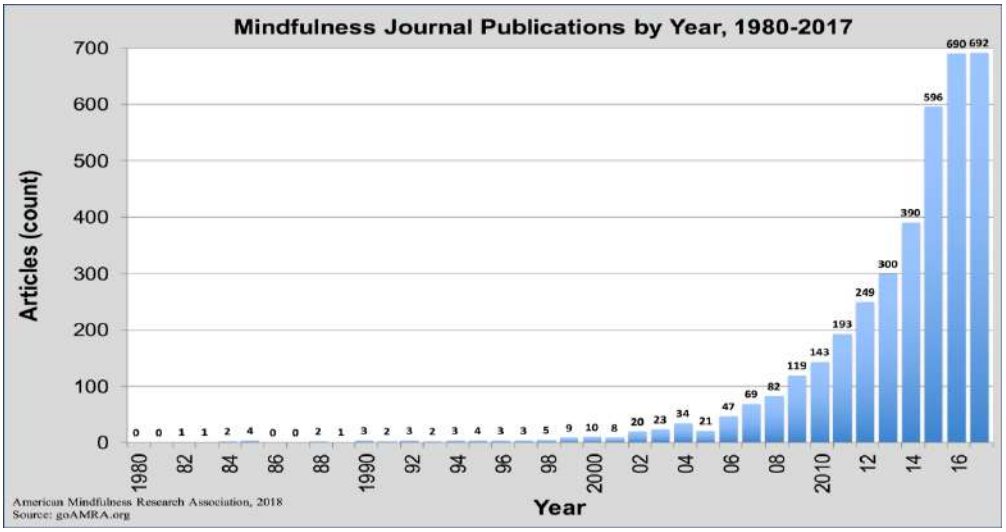

Figure 1. Number of scientific publications using the Mindfulness term as their heading for a given year; data obtained from the ISI Web of Science. Figure used with permission from the American Mindfulness Research Association (www.goAMRA.com).

Coaching

Based on the ICF definition, Coaching is "a reflective and creative accompaniment process with clients, which inspires them to maximize their personal and professional potential". As such, we can define Coaching as "a learning and development process, framed within the respect for ethics and values, during which the client (known as coachee) becomes aware and changes their way of being, feeling and acting based on their objectives and goals". If as a consequence of this process, changes come about in some of the aspects that constitute a person participating in a process, the possibility of carrying out new processes increases, and as such, of creating new results that carry greater personal and professional well-being.

In any case, to carry out this change, Coaching emphasizes the client's responsibility, who is the actual author of it. Coaching is not about teaching but creating a favorable environment for the client to learn, grow and develop.

Nowadays, we are witnessing an exponential growth in Coaching parallel to the *"Mindful revolution"*. Unfortunately, behind everything called as such, a responsible and professional practice isn't always carried out. As such, current efforts are on defining the professional standards of what quality Coaching represents. But the Coaching profession is not currently fully regulated. Therefore, international federations and national and international associations seek to regulate the profession by establishing certain quality standards, defining professional competences and setting a well-established deontological code. In fact, one of the most internationally recognized authors and founder of Performance Consultants International, Sir John Whitmore, warns that *"the bad practices in Coaching carry with them the danger of being misinterpreted and mistakenly perceived and rejected as something neither so different nor so new that, moreover, has not kept its promises."* And that is why he defines this discipline as *¨a way of managing, a way of treating people, a way of thinking, a way of being¨* (Whitmore, 2011). This reflective accompaniment, based on a transforming

conversation that propitiates action and changes in a person, can have its origins in classical Greece,specifically in Maieutics, the method of questions that Socrates put into practice with his disciples. More recently, in his book *"The Inner Game of Tennis"*, Timothy Gallwey –a tennis coach– was the first to discover and reflect that there was a struggle between technique and mind within each player. That *"inner game"* was key to releasing their potential and improving results.

Whether from classical Greece philosophy or from Gallwey's work, it is really the 80's that catapults Coaching and turns it into a methodology with its own identity as we know it today. A methodology that, according to authors and schools, is influenced by Humanist Psychology, Systemic Thinking, Neuro-linguistic Programming, Emotional Intelligence, Neuroscience and, of course, Mindfulness.

The impact of Coaching has exponentially grown in the organizational field, with the invaluable contribution of Whitmore in Leadership, in the sports field through Gallwey, and in the personal development field, in what is called *Life Coaching*, with the work of Thomas Leonard in the United States (2009).

Scientific research in Coaching may be considered incipient, especially when compared to research in Mindfulness. A review of the scientific studies that have been carried out to verify the effectiveness of coaching as an intervention show us that it is effective in promoting well-being and performance, both at an organizational and personal level (Grant, Passmore, Cavanagh & Parker, 2010). Although these evidences are promising, the scientific study in Coaching is still in developing stages. The existence of different schools and movements is one of the main obstacles in this area, it limits the possibilities of standardizing the procedure. In any case, and despite its areas in need of improvement, Coaching still has a lot of potential that can be applied and developed. To quote Whitmore: *"In order to obtain the best of someone, we must first believe that perfection exists"* (Whitmore, 2011).

Link between Mindfulness and Coaching

It is, to an extent, natural to apply Mindfulness to the field of Coaching. More and more coaches are becoming aware of the close relationship between Mindfulness and Coaching. According to Aboodi Shabi, an international expert in Coaching and Leadership, Mindfulness contributes to well-being and satisfaction since it teaches us to appreciate our life differently, to live it meaningfully, and to know who we are and what we do. For this author, there are several strings that connect both disciplines, such as curiosity, acceptance, values or taking perspective (Hall, 2013). This is because the two approaches share common characteristics that vouch for their complementarity. For example, both Mindfulness and Coaching:

- Address the growth and development of human potential.
- Promote personal development and change through customer awareness and responsibility.
- Conceive the human being as an integral whole composed by the interaction of all their dimensions.
- Consider respecting quality and ethical standards as essential.
- Require having been previously experienced on a personal level in order to be properly implemented in other people.

