Index

Selection of Works for the I Iberian Conference on Clinical Psychology, Health and Sports 5
Causal Attribution in Psychosis: A Study on Patients and Relatives 7
Descriptive study on continuity of care among a sample of children and youth treated at a Children’s Mental Healthcare Unit 9
Neurofeedback and treatment adherence in ADHD 13
Virtual reality: a tool capable of generating emotions 15
Body dissatisfaction and the pressure of family and peers as risk factors for the development of eating disorders 17
Pleasant and unpleasant ideas of reference and their relation to psychopathology 21
Body dissatisfaction and coexisting behaviors. Comparative study of adolescent and young women from the general population, dancers and women with an ED diagnosis 23
Psychopathology in mothers of a pediatric sample of children and adolescents affected by obesity or excess weight 31
Psychophysiological impact of european tobacco-warning images 33
Skin cancer: how portuguese “sunbathers” perceive risk 37
Intervention Program based on Virtual Reality for Pediatric Burns 41
Fear and anxiety in dental treatments and psychological interventions 45
Administering the CPT/IVA to evaluate the effects of neurofeedback in ADHD 49
Sympathetic neural mechanisms in the cardiac defense response 51
Reward value of loved familiar faces: an fmri study 53
Integrated approach to the study of eating and weight-related problems: a paradigm shift 57
With which coach shall we practice today? Leadership, cooperation and performance in a coach rotation system in soccer 61
Two dimensions of emotions in sports: Construction and validation of an assessment tool 65
Risk of eating disorders among different dance majors at a dance conservatory 69
Flow in marathon runners before, during and after the competition 73
Analysis of the needs for intervention in parents of young athletes 75
Motives for exercising among young adults with a moderately positive body image 79
On March 7-9 of this year, the I Iberian Conference on Clinical Psychology, Health and Sports was held at the School of Psychology of the Universidad de Sevilla. It was an academic and professional gathering that was attended by practicing psychologists as well as professors of psychology from both Portugal and Spain. The conference participants were treated to a wide range of contributions in the fields of clinical psychology, health and sports. The level of the conference events was extraordinary at both the plenary sessions and the different symposiums and talks. We were lucky enough to participate in passionate debates that went well beyond the times scheduled by the event organizers, a fact that demonstrates the interest in the contents and the excellent reception of the material by the participants.

The Anuario de Psicología Clínica y de la Salud/Annuary of Clinical and Health Psychology journal has gathered some of the conference’s best works, which were presented anonymously and read by peer reviewers of the scientific committee, from among the many papers presented by conference participants. We believe that these works represent the variety, the quality and the interest in the contributions made at the event. What is more, a few of the authors whose works were initially selected by the scientific committee declined from publishing in this journal because they were already in the process of publishing in another international journal.

The selected works show the breadth of topics and many of the emerging issues in science today. For example, there are works on clinical intervention and detection of eating disorders in risk groups such as ballet, modern and flamenco dancers (see the work by García-Dantas et al., 2013).

Other works reveal the importance of advances in technology and their incorporation to research designs and treatment, such as the application of neurofeedback and the advantages it offers ADHD patients (Moreno-Garcia et al., 2013). Another emerging topic is the application of virtual reality, in studies like that of startle reflex modulation (Rodríguez-Árbol et al., 2013) or pain management and improved control among pediatric burn patients (Delgado-Pardo y Moreno-García, 2013).

In the field of health, there is a clear interest in studies on prevention, like that on skin cancer and sunbathers by our Portuguese colleagues Costa and Tapadinhas (2013), or indicators of anxiety in the relatives of overweight or obese children (Avilés-Carvajal et al., 2013).

In the field of sports, there have been many fascinating contributions like the one on training styles in soccer (Aguiar and Lopes Almeida, 2013) and flow experience among marathon runners (Jiménez-Torres et al., 2013), to name two examples.

This brief list of contents will undoubtedly spark the interest of our readers. We believe that the diverse contents and academic rigor of the works indicate the important contributions currently being made in psychology today on the Iberian continent. In this regard, we are pleased that these works are helping to further develop knowledge about psychology and assisting those who are the targets of these interventions. We hope that readers will find this selection of studies interesting and we eagerly await the II Iberian Conference on Clinical Psychology, Health and Sports, which will be held in Lisbon in three years.
Causal Attribution in Psychosis: A Study on Patients and Relatives

Gloria Bellido Zanin
Antonio J. Vázquez Morejón
Guadalquivir Community Mental Healthcare Unit,
Virgen del Rocio University Hospital (Seville, Spain)

Abstract:
Far too little is known about causal attribution of psychotic disorders according to patients and relatives, something that could be related to their attitudes and emotional reactions towards the disorder itself. In order to examine this matter, a sample of 162 patients diagnosed with psychosis and their families, who were included in an assessment of social functioning, was collected. They were asked to answer this open question: What do you think your/his disorder is due to? The following step was the classification of the answers. The results indicate that both patients and relatives considered Vital Circumstances as the primary cause of the disorder. It should also be noted that relatives tend to consider internal factors as a cause as opposed to patients. In subsequent studies, it would be interesting to explore the relationship between the causal attribution given by patients and relatives, and other relevant variables such as social functioning, behavior problems and family overload.

Received: 24/06/2013  Accepted: 04/09/2013

INTRODUCTION

Many models and theories on the causes of psychosis have been developed over the past few years. However, little is known about the causal attribution on the part of the patients diagnosed with psychosis and their relatives. In existing studies on this topic, it has come to light that in relation to mental disorders in general, psychosocial stress is the cause most commonly indicated, followed by personal factors and finally, genetic factors (Matschinger and Angermeyer, 1996). In the specific case of psychoses, Angermeyerl and Klusmann (1988) found that patients perceived social, psychological and interpersonal problems to be the cause of the disorder, a finding which concurred with a study by Srinivasan and Thara (2001) in a different cultural context.

On the other hand, Weiner's attribution theory (1988) has served as the basis for studies on the importance of beliefs of causality and controllability (internal and external attributions) in how subjects respond to negative situations (such as suffering from a mental disorder or having a relative who suffers from one). This has fostered results which show how the attitude of relatives towards psychotic patients and the evolution of the patients themselves are influenced by the attributions that relatives make of the causes of psychosis (Barrowclough, C., Johnston, M., & Tarrier, N., 1995).

Among the patients, awareness of their own causal attribution with regards to the disorder can also be of interest. This awareness can be related to the patients’ self-esteem and to the emotional responses that begin when the disorder apar-
Table 1. The most frequent causal attributions of patients who did mention a cause are the following: life circumstances (40.37%) followed by genetic causes at a far second (18.35%) and personal features (9.17%). In terms of the internal/external nature of the attribution, results show that 56.88% of the patients attributed their disorder to external causes. Table 2. As for relatives, a very similar percentage (35.25%) did not know or did not respond to the question, which could also indicate unawareness or a lack of firm beliefs regarding the causes of the disorder. For the relatives who did respond, the most frequent causal attributions were life circumstances (32.91%), genetic causes (24.05) and personal features (15.19%). In relation to the internal/external nature of the attribution, the data indicate that 48.1% of family members made external attributions as the cause of the disorder.

Table 1. Percentage of patients and relatives in responses classified by similar features

<table>
<thead>
<tr>
<th></th>
<th>Patients</th>
<th>Relatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life circumstances</td>
<td>40.37%</td>
<td>32.91%</td>
</tr>
<tr>
<td>Personal features</td>
<td>9.17%</td>
<td>15.19%</td>
</tr>
<tr>
<td>Biological causes</td>
<td>4.59%</td>
<td>6.06%</td>
</tr>
<tr>
<td>Causas genéticas</td>
<td>18.35%</td>
<td>24.05%</td>
</tr>
<tr>
<td>Drugs</td>
<td>6.42%</td>
<td>6.33%</td>
</tr>
<tr>
<td>Vulnerability model</td>
<td>5.50%</td>
<td>6.33%</td>
</tr>
<tr>
<td>Several factors</td>
<td>9.17%</td>
<td>3.80%</td>
</tr>
<tr>
<td>Others</td>
<td>6.42%</td>
<td>6.33%</td>
</tr>
</tbody>
</table>

Table 2. Percentage of patients and relatives in responses classified by attribution type (internal or external)

<table>
<thead>
<tr>
<th></th>
<th>Patients</th>
<th>Relatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal attribution</td>
<td>33.03%</td>
<td>45.57%</td>
</tr>
<tr>
<td>External attribution</td>
<td>56.88%</td>
<td>48.10%</td>
</tr>
<tr>
<td>Mixed</td>
<td>10.09%</td>
<td>6.33%</td>
</tr>
</tbody>
</table>

Discussion and Conclusions

The data indicate that both patients and relatives consider life circumstances to be the main cause of the disorder. However, it is important to point out that family members are more likely than patients to consider internal factors as the cause of the disorders.

Given the data available, it would be interesting for future studies to explore the relationship between the type of causal attribution made by patients and family members and the intensity of behavior problems and family overload.

References


Abstract:
In this paper we analyze a sample of 100 children and young adolescents treated in the USMI-J at Juan Ramón Jiménez Hospital in 1986 and its continuity twenty five years later in the USMC in the province of Huelva. The variables studied were distribution by sex, age at the first consult and established diagnoses. Results reveal that of the entire sample, almost 30% of cases consulted in the USMC, prevailing male consulting, unlike what happens in the child and adolescent population where there are no differences by sex. The higher healthcare continuity occurs on patients who receive a clinical diagnosis of Severe Mental Disorder (83.3%). The healthcare continuity is a priority of Servicio Andaluz de Salud (SAS), so studies on the variables that affect it would be necessary, especially for the child and adolescent population, to optimize treatments and resources, thereby improving the quality care.

Keywords: continuity of patient care, mental health, diagnosis.

INTRODUCTION

A comprehensive approach to mental healthcare depends on highly complex processes of treatment and rehabilitation. The Integral Mental Healthcare Plan (Spanish Regional Health Ministry, 2009) of the Andalusian Health Service (SSPA, its Spanish acronym) attempts to respond to all of the healthcare needs of the residents of Andalusia. Continuity of care is included in the II Integral Healthcare Plan of Andalusia 2008-2012 (Spanish Regional Health Ministry, 2008) as a fundamental guideline, emphasizing the need for a reorientation of care services; greater coordination and cross-relations with the welfare-healthcare sphere; and a firmer commitment by professionals and citizens alike. All of these measures are aimed at making continuity of care a reality.

One of the definitions of continuity of care is “attention throughout a person’s life, in their different spheres and under any circumstance,” (Martín, 1997).

The concept that we will apply here has four fundamental dimensions (Hennen, 1997): chronological, which consists in care over the natural course of an illness; geographical, getting healthcare services to people; interdisciplinary, considering individuals as a group and in their surroundings; and interpersonal, which involves the relationship with the patient, relatives and among different professionals.

This work offers a descriptive longitudinal study on continuity of care—focusing on its chronological dimension starting in childhood—in the services offered by the mental healthcare department at Hospital Juan Ramón Jiménez in Huelva.

OBJECTIVES

To study the continuity of care in the sample chosen for the study analyzing the following variables: age at the first consultation, gender and established diagnosis.

METHOD

The sample for our student was comprised of the first 100 children and adolescents who received care at the children’s mental healthcare unit in 1986. The procedure that we followed was a retrospective analysis 25 years later through the revision of medical case histories and phone calls to the different community mental healthcare units (USMC).

RESULTS

The continuity of care in our study was 28%. When analyzing the selected variables, data in relation to gender reveal that men are more likely to return to healthcare as adults, considering that among the child population, the gender proportion was 1:1. With respect to the age at the first consultation, it is noteworthy that among children, the highest demand occurs during the elementary and middle-school years, while adults tend to make another consultation between the ages of 25-45 (Figure 1).

In terms of the third variable studied, our study noted higher continuity of care among patients who receive a clinical di-
agnosis of a severe mental illness (SMI; 83%). Low continuity was observed for diagnosed cases of intellectual disability (37.5%) (Figure 2).

**Discussion and conclusions**

As demonstrated in the literature, continuity of care is a key element to improving the quality of healthcare. In our study, we noted that continuity of care is higher among people diagnosed with an SMI. These patients require priority care due to their clinical characteristics, comorbidity and higher mortality rate. We believe that the care provided at the mental healthcare units has been efficacious and ensured high continuity as it began during childhood; allowed child patients to be diagnosed with mental disorders; and provided preventive treatments.

On the other hand, patients with SMI are frequently men, which explains why there was a higher percentage of men among the adult population in our study.

Another relevant question in the study is related to the low prevalence of hyperkinetic disorders in 1986 compared to today. According to current bibliography, hyperactivity and behavioral disorders are the mental healthcare problems which pose the greatest risk for children of both genders today.

In the category of eating disorders that begin in childhood, no continuity was observed with adulthood, which could reveal qualitative differences between these disorders in children and in adults.

Finally, in terms of the established clinical diagnoses, most of the children diagnosed with intellectual disability did not continue visiting the mental healthcare units as adults. This could be explained by the use of other institutional, educational and social resources available for these patients. In future studies, it would be interesting to examine the continuity in other non-healthcare services for those diagnosed with intellectual disability. It would also be useful to take into account all of the dimensions of continuity of care.

Based on these results, we emphasize the need to conduct studies which focus on youth-adolescents in order to optimize treatments and resources and foster coordination in order to improve the quality of care for people with mental illnesses.
References


Neurofeedback and treatment adherence in ADHD

Inmaculada Moreno García, Gracia Delgado Pardo
Department of Personality and Psychological Evaluation and Treatment. Universidad de Sevilla
and José Sánchez Blanco
Andalusian Health Service. Southern Seville Healthcare District. Spain

Abstract:
Adherence and therapeutic abandonment are causes for concern in the clinical setting due to the consequences and adverse effects mainly involving for patients. Those who discontinue the treatment or refuse to start do not achieve the desired therapeutic effects, increasing the likelihood of relapse and developing low expectations of improvement, while seeking new resources for mental health and increasing health costs. Different research in the field of behavioural disorders estimated that 38% of children unjustifiably terminate the intervention. The aim of this paper is to analyse the therapeutic adherence and the abandonment in a sample of 92 children aged between 7 and 14, diagnosed with Attention Deficit Disorder and randomly assigned to three treatment conditions: Neurofeedback, Behaviour Therapy and Pharmacologic Therapy. The results show that 84.21% of children who received Neurofeedback ended the treatment.

Keywords: ADHD, Children, therapeutic adherence, Neurofeedback.