- Lastly, both disciplines recognize open-mindedness, acceptance, curiosity, mental clarity, presence or authenticity as essential skills.

On the other hand, Mindfulness and Coaching differ in some fundamental aspects that need to be pointed out (Hall, 2013). Understanding these differentiating characteristics can contribute to the comprehension of the complementarity of both approaches. As seen in Table 1, the main difference lies in that Coaching emphasizes the promotion of change as a long-term approach, whereas Mindfulness promotes the unconditional acceptance of the present moment.

These connotations can be grouped around two central concepts in Mindfulness: ¨*doing mode*¨ and ¨*being mode*¨ (Segal, Williams and Teasdale, 2002). The first one would be characteristic of Coaching, while the second is more of a reflection of Mindfulness. Both are described below:

The "***doing mode***" is characterized by:

- Being oriented to the attainment of a certain result or objective.
- Generating a continuous state of judgment, since it is in the mind where analyzing the discrepancies between the current state and the desired state is centered, between how things are and how we would like them to be.
- Promoting a state of mind characterized by attention to the past and/or future, by which the ability to perceive the present is reduced.

On the other hand, ***"being mode"*** is characterized by:

- Oriented to being or to living in close contact with the present moment, with presence and consciousness. Without having to do anything, or achieving anything, or getting rid of anything in order to be at peace here and now.
- Generating a state of compassionate and calm acceptance, in which it is not necessary to judge continuously.
- Promoting a state of mind characterized by open-mindedness in the present.

Activating an operating mode characterized by Mindfulness, in which we can respond to the situation in an adaptive and appropriate way, without having to react based on our stereotyped automatic patterns.

Table 1
Distinguishing Characteristics between Mindfulness and Coaching

	MINDFULNESS	COACHING
MODE	BEING	Doing
MAIN ATTITUDE	ACCEPTANCE	Change
FOCUS	In the present	In the future

Note: Adaptation from González-García, M. (2018)

It is possible that after reviewing the differences between these modes, and therefore between Mindfulness and Coaching, the combination of both techniques may be contradictory. Despite this, we observe in our professional practice that it is precisely because of these differences that Mindfulness can optimize the coaching process's

effectiveness. For example, it is possible that the orientation towards the attainment of results or objectives that take us from the current state to a desired future state, may constitute an impediment for the accompaniment process itself, since it may position both the coach and the coachee in a state of non-acceptance or struggle. Sticking to the results or fighting against the present reality can make the coach rush into action and overlook key information that can help facilitate change in the coachee. In contrast, the present focus of Mindfulness enables us to accept whatever is happening right now with equanimity. Although it may be paradoxical, it is only from this radical acceptance that real change can emerge. This phenomenon was described thousands of years ago in the following Buddhist proverb "what is resisted, what remains and what you accept is transformed" and was confirmed hundreds of years later by Western Psychology thanks to psychotherapists such as Carl Rogers (1951). In fact, it is the essential part of the current *third-generation psychological therapies* (Hayes, 2004). Acceptance enables deactivating the fighting and avoidance reactions which rise human suffering, and which are present in most of the psychopathological disorders. And it is precisely through acceptance that Mindfulness promotes change.

In fact, the "Being mode" is the necessary precondition for developing the presence state which characterizes a real Coaching session. And it is acceptance what opens us to a mental state characterized by the breadth of perspectives and lets us remain calm during difficulties. Other Coaching essential competences recognized by the ICF can be developed with Mindfulness. For example, the art of making suitable questions lies in the capacity for being able to remain silent while calm, to keeping our minds open, because it is where the ability of active listening lies. This capacity of remaining silent, keeping calm in the face of uncertainty and maintaining our resource state is one of the main benefits associated with practicing Mindfulness.

Usefulness in applying Mindfulness in Coaching

A review study about the contributions of Mindfulness to Coaching carried out by Passmore and Marianetti (2013) concludes that Mindfulness training can help coaches in 4 key areas:

- Being prepared for the Coaching session: practicing Mindfulness helps to manage stress properly and mentally prepare us to give our best in the session with the client.
- Keeping focus on the session: this training helps us to focus on the session and to keep the necessary concentration to perform the session optimally.
- Effectively managing emotions: practicing Mindfulness strengthens the capacity of becoming aware of our emotions, both the ones that emerge during the session and outside it and managing them effectively, without identifying ourselves with them.
- Transmitting Mindfulness to coaches: both explicitly, through teaching Mindfulness skills and exercises, and implicitly through our actions.

In addition to these areas, Michael Chaskalson, coach and Mindfulness instructor and author of the book "*The Mindful Workplace*" (2011), highlights that Mindfulness specifically prepares us for creating the environment and developing the necessary empathy for providing the transformation and change in our clients. And this type of training allows us to recognize and value who we are and, from there, appreciate

other people in an authentic way. In his research, he has shown that Mindfulness is an effective training for developing leadership skills (Reitz, Chaskalson and Waller 2016).

Moreover, Liz Hall thinks that Coaching gives people the possibility of discovering new opportunities, with Mindfulness being the way to achieving these opportunities (Hall, 2013).

From our point of view, the application of Mindfulness in the field of Coaching can be classified by taking as reference Christopher Germer's (2013) model that initially proposed for the application of Mindfulness in the field of psychotherapy. This author claims that the application of Mindfulness can be carried out in, at least, three different ways in a continuum ranging from the most implicit to the most explicit level (figure 2).