Introduction
The lack of therapeutic adherence and dropout have adverse effects for patients. The diagnosed disorder, the modality and therapeutic context are all influential variables (Monastra, 2005). Unjustified interruptions of treatment have a negative effect on the scope and significance of scientific findings by altering the composition of the groups, introducing sampling biases and limiting the generality of results (Kazdin, Holland and Crowley, 1997).

Between 40-60% of the children and adolescents whose diagnosis requires treatment prematurely drop out of therapy (Kazdin, 1996). With respect to behavioral disorders, dropout rates are between 37% (Moreno and Lora, 2006) and 38% (Kazdin and Wassell, 1998).

Objectives
To analyze therapeutic adherence and dropout in minors diagnosed with ADHD taking into account the phases of the therapy process and the treatment modality employed.

Method
A total of 92 children ages 7-14 participated. According to the therapeutic continuity/dropout variable, the children were divided into three groups: a) children who drop out in the pre-treatment phase, b) minors who stop treatment after several sessions, and c) minors who complete the treatment.

Results
Of all children participants (N=92), 35 minors (38%) dropped out during the pre-treatment phase (Group A). Another 57 children (62%) started one of the administered therapeutic options (Group B), with a dropout rate of 15.78% among children who received neurofeedback. A total of 75.4% finished the recommended treatment (Group C). It should also be noted that 84.21% of the children who received neurofeedback completed the treatment.

Conclusions
The general therapeutic dropout rate was similar to that reported in previous studies. The adherence to neurofeedback treatment was high in comparison to the other therapeutic options studied.

References


**Acknowledgements**

This work has been funded by the Plan Nacional i+d+i (PSI2008-06008-C02-01) from the Ministerio de Ciencia e Innovación.
Virtual reality: a tool capable of generating emotions
J. Rodríguez-Árbol, L. F. Ciria, R. Delgado-Rodríguez, M. A. Muñoz, G. Calvillo-Mesa and J. Vila
Department of Personality and Psychological Evaluation and Treatment

Abstract:
The creation of virtual environments that allow interacting with simulated phenomena arises as one of the most powerful tools in the field of clinical psychology. Virtual Reality is able to elicit a feeling of presence and emotional states that can be useful for therapy in various psychological disorders. The aim of this paper is to check the ability of artificial environments to elicit emotions in a healthy population within the scientific paradigm of startle reflex modulation. We assessed the subjective and physiological responses of 54 students (27 women and 27 men) while they visualized 9 virtual environments (3 pleasant, 3 neutral and 3 unpleasant). The physiological test was composed by a 5-minute adaptation period followed by 18 startle trials. The virtual stimuli were displayed during 20 seconds in a 180 degrees immersive screen. The results demonstrate the ability of virtual environments to modulate emotional responses within the defensive reflexes modulation paradigm.

Keywords: virtual reality, startle reflex, emotion.

Introduction
Virtual reality has proved effective for the treatment of different disorders (Quero et al., 2012), facilitating the patient’s exposure to stimuli and situations that are difficult to reproduce in real contexts (Botella et al., 2004). However, little research has been done to gauge how effectively virtual environments can generate emotional states in a healthy population (Jang, Ku, Shin, Choi and Kim, 2000). The synthetic appearance that characterizes these environments, the difficulty of isolating them from their surrounding environments and their level of realism all cast doubt on their abilities to generate emotions. Determining the efficacy of artificial environments is critical since the feeling of immersion depends on the participant experiencing the sensations and emotions produced by the virtual environment in the realist way possible (Marks, 1987).

One of the most solid paradigms for the study of emotions is that of startle reflex modulation, which is measured through the contraction of the orbicularis oculi muscle (Lang, Bradley and Cuthbert, 1990; Vrana, Spence and Lang, 1988). The logic is simple: blinking intensity before an unexpected and highly intense stimulus can be modulated after an unpleasant or pleasant emotion is induced. During pleasant emotional states, the blink magnitude is diminished in comparison with the blink magnitude in unpleasant situations, thus indicating the participant’s emotional state.

Objectives
The objective of this study was to gauge the capacity of artificial environments to generate emotions in a healthy population through the study of startle reflex modulation. Thus we expect that the visualization of an aversive artificial environment increases the startle reflex magnitude while the viewing of a positive artificial environmental decreases the blink magnitude.

Method
A total of 54 students between the ages of 18 and 38 participated in the study (M=21.85; SD=4.12). The distribution by gender was 27 women (age M=21.19, SD=3.87) and 27 men (age M=22.19, SD=4.4). Their reward for participating consisted in extra credit at the Department of Personality and Psychological Evaluation and Treatment. The experimental protocol was approved by the Ethics Committee for Human Research at the Universidad de Granada.

Nine virtual environments were created. Three were unpleasant (showing traffic accidents, dead bodies and threatening situations); three were pleasant (showing social situations, parties and gift giving); and three were neutral (showing objects or buildings). To ensure similar stimuli for all participants, 20-second clips were shown in order to keep participants from interacting with the virtual objects.

The participants viewed the environments on a 180-degree immersive screen. (Vision Station, Elumens®). The physiological test consisted of a 5-minute adaptation period followed by 18 startle tests. The startle-eliciting stimulus was biauricular white noise with an intensity of 105dB, lasting 50ms and instantaneous rise time. The reaction of the subjects was measured with an integrated electromyogram (EMG) that tracked the orbicularis oculi muscle of the eye.

Contact information:
Javier Rodríguez Árbol
Centro de Investigación Mente, Cerebro y Comportamiento; Campus Universitario de Cartuja s/n. 18071, Granada, Spain javierarbol@gmail.com
Results

Variance analysis revealed significant effects \( F[2,106]=9.426; p<.001 \) based on the emotional category of the virtual environment (pleasant, unpleasant or neutral). The post-hoc analysis showed that the EMG range of the orbicularis oculi muscle was significantly lower while visualizing pleasant environments than when viewing neutral ones; it was also higher for unpleasant environments (all \( p<.05 \) with Bonferroni correction; see Figure 1).

Discussion and conclusions

Just as we had expected, the range of the startle response was reduced when participants found themselves in pleasant virtual environments (parties, social gatherings) and higher for unpleasant situations (accidents or threats). Thus artificial environments could be an excellent tool for inducing emotional states not only in a clinical population but in a healthy one as well. In our study, in spite of the virtual element and the limited possibility for interacting with the objects, the virtual environments were capable of activating physiological responses similar to those usually observed when other visual stimuli are employed.

Our results show that virtual reality is an effective tool for inducing emotional states in experimental contexts, allowing the intensity of the emotional impact to be adjusted through realism or the level of interaction.

References


Acknowledgements

This project was funded under the II Call for R+D+I Projects, CEIBioTIC Granada, part of the CEI Program of the Spanish Ministry of Education and the Counsel of Economy, Innovation, Science and Employment.

Figure 1. EMG startle range based on the emotional category of the virtual environment viewed (*\( p<.05 \); **\( p<.01 \)).
Body dissatisfaction and the pressure of family and peers as risk factors for the development of eating disorders

S. Rodríguez-Ruiz, S. Díaz, B. Ortega-Roldán, J.L. Mata, R. Delgado and M.C. Fernández-Santaella
Universidad de Granada (Spain)

Abstract:
Body dissatisfaction (IC) and weight concerns can lead adolescents and children to adopt inappropriate eating behaviors, and trigger an eating disorder (ED). These attitudes may be influenced by family beliefs and peer group. The aim of this study was to explore the relationship between IC and the development of symptoms of ED in children and adolescents, mediated by the pressure exerted by family and friends. The study included 1479 children and adolescents. Data suggested that: a) the boys / girls who thought their weight was not right had more symptoms of ED, compared to boys / girls who thought nothing about it, especially girls, b) the boys / girls who thought they should lose weight -for themselves, for recommendation of family and / or friends-, had more symptoms of ED than boys/girls who did not think so. The IC is a risk factor for the development of ED in children and adolescents, and even more in girls, and may be influenced by the attitudes of parents and peers toward weight.

Keyword: Risk factors, eating disorders, children and adolescents, body dissatisfaction, weight.

Introduction
Different studies have examined the possible relationship between family influence and the assimilation of the idea of thinness, concluding that parents and peers alike contribute to the search for impossible beauty ideals through body comments and criticism (“fat talk”). This is especially true in the case of girls (Quiles, Quiles, Pamies, Botella and Treasure, 2013; Ruiz, Vázquez, Mancilla and Trujillo, 2010).

Objective
The objective of this study was to explore the relationship between body dissatisfaction, the development of general symptoms of EDs among children and adolescents and the pressure exerted by family and friends. Our hypothesis is that the assimilation of the idea of thinness imposed by family and society increases the possibility of developing ED symptoms, especially among girls.

Method
Participants: A total of 1,479 children and adolescents participated in the study (676 boys and 803 girls) ages 10 to 18 (M= 14.08; DT=2.22) with a body mass index (BMI) between 13.20 and 40.40 (M= 21.33; DT=3.98). Participants came from different schools and institutes in Eastern Andalusia (see Table 1).

Instruments
Body composition analyzer. The GS TANITA TBF 300 body composition analyzer was used to measure the weight, height and BMI of the participants.

Eating Attitude Test [EAT] (Garner and Garfinkel, 1979). This questionnaire consists of 40 items designed to evaluate a wide range of ED symptoms. Participants rate each item on a six-point scale that goes from “Never” to “Always.” Cut-off scores of 30 and 50 characterize the population at risk and the clinical population, respectively. The EAT-40 has been validated and widely used in Spain (Castro, Toro, Salamero and Guimera, 1991).

Body Dissatisfaction Questionnaire [BDQ]. This questionnaire was created specifically for this study and includes the following adapted questions: “Do you believe that your weight is right for your age and height? If you answered No, indicate why: because I think that 1) I should lose weight, 2) I should gain weight, 3) My family says I should lose weight, 4) My family says I should gain weight, 5) My friends say I should lose weight, 6) My friends say I should gain weight.”

Procedure
The body mass index (BMI) of all participants was obtained and participants were then given 15 minutes to complete the following self-report measures: the Eating Attitude Test [EAT] and the Body Dissatisfaction Questionnaire [BDQ]. All statistical analyses were done using SPSS 15 for Windows. The possible violation of the homogeneity of error variance assumption was considered and in the case of within-subject factors, the Greenhouse-Geisser correction was applied. The results are presented with the original degrees of freedom and the corrected probability values. The significance level was set at 0.05.
Results
On the one hand, the boys/girls who thought their weight was not right reported more ED symptoms than the boys/girls who reported that their weight was (F1, 654 = 13.61, p < .0001), especially in the case of girls (see Figure 1). On the other hand, the boys/girls who thought they should lose weight—regardless of whether it was on their own or based on the recommendation of their family and/or friends (see Figure 2)—presented more ED symptoms (F1, 654 = 4.05, p < .044) than those who had no plans to lose weight (and had not received a recommendation to do so by anyone in their environment).

Discussion and conclusions
Body dissatisfaction is a risk factor for ED among children and adolescents and can be influenced by family and social pressure, with more noticeable effects on girls. Thus the attitude of parents towards their children—like scolding them for a lack of appetite or encouraging them to do exercise “to burn calories” (“fat talk”)—can negatively influence children and foster problematic food behaviors and attitudes (Ballester and Guirado, 2003; Quiles et al. 2013). This study emphasizes the importance of prevention programs among male and female adolescents in order to foster self-esteem, self-evaluation and independence; put into perspective the pressure from family and friends; and thus keep a potential ED from developing.

Table 1. Median (and typical deviation) of age and BMI for the entire sample

<table>
<thead>
<tr>
<th>Schools (N= 517)</th>
<th>Age M (DT)</th>
<th>BMI M (DT)</th>
<th>N Boys</th>
<th>GIRLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOYS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age M (DT)</td>
<td>11.54 (1.16)</td>
<td>20.15 (3.61)</td>
<td>N= 269</td>
<td></td>
</tr>
<tr>
<td>BMI M (DT)</td>
<td>15.43 (1.20)</td>
<td>21.94 (3.92)</td>
<td>N= 407</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>676</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutes (N= 962)</td>
<td>13.88 (2.24)</td>
<td>21.21 (3.90)</td>
<td>N= 676</td>
<td></td>
</tr>
<tr>
<td>Total (N= 1479)</td>
<td>11.47 (1.15)</td>
<td>19.54 (3.64)</td>
<td>N= 248</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15.49 (1.18)</td>
<td>22.30 (3.93)</td>
<td>N= 555</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14.25 (2.19)</td>
<td>21.42 (4.05)</td>
<td>N= 803</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Average EAT scores based on whether or not boys/girls believed that their weight was right for their age and height

Figure 2. Percentage of boys/girls who believe that their weight is not right for their age and height because: 1) they should lose weight, 2) they should gain weight, 3) their family says they should lose weight, 4) their family says they should gain weight, 5) their friends say they should lose weight, 6) their friends say they should gain weight.
Body dissatisfaction and the pressure of family and peers as risk factors for the development of eating disorders

References


Acknowledgements

This investigation was funded by two research grants from the Spanish Ministry of Economy and Competitiveness [PSI2009-08417 and PSI2012-31395]
Pleasant and unpleasant ideas of reference and their relation to psychopathology

J.F. Rodríguez-Testal, Universidad de Sevilla
M.C. Senín-Calderón, Psychological and Psychopedagogical Care Service, Universidad de Cádiz (Spain)
S. Perona-Garcelán, M. Ruiz-Veguilla, Institute of Biomedicine of Seville (IBIS) and C. Scurtu, Universidad de Sevilla (Spain)

Abstract:
In previous works we recorded the presence of ideas of reference (or self-references) with the REF-scale about referential thinking. The differences between patients and controls are clear, but not so clearly between diagnostic categories, except for psychotic disorders. Aims: We try to verify whether the differences between patients and controls are due to the presence of pleasant self-references (PS) or unpleasant self-references (US) and, especially, considering the different diagnostic groups.

Method: 1600 subjects participated, 1245 from general population and 355 patients, 63.3% were women. Results: We obtained significant differences between patients and controls, both PS, F (1, 1598) = 62.31, and US, F (1, 1598) = 99.47. When analyzing the diagnostic categories, differences were obtained in mean of US, F (7, 347) = 2.770, and PS, F (7, 347) = 3.870, highlighting psychotic patients. Discussion: Psychotic patients reached statistically significant differences only with adjustment disorders patients, when considering US; and mood disorders, anxiety and adjustment disorders, when considering PS.

Keywords: ideas of reference, pleasant self-references, unpleasant self-references, psychotic disorders, Psychopathology.