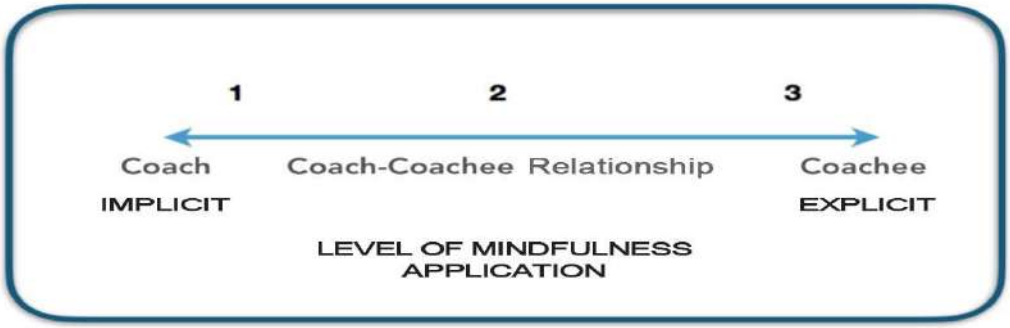

Figure 2. Possible levels of implementation of Mindfulness to Coaching

Level 1: the level at which Mindfulness is applied in the most implicit way. In this level, this training is used as a personal practice for the coach, with the aim of increasing the coach's abilities to be present during the session, in tune with himself and with the client, as well as to develop his or her abilities of attention, openness, self-awareness, self-regulation and self-care.

Level 2: Mindfulness is used here in addition with the Coaching process itself, although the client is not taught explicitly, but implicitly to promote the coach-coachee relationship. Mindfulness attitudes are applied, such as acceptance, equanimity or compassion to guide the work of accompaniment during the session.

Level 3: it is the most explicit level. In this level, the client is taught Mindfulness explicitly by the coach, using one more coaching tools, both in the session itself and outside it, as tasks to be assigned to the coachee between sessions.

The benefits associated with implementing Mindfulness at each of these levels are described below in detail.

Mindfulness for the coach

As shown in the introduction to the present work, several studies show that the practice of Mindfulness in the coach enhances the effectiveness of encouraging change in the coachee. Liz Hall, editor of the magazine "*Coaching at Work*", was one of the first coaches to be interested in the contribution of Mindfulness to Coaching. In 2012, this author carried out the first international survey about the use of Mindfulness in Coaching. 153 coaches from countries such as Spain, United Kingdom, Sweden, Germany, United States and India participated in the survey. The results showed that practicing Mindfulness helps coaches to increase their capacity for self-awareness, be

more present, be more creative, as well as manage stress, be more able to maintain a systemic outlook, be more open to possibilities, be more in tune with our clients, judge less and be more compassionate (Hall, 2013).

Mindfulness for the coach-coachee relationship

In recent years, the importance of studying the underlying processes of Coaching has been recognized, such as the Coaching relationship (Correia, dos Santos & Passmore 2016). In fact, the quality of the relationship between the coach and the coachee is the factor that has been most consistently associated with the success of the coaching process (De Haan, 2008a & 2008b). These results are in line with those obtained in the field of psychotherapy. Several studies show that the final therapeutic outcome depends more on the quality of the relationship between the client and the therapist than on the specific techniques or therapies used (Duncan & Moynihan, 1994, Lambert & Ogles, 2004, Lambert & Simon, 2008, Norcross, 2002, 2011). In fact, the key ingredient for the therapeutic relationship is currently considered to be the therapeutic presence (Geller & Greenberg, 2012; Hayes & Vinca, 2011; Pos, Geller, & Oghene, 2011). Taking the work of these authors as reference, we can define the presence in the context of Coaching as "*the ability of the coach to be fully present and attuned to their own body and with the coachee on a physical, emotional cognitive and spiritual level*" (González-García, 2018). We must keep in mind that Coaching is not a form of therapy, but a companion, which is a fundamental difference between this discipline and psychotherapy; both disciplines have the common requirement for the professional to develop this type of presence so as to generate the necessary environment to promote change. On the other hand, as has already been suggested in the field of Mindfulness (González-García López, 2017), we propose here that this type of relationship between the coach and the coachee manifests from the coach's embodiment. This concept refers to the coach's capacity to embody the competences and ethics of coaching and transmit it through their actions, gestures and speech throughout the accompaniment process. This type of transmission can be achieved through the personal practice of Mindfulness. Within this same line, it has recently been suggested that the practice of Mindfulness empowers the coach's ability to be present for his clients, so that they can feel fully seen and heard in a context in which their unique experience as individuals is accepted without judgement (Chaskalson, 2011, p.116). In this way, Mindfulness is considered to strengthen the alliance between the coach and coachee (Kemp, 2011).

Mindfulness for the coachee

As has been shown so far, Mindfulness practice in the coach directly contributes to the effectiveness of the coaching process. Besides that, if Mindfulness is explicitly used in a session to teach the technique to the coachee, the beneficial effects could be enhanced. In the aforementioned survey by Liz Hall, 83% of the coaches surveyed used Mindfulness with their clients. The main reasons for doing so included increasing self-awareness, managing stress and reactions, generating focus, clarity and well-being, promoting greater alignment with their values, and developing emotional intelligence (Hall, 2013).

To finalize this section, we want to emphasize that the fundamental prerequisite to be able to apply Mindfulness effectively to the coaching process resides in the coach's own personal practice (González-García, 2018). This is because unlike other techniques, as in Coaching, Mindfulness cannot be taught if it has not been previously experienced on a personal level. Otherwise, the ability to follow and guide others in

their practice will be seriously limited. In addition to this, the Mindfulness technique will be distorted. And there are no shortcuts that help us avoid working with our own mind.

Conclusions

Our aim in this article is to review the possible benefits of implementing Mindfulness within the context of Coaching. To this end, a review of the existing literature on the subject has been carried out and structured presenting the usefulness that this application can have for the Coach, for the Coaching relationship, and for the Coachee. In short, the adaptation of Mindfulness to this field could provide the necessary training for the coach to be able to develop and transmit, in a practical way, the competences of presence and consciousness that enable him or her to do real Coaching. This will generate the kind of relationship with the coachee in which they can feel meaningful and learn to connect with themselves in a more constructive way, trusting in their own strengths, connecting with their own resources and generating the changes that enable them to develop their potential. This type of transmission can be achieved through adequate Mindfulness training, which enables the coach to develop his or her own consciousness and transmit this full presence at a level beyond the conceptualized, in an embodied, active and vivid way while interacting with the coachee. Therefore, through Mindfulness, to train the consciousness in the current moment is not only done so to intentionally create a state, but to develop an enduring feature in our lives (Siegel, 2010).