Received: 17/06/2013  Accepted: 18/10/2013

Introduction
In previous works, we have noted the occurrence of ideas of reference with the Referential Thinking Scale (REF; Lenzenweger, Bennett & Lilenfeld, 1997) in both a general and clinical population (Rodríguez-Testal et al., 2008; Senín et al., 2010). Although the differences between patients and controls are clear, the differences among diagnostic categories are not as notable, except in the case of psychotic disorders. Cicero and Kerns (2011) suggest that this could be owed to whether referential thinking is experienced as pleasant or unpleasant.

Objectives
To verify whether the differences between patients and controls are owed to pleasant and unpleasant referential thinking (PRT/URT) while considering the DSM-IV-TR diagnostic categories (APA, 2000).

Results
Significant differences were observed between patients and controls for both PRT, $F_{(1, 1616)} = 61.33$ and URT, $F_{(1, 1618)} = 102.24$. The difference between the proportion of PRT to URT of patients is greater than that of controls (Table 1).

When the ten most unpleasant referential thoughts and the ten most pleasant ones are taken, significant differences are observed for PRT, $F_{(1, 1616)} = 73.41$, and for URT, $F_{(1, 1618)} = 168.89$ (Table 2):

Contact information:
Juan F. Rodríguez-Testal
Departamento de Personalidad, Evaluación y Tratamiento Psicológicos. Universidad de Sevilla.
C/ Camilo José Cela SN. 41018 Sevilla. Spain.
Tel.: +34 954557802
testal@us.es
When the diagnostic categories are analyzed with respect to the ten 10 most pleasant referential thoughts and 10 most unpleasant ones, ANCOVA indicates differences in the average PRT, $F(6, 34.4)= 3.151$, $p = .005$; and URT, $F(6, 34.4) = 2.448$, $p = .025$ (Table 3).

**Table 3.** Average of pleasant and unpleasant referential thinking based on diagnostic categories.

<table>
<thead>
<tr>
<th>Diagnostic Categories</th>
<th>N</th>
<th>10 Pleasant</th>
<th>10 Unpleasant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axis II</td>
<td>26</td>
<td>2 (2.52)</td>
<td>3.80 (2.53)</td>
</tr>
<tr>
<td>Mood</td>
<td>111</td>
<td>1.68 (1.84)</td>
<td>3.25 (2.50)</td>
</tr>
<tr>
<td>Adjustment Disorders</td>
<td>57</td>
<td>1.71 (1.82)</td>
<td>2.01 (2.03)</td>
</tr>
<tr>
<td>Somatoform disorder</td>
<td>28</td>
<td>2.17 (2.00)</td>
<td>3.75 (2.81)</td>
</tr>
<tr>
<td>Eating disorders</td>
<td>11</td>
<td>2.27 (1.79)</td>
<td>3.00 (2.04)</td>
</tr>
<tr>
<td>Anxiety disorders</td>
<td>86</td>
<td>1.76 (2.07)</td>
<td>3.32 (5.51)</td>
</tr>
<tr>
<td>Psychotic disorders</td>
<td>32</td>
<td>3.40 (3.14)</td>
<td>4.81 (3.13)**</td>
</tr>
</tbody>
</table>

**Discussion and Conclusions**

The controls reported PRT and URT less frequently and with less difference between the two. Patients showed a clear presence of referential thinking, especially URT. Only the psychotic patients stand out from the adjustment disorder patients.

PRT clearly varies according to a patient’s diagnosis. Psychotic patients reported it more frequently and the post-hoc test (Tamhane) differentiates this group from patients with mood, anxiety and adjustment disorders.

Omnipresence of URT is not discriminatory. The combination of URT/ PRT can be an indicator of hypervigilance in a social context; it is higher when exclusively URT is considered (like during depressive states) or for exclusively PRT in the absence of a psychopathology.

**References**


Body dissatisfaction and coexisting behaviors. Comparative study of adolescent and young women from the general population, dancers and women with an ED diagnosis

I. Torres-Pérez, A. García-Dantas, L. Beato-Fernández, M. Borda-Más, M. Sánchez-Martín and C. Del Río-Sánchez

Department of Personality and Psychological Evaluation and Treatment. Universidad de Sevilla
Hospital General Universitario in Ciudad Real (Spain)
Department of Experimental Psychology. Universidad de Sevilla

Abstract:
Body dissatisfaction in adolescence is one of the factors predisposing to the development of eating disorders (ED). The dancers are a risk group for ideal physical characteristics and aspiration of "dominating her body" turning the body into a working tool and a midst of artistic expression. Objective: To analyze the degree of body dissatisfaction and possible conditions associated behaviors in adolescent and young girls, comparing three groups: students (general population), dancer students and girls diagnosed with ED. Methods: We administered the Body Shape Questionnaire (BSQ) to 566 female students: 247 of the general population, 175 were professional dancer students and 143 with a ED diagnosis. Descriptive and comparative analyses were performed. Results and conclusions: The concern for the body image was moderate to extreme in 19.8% - 6.1% of the general population students and 17.7% - 9.7% in dancers. In the dance students, concern and dissatisfaction with their own body image can be increased reaching a clinically significant degree of concern, but are not derived from a high BMI.

Keywords: body dissatisfaction, eating disorders, dance students.

Received: 23/09/2013 Accepted: 23/09/2013

Introduction
Body dissatisfaction has been the focus of numerous investigations among clinical populations, the general population and risk groups (i.e. adolescents who may or may not practice an artistic activity and/or sports). This is because body dissatisfaction is an important risk factor for depression, low self-esteem and eating disorders. The physical changes that occur in adolescent girls often cause significant weight gain, which in many cases distances these young women from the dominant beauty ideals in our culture. This is why adolescence is considered the life stage when individuals are most at risk of becoming dissatisfied with their own body, and dissatisfaction is one of the most significant predictors of an ED, though it is not the only one (Stice, 2002). Del Río, Borda, Torres and Lozano (2002) have found that an important number of adolescent girls resort to behaviors detrimental to their health: self-induced vomiting, the use of laxatives and/or intense exercise, and dieting (the most common practice) in order to lose weight and reduce their body dissatisfaction. The percentage of girls who practice one or more of these strategies ranged from 50-80% for dieting, 5-15% for vomiting, 2-6% for laxatives and 20-56% for physical exercise (Killen et al., 1986; Unikel and Gómez, 1999; del Río, Borda, Torres and Rodríguez, 2000; del Río et al., 2002, and others).

Regular exercise is considered fundamental to both physical and mental health. However, in scientific literature we find a high prevalence of ED and body dissatisfaction among adolescent women and youth who practice some sort of physical exercise in which thinness takes precedence. Thinness in these activities is associated with both the performance and the aesthetics: dance, ice skating and rhythmic gymnastics (Garner and Garfinkel, 1980; Ringham et al., 2006; Sundgot-Borgen and Torstveit, 2004; Patel, Greydanus, Pratt and Phillips, 2003; Thomas, Keel and Heatherton, 2005). It seems that ballet is an activity where the conditions for developing EDs are particularly strong, due to the pressure to be thin and the high competitiveness, especially for vulnerable adolescents (Ackard, Henderson and Wonderlich, 2004; Anshel, 2004). Few comparative studies have been done on body dissatisfaction among adolescents in the general population, young women with an ED and high risk groups (specifically dance students). Rutsztein et al. (2010) concluded that for the diverse characteristics associated with EDs, dance students were more similar to middle school adolescents than to patients except in terms of their distorted body image, which was higher.

Contact information:
Maria Inmaculada Torres Pérez
Departamento de Personalidad, Evaluación y Tratamiento Psicológico. C/ Camilo José Cela, s/n. 41018. Sevilla (Spain)
mtorres9@us.es
Our research focuses on analyzing the degree of body dissatisfaction and the possible coexisting behaviors associated with it among female students from the general population in comparison with others who take professional dance classes and others who have been diagnosed with an ED.

**Method**

**Participants.** 566 women (ages 12 to 22), of which 247 were from the general population (high school, pre-university or university students), 144 had been diagnosed with some eating disorder according to DSM-IV criteria (outpatients from Hospital Universitario in Ciudad Real) and 175 were dance students from two professional dance conservatories in Andalusia (47 studied ballet, 22 modern dance, 57 flamenco and 49 Spanish dance) (see Table 1).

**Instruments.** The Spanish-language version of the Body Shape Questionnaire (BSQ) by Cooper, Taylor, Cooper and Fairburn (1987) was used (adapted to Spanish by Raich, Mora, Soler et al., 1996). *Procedure.* The young women and their parents (in the case of minors) were informed of the research objective and informed consent was obtained following the recommendations of Del Río (2005). All the participants completed the BSQ and weight and height were measured to determine their BMI. Participants who responded "many times", "almost always" or "always" were selected in order to eliminate cases in which body dissatisfaction was isolated ("sometimes" or "almost never"). A cut-off point of 105 on the BSQ was considered (Table 1 and 2). To study the degree of body dissatisfaction, four levels were distinguished: none, slight, moderate and extreme, based on the scores obtained on the BSQ (Table 3).

**Statistical analysis.** For the statistical calculations, the predictive analytics software SPSS 20.0 was used. We did a descriptive analysis, a comparison of means (single factor Table 1. Characteristics of the sample

<table>
<thead>
<tr>
<th>N</th>
<th>Age Mean (DT)</th>
<th>BMI Mean (DT)</th>
<th>BSQ Mean (DT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP</td>
<td>Whith ED</td>
<td>GP</td>
<td>Whith ED</td>
</tr>
<tr>
<td>Sophomores</td>
<td>11</td>
<td>14 (0)</td>
<td>16,00 (1,17)</td>
</tr>
<tr>
<td>Juniors</td>
<td>35</td>
<td>16</td>
<td>14,37 (0,60)</td>
</tr>
<tr>
<td>Students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seniors</td>
<td>30</td>
<td>15,83 (1,87)</td>
<td>17,78 (1,76)</td>
</tr>
<tr>
<td>Pre-u 1</td>
<td>98</td>
<td>16</td>
<td>17,65 (1,39)</td>
</tr>
<tr>
<td>Pre-u 2</td>
<td>30</td>
<td>2</td>
<td>18 (1,33)</td>
</tr>
<tr>
<td>Job training</td>
<td>33</td>
<td>19</td>
<td>19,98 (1,63)</td>
</tr>
<tr>
<td>University</td>
<td>10</td>
<td>27</td>
<td>21,60 (0,69)</td>
</tr>
<tr>
<td>Total</td>
<td>247</td>
<td>144</td>
<td>17,32 (2,36)**</td>
</tr>
<tr>
<td>Dancers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ballet</td>
<td>47</td>
<td>15,04 (2,33)</td>
<td>19,01 (1,99)*</td>
</tr>
<tr>
<td>Modern</td>
<td>22</td>
<td>14,00 (2,37)</td>
<td>18,73 (1,99)*</td>
</tr>
<tr>
<td>Flamenco</td>
<td>57</td>
<td>15,81 (2,43)</td>
<td>21,16 (2,66)*</td>
</tr>
<tr>
<td>Spanish</td>
<td>49</td>
<td>15,35 (2,26)</td>
<td>19,88 (3,86)</td>
</tr>
<tr>
<td>Total</td>
<td>175</td>
<td>15,25 (2,39)**</td>
<td>19,92 (2,96)*</td>
</tr>
<tr>
<td>Total sample</td>
<td>566</td>
<td>16,98 (2,61)</td>
<td>20,23 (3,56)</td>
</tr>
</tbody>
</table>
Table 2. Body concern and dissatisfaction *p<0.05; **P<0.001

<table>
<thead>
<tr>
<th></th>
<th>None (BSQ &lt; 81)</th>
<th>Slight (81 &gt; BSQ &lt; 100)</th>
<th>Moderate (100 &gt; BSQ &lt; 140)</th>
<th>Extreme (BSQ &gt; 140)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
</tr>
<tr>
<td>General population</td>
<td>4 (6,9)</td>
<td>23 (39,7)</td>
<td>7 (12,1)</td>
<td>3 (5,2)</td>
</tr>
<tr>
<td>Whith ED</td>
<td>7 (6,4)</td>
<td>15 (13,8)</td>
<td>34 (31,2)</td>
<td>2 (1,8)</td>
</tr>
<tr>
<td>Total</td>
<td>58 (23,48)</td>
<td>109 (75,69)</td>
<td>129,46 (18,25)**</td>
<td>146,20 (22,52)**</td>
</tr>
<tr>
<td>Dancers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ballet</td>
<td>14 (32,6)</td>
<td>132,71 (20,12)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modern</td>
<td>4 (9,3)</td>
<td>124,25 (16,05)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flamenco</td>
<td>15 (24,9)</td>
<td>142,27 (24,31)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spanish</td>
<td>10 (23,3)</td>
<td>139,10 (21,93)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>43 (24,6)</td>
<td>136,74 (21,61)*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05; **p<0.001

Table 3. Level of body concern and dissatisfaction

<table>
<thead>
<tr>
<th>Age Group</th>
<th>None (BSQ &lt; 81) N (%)</th>
<th>Slight (81 &gt; BSQ &lt; 100) N (%)</th>
<th>Moderate (100 &gt; BSQ &lt; 140) N (%)</th>
<th>Extreme (BSQ &gt; 140) N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preadolescents</td>
<td>22 (62,9)</td>
<td>5 (14,3)</td>
<td>4 (11,4)</td>
<td>4 (11,4)</td>
</tr>
<tr>
<td>Adolescents</td>
<td>92 (63)</td>
<td>16 (11)</td>
<td>32 (21,9)</td>
<td>6 (4,1)</td>
</tr>
<tr>
<td>Youth</td>
<td>39 (59,1)</td>
<td>9 (13,6)</td>
<td>13 (19,7)</td>
<td>5 (7,6)</td>
</tr>
<tr>
<td>Total</td>
<td>153 (61,9)</td>
<td>30 (12,1)</td>
<td>49 (19,8)</td>
<td>15 (6,1)</td>
</tr>
<tr>
<td>Baileeras</td>
<td>55 (75,3)</td>
<td>8 (11)</td>
<td>8 (11)</td>
<td>2 (2,7)</td>
</tr>
<tr>
<td>Adolescents</td>
<td>44 (51,8)</td>
<td>8 (9,4)</td>
<td>22 (25,9)</td>
<td>11 (12,9)</td>
</tr>
<tr>
<td>Youth</td>
<td>9 (52,9)</td>
<td>3 (17,6)</td>
<td>1 (5,9)</td>
<td>4 (23,5)</td>
</tr>
<tr>
<td>Total</td>
<td>108 (61,7)</td>
<td>19 (10,9)</td>
<td>31 (17,7)</td>
<td>17 (9,7)</td>
</tr>
<tr>
<td>Pacientes</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>1 (100)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Adolescents</td>
<td>16 (20,3)</td>
<td>6 (7,6)</td>
<td>25 (31,6)</td>
<td>32 (10,5)</td>
</tr>
<tr>
<td>Youth</td>
<td>2 (13,3)</td>
<td>7 (10,9)</td>
<td>23 (35,9)</td>
<td>29 (45,3)</td>
</tr>
<tr>
<td>Total</td>
<td>21 (14,6)</td>
<td>13 (9)</td>
<td>49 (34)</td>
<td>61 (42,4)</td>
</tr>
</tbody>
</table>
Table 4. BSQ items representative of high body concern and dissatisfaction

<table>
<thead>
<tr>
<th>Item</th>
<th>Certain coexisting behaviors</th>
<th>Kruskal Wallis</th>
<th>Mann Whitney</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 1 Has feeling bored made you brood about your shape?</td>
<td>6,53 0.038</td>
<td>1784,00 (Dance and GP) 912,000 (GP and ED)</td>
<td>0.041 -2.044 0.024 -1.808</td>
</tr>
<tr>
<td>Item 2 Have you been so worried about your shape that you have been feeling you ought to diet?</td>
<td>5,92 0.015</td>
<td>609,500 (Dance and ED)</td>
<td>0.015 -2.435</td>
</tr>
<tr>
<td>Item 3 Have you thought that your thighs, hips or bottom are too large for the rest of you?</td>
<td>18,46 0.000</td>
<td>1321,39 (ED and GP) 825,500 (Dance and ED)</td>
<td>0.000 -3.689 0.000 -4.314</td>
</tr>
<tr>
<td>Item 4 Have you been afraid that you might become fat (or fatter)?</td>
<td>18,20 0.000</td>
<td>1339,50 (ED and GP) 998,50 (Dance and ED)</td>
<td>0.000 -3.766 0.000 -4.146</td>
</tr>
<tr>
<td>Item 5 Have you worried about your flesh being not firm enough?</td>
<td>17,98 0.000</td>
<td>838,00 (ED and GP) 630,50 (Dance and ED)</td>
<td>0.000 -3.845 0.000 -3.786</td>
</tr>
<tr>
<td>Item 6 Has feeling full (e.g. after eating a large meal) made you feel fat?</td>
<td>28,78 0.000</td>
<td>776,00 (ED and GP) 433,00 (Dance and ED) 1215,00 (Dance and GP)</td>
<td>0.000 -3.769 0.000 -5.327 0.034 -2.120</td>
</tr>
<tr>
<td>Item 9 Has being with thin women made you feel self-conscious about your shape?</td>
<td>8,72 0.013</td>
<td>766,50 (Dance and GP)</td>
<td>0.003 -2.921</td>
</tr>
<tr>
<td>Item 10 Have you worried about your thighs or waist spreading out when sitting down?</td>
<td>8,57 0.014</td>
<td>835,50 (ED and GP)</td>
<td>0.005 -2.793</td>
</tr>
<tr>
<td>Item 12 Have you noticed the shape of other women and felt that your own shape compared unfavorably?</td>
<td>7,42 0.024</td>
<td>955,000 (ED and GP) 1279,500 (Dance and GP)</td>
<td>0.032 -2.140 0.013 -2.496</td>
</tr>
<tr>
<td>Item 16 Have you imagined cutting off fleshy areas of your body?</td>
<td>6,40 0.041</td>
<td>172,000 (Dance and ED)</td>
<td>0.009 -2.611</td>
</tr>
<tr>
<td>Item 21 Has worry about your shape made you diet?</td>
<td>9,52 0.009</td>
<td>520,50 (ED and GP)</td>
<td>0.018 -1.437</td>
</tr>
<tr>
<td>Item 23 Have you thought that you are in the shape you are because you lack self-control?</td>
<td>3,95 0.047</td>
<td>297,500 (Dance and ED)</td>
<td>0.003 -2.972</td>
</tr>
<tr>
<td>Item 24 Have you worried about other people seeing rolls of fat around your waist or stomach?</td>
<td>12,27 0.002</td>
<td>1030,000 (ED and GP) 715,000 (Dance and ED)</td>
<td>0.001 -3.377 0.004 -2.868</td>
</tr>
<tr>
<td>Item 30 Have you pinched areas of your body to see how much fat there is?</td>
<td>8,55 0.014</td>
<td>1268,000 (Dance and GP)</td>
<td>0.005 -2.814</td>
</tr>
<tr>
<td>Item 31 Have you avoided situations where people could see your body (e.g. communal changing rooms or swimming baths)?</td>
<td>5,40 0.020</td>
<td>636,00 (Dance and ED)</td>
<td>0.020 -2.325</td>
</tr>
<tr>
<td>Item 34 Has worry about your shape made you feel you ought to exercise?</td>
<td>8,78 0.012</td>
<td>1970,50 (ED and GP)</td>
<td>0.004 -2.916</td>
</tr>
</tbody>
</table>
Figure 1. Percentage of students based on their degree of body concern and dissatisfaction

Figure 2. Body concern and dissatisfaction based on age
ANOVA) and multiple comparisons (Sheffé test). To study the differences with respect to the coexisting behaviors associated with body concern and dissatisfaction, we applied Kruskal-Wallis and the U by Mann-Whitney.

**RESULTS**

**Discussion**

Our findings concur with other studies in relation to young women from the general population. Among such women, dissatisfaction tends to normalize once they have gotten used to the physical changes of adolescence. However, among dancers, we noted that this dissatisfaction not only does not diminish but instead increases or at least remains steady with age. In this regard, Dotti et al. (2002) suggested that concerns regarding eating, weight and body image increase with age and with the duration of dance studies. Among the groups with EDs, dissatisfaction sets in during adolescence and persists in the different life stages.

In summary, given the results of our study, we can conclude that the practice of dance can promote greater dissatisfaction with one's body image and reach a clinically significant degree of concern even without a high BMI. At the same time, this concern as a behavioral response to the search for ideal thinness can lead women to start low-calorie diets that are dangerous for their health and adopt body avoidance behaviors and other coexisting behaviors like those listed on Table 4. Based on these results, there is a need to take preventive measures at professional dance conservatories. The differences noted for women studying dance justify the need to consider this variable in the prevention programs in order to adapt them to the characteristics of each group, as we have noted in another study (García-Dantas, Del Río-Sánchez, Sánchez-Martín, Avargues and Borda, 2013).
Body dissatisfaction and coexisting behaviors. Comparative study of adolescent and young women from the general population, dancers and women with an ED diagnosis

References


Abstract:

**Objective:** To analyze the presence of psychopathological symptoms in a sample of mothers whose children and adolescents were treated because of obesity or overweight in the Pediatric Endocrinology Unit at Children’s Hospital “Virgen del Rocío” of Seville. **Method:** The participants were a group of families that went to the pediatric endocrinology unit. After the mothers signed the informed consent, we gave them the “General Health Questionnaire Goldberg” (GHQ-28), that once filled had to be returned by post mail. We present the results of 41 participants. **Results:** Most mothers did not show symptoms of psychopathological problems. Nonetheless, there were a 12.7% of cases with clinical significance in the anxiety-insomnia scale. **Conclusions:** There are no indicators of special psychopathology in the mothers of children with obesity or overweight, being anxiety symptoms the main problem they showed. **Keywords:** obesity, overweight, pediatric population, hospital treatment, maternal psychopathology.

Introduction

Obesity and excess weight are two of the principle health problems today (Duelo, Escribano and Muñoz, 2009), which is why it is so important to examine the psychological context in which these problems occur. The pioneering works by Epstein, Klein and Wisniewski (1994) and Epstein, Wisniewski and Weng (1994) established the existence of different psychopathological problems in the parents of children suffering from obesity. Several recent studies continue to associate childhood obesity with mothers’ psychopathology in general (Decaluwé et al, 2006; Farrow y Blissett, 2005; Roth et al, 2008), and with certain specific psychopathological disorders such as the lack of impulse control and attention deficit disorder with or without hyperactivity (Dempsey, Dyehouse and Schafer, 2011).

**Objective**

To analyze the presence of psychopathological symptoms in a sample of mothers whose children or adolescent sons/daughters were receiving hospital treatment for excess weight or obesity.

**Method**

**Participants.** The participants were 41 mothers of children and adolescents receiving treatment for excess weight or obesity at the Pediatric Endocrinology Unit at Hospital Infantil “Virgen del Rocío” of Seville. Except for one case of excess weight, the clinical cases detected with all of mothers with overweight children. Initially 64 mothers agreed to fill out the questionnaires but only 41 sent it in, in spite of the fact that these mothers did provide other data that was not of a personal nature. One of the participants did not answer all of the questions on the “Social Dysfunction” or the “Major Depression” scales.

**Instruments.** The General Health Questionnaire GHQ-28 (Goldberg, 1996) was used. This scale evaluates the presence of psychopathological symptoms among adults through 28 items that provide information on four subscales: “Somat-ic Complaints”, “Anxiety/Insomnia”, “Social Dysfunction” and “Major Depression.” It is a brief screening test that uses self-reporting to detect new problems.

**Procedure.** Following an interview with the families who had come to the unit for their son or daughter’s nutritional checkup, mothers were asked to sign a consent form and then received the GHQ-28. They were asked to mail it in after they had completed it.

**Results**

The data observed allow us to affirm that most of the mothers of children and adolescents with excess weight or obesi-
ty who received treatment at the hospital unit did not show symptoms of psychopathological problems. Only one case of somatic complaints was found, one case of social dysfunction, three cases of major depression and eight cases of anxiety. The three mothers who showed signs of depression also showed signs of anxiety, and one of these mothers also reported somatic complaints. In percentages, as can be seen on Figure 1, the highest percentage of clinically significant cases are on the anxiety-insomnia scale (12.7%), with barely any relevant evidence of symptoms on the scales of somatic complaints, social dysfunction or major depression. On a positive note, these results suggest that 87.3% of the mothers whose children or adolescents struggle with excess weight or obesity show no signs of psychopathology.

**Discussion and conclusions**

The results of our work do no corroborate the findings of Epstein et al. (1994) or of later studies with a similar focus, as we did not detect any relevant evidence of psychopathology among the mothers of children with obesity and/or excess weight. Although the data are clear, it is necessary to clarify that a significant number of the families interviewed (23) did not return the questionnaire in spite of actively collaborating in the interview and providing information on their children’s attitudes and behaviors. This could be owed to the mothers’ reluctance to talk about themselves out of fear that the obesity of their sons/daughters could be attributed to their own personal variables, thus explaining the experimental mortality detected and distorting the responses that were obtained. At the same time, since the GHQ is a screening measure that involves a brief self-report, it is possible that some type of social desirability could appear in answers along with false positives and negatives. We can conclude by noting that there does not seem to be any particular psychopathology among the mothers of boys, girls or adolescents with obesity or excess weight, except for an increased amount of anxiety symptoms. These results should be confirmed with tests other than screenings in order to rule out the social desirability that could appear due to the evaluation context. Similarly, it would be important to explore the causes of the experimental mortality detected in this study. Finally, maternal psychopathology that is not related to child obesity should be assessed through comparisons with groups of mothers of children who are neither overweight nor obese.

**References**


Psychophysiological impact of European tobacco-warning images

I. F. Ciria, A. Punzo, B. Blanca, N. Vera, M. A. Muñoz y J. Vila

Universidad de Granada, Granada, Spain

Abstract:
The World Health Organization insures that tobacco epidemic kills nearly six million people a year. In 2003, the European Commission proposed a series of pictorial warnings to be use on tobacco packages for to prompt negative attitudes towards smoking and predispose smokers to quit smoking. This study evaluated the physiological impact of tobacco-warning European Commission. Fifty healthy volunteers (aged 19 – 23 years) participated in the study. They saw a set of thirty six IAPS pictures and twenty four European tobacco-warning images. Electromyographic activity of zigomatic major and corrugator were recorded when subjects were viewing the pictures. The results showed higher EMG activity level of corrugator to unpleasant IAPS pictures compared to tobacco-warning images. These results indicated that images proposed by the European Commission for tobacco packages could gain of more activating images, in order to promote the activation of defensive/avoidance motivational system.

Keywords: Tobacco-warning, Efficacy, Motivation.

INTRODUCTION

According to the World Health Organisation, tobacco is the cause of six billion deaths across the world each year, and approximately one-third of these are women (WHO, 2004). In 2003, the European Commission proposed using pictorial images on cigarette packages to warn users of their harmful effects. Recently, the ability of these images to promote negative attitudes towards smoking and predispose smokers to quit smoking has been researched (Muñoz et al., 2011). Self-reports indicate that the images proposed by the commission may not be negative enough to serve as activators i.e. to predispose smokers to quit. However, these results have not been tested with objectives scales like the electromyographic activity of the zygomatic major and corrugator muscles. The activities of these muscles is related to the emotional response to positive or negative stimuli; the activity of the corrugator is greater when unpleasant images are shown, while the zygomatic major activity is increased in response to pleasant images.

The goal of this study was to evaluate the emotional image of the tobacco prevention images in women by measuring electromyographic activity of the zygomatic major and corrugator muscles in response to a set of affective images selected from the International Affective Picture System (Lang, Bradley and Cuthbert, 1999).

METHOD

Participants. Fifty university students ages 19-23 (mean=22.02; SD=3.08) participated in this study. All were students at the Universidad de Granada and none were taking medication or suffering from any health problems. The study was approved by the research ethics commission at the Universidad de Granada.

Procedure. Participants viewed 36 images with different emotional contents from the International Affective Picture System (IAPS) (Lang, et al., 1999) (12 pleasant, 12 neutral, 12 unpleasant) and 12 preventive unpleasant images and 12 preventive neutral, in following with the study by Muñoz et al. (2011). The task consisted in viewing 5 sets (blocks) of 12 images presented twice; each image was shown for 3 seconds. The blocks were separated by a black screen that was shown for 20 seconds. The order in which the blocks were presented was counterbalanced using a Latin Square design. While viewing the images, participants remained standing before a screen measuring 97 x 103 cm and located 150 cm from with subject with a viewing angle of 38˚ x 34˚. The reaction of the subjects was measured using an integrated electromyogram (EMG) of the zygomatic major and corrugator supercilli muscles on the right side of the face.