As we have elaborated in this work, one of the main aspects in common between Mindfulness and Coaching is that both disciplines promote change through the client's awareness and own responsibility. Likewise, both require having previously experienced it on a personal level in order to properly implement it in other people. Any person who applies coaching from a professional point of view needs to first apply coaching in their life, carrying out a process of introspection, learning and openness towards new ways of being, doing and thinking. In addition to an ethical and deontological commitment, one of the key competences of any coach is to work on one's own personal development in order to be able to accompany other people in the pursuit of their own objectives and the development of their own potential. In this way, when we talk about Mindfulness and its benefits, we should also first see in ourselves the effects of being aware in the current moment. On the other hand, the fundamental difference between Coaching and Mindfulness is that the former strengthens the way of doing, and the latter the way of being. According to our experience, when it comes to creating awareness and presence in a Coaching session, we work within the context of way of being. As defined by Ya Whitmore (2010): *"a way of managing, of treating people, of thinking, of being"*. In other words, he already anticipated the fact that there is a part of the coach that already is, and so develops his or herself in the way of being. Only then can presence emerge.

Presence in Coaching has been taken up by the ICF as Competence 4 and defined as: "The ability to have full awareness and to create spontaneous Coaching relationships with the client, using an open and flexible style that demonstrates security and trust". Based on our experience, and unlike what happens with other skills, this can only be acquired from training in the way of being, and not only from a cognitive perspective. On the other hand, one of the main deficiencies in many Coaching trainings

is the absence of practical strategies to develop essential competences recognized by the ICF, such as being in the moment or creating awareness. The adaptation of Mindfulness to this field can indeed generate the necessary training for the coach to be able to properly develop the skills that enable him or her to do authentic Coaching.

In line with the definition of Mindfulness provided by Silsbee (2010), which concludes that Mindfulness is *a path towards Presence* in our experience, the practice of Mindfulness leads us to develop that state of presence, where we renounce the ego and judgments, and focus on the present moment, "dancing" with the client and being available to them during the session. Being present requires tolerating the uncertainty of not knowing what will happen in the session, opening ourselves to ambiguity, vulnerability and assuming that the client is the only one who knows, and that our role as companions requires us to be open to any possibility, abandoning the security we seek in many aspects of our personal and professional lives.

Through the practice of Mindfulness, we obtain direct knowledge of how our mind works, and how to learn to manage it. This learning allows us to learn to take greater responsibility in our lives and can be an invaluable tool to our well-being as coaches learning to manage the difficulties that arise in the coaching process.

In short, and in our experience, the practice of Mindfulness during the coaching session puts an end to the dualism between the way of being and the way of doing, because it complements and improves the way of doing coaching, with the way of being of Mindfulness. We must not forget that, contrary to what many think, Mindfulness does not only move within the way of being, but improves decision making and the step to the action from a state of greater clarity and well-being. In conclusion, the implementation of Mindfulness in the field of coaching can contribute in creating the necessary awareness to build a scenario in which we all gain in well-being: the coach, the coachee and society as a whole.

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DEPRESSION IN MEN AND ITS RELATION TO THE TRADIONAL MALE IDEOLOGY AND ALEXITHYMIA

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Abstract. The aim of this research was to see if there is a direct relationship between the levels of depression in men and the presence of a traditional male ideology. The demands of the traditional male role today continue to suppress what is related to emotional expression, stressing the importance of being strong and not needing help. That is why such mental illnesses as depression are affected by traditional masculinity and a high cognitive rigidity expressed in beliefs about gender roles. The presence of alexithymia and its relation to traditional male ideology and depression has also been analysed. To this end, the Male Role Standards Scale, the Beck Depression Inventory (BDI-II) and the Toronto Alexithymia Scale (TAS-20) were administered to 50 men over the age of 25 in the general population. This is a correlational study in which the baseline hypothesis was that the levels of depression and the score in the TAS-20 correlated directly with the scores obtained in the Male Role Standards Scale. The results showed that there is a relationship between a factor of traditional male ideology and depression, mediated by alexithymia.

Key words: Depression, alexithymia, gender roles, male depression, male health.

DEPRESIÓN EN HOMBRES Y SU RELACIÓN CON LA IDEOLOGÍA MASCULINA TRADICIONAL Y LA ALEXITIMIA

Resumen. El objetivo de esta investigación era ver si existe una relación directa entre los niveles de depresión en hombres y la presencia de una ideología masculina tradicional. Las exigencias del rol masculino tradicional en la sociedad actual siguen suprimiendo lo relacionado con la expresión emocional y recalcando la importancia de ser fuerte y no necesitar ayuda. Es por eso por lo que enfermedades mentales como la depresión se vean afectadas por una masculinidad tradicional y una alta rigidez cognitiva expresada en creencias sobre los roles de género. También se ha analizado la presencia de alexitimia y su relación con la ideología masculina tradicional y la depresión. Para ello, se administraron la Escala de Normas de Rol Masculino (ENRM), el Inventario de Depresión de Beck (BDI-II) y la Escala de Alexitimia de Toronto (TAS-20) a 50 hombres mayores de 25 dentro de la población general. Se trata de un estudio correlacional en el que la hipótesis de partida era que los niveles de depresión y la

puntuación en el TAS-20 correlacionarían de forma directa con las puntuaciones obtenidas en la ENRM. Los resultados muestran que existe una relación entre un factor de la ideología masculina tradicional y la depresión, mediada por la alexitimia.

Palabras clave: Depresión, alexitimia, roles de género, depresión masculina, salud masculina.

Introduction

Depression, gender roles and alexithymia are the focus of this research. Therefore, it is important to establish a frame of reference for these concepts.

Depression

The definition of depression, or the different depressive disorders, depends on the categorization of its symptoms and their severity, by which the classification varies from handbook to handbook. In general, the World Health Organization (WHO) (2018) defines depression as a common mental disorder that presents such symptoms as sadness, loss of interest or pleasure, feelings of guilt, low self-esteem, disturbed sleep or appetite, as well as fatigue and concentration problems.

Depressive disorders often show comorbidity with other illnesses, both mental and physiological. Therefore, depression can not only be the cause of these disorders, but also a consequence of them (Bastidas-Bilbao, 2014). Affective disorders can be difficult to diagnose due to the variability of their symptoms and the fact that they are often similar to those of other physiological illnesses. In addition, there are no biological, biochemical, or brain morphology markers to help make an unequivocal diagnosis of depression (Mitjans & Arias, 2012)

In 2006 a prediction was made that by 2030 depression would be among the top three causes of disability worldwide. (Mathers & Loncar, 2006). However, according to WHO (2018), it is already considered the leading cause, despite being more than a decade away from the estimated dated, affecting around 300 million people worldwide. Although the percentages vary in different studies, it has been observed that the percentages based on gender are always similar, with more women than men suffering from depression (Cardila Fernández, et al., 2015). It has also been found that a person is more likely to suffer depression than any other type of mental disorder. The annual percentage in primary care was between 9.6% and 20.2%. There is such a large difference because the figure varies depending on the type of depressive disorder and the evaluation methodology used (Vindel, Salguero, Wood, Dongil & Latorre, 2012).

Disorders that make up the diagnostic group of depressive disorders in the DSM-V (2013) include: major depressive disorder, persistent depressive disorder (dysthymia), substance/medication-induced depressive disorder, depressive disorder due to another medical condition, and specified and unspecified depressive disorder. Of all of them, the most common is the major depressive disorder, which would coincide in symptomatology and duration with the definition given by the WHO. The DMS-V also includes disruptive mood dysregulation disorder and premenstrual dysphoric disorder, with the former occurring in children under 10 and the latter only in women. This manual makes a distinction between normal sadness and suffering, which is present especially after events or situations in which feelings of sadness are considered normal, but the sadness and suffering are presented as a major depressive disorder.

As previously mentioned, major depressive disorder is one of the most characteristic among the group of depressive disorders. It is characterized by a depressed mood, decrease/loss of interest or pleasure in most activities; marked weight gain or loss, as well as a lack or increase of appetite; sleep problems such as insomnia or, on the contrary, hypersomnia; tiredness; psychomotor restlessness; problems focusing; feelings of guilt and uselessness, and suicidal ideations. Diagnosis is complicated, especially when the individual suffers from other medical conditions. There are also cases in which the individual denies the existence of symptoms like sadness, or present somatic complaints instead of feeling sadness (APA, 2013). In Europe, the major depressive disorder's prevalence is estimated at being around 6.9%, affecting around 30 million people in 2011, almost 12 million people more than in 2005 (Wittchen, et al., 2011).

The current literature indicates that, besides gender-related differences in depression prevalence (de Graaf, ten Have, van Gool & van Dorssealaer, 2012), there are also differences concerning symptoms, the search for professional aid and the availability and use of services for treating it. Vázquez-Machado (2013) notes that many authors agree that men and women experience depression differently, since women express emotional symptoms more easily and therefore seek more professional aid. On the contrary, it is more difficult for men to express said symptoms, leading to a higher somatization of them and, therefore, instead of seeking professional aid in the field of mental health, men tend to visit general physicians. Another aspect the author notes is that depressed men also have substance abuse problems in many cases, which makes depression symptoms go unnoticed, therefore leading to an underdiagnosis of depression in men. The same thing is reflected in a study by Schuch et al., (2014) where men present almost twice the possibility of suffering from alcohol dependence or abuse.

Some studies have shown that, concerning symptomatology, men note feeling higher levels of sadness, but lower mood reactivity than women. Almost twice as many men, compared to women, present a type of sadness that they point out to be different from the one usually associated with feelings of sorrow or loss (melancholy). Furthermore, women present higher levels of guilt and feeling of uselessness than men and tend to suffer from insomnia and weight gain. (Schuch, et al., 2014). There is also evidence that points to the existence of a greater difference of depression between men and women in those cases with greater gender role differentiation (Bromet, et al., 2011).

In terms of the use of mental health services and care in Europe, women tend to visit general practitioners more (contrary to what Velázquez-Machado points out in his review) than to mental health specialists. But even so, women's use of mental health services is greater than that of men. (Kovess-Masfety, et al., 2014).

Gender roles

Gender roles are a set of skills and ways of behaving that are accepted by society according to whether a person is born male or female. (Marcia Lees & Johnson Black, 2017). A role entails a certain status and, therefore, a series of explicit and implicit norms of behavior by which to be governed. In the case of gender differentiation, there is therefore a differentiation of roles and expected behaviors. Men are expected to take on the role of provider, decision-maker and manager. However, in the twentieth century there have been several changes in gender roles, the most important being the incorporation of women into the labor market and all that this implies (Lindsey, 2015). This incorporation of women, however, does not imply the disappearance of gender

roles and their consequences. It is important to take into account the influence of these roles, since they are manifested in numerous aspects of daily life, specifically in the patterns of upbringing and punishment (Matud & Aguilera, 2009) and may condition behavior in adulthood. This generates contradictory male ideologies that have been shown to have a negative effect on men's well-being (Guvensel, Dixon, Chang & Dew, 2018). The fact of socially adhering to a gender role poses numerous challenges, and on many occasions, men encounter difficulties as a consequence of wanting to comply with the firmness and invulnerability that is expected of their own role.

It is important to bear in mind that gender role may imply an optimal state of health or, on the contrary, the development of a pathology (Matud & Aguilera, 2009). In fact, suicide, closely linked to mental health, affects each gender differently, with female suicide being associated with an emotional motive, and male suicide with economic motives (Tondo, 2014). Considering that each sexual role is assigned a social role by which one has to behave and govern one's life, it is possible that leaving one's own marked role may lead to mismatches, or perhaps, on the contrary, positive effects. Ultimately, it is sometimes assumed that men's upbringing patterns are adequate and beneficial, and that the problem concerns the type of education given to women, when in fact it is definitely a mixture of two upbringing styles that do not benefit either gender.