At the end of the experimental task, participants reported the valence and arousal in response to each image using the Self-Assessment Manikin (Bradley and Lang, 1994).

RESULTS

When the five affective categories were compared, the analysis of variance in valence and arousal showed significant differences between the two (F(4,59)=165.86, p<.001),
(F(4.59)=164.96, p<.001 respectively). The preventive neutral and unpleasant images were viewed as less negative and less activating than the unpleasant images of the IAPS (p<.001). At the same time, the preventive neutral and unpleasant images were viewed as more unpleasant and activating than the pleasant images of the IAPS (p<.001; Table 1).

The result of the ANOVA 5 (Categories) x 5 (Order) of the electromyographic activity of the corrugator showed significant differences in the Categories factor (F (4.45) =19.23, p < .001; Figure 1a). The unpleasant images of the IAPS produced greater activation of the corrugator than the unpleasant tobacco prevention images (p< .01) or the neutral tobacco images (p<.001). At the same time, the activity of the corrugator provoked by the preventive neutral images was lower than that brought on by the preventive unpleasant images (p<.05).

The result of the ANOVA 5 (Categories) x 5 (Order) of the electromyographic activity of the zygomatic showed significant difference in the Categories factor (F (4.45) =3.904, p<.01). The post-hoc analysis revealed marginally significant differences between the images from the neutral category and those of the pleasant (p<.08) and unpleasant (p<.05) categories (Figure 1b).

**Discussion and conclusions**

In spite of the efficacy of the use of images in tobacco prevention campaigns, our results indicate that the use of images with a higher emotional impact could increase the effectiveness of the anti-tobacco campaign. The images proposed by the European Commission induce average levels of aversion and activation. This translates into averages levels of activation of the defensive system, which could limit the scope of the preventive campaign. The combination of scales measuring both subjective and physiological aspects lends support to this conclusion. Based on Peter J. Lang’s bio-informational theory (Lang, 1995), visual stimuli with a high emotional impact can promote intense emotional states that are reflected in a central activation of the motivational systems for action. In light of the data obtained through these scales, the preventive campaign proposed by the European Commission could benefit from the use of more unpleasant and activating images capable of eliciting a defensive aversive response.

Future studies should include men to corroborate whether the effect is replicated regardless of gender. The incorporation of other physiological and behavioral scales in future studies—like skin conductance or body movements—could increase the scope of these conclusions.

**References**

Ciria, Punzo, Blanca, Vera, Muñoz and Vila

Psychophysiological impact of european tobacco-warning images


Skin cancer: how portuguese “sunbathers” perceive risk
Rita Silvestre Costa and Ana Rosa Tapadinhas
Instituto Superior de Psicologia Aplicada, Instituto Universitário, ISPA-IU

Abstract:
Skin cancer has been on the rise among the Caucasian population and scientific literature suggests that the incidence of this type of cancer could be prevented if individuals adopted precautionary behaviours. Effectively, rates decrease if citizens avoid prolonged exposure to the sun and protect themselves when exposed. The current research paper aims to understand how a sample of Portuguese citizens perceive the risk of skin cancer during bathing season. Method: A sample of 318 participants, between 18 and 74 years of age, was gathered and both the Risk perception of Skin Cancer and the Socio-Demographic Questionnaire were employed. Results: It was found that the risk perception in the sample could be considered median, and is significantly higher than the average risk awareness in general. Conclusions: The study provides a boost towards identifying priorities in intervention programs in cancer and preventive behaviors. As recommendations for future research, we suggested comparative data, validations of the scale and qualitative methodology. Future research should examine the relations between risk perception in concomitance with other psychological concepts.

Keywords: Risk perception, Skin cancer, Sun exposure, Health Psychology.

Received: 26/06/2013 Accepted: 05/09/2013

Introduction
In Portugal, it is estimated that each year there are approximately 10,000 new diagnoses of non-melanoma skin cancer and about 1000 cases of melanoma (www.apcancrocutaneo.pt), the most serious form of skin cancer (Pollock, 2006). Numbers are high not only for our overall population, but also for the European rates (Parente, Gomes, Viana, & Valley, 2012). The aforementioned research solidly establishes that, with regards to the various types of skin cancer, the foremost external cause is exposure to ultraviolet rays (Kasparian, McLoone, & Meiser, 2009). It is estimated that 4 in 5 cases of skin cancer could be prevented by reducing solar exposure, particularly avoiding sunburns and using sunscreen (Hawkes, Hamilton, White, & Young, 2012; Myers & Horswill, 2006). In this context, risk perception plays an important role in most cognitive models for predicting health-related behaviour (Brewer, Chapman, Gerrard, Mc Caul, & Weinstein, 2007; Camilo & Lima, 2010; Hay et al., 2011) and it appears that risk is a underlying component in exposure to sunlight (Craciun, Schuz, Lippke, & Schwarzer, 2010; Sjöberg, Holm, Ullén, & Brandberg, 2004). According to Janssen, Osch, Vries and Lechner (2011), risk perception can be measured along the dimensions of Perceived Likelihood and Perceived Severity.

Objective
Having established these facts, and taking into account the few existing studies on this subject, the following research problem suggests itself: What is the risk perception of skin cancer among a sample of Portuguese sunbathers during the bathing season?

Methods
Participants. The participants were 318 sunbathers from different districts of Portugal; of these 64.2% were female and 35.8 % male. All were aged between 18 and 74 years (M=35.61; SD=12.412).

Instruments. Two instruments were employed, the “Risk Perception of Skin Cancer (Janssen et al., 2011), translated by ourselves and the “Sociodemographic Questionnaire”. The “Risk Perception of Skin Cancer” (Janssen et al., 2011), consists of two main operationalizations, one for Perceived Likelihood and the other for Perceived Severity.

Procedure. A trial run was carried out. We proceeded to collect the sample, which is restricted to subjects with minimum age of 18 years, of Portuguese nationality, Caucasians, with the additional criterion of being sunbathers. Treatment and statistical analysis of data was made using the Statistical Package for the Social Sciences (version 20.0 for Windows). The present study is one of a correlational and descriptive quantitative nature. It also has an exploratory nature (D’Oliveira, 2007).

Results
In order to answer the point of research, we performed a Student t-test for paired samples. The results (Table 1) indicate that the risk perception in skin cancer was median in this sample compared with the values of a population answer average of 3.00. Briefly, risk perception, t (317) = 15.040,
p = 0.000, was significantly higher in the sample than average risk perception in an average population. The Perceived Likelihood, t (317) = -2.139, p = 0.033, was significantly lower in the sample than the average Perceived Likelihood. Comparatively the Perceived Severity was significantly higher in the sample, t (317) = 18.517, p = 0.000, than the average Perceived Severity.

Table 1 – Student t test for Risk Perception

<table>
<thead>
<tr>
<th>Risk perception</th>
<th>Medium</th>
<th>SD</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk perception</td>
<td>3.36</td>
<td>0.42</td>
<td>15.040</td>
<td>0.000***</td>
</tr>
<tr>
<td>Perceived likelihood</td>
<td>2.92</td>
<td>0.58</td>
<td>-2.139</td>
<td>0.033**</td>
</tr>
<tr>
<td>Perceived severity</td>
<td>3.48</td>
<td>0.46</td>
<td>18.517</td>
<td>0.000***</td>
</tr>
</tbody>
</table>

** p ≤ 0.05 *** p ≤ 0.001

Discussion and conclusions

The risk perception in the sample of Portuguese citizens could be considered median, and is significantly higher than the average risk awareness in general. However, when comparing the two operationalizations of risk perception, we found that the participants reported being aware of the severity of skin cancer, but considered that they had a lower Perceived Likelihood of suffering from this disease. This could be supported by the research of Bränström, Kristjansson, and Ullen (2005). Taking into account these values, we may be before a case of “unrealistic optimism” (Radcliffe & Klein, 2002; Henriques & Lima, 2003). We should also consider the possibility of a denial mechanism as a strategy of minimizing risk perception (Thielen, Hartmann, & Soares, 2008). Focusing on generalist Health psychology, the data could be approached in light of the biomedical model (Ogden, 2004). Given the relevance of the topic and its exploratory nature, one can view this study as a stepping stone in the understanding of risk perception in individuals who attend the beach and that are facing the most important risk factor: sun exposure - a factor that is in turn conditioned by awareness and responsible behaviour of each individual (Cestari & Zago, 2005). In terms of implications, the study could provide a boost towards identifying priorities in intervention programs. It should be noted that there were some limitations, as the impact of social desirability, random responses and the absence of comparative data should be noted. As recommendations for future research, we suggested further validation of the scale for the population and gather/analyzing the data through a qualitative methodology (Pais-Ribeiro, 2008). Finally, it is suggested studying risk perception in concomittance with other psychological aspects.

References


Costa and Tapadinhas


Abstract:
In this study, we propose an intervention program based on virtual reality (VR) for the treatment of pediatric patients who have suffered from burns, based on the scientific contributions that have shown the effectiveness of VR at reducing the pain caused by injuries. The program is structured in two phases: I) Information/Preparation. The process and expected effects will be explained to patients; and II) Intervention. In this phase, in order to observe the differential effects of virtual reality, patients will be divided into two groups: Group a) will receive training on imagination/distraction techniques and Group b) will be treated with VR. Based on the emotional effect caused by burns, the application of VR technology is expected to reduce the anxiety which young patients experience, favoring control and pain management during medical procedures and avoiding anticipation of pain.

Introduction
Virtual reality (VR) has proven an effective technique for managing and controlling the pain of burn injuries. It produces beneficial effects by reducing the sensory and emotional component (Hoffman, Patterson, Carrougher and Sharar, 2001). Several studies have shown the efficacy of VR in treating severe pain (Morris, Louw and Grimmer-Somers, 2009; Malloy and Milling, 2010; Hoffman, Chambers, Meeyer, Arceneaux, Rusell et al., 2011). The technique consists in VR-based behavioral interventions to alleviate the pain experienced by patients who must undergo painful medical procedures such as treatments for burn injuries (Hoffman, Patterson, Magula, Carrougher, Zeltzer et al., 2004; Hoffman, Patterson, Seibel, Soltani, Jewett-Leahy et al., 2008). The goal of these interventions is to distract the patient to keep him/her from focusing on the signs of pain (Maani, Hoffman, Desocio, Morrow, Galin et al., 2008). On the other hand, although the pain experienced during burn treatments has been clinically established, the pediatric population has received little attention from researchers (Kipping, Rodger, Ware, Kimble and Cuttle, 2012).

Pain and anxiety can prolong the recovery time of children who have suffered from burn injuries and pharmacological therapy alone is not enough to alleviate these reactions (Das, Grimer, Sparnon, MacRae and Thomas, 2005). Recent findings have shown that VR can be effective in these cases either on its own or in combination with other treatments. In this case, cognitive procedures were combined with augmented reality (AR). The studies show an improvement among the treated patients and highlight the motivational factor that appears in this type of therapy (Brown, Rodger, Ware, Kimble and Cuttle, 2012).

Objective
To present an RV-based intervention program for the treatment of pediatric patients with burn injuries. The results of previous studies (Delgado, Moreno, Miralles and Gómez-Cía, 2008; Delgado, Moreno and Gómez-Cía, 2010) and the bibliography accumulated over the past decade on VR support the use of this technology for the treatment of burn injuries (Schmitt, Hoffman, Blough, Patterson, Jensen et al. 2011)

Method
Taking into account the study’s objectives, we propose implementing the treatment program in the morning when patient burns are treated (wound cleansing and dressing changes) for several days. Before starting the intervention, the minors will be randomly assigned to one of two groups. The study involves two phases although in Phase II, the intervention will be different for each of the two groups:

Phase I: Participants receive information and preparing for the procedure that will take place during the intervention.

Phase II:
-Pre-Intervention Assessment: Pain, anxiety and psychophysiological responses
- **Intervention during the medical procedure**: Subjects will be divided into two treatment groups; the contents of the techniques will vary for each group. Both will receive the prescribed analgesia to cope with the wound care.

  **Group 1**: Training in imagination/distraction techniques.
  **Group 2**: Instructions to learn to control the VR game.

- **Post-Intervention Assessment**.

In both phases, the assessments will be done by third party observers. Self-reporting techniques and objective pain scales will be used.

**Discussion and conclusions**

Studies have already shown that when combined with pharmacological treatment with minimum secondary effects, VR is a valid option for handling and alleviating the severe pain caused by burns (Das, Grimmer Sparnon, MacRae and Thomas, 2005) and an adequate strategy when used in conjunction with the usual pharmacological treatments (Hoffman et al., 2004). Its effects have been tested in an adult population (Hoffman, Doctor, Patterson, Carrougher and Furness, 2000) and among children who have suffered from burns (Hoffman, Patterson, Carrougher and Sharar, 2001). At the same time, VR can help reduce dependency on opioid analgesics while reducing the possibility of the psychological pathologies that can develop over time. VR is successful at reducing the pain experience from the very first day it is used and the treated minors find that it is a fun, appealing experience (Schmitt, Hoffman, Blough, Patterson, Jensen et al., 2011). Other studies have suggested that VR’s efficacy should be corroborated by comparing it with standard treatments (pharmacological) and other distraction methods (watching TV, listening to music, etc.) (Van Twillert, Bremer and Faber, 2007).

In conclusion, there is evidence that VR can be beneficial as a supplementary method to reduce the severe pain associated with burns in a pediatric and adolescent population in comparison to standard (pharmacological) treatment alone. The efficacy of the technique improves when it is applied in conjunction with other distraction techniques.
References


Fear and anxiety in dental treatments and psychological interventions

Eugenia Mª Díaz Almenara, Laura San Martín Galindo
Department of Stomatology. Universidad de Sevilla, Spain
and Miguel Ruiz-Veguilla
Hospital Universitario Virgen del Rocío, Sevilla, Spain

Abstract:
About 11 to 20% of the population has phobia of the dentists. The main aim of this study is to identify the factors associated with fear of dentist. Methods: The study included 98 subjects who regularly attending a private practice dentists located in Seville during 13 months. A cross-sectional clinical study was carried out involving the administration of anxiety scales, a sociodemographic questionnaire and Dental fear was measured using the questionare of dental fear (CMD) and using the question: ‘How afraid are you of visiting a dentist? Results: We applied a factor analysis and we extrated four dimensión from the questionare of dental fear: health care, attitud of dentist, negligence and organization. Only attitud of dentist (OR=2.4(IC95% 1.1-5.4); p=0.02), negligence ( OR=5.3(IC95% 2.0- 13.1); p=0.0001) and anxiety (OR=1.3(IC95% 1.3-1.7); p=0.01) showed assocaction with dental fear. Conclusions: the anxiety, negligence and attitud of dentists dimension was associted with fear of dentist.