The male role has to be taken into account as it involves certain general disadvantages that affect how a man lives his own emotional life and, therefore, how they live with depression. Men come under special pressure when they deviate from the model that has been created for them, which includes a display of masculinity, the role of provider and protector among others. On top of that, there is no plentiful economic and social resources for men who are going through times of weakness or vulnerability. Other aspects also include being strong, brave, rational and competitive (Rosado Millán, Gracía García, Alfeo Álvarez & Rodríguez Rosado, 2015). Emotional suppression is commonly seen as a factor in depressed men who rigidly play a traditional male role (Rice, Fallon, Aucote, & Möller-Leimkühler, 2013). This is why paid work is an important part of male self-concept and identity.

Gender roles are currently being questioned and gradually undergoing changes in a society that demands equal rights for both men and women. Since the beginning of the 20th century, the status in relation to gender has been diminishing in its differentiations, with greater emotional regulation for both (Holmes, 2015). In fact, the very conception of gender has been changing, with the existence of non-binary genders and diverse sexual conditions increasingly accepted socially. However, gender roles still have implications, and one continues to live up to them in most cases, having the power to influence most of the everyday aspects of today's culture (Mac an Ghaill & Haywood, 2012).

Alexithymia

Alexithymia consists of a difficulty in identifying, processing and describing emotional processes, as well as distinguishing these from physical states (Eastabrook, Lanteigne & Hollenstein, 2013). This phenomenon is estimated to occur in 8-10% of men and approximately 1.8% of women (Alonso-Fernandez, 2011). This is expressed through four cognitive-affective dimensions: 1) Difficulty in identifying and describing feelings; 2) Difficulty in distinguishing between feelings and corporal sensations of emotional activation; 3) Reduction or absence of symbolic thinking; and 4) A cognitive style aimed at the external and concrete (Arancibia & Behar, 2015).

Alonso-Fernandez (2011) points out that men suffer from it in greater measure than women, and that women are less extroverted than those men who suffer from it. Alexithymia is also associated with lesser expressions of negative emotions, low empathy and has come to be associated with low levels of positive affection (Moral de la Rubia & Ramos Basurto, 2015). It is not considered a diagnostic category and does not appear in any manual as a disorder or condition at present. In any case, it would fall under a set of characteristics of thoughts and feelings, often linked to numerous psychiatric pathologies (Günther, Matthes, Kersting & Egloff, 2016).

Regarding the relationship between alexithymia and depression, several stands that have changed over time can be observed. López-Ibor Aliño (1972) maintains that the characteristics of alexithymia coincide with several manifestations of depression. Fisch (1989) points out that alexithymia is presented in a comorbid manner along with depression, and that it masks itself through somatic symptoms, while Taylor et al. (1990) maintains that it is an independent concept and different from depression itself. However, more current research shows alexithymia to be a stable personality trait in patients who suffer from depression and that alexithymia itself could pose a risk factor for the development of depression (Carranza, 2014). Alexithymia has been observed to increase both depression and anxiety, stress, and the onset of negative emotions, resulting in other mental illnesses (Nekouei, Doost, Yousefy, Manshaee & Sadeghei, 2014). Concerning the correlation between the severity of the depression and alexithymia, this presents variations depending on the type of instrument used for its measurement, since in those cases where self-reports are used, the subject's responses are similar among the different instruments (Li, Zhang, Guo & Zhang, 2015). With this in mind, it's been observed that the higher the levels of alexithymia, the more severe the symptoms of anxiety and depression are; and the effectiveness of antidepressants diminishes (Behar & Arancibia, 2015).

Another aspect to consider is the level of influence that gender roles can have on the development and the endurance of alexithymia itself. The possibility of one's own cultural influence should not be dismissed, since a culture that encourages the role of caregivers in women may be partly responsible for the lack of detecting internal emotions in them (Moral de la Rubia, 2005). Men who have grown up and socialized under a traditional male ideology have higher levels of alexithymia, higher also than women's levels of it (Levant, et al., 2009).

Method

Participants

The participants of this study were 50 males aged 25 and over, from the communities of Cantabria, Andalucía and Oviedo, and formed a non-probability convenience sampling. It was also a study carried out by snowball sampling, since the questionnaires were made through the Google Forms tool and were to several parts of Spain. Participation was completely voluntary, and participants did not receive any financial remuneration or compensation for participating. The only selection criteria that were established were age and gender, since only male participation over 25 years of age was required. The average age was 40.2, with a maximum of 58 and a minimum of 25, with a range of 33 and a standard deviation of 10.46 years.

In Table 1, we can see the distribution of frequencies in the sample's age, as well as civil state, where we can see that a great number of participants were educated singles.

Table 1
Sample Description

Variables		Frequency	Percentage
Civil S.	Single	25	50.0
	Domestic partner	11	22.0
	Married	14	28.0
Educational Level	Primary S.	7	14.0
	Secondary S.	18	36.0
	University	25	50.0

Instruments

Beck Depression Inventory (BDI-II). To carry out this research, the Spanish version of the inventory originally created by Beck, Steer and Brown (1996) was chosen, which is one of the most used trials in Spain by psychologists for diagnosing the depression levels in a person (Muñiz & Fernández-Hermida, 2010). BDI-II is a 21-item self-report in which each item touches upon different symptoms related to depression, such as irritability and hunger, in which the person must choose a response between four alternatives in accordance with how they have felt over the last two weeks. In the Spanish adaptation made by Sanz et *al.* (2003), some results were found in other studies carried out in the general populations of different countries, getting a total score between 0 and 43. In the same study, a factorial analysis was carried out with the 21 items in which four of them showed values greater than 1, explaining a variance of 29.4%, while the rest of the factors presented very small values.

Male Role Norms Scale (MRNS). In this study, a Spanish adaptation of the original Male Role Norms Scale created by Thompson and Pleck in (1986) was used. In this study, a 3-factor analysis was carried out, where the reliability coefficients for the first one was an alpha coefficient of 87, 85, for the second one, and 80 for the third one (Matínez, Paterna, López and Velandrino, 2010). The test calculates the traditional male ideology variable. To this effect, the scale was based on 24 statements, which the subject had to answer based on how much they agreed, from 1 to 6. These 24 statements are divided into 3 factors: beliefs and rules related to status, rules related to strength, and anti-femininity rules. The first one refers to the beliefs related to job and professional success and respect; the second one refers to both physical, emotional and mental strength, as well as independence and self-sufficiency; and the third one refers to attitudes toward emotions, behaviors and tasks traditionally assigned to women.

Toronto Alexithymia Scale (TAS-20). Created by Bagby, Taylor and Parker and translated into Spanish by Martínez-Sánchez et *al*., (1999), it is a single-factor scale composed of 20 Likert items, with the subject responding according to their degree of agreement from 0 to 6. Taylor et *al*. (1994) defined the Alexithymia construct as the difficulty to identify, and therefore to describe our own feelings and the bodily sensations produced by emotions, which limits the imagination and so affects the complexity of fantasies. They also defined it as a cognitive style where the subject was more oriented to the external. In order to verify its validity and reliability, Moral de la Rubia and Retamales (2014) carried out a correlation study with two other scales which measure the same Alexithymia construct, the SAT-9 and the BFQ. They found that the internal consistency in the Spanish sample was between 78 to .83, with a reliability of .81

Procedure

In order to test the initial hypothesis, levels of depression, alexithymia and the higher or lower presence of a traditional masculine ideology were analyzed. The BDI-II, the MRNS and the TAS-20 were distributed for said purpose using Google Forms, where these three were introduced without making any modification to the items and with the option of answering anonymously. At the beginning of the form, a section with all the information about the research, its purpose, its anonymity and its voluntary nature and the possibility of withdrawing from it without any repercussion to the subject, were all included in the consent form. Subjects received no compensation at all for completing the survey. This study has been approved by the Ethics Committee of the European University of the Atlantic.

Social networks such as Facebook or Instagram and instant messaging tools such as WhatsApp were used to distribute this form. This is because subjects were encouraged to spread the form to contacts who met the required characteristics to be part of the study. Once the number of 50 subjects was reached, access to the form was closed and the database with the subjects' responses was downloaded for further statistical analysis.

Data analysis

A descriptive analysis of the sample was carried out, obtaining an age average and frequencies in terms of marital status and educational level (Table 1). Cronbach's alpha was used to measure the reliability of the instruments in use and their factors. In order to carry out an analysis of the data obtained through the different tests, the Pearson Correlation Coefficient was used with the total BDI-II score, the total TAS-20 score and the different factors of the MRNS, together with the age. ANOVA was then used for marital status and educational level. After verifying the results of this analysis, a mediation analysis between the variables Hardness, Depression and Alexithymia was carried out (hardness being the independent variable, depression the dependent variable, and alexithymia the mediating variable) through regression coefficients, in order to know the variance percentage explained in the depression variable as a function of hardness and alexithymia, given that hardness is the only factor that showed correlations with both the BDI-II's total score and the TAS-20's total score.

Results

After carrying out the correlational analysis of the measured variables, it was discovered that there was no significant correlation between the socio-demographic variables and the rest of the measured variables.

Various correlations were found between the rest of the variables (Table 2), such as the BDI-II (Depression levels) and Hardness variable, which presented a significant correlation. The same was found for the BDI-II and TAS-20 scores, as well as the statistically significant correlations between the total TAS-20 scores and all the factors that make up the MRNS and its total score. However, no significant correlation has been found between the depression levels that were measured with the BDI-II and the total MRNS result.

Table 2
Correlation of Variables

		BDI-II	Status	Hardness	Anti-femininity	MRNS	TAS-20	Age	Civil State	Level of Education
BDI-II	Correlation of Pearson	1	.119	.438**	.189	.240	.493**	-.166	-.208	.006
	Sig. (bilateral)		.411	.001	.189	.093	.000	.249	.147	.968
Status		.119	1	.594**	.585**	.933**	.384**	.250	.215	-.277
		.411		.000	.000	.000	.006	.080	.134	.052
Hardness		.438**	.594**	1	.676**	.810**	.509**	-.062	-.078	.015
		.001	.000		.000	.000	.000	.670	.588	.917
Anti-femininity		.189	.585**	.676**	1	.794**	.447**	.078	.125	-.036
		.189	.000	.000		.000	.001	.590	.388	.802
MRNS		.240	.933**	.810**	.794**	1	.488**	.159	.144	-.179
		.093	.000	.000	.000		.000	.269	.319	.214
TAS-20		.493**	.384**	.509**	.447**	.488**	1	.016	-.038	-.074
		.000	.006	.000	.001	.000		.910	.795	.610
Age		-.166	.250	-.062	.078	.159	.016	1	.533**	-.342*
		.249	.080	.670	.590	.269	.910		.000	.015
Civil State	ANOVA from a sig.	1.471	2.226	.157	.825	1.087	.082	9.812**	1	1.347
	factor	.240	.119	.855	.443	.346	.921	.000		.270
Leve lof		.239	3.125	.829	.108	1.728	.421	3.142	1.347	1
Education		.788	.053	.443	.898	.189	.659	.052	.270	

Since one of the factors of this scale (hardness) correlates significantly with depression levels and alexithymia levels, a mediation analysis was carried out between these three variables in order to better understand the existing correlative relationships. The results show that there is a significant mediation effect. When alexithymia is introduced into the model, the relationship between hardness and depression loses its significance (direct effect), and the indirect effect is significant (Figure 1). Therefore, although this research design is transversal, and no causal relationships can be established, we can conclude that alexithymia is positive and significantly associated with hardness, and that depression is explained by the degree of alexithymia, not by hardness.