Keywords: Anxiety, fear of dentist.

Introduction
Fear of dental treatment and the dentist’s chair is a component that is frequently present in stomatology (Milgrom et al., 1985). For years, fear and anxiety have been a recognized source of problems for the normal practice of our profession (Aguilera et al., 2002; Heitkemper et al., 1993; Marquez-Rodriguez, 2001; Milgrom et al., 1985; Navarro and Ramirez 2002).

According to many authors, fear mainly depends on the professional’s readiness and ability to condition patients with a positive attitude towards dental treatment, though it can also be conditioned by family and social influences. In any case, the individual’s perception of the pain plays an important role in dental fear (Diaz and Cruz, 2004).

Some studies show a much more significant reduction of the anxiety in the treatment of patients whose dentists were aware of their dental anxiety scores before treatment (Dailey et al., 2002; Fernandez and Roales-Nieto, 2000; Shoben and Borland 1954). Therefore, self-reported dental anxiety scales can provide valuable information for dentists who are interested in assessing and reducing anxiety levels among their patients.

Contact information:
Dr. Miguel Ruiz Veguilla
Psychosis and Neurodevelopment Group. Institute of Biomedicine of Seville (IBIS), Hospital Universitario Virgen del Rocío / CSIC/Universidad de Sevilla. Mental Healthcare Hospitalization Uni. Sevilla, Spain
miguel.ruiz.veguilla.sspa@juntadeandalucia.es

Received: 30/06/2013   Accepted: 30/10/2013

Objectives
The first objective of this study was to describe the dental fears expressed by the patients who go to the dentist. In order to do so, secondary objectives included identifying the components or components that are part of the concept of dental fear; and identifying which components distinguish the groups with high dental fear from those with no fear of the dentist.

Method
All subjects who visited a private dental practice in Spain between December 2011 and January 2012 were included in the study.

The dependent variable was being afraid of the dentist. Fear was measured using the simple question included on the questionnaire by Pohjola et al. (2011): How afraid are you of visiting a dentist? 1) Not at all; 2) A little; 3) A lot. The questionnaire was dichotomized in order to divide the statistical analysis in two: low fear (no fear/a little fear) and high fear (those who answered “a lot” on the questionnaire). The following independent variables were considered: age, sex and the dental fear survey by Navarro and Ramírez (1996). This questionnaire consists of 20 items with Likert-type responses from 0 to 5 and it was administered in order to assess dental fear. Anxiety and depression were assessed using the Hospital Anxiety and Depression Scale (HADS, Zigmond y Snaith, 1983).
Results

A total of 98 subjects who regularly visited a private practice in Seville were included in the study. In terms of gender, 59 (60%) were women and the average age was 37.5 with a standard deviation of 12.6 years. In terms of regular visits to the dentist, 50% (49 subjects) visited the dentist regularly, while 44% (43 subjects) only went to the dentist when something was bothering them and 6% (6 subjects) never went. In relation to the fear associated with the dental visit, 81% (n=79) reported low fear; 45% (44 subjects) had “no” fear of the dentist; and 36% (n=35) had some fear. In terms of the high group, 19 subjects (19%) reported a lot of fear associated with dental visits. The score on the HADS anxiety subscale was 3.1 (standard deviation 2.4) and on the depression subscale, 7.3 (standard deviation 3.2).

In the component analysis of the dental questionnaire, eigenvalues of over 1.5 were retained and subject to varimax rotation. Four components were extracted: the dentist attitude component (variance of 15.7%); the negligence/oversight component (variance of 13.8%) and the organization component (variance of 13.2%).

In the multivariable analysis, the three components that had been high in their relationship to the dental fear variable were introduced (negligence component, dentist attitude component, HADS-A). The age and gender variables were also included. The variables that were independently associated in cases of dental fear were: HADS-A (OR=1.3(1.0-1.7); P<0.01), negligence (OR=5.3(2.0-13.7);P<0.0001) and the dentist component attitude (OR=2.4(1.1-5.4);P<0.0001).

Discussion and Conclusions

The main finding of this study can be summarized as follows: anxiety, the negligence component and the attitude component are independently associated when a high fear of the dentist is perceived.

Márquez–Rodríguez et al. (2004) did a component analysis in order to extract the dental fear survey components. The results were similar to those obtained in our study: four components that explained 65% of the variance were extracted. The extracted components were: component 1) humane treatment of the client; component 2) professional malpractice; component 2) aspects inherent to the treatment and component 4) unprofessional aspects. It is important to note that the study by Márquez-Rodríguez et al. (2004) was on users of public healthcare. However, the components were similar to those obtained in this study, which leads us to conclude that the fears and concerns of users of public and private healthcare are similar.

In our work, dental fear was associated with high anxiety scores. This indicates that fear of visiting the dentist could be encompassed within phobias. Therefore, we could deduce that interventions that have proven effective in the treatment of specific phobias could also be used for patients with dental fear (Hmud and Walsh, 2009). In a study by Moore et al., the authors found that patients attributed the origin of their anxiety to these negative contacts with the dentist (Moore et al., 1993).

In conclusion, three independently associated components were identified when experiencing dental fear: the attitude of the dentist, fear of negligence/oversight and anxiety. These components can be modified with simple interventions.

References


Abstract:
Continuous Performance Tests (CPT) have proven effective for monitoring the effects of treatments for ADHD, especially neurofeedback and virtual reality. The Integrated Visual and Auditory Continuous Performance Test (IVA/CPT), which is based on the DSM-IV diagnostic criteria, allows hyperactive-impulsive symptoms and inattention to be assessed at the visual and auditory level. The goal of this study is to determine whether the IVA/CPT is a useful scale to measure the therapeutic efficacy of neurofeedback. A total of 16 male and female subjects ages 7-14 with a diagnosis of ADHD who had been randomly assigned to neurofeedback treatment participated in the study. Attention and hyperactivity were the variables evaluated in the pre- and post-treatment phases. Through comparisons of means and effect size calculation, the efficacy of neurofeedback was estimated according to the children's performance in the auditory and visual variables of the CPT/IVA. The data obtained reveal significant improvement in self-control and symptoms of inattention following the treatment.

Received: 22/07/2013  Accepted: 22/07/2013

INTRODUCTION

Continuous Performance Tests (CPT), currently considered an alternative to paper and pencil tests, allow sustained attention and behavioral inhibition to be measured while allowing for the objective monitoring of therapeutic effects. They have proven effective for monitoring the change associated with treatments administered in ADHD (Madaan et al., 2008; Monastra, 2002; Epstein, 2001), especially neurofeedback (Arns, de Ridder, Strehl, Breteler y Coenen, 2009; Moreno et al., 2011) and virtual reality (Yan et al., 2008).

The Integrated Visual and Auditory Continuous Performance Test (IVA/CPT) (Sandford and Turner, 1995) which is based on the DSM-IV diagnostic criteria, allows hyperactive-impulsive symptoms and inattention to be evaluated at the visual and auditory level. It is administered from the age of 6 through adulthood and it takes 20 minutes. It has been used to evaluate attention and self-control problems (White, Hutchens and Lubar, 2005; Corbett and Constantin, 2006) and as an objective scale for measuring therapeutic effects.

In ADHD treatment, the IVA/CPT has been used to compare the effects of pharmacological therapy with respect to modifications in behavioral patterns (Harding, Judah and Gant, 2003) and in relation to neurofeedback (Yan et al., 2008; Moreno et al., 2011), with significant differences detected on the principal scales (inattention and behavior control). Smith and Sams (2005) obtained significant changes in relation to inattentive symptoms in a group of adolescents with disruptive behaviors who were treated with neurofeedback. At the same time, when measuring therapeutic efficacy in a multimodal treatment (neurofeedback and cognitive therapy), Tinius and Tinius (2000) noted significant differences in inattention and behavioral inhibition among adults with ADHD (inattentive subtype) and a control group.

OBJECTIVES

To determine whether the IVA is a useful scale to measure the therapeutic efficacy of neurofeedback, a treatment administered to children diagnosed with ADHD.

METHOD

A total of 16 male and female subjects ages 7-14 with a diagnosis of ADHD who had been randomly assigned to neurofeedback treatment participated in the study. The minors were evaluated using the CPT/IVA.

RESULTS

Attention and hyperactivity are the two variables evaluated in the pre- and post-treatment phases. Through comparisons
of means and effect size calculation, the efficacy of neurofeedback was estimated according to the children’s performance in the auditory and visual variables (respectively) of the CPT/IVA. The data obtained in the study reveal significant improvement in self-control (FRCQ t=-2.509; p<0.05) and with respect to symptoms of inattention (VAQ t=-2.910; p<0.05) following the treatment. The results taken from the TE show values of between 1.03 and 0.69 and 0.80 and 0.57 for self-control and symptoms of inattention.

**DISCUSSION AND CONCLUSIONS**

CPT/IVA was confirmed as a useful scale to measure the therapeutic efficacy of neurofeedback. Medium and high effect sizes reflect the magnitude of the change between pre-treatment and post-treatment measurements.

The changes were observed in terms of both self-control and symptoms of inattention. The therapeutic effects can be seen independently of the type of stimulus presented (auditory or visual), although the data reflect that the change is greater when children are responding to visual stimuli.

**REFERENCES**


**ACKNOWLEDGEMENTS**

Project funded by the national R+D+i plan (PSI2008-06008-C02-01) (Spanish Ministry of Science and Innovation).
Abstract:
The scientific approach to human emotions entails important methodological difficulties. Many of these difficulties can be solved by the development of adequate research paradigms together with the application of psychophysiological register techniques. Various studies show the tendency of negative affect emotions like fear and anxiety to be healthy in human health. Heart affections are one of the most often health problems derived from an intense and continuous emotional activation. In order to know in detail the sympathetic mechanisms of influence on cardiovascular activity, we propose an experimental design of cardiac defense response (RCD) together with register of the pre-ejection period (PEP) obtained by impedance cardiography and electrocardiogram. The PCD is a well established paradigm of cardiovascular reactivity elicited by the unexpected display of an intense and short auditory stimulus (500 ms, 105 dB). The PEP measures the latency between the onset of electromechanical systole and the onset of left ventricle ejection, being a reliable index of beta-adrenergic activity on left ventricle. Keywords: fear, anxiety, impedance cardiography, cardiac defense response, pre-ejection period.
(sympathetic nervous system) increases activity while the PSNS (parasympathetic nervous system) decreases it. Traditionally it was thought that the two systems always acted in a reciprocal manner: when one activated a response, the other inhibited it and vice-versa. However, there is a large number of studies whose results do not fit this model. In the study by Bernston, Cacioppo and Quigley (1991), who brought together all of the data that had been previously overlooked, the activity of the SNS is conceived of as a two-dimensional space where the two subsystems can function not only in a reciprocal manner but also by simultaneously activating or inhibiting a response. Assuming this model thus requires that sympathetic and parasympathetic activity be measured separately as opposed to simply inferring them based on general cardiac activity.

The most rigorous methodological way to measure the influence of the SNS on the heart is by recording the activity of the left ventricle as it is innervated exclusively by sympathetic fibers. This monitoring can be done in a non-invasive way through the application of impedance cardiology that is synchronized with the electrocardiogram (Sherwood et al., 1990). The development and standardization of this technique originally designed by Kubicek, Karnegis, Patterson, Witsoe and Mattson (1966) allows different indexes of the sympathetic neural influences on the heart to be obtained. One of these indexes is the pre-ejection period (PEP), which is the time interval from the onset of ventricular depolarization (the moment when the electromechanical systole begins) until the opening of the aortic valve (the moment when the oxygenated blood begins to flow through the aortic valve). The shorter the interval, the higher the level of sympathetic activity on the left ventricle and vice-versa. One of these indexes is the pre-ejection period (PEP), which is the time interval from the onset of ventricular depolarization (the moment when the electromechanical systole begins) until the opening of the aortic valve (the moment when the oxygenated blood begins to flow through the aortic valve). The shorter the interval, the higher the level of sympathetic activity on the left ventricle and vice-versa.

The application of this technique in the laboratory, within a research paradigm in the psychology of emotions such as the cardiac defense response (Vila et al., 2007), allows for precise information to be obtained on the degree of cardiovascular activity that depends on the influence of the sympathetic branch of the ANS. This integration model illustrates the importance of combining technological and conceptual advances with research paradigms, in a synergy that allows us to take one step forward in our knowledge of emotions and their health implications.

**References**


James, W. (1884). What is an emotion?. *Mind, (34)*, 188-205.


Reward value of loved familiar faces: an fMRI study
Alicia Sánchez-Adam, Pedro Guerra Muñoz,
University of Granada (Spain)
Mª Antonieta Bobes,
Cuba Neuroscience Center
Inmaculada León,
Universidad de La Laguna (Spain)
Agustín Lage
Cuba Neuroscience Center
and Jaime Vila,
University of Granada (Spain)

Abstract:
We have known since decades about the positive influence of social support and positive emotions on health. Different hypotheses have been made in order to understand the relationship between these factors and physiological and psychological indexes of health and wellbeing. One of these hypotheses suggest that secure, caring and loving environments act as safety cues that activates the reward system and inhibits defensive reactions. Previous studies from our lab have shown that viewing loved familiar faces activates the appetitive motivational system and inhibits defensive responses. In these study we compared central activation during the passive viewing of loved familiar faces with the activation associated with other highly rewarding stimuli (attractive faces). Our results show that loved familiar faces provoked a higher activation of the brain reward system, e.g. the medial orbitofrontal cortex.

Keywords: faces, identity recognition, emotion, loved familiar people, fMRI.

Introduction
Social interactions and attachment bonds between humans constitute one of the fundamental sources of pleasure (Berridge & Kringelbach, 2008). Recently, studies using functional magnetic resonance (fMRI) have shown the involvement of the reward brain system in the processing of loved familiar faces (Bartels & Zeki, 2000, 2004; Aron et al., 2005; ). In addition, a sense of being loved, valued and integrated in a social network is related with reduced mortality and morbidity rates (Taylor, 2010; Berkman & Syme, 1979). Regarding physiology, the presence of a loved one is associated with reduced stress responses (Heinrichs, Baumgartner, Kirschbaum & Ehlert, 2003) and lower pain perception (Eisenberger et al., 2011). Previous studies from our lab have shown that the processing of loved familiar faces yields a pattern of peripheral and central responses which is indicative of the activation of the appetitive motivational system (; Guerra et al., 2011) and the reciprocal inhibition of the defense system ( ). It has been argued that the beneficial effects of social support on health could rely on this reciprocal inhibitory mechanism (Guerra et al., 2012). Nevertheless, the activation of the reward brain system and the subsequent inhibition of defensive responses are also related to the processing of other pleasant stimuli like beautiful faces, erotic-content pictures, and beautiful paintings and music, whose relationship to health outcomes and wellbeing is not so clear (Bradley & Lang, 2007; ; Ishizu & Zeki, 2011). In this study we focus on the potential communalities and differences between loved familiar and unknown beautiful faces regarding activation of the reward system.