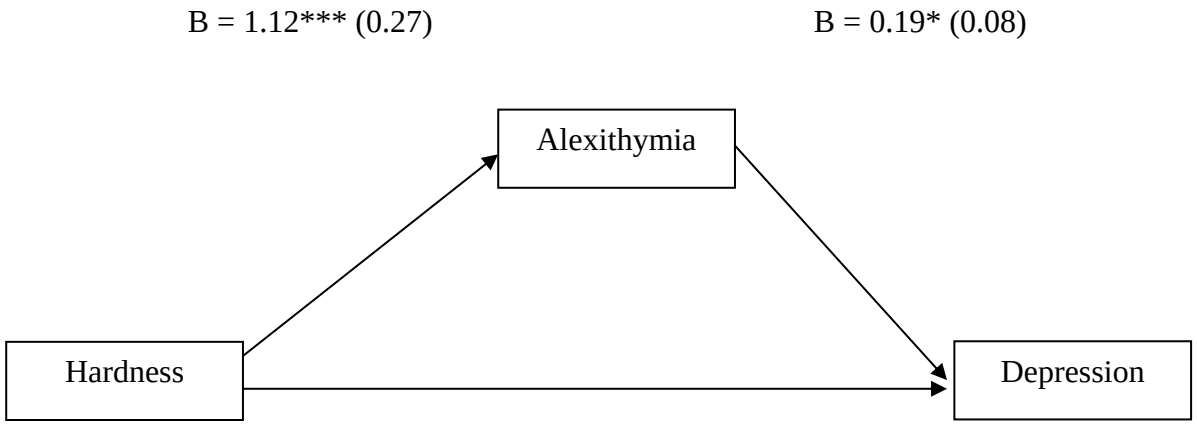

Figure 1. Diagram explaining the mediation produced by alexithymia between the variables of Hardness and Depression

Note: **. The correlation is significant at level 0.01 (2 lines); *. The correlation is significant at level 0.05 (2 lines); MRNS = Male Role Norms Scale.

Discussion

The objective of this research was to observe if there was a direct relationship between the levels of depression and a traditional masculine ideology, as well as to observe what the role of alexithymia in this relationship is. The initial hypothesis proposed was that higher levels of traditional male ideology would correlate directly with higher levels of depression in men.

The total BDI-II score was found to correlate significantly with the MRNS hardness factor, as well as with the total TAS-20 score. The fact that it correlates with the hardness factor might initially indicate that there is some relationship between levels of depression and both cognitive and emotional hardness, which involves remaining calm when facing adversities. This seems to be consistent with the initial hypothesis of the research. However, the relationship established between these two variables was discovered to be mediated by the presence of alexithymia. That is, the apparent

relationship between hardness and depression levels occurs because alexithymia is significantly correlated with both variables. All the factors that make up the traditional male ideology in the MRNS have been found to be related to alexithymia. A potential explanation for this relationship may be that the traditional male role considerably suppresses men's emotional expression, depriving them of learning to understand and identify them from a young age, and may produce a certain vulnerability to alexithymia. In addition, the results show that there is also a correlation between alexithymia and depression, something that has been observed in other studies such as Arancibia and Behar (2015). However, nowadays the debate about the nature of alexithymia is still ongoing, with some authors pointing out that it is a personality trait, while others state that it is just another symptom of depression, and others that it is a completely independent nosological identity. Therefore, in spite of not being able to affirm with certainty that the existence of a traditional masculine ideology leads to higher levels of depression, the results of this research show the existence of a relationship between hardness, alexithymia and depression in men, something that may be interesting to take into account in subsequent studies.

Although, until recently, research on depression has primarily been focused on women because of their higher prevalence compared to men, there are related data for which there is still no compelling explanation. An example of this is suicide, an aspect very closely linked to mental illness, particularly to depression. There are several studies that refer to the difference in the prevalence of suicide among men and women, where it can be seen that, although women commit the most suicide attempts, it is men who show the highest suicide rate (Addis, 2011). Tondo mentions something that may be relevant for future studies (2014), pointing out that there is a difference in the perception of the reasons that lead to suicide in men and women. The latter are associated with emotional motives, while men are associated, above all, with economic motives, such as job loss or economic crisis (Iglesias-García, et al., 2017). One of the explanations for this is that one of the qualities of the traditional male role is as the provider, while women are attributed with qualities more related to emotionality, so studies related to depression and gender roles, as well as traditional gender ideologies, may be useful in helping to understand these kinds of findings and hypotheses. Despite this, very few studies nowadays focus on studying these three variables as a whole. Similar studies have compared levels of alexithymia and depression, but within the geriatric population (Tartaglini, et al., 2017) and the female population who have suffered domestic violence (Moral de la Rubia & Ramos-Basurto, 2015). No studies have been found that relate the 3 variables in men, since the gender and traditional role variable is not included in these studies.

Therefore, another practical implication of these results could be obtaining the importance of early identification of alexithymia symptoms in men, given the significant relationship between alexithymia and depression. This would not only be an additional factor to consider for the treatment and diagnosis of depression, but also for its prevention. If in the future, the existence of a causal relationship between traditional masculine ideology and alexithymia were discovered, this first would be taken into account as a vulnerability factor against alexithymia and potentially depression. The inferences from the present study could later be confirmed by conducting a longitudinal experimental study with a control group of women. Linking traditional masculine ideology with negative consequences for population, could shed some light on the need to combat gender inequality, since it would not only harm women, but also men. The expression of symptoms such as sadness contradicts what the male gender role

symbolizes, men are denied the use of useful words that help describe its situation, the social support and validation that is often necessary to become aware of one's own illness or need for help (Williams, Stephenson & Keating, 2014).

With regard to the limitations of this study, it is worth highlighting the sample size, which does not enable an extrapolation of the results to the general population. The design of the research itself means that it is not possible to analyze causal relationships to provide more information on the subject in question. In addition, the fact that the surveys have been elaborated with the Google Questionnaires tool may have presented biases in the undocumented sample by requiring a user-level knowledge that depends on the device used for filling it out (mobile, tablet or computer), with the possibility of excluding from the sample older people who do not know how to use these devices. The fact that the tests are self-administrated means that in the event the subject has any questions, these can't be answered simultaneously.

In spite of all this, it has been possible to obtain information that could be a starting point for future research, and thus be able to provide even more information in this area.

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