Methods
Fifteen participants (7 males) took part in this experiment, consisting of two experimental sessions. In the first experimental session peripheral psychophysiological and subjective emotional responses to the stimuli were recorded. The second session consisted of an fMRI scanning during the passive viewing of emotional faces (loved familiar, beautiful, hated familiar and unpleasant). Four different faces were included in each category. Here we focus on the fMRI data for the contrast Loved Familiar Faces > Beautiful Unknown Faces (Figure 1). The task comprised 180 trials presented in a pseudo-random order: 160 emotional trials (10 for each single picture) and 20 “catch” trials (a picture of a baby taken from the International Affective Picture System) (Lang, Bradley, & Cuthbert, 2008). Pictures were presented during one second with an inter-trial interval between 5 and 6 seconds. Participants were instructed to look at the pictures for the entire time they were on the screen and to press a button whenever the baby picture appeared.

Contact information:
Alicia Sánchez Adam
Centro de Investigación Mente, Cerebro y Comportamiento (CIMCYC), Campus de Cartuja S/N (18071-Granada, Spain)
Tel.: (+34) 686596109
adam@ugr.es
Data from all participants were obtained in a 3T Philips scanner and analyzed using SPM8 (Statistical Parametric Mapping V8 http://www.fil.ion.ucl.ac.uk/spm). Activity in the whole head was measured using an echo-planar imaging sequence that acquired 30 interleaved slices. Acquisition and repetition times were 2.9 and 3 sec., respectively.

**Results**

Figure 2 depicts main results for the contrast *Loved familiar faces > Beautiful faces*. Statistical threshold was set at $p < 0.001$ (uncorrected) with a minimum cluster size of 38. There were six significant activations at the cluster level that can be categorized on a functional level: (a) medial orbitofrontal cortex (MOF) and frontal inferior cortex, (b) supplementary motor area (SMA) and (c) precuneus and fusiform gyrus (bilateral) and right cuneus (see Table 1).

**Discussion and Conclusions**

Our results show that the processing of loved familiar faces is accompanied by activation of a set of brain areas associated with the evaluation of their hedonic valence and motivational value, and with identity recognition processes. The brain structures reported here are consistent with data from emotional processing and face recognition studies (Bradley & Lang, 2010; Sabatinelli et al., 2007; Gobbini & Haxby, 2007). Medial orbitofrontal cortex is related to the monitoring, learning and memory of the reward value of reinforcers (Kringelbach, 2005), giving support to the hypothesis that loved familiar faces act as stronger reinforcers than beautiful faces. The activation found in the supplementary motor cortex could be also explained in terms of a greater emotional response that involves motor preparation and emotional expression (Bradley & Lang, 2010). Finally, the activation found in the cuneus, precuneus and fusiform gyrus might be related to the recovery of semantic and autobiographical memories associated with the familiar face as well as with

---

Figure 1. An example of a loved familiar face and a beautiful unknown face. Pictures were matched in color, size and background. Faces were chosen with a frontal orientation, direct gaze and a neutral emotional expression.

Figure 2. Activity elicited when participants viewed faces of their beloved ones compared to pleasant (unknown) faces. Abbreviation: SMA = Supplementary Motor Area; MOF = Medial Orbitofrontal.
Reward value of loved familiar faces: an FMRI study

Sánchez-Adam, Guerra, Bobes, León, Lage and Vila

identity recognition processes (Adolphs, 2002; Bartels & Zeki, 2004; ). Altogether, these findings show that viewing loved familiar faces activate a set of brain areas related with the processing of emotion and reward, compared with other rewarding stimuli. Understanding how the brain process positive emotions and personal attachment related stimuli can help to developed individual and collective interventions aim at encouraging wellbeing and preventing pathology.

Table 1. MNI coordinates of activations for the contrast Loved familiar faces > Pleasant Faces. Significant activations at P< 0.05 uncorrected.

<table>
<thead>
<tr>
<th>Left</th>
<th>Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activations</td>
<td>x</td>
</tr>
<tr>
<td>Suplementary Motor Cortex</td>
<td>4</td>
</tr>
<tr>
<td>Medial Orbital Frontal Cortex</td>
<td>0</td>
</tr>
<tr>
<td>Frontal inferior Cortex (Operculum)</td>
<td>-40</td>
</tr>
<tr>
<td>Cerebellum</td>
<td>-46</td>
</tr>
<tr>
<td>Precuneus</td>
<td>-4</td>
</tr>
<tr>
<td>Cuneus</td>
<td>0</td>
</tr>
<tr>
<td>Medial Cingulate</td>
<td>-4</td>
</tr>
<tr>
<td>Fusiform gyrus</td>
<td>-38</td>
</tr>
</tbody>
</table>

References


Integrated approach to the study of eating and weight-related problems: a paradigm shift

David Sánchez-Carracedo; Ph. D., Gemma López-Guimerà; Ph. D.,
Dept. Clinical and Health Psychology, Universitat Autònoma de Barcelona (Spain)

Jordi Fauquet; Ph. D.,
Dept. Psychobiology and Methodology of Health Sciences, Universitat Autònoma de Barcelona
Neuroimaging Research Group, IMIM (Hospital del Mar Medical Research Institute), Barcelona
and Joaquim Puntí; B. Sc.
Dept. Clinical and Health Psychology, Universitat Autònoma de Barcelona
Mental Health Unit of the Parc Taulí Health Corporation (CSPT)

Abstract:
Eating and weight-related problems (EWRP) include eating disorders (ED), unhealthy weight-control behaviors (UWCB), body dissatisfaction, overweight and obesity. The development of integrated approaches for the prevention and intervention of EWRP requires a better understanding of their interrelationships and shared risk factors. However, the majority of the studies under this integrated approach have been conducted in North American populations. This fact limits the generalizability of their results to adolescents from other countries. This paper presents a brief review of main arguments that supports this integrated approach. Additionally, we present some of the main results obtained in a study conducted by our research group that examines and compares UWCB as a function of weight status in North-American and Spanish adolescent samples. This study highlights the necessity to promote an integrated approach to the study of EWRP, especially in the prevention field. Concurrently, differences and similarities between both samples indicate that integrated interventions with common and specific components for each country are needed.

Key words: obesity, disordered eating, prevention, adolescents, weight status

Received: 29/06/2013  Accepted: 08/09/2013

Introduction

Given the prevalence, serious complications, and resistance to treatment of obesity, eating disorders and disordered eating, prevention becomes a high priority (Gearhardt, 2012; Stice, Becker and Yokum, 2013).

Although to date research in the obesity and disordered eating fields has followed quite separate paths, increasingly researchers in both prevention areas are beginning to recognize the benefits of collaborative efforts aimed at the spectrum of eating and weight-related problems, which include anorexic and bulimic behaviors (such as fasting, vomiting and the use of laxatives, diet pills or diuretics), unhealthy dieting practices (as dieting, skipping meals, etc.), body dissatisfaction, binge-eating disorder, overweight and obesity (Neumark-Sztainer, 2003). Empirically supported reasons for this integrated approach include: (i) the co-occurrence of these problems and easy progress from one problem to another over time; and (ii) identification of shared risk factors. Practical considerations include: (i) a possible lack of coherence in the messages being transmitted in obesity and eating disorders prevention fields; and (ii) the efficiency of implementing programs aimed at preventing a broad spectrum of eating and weight-related problems than to implement separate programs. Special attention is being paid to shared risk factors of eating disorders and obesity (Haines & Neumark-Sztainer, 2006; Neumark-Sztainer, Wall, Haines et al., 2007; Hill, 2007; Sánchez-Carracedo et al., 2012). But the majority of the studies identifying these shared risk factors have been conducted in North American populations, aspect that limits the generalizability of their results to adolescents from other countries and therefore indicates the need for cross-cultural studies (López-Guimerà et al., 2013). Our research group had conducted a study that examines and compares unhealthy weight control behaviors as a function of weight status in population-based samples in two large urban areas, Barcelona (Spain) and Twin Cities (U.S.) (López-Guimerà et al., 2013). To the best of our knowledge, this is the first cross-cultural study between Spanish and North-American adolescent samples of these characteristics. Participants included in this study were 1501 adolescents from Barcelona (48% girls, 52% boys, mean age of 14.3 years, SD=1.2) and 2793 adolescents from Twin Cities (53% girls, 47% boys, mean age of 14.4 years, SD=2.0). The main results indicated that although significantly more girls within the U.S. report-
ed dieting and the use of unhealthy weight control behaviors as compared to girls in Spain, the prevalence was high and of concern in both countries (e.g., 45.7% of girls from TC sample and 33.9% of girls in the BCN sample self-reported dieting). Among boys, these differences between samples were higher. In both samples, overweight and obese adolescents, girls and boys, were significantly more likely to report dieting and unhealthy weight control behaviors than non-overweight adolescents, although these behaviors were still prevalent among non-overweight girls. These findings provide initial support for the incorporation of messages aimed at preventing unhealthy weight control behaviors within obesity prevention interventions in Spain. Concurrently, differences and similarities between both samples indicate that integrated interventions with common and specific components for each country are needed.

There is a major concern about the possible harmful influences that effects of obesity prevention programs might have in variables such as body image, excessive weight concerns, weight-related teasing, or engage in unhealthy weight-control behaviors, cancelling out the efforts and achievements in the field of prevention of disordered eating and body dissatisfaction (O’Dea, 2005; Neumark-Sztainer, Levine et al., 2006; Striegel-Moore, 2001). This is a controversial issue (Carter and Bulik, 2008), but we have an indirect evidence of this possible harmful influence in the high frequency of engaging in unhealthy weight-control behaviors among overweight and obese adolescents, located between the 30% and 70%, depending on the sex and the type of population studied (López-Guimerà et al., 2013; Neumark-Sztainer and Hannan, 2000; Neumark-Sztainer, Story, Hannan, Perry, Irving, 2002).

Discussion

Some recent obesity prevention programs have been concerned with evaluating their potential effects on disordered eating (Austin et al., 2007), some programs aimed at preventing shared risk factors of obesity and eating disorders have been developed (Neumark-Sztainer et al., 2010; Stice et al., 2008; Stock et al., 2007), and the voices calling for the development of an integrated approach to prevention of both fields are increasingly (APA Public Interest Government Relations Office, 2008; Neumark-Sztainer, 2009; Neumark-Sztainer, Levine et al., 2006; Sánchez-Carracedo et al., 2012; Stice, South and Shaw, 2012). But the developments in this field are still very scarce. It is time for a paradigm shift and to focus our efforts in a new integrated approach to prevention of this broad spectrum of problems. A complete analysis of barriers, developments and opportunities of this integrated approach has been developed elsewhere (Sánchez-Carracedo et al., 2012).

Conclusions

(1) Research has detected shared risk factors across the spectrum of eating and weight-related problems; (2) Some effective preventive programs have already been developed to cover this broad spectrum of problems. Interest in this integrated approach is growing. (3) It is the ideal moment for encouraging the responsible for community obesity prevention programs, which have substantial resources available and are already reaching out to broad sections of the population, to take account of the available information on the potential benefits of an integrated approach to prevention. They should take into consideration the possibility of modifying these strategies or incorporating additional components and measurements that contribute to promoting a healthy and positive body image, accepting the diversity of body sizes, reducing weight- and appearance-related teasing, removing the stigma associated with obesity, and eradicating unhealthy weight-control behaviors; (4) Cross-cultural differences and similarities indicate that integrated interventions with common and specific components for each country are needed.

References


**Acknowledgements**

Preparation of this article was supported by Research Grants from Ministry of Science & Innovation (PSI2009-08956) and Ministry of Economy and Competitiveness (PSI2012-31077) of the Spanish Government.
With which coach shall we practice today? Leadership, cooperation and performance in a coach rotation system in soccer

Ricardo Aguiar; Ph.D.
Atlético Clube do Cacém
and Pedro Lopes Almeida; M.S.
ISPA-IU, Lisboa

Abstract:
Objective: The present study examined the relations between leadership behaviors, cooperation with the coach and performance. The Multidimensional Model of Sports Leadership and the Conceptual Model of Sport Cooperation were employed.

Method: Using a correlational method, 43 athletes from the sub-14 age group completed the preferred and actual version of the ELD, and the subscale of cooperation with the coach from the QCD-p. Moreover, three head coaches evaluated the 43 athletes with a performance questionnaire. Results: The results showed a positive correlation between democratic behaviours, training and instruction, and positive feedback with cooperation with the coach and performance.

Conclusions: Given the findings, future research should delve in the verified relations and examine the existence of moderating, mediating variables in the results, by employing other methodologies and a more updated model of sports leadership.

Keywords: Leadership, Cooperation, Performance, Soccer, Sports Psychology

Received: 29/06/2013 04/09/2013

Introduction
In a sports-related context, an effective leadership can fuel the success of an organization, team, or the performance of individual athletes. In this respect the Multidimensional Model of Sports Leadership (MMSL), developed by Chelladurai, should be noted as it breaks down the different behaviour states of a leader: required, preferred and actual. According to Chelladurai (2007), a better balance of these states, can lead to a better performance and satisfaction level among athletes. Often linked to the concept of sports leadership is the concept of sports cooperation. García-Mas, Morilla, Olmedilla, Quinteiro, Rivas e Toro (2006), indicate that this element is of substantial support to a coach, allowing them to evaluate athletes’ natural tendencies in response to distinct sporting situations/circumstances. Nonetheless, the decision to cooperate can be instigated by circumstantial or dispositional factors, or in accordance with a given team’s characteristics (García-Mas et al., 2006). Considering that the coach himself can be seen as a stimulus for an athlete to cooperate and compete, and that his or her behaviour can influence the effectiveness of training and competitive performance, the current study attempts to establish whether there are notable correlations between leadership behaviour, cooperation with the coach and athletes performance.

Method

Sample. The sample was drawn from a local football club. The respondents numbered 43 athletes from the sub-14 age group (M=13.67 years old), and three main coaches (age M=23.3 years; experience M=4.6 years).

Instruments. We employed the actual and ideal version of the Portuguese Leadership Scale for Sports (ELD, Cruz & Chelladurai, 1985), the coach cooperation subscale of the Portuguese Sports Cooperation Questionnaire (QCD-p, Almeida, García-Mas, Lameiras, Olmedilla, Ortega & Martins, 2012), and a performance evaluation questionnaire.

Procedures. The athletes filled out an ideal version of the LSS. At the end of each rotation the coaches would evaluate their athletes using the performance questionnaire, and the athletes would fill out an actual version of the LSS, the coach cooperation subscale, with the aid of the head coach of his team. The club’s adopted strategy for the sub-14 age category has been a rotating system of coaches. The head coaches would each train the team for three weeks, after which at the end of the ninth week, a new cycle would kick in (figure 1).

The current study is correlational resorting to a non-random and convenience-based sample.

Results
Different results were identified for the three coaches. We confirmed that there is a positive correlation between cooperation with the coach, actual behaviours of training/instruction (ρ=0.38, α=0.05), and positive feedback (ρ=0.50, α=0.01). For another coach, there was a clear positive corre-
lation between an athlete’s performance in hard passing, the preference for ideal democratic behaviour ($\rho=0.31$, $\alpha=0.05$), and the frequency of actual training and instruction ($\rho=0.39$, $\alpha=0.01$). We also examined the relation between the athletes' performance in interceptions and the difference between autocratic ideals and actualities ($\rho=-0.30$, $\alpha=0.05$).

**Discussion and conclusion**

We determined that frequent training and instruction behaviour, and positive feedback, are closely co-related with perceived cooperation with the coach. This result matches previous studies that identified correlations among the same leadership behaviour/states and other variables (Amorose & Horn, 2001; Murray, 2006; Aoyagi, Cox & McGuire, 2008, Baric & Bucik, 2009, Pawar, Sharma & Yadav, 2009). The connections detected are all the more relevant from a coaching perspective, demonstrating that there certain behaviours that can motivate athletes into attempting to fulfil goals, both personal and the team’s, and thus further reinforcing cooperation with the coach. The model under analysis, however, evidenced low internal consistency among several subscales, and leads us to consider resorting to a more recent model, one that includes for instance advances in the understanding of neo-charismatic and transformational leadership (Gomes & Cruz, 2006a). The same suggestion has been advanced by Aoyagi et al. (2008), after their own studies produced data that contradicted the MMSL. Additional limitations were encountered generated by the consistency and implementation of the coach rotation system. On several occasions players would ask “With which mister are we training today?”, which suggests the athletes are not entirely comfortable/adapted to the rotation system that contextualizes our research.

We believe future studies would benefit from examining the positive loops between cooperation with the coach, performance, leadership behaviour, via a qualitative methodology (Brandão & Carchan, 2010), and by analysing the various moderation and mediating variables, as well as seeking better grounding in an updated leadership model.

**References**

With which coach shall we practice today? Leadership, cooperation and performance in a coach rotation system in soccer

Aguiar and Lopes


Abstract:
The present work aims at the description of the evidence of construct validity and internal consistency of the "Instrument for Sport Competition Emotions" (INECOD), newly created instrument that evaluates the perception of physiological and cognitive dimensions of emotion during the competition. Using a sample of 411 athletes from nine disciplines, obtain a three-dimensional factor structure (positive affect, negative affect and anxiety) in the two subscales. The results confirm the evidence of construct validity (explained variance of 59.8% and 62.3%) and reliability (from α = .538 and .822) presenting a tool that can be used in sport populations, and should be confirmed in future works.

Keywords: sport; emotions; instrument; competition.

Received: 03/06/2013  Accepted: 02/10/2013

INTRODUCTION

In the area of sports and exercise, emotions have been researched with regards to different aspects: health (Garcés de los Fayos & Díaz-Suarez, 2013), sports organizations (Wagstaff, Fletcher & Hanton, 2012), spectators (Jones, Coffee, Sheffield, Yangüez & Barker, 2012), and team sports (Campo, Mellalieu, Ferrand, Martinet & Rosnet, 2012), though research has mainly centered on the emotions during sports competition and, in this regard, anxiety has been the main emotion studied (McCarthy, 2011). Over the past few years, however, theoretical models have been developed on pleasant emotions in sports (Jackson & Csikszentmihalyi, 2002). In any case, the focuses on sports emotions that have received the most attention are those that have considered a multidimensional construct (Hanin, 1986; Jones, 2003; Kerr, 1985). In this regard, the model that is presented as the basis for this tool must take into account the importance of the entire range of hedonic emotions while also evaluating the physiological and cognitive dimensions of the emotion separately. The goal of this work is to present the psychometric results on the construct validity and reliability scales of the INECOD tool designed for this task.

METHOD

Participants: For this study, 411 athletes from nine different sports participated. The average age of participants was 24.87 with a variability of 8.81 years. In terms of the time they have been playing their sport, participants reported an average of 9.35 years of practice (DT=6.97), and a slightly lower quantity (M=8.02; DT=6.41) of years of practice at the competitive level. In terms of gender, 75.1% of the subjects were men and 24.9% women.

Procedure: After carrying out a qualitative assessment of the scientific literature, the proposal for items, inter-observer concordance and the pilot phase (Cantón & Checa, 2012), a 21-item instrument was obtained and submitted for validation in this study. Subjects were asked to report the intensity with which they experienced these emotions while bearing in mind the cognitive and/or physiological dimension. The answers were anonymous and confidential and the questions were asked by trained interviewers within one hour after participating in a sports competition.

For the section on statistics, an exploratory factor analysis (EFA) was conducted for the two sub-scales of the INECOD tool in order to explore its factor structure. Due to the debate on the independence of the emotions, the exact relationship between pleasant and unpleasant emotions is not entirely understood and thus an oblique rotation was done, assuming the factors to be correlated. The correlations between factors were also presented to confirm this assumption in this specific sample. A difference of means test (t-test) was also done as evidence of the construct validity to corroborate the two-dimensionality of the emotions studied.

RESULTS

In terms of the construct validity, the results of the EFA are presented on Table 1. In the case of the somatic dimension, which explains 59.8% of the variance, the correlation matrix among components offers a statistically significant correlation in the expected direction (r=-.239) between positive and negative affect, and between negative affect and anxiety. (r=.353). In the cognitive dimension, in contrast, the explained variance was 62.97%; a statistically significant correlation was obtained and in the expected direction (r= .384) between positive and negative affect, and between negative affect and anxiety (r=.238).
In terms of the two-dimensionality of the emotions, the difference of means test (t-test) revealed significant differences in negative affect ($t$=-4.039; $p<.000$), positive affect ($t$=-3.429; $p=.001$) and anxiety ($t$=-2.518; $p=.012$), with scores always higher in the cognitive dimension. In terms of the converging validity, the experience of precompetitive anxiety in its four expressions correlate positively with the anxiety measured by the INECOD both in the somatic and cognitive dimension, with correlations between $r=.180$ and $r=.260$.

**Table 1 – Exploratory Factor Analysis (EFA) of the INECOD sub-scales**

<table>
<thead>
<tr>
<th></th>
<th>Somatic Dimension</th>
<th>Cognitive Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sad</td>
<td>.696</td>
<td>-.372</td>
</tr>
<tr>
<td>Furious</td>
<td>.672</td>
<td>-.043</td>
</tr>
<tr>
<td>Depressed</td>
<td>.686</td>
<td>-.202</td>
</tr>
<tr>
<td>Angry</td>
<td>.809</td>
<td>-.158</td>
</tr>
<tr>
<td>Discouraged</td>
<td>.785</td>
<td>-.237</td>
</tr>
<tr>
<td>Unhappy</td>
<td>.739</td>
<td>-.126</td>
</tr>
<tr>
<td>Capable</td>
<td>-.194</td>
<td>.801</td>
</tr>
<tr>
<td>Proud</td>
<td>-.213</td>
<td>.803</td>
</tr>
<tr>
<td>Pleased</td>
<td>-.231</td>
<td>.805</td>
</tr>
<tr>
<td>Energized</td>
<td>-.141</td>
<td>.728</td>
</tr>
<tr>
<td>Tense</td>
<td>.335</td>
<td>.184</td>
</tr>
<tr>
<td>Nervous</td>
<td>.284</td>
<td>-.060</td>
</tr>
<tr>
<td>Explained Variance</td>
<td>32%</td>
<td>19.24%</td>
</tr>
<tr>
<td>$\alpha$</td>
<td>.822</td>
<td>.795</td>
</tr>
</tbody>
</table>

**Discussion and conclusions**

It can be concluded that the study achieved the goal of its exploratory phase: an assessment tool for the emotions of sports competition was validated. The explained variance of both subscales is sufficient (59.8% and 62.07%) if we consider the review of 60 factor analyses by Henson & Roberts (2006), where the average proportion of variance explained by the factors was 52.03%. On the other hand, the values of internal consistency are sufficient, taking into account the reduced number of items. In any case, the data from Cronbach's alpha, $\alpha$, for the “Anxiety” factor on both subscales reveals that in the future, a few more items would be necessary (at least three), as suggested by some authors (Costello & Osborne, 2005).

Our review of the scientific literature indicates that a new tool is necessary, one that takes into account the fact that emotions are not rigid entities with a single, simple expression. Instead, emotions are comprised of dimensions: the physiological or somatic dimension and the cognitive or mental dimension, and it would also be useful to add the behavioral or expressive dimension (Lang, 1995). This is the conceptual basis for a tool that would incorporate the two-dimensional evaluation of emotional experience and its application to sports; and an instrument with which the psychological evaluation can be done simply and easily as required in this area of intervention.

The results show greater explained variance on the cognitive subscale, which supports the idea of differences in the perception of emotions among athletes. They are more conscious of the mental dimension of an emotion and not so aware of the physiological or somatic expression of the emotion. This fact, in addition to the significant differences found on the scores of the three factors on both subscales, confirms the hypothesis on the two-dimensionality of emotions in sports. In any case, it is clearly very difficult to confirm the hypothesis of two-dimensionality solely through self-reports, which is why it is necessary to incorporate psychobiological scales, which have also been used in the past few years (Lane, Wilson, Whyte & Shave, 2011).
Two dimensions of emotions in sports: Construction and validation of an assessment tool

Checa, Cantón and Espejo

References


Risk of eating disorders among different dance majors at a dance conservatory

Ana García-Dantas, Carmen Del Río Sánchez,
Department of Personality and Psychological Evaluation and Treatment. Universidad de Sevilla
Milagrosa Sánchez Martín,
Department of Experimental Psychology. Universidad de Sevilla
María Luisa Avargues Navarro and Mercedes Borda Mas
Department of Personality and Psychological Evaluation and Treatment. Universidad de Sevilla (Spain)

Abstract:

Introduction: Dance is a high risk activity for eating disorders (Ed). It seems that there is a lack of studies focused on the analysis of Ed risk among dance genres.

Method: 176 female dancers from different genres (aged 12-20) from a professional dance conservatoire take part in the study. The Eating Attitudes Test, 26 was administered. Results: ballet dancers showed higher scores in items related to eating problems compared to others genres. Contemporary dancers presented a low concern of having fat body areas and they scored the lowest in diet habits. Contrary to expectations, the most worried about having fat body parts were flamenco dancers. The vast majority of dancers with moderate and high risk of ED belonged to ballet and flamenco. Discussion: it is analysed the existence of risk and protective factors that makes certain genres likely to develop an ED.

Keywords: Dance genres. Risk factors. Eating disorders. Prevention.

INTRODUCTION

Recent studies indicate that dancers are more likely to suffer from eating disorders (EDs) and dissatisfaction with their body image (BI) (Benn, 2001; Ribeiro & Da Veiga, 2010; Schluger, 2009). However, certain studies have shown that dance as an activity does not necessarily increase the likelihood of an ED (Toro, Guerrero, Sentis, Castro and Puerto-Las, 2009), but that certain environmental factors connected to dance are what make dancers a risk group for this type of disorder. Some of the most influential environmental risk factors in BI dissatisfaction include the frequent use of mirrors (Radell, Adame and Cole, 2004) and dance uniforms, leotards and tights (Price and Pettijohn, 2006). Given that each dance style has its own environmental factors (i.e. ballet is much stricter in terms of uniforms than modern dance), it is logical to suppose there would be differences in the risk of ED based on the dance style a person chooses to study. Recent studies have shown that ballet dancers are much more concerned with diet, displaying more bulimic behaviors and greater oral control than modern dancers (Schluger, 2009). However, given the fact that few studies have focused on other dance disciplines, Nordin-Bates, Walker and Redding (2011) suggest analyzing the possible discrepancies between different dance styles. The objective of this study is thus to examine the prevalence of eating-related problems and the risk of developing EDs within each dance major.

METHOD

Participants: A total of 176 dancers ages 12-20 (X=15.25; DT=2.30) at a professional dance conservatory participated in the study. Table 1 shows the distribution of participants by their major and by BMI and Table 2 provides a description of the features of each major.

Instruments: Eating Attitudes Test, EAT-26 (Garner, Olmsted, Bohr and Garfinkel, 1982; adapted by Gandarillas et al. 2002). Sub-scales on diet, bulimia and oral control (above 20, high risk; 10-20, moderate risk; and under 10, slight risk).

Procedure: The instruments were administered according to the application and correction norms proposed by the original authors. Before taking the test, the participants signed an informed consent form in accordance with the recommendations of Del Río (2005). To corroborate the existence of differences on the EAT-26 scales among dancers with different majors, the Kruskal-Wallis test was used. This test, along with the Mann-Whitney U test, was used to corroborate the existence of significant differences among majors for each of the items on the EAT-26.

Results: No statistically significant differences were detected by major in any of the three original subscales of the EAT 26, although the percentage of girls at risk (slight, moderate and high) varied for each group. Table 3 shows the dance majors with significant differences.

Although few differences were found, it is interesting to see how the percentage of girls at risk varies from group to group (see Table 4).

Contact information:
Carmen del Río Sánchez
Departamento de Personalidad, Evaluación y Tratamiento Psicológico, C/ Camilo José Cela, s/n. 41018 Sevilla (Spain)
cdelrio@us.es / anagarciadantas@gmail.com
Table 1: Distribution of participants by major and by BMI

<table>
<thead>
<tr>
<th></th>
<th>Ballet</th>
<th>Modern Dance</th>
<th>Flamenco</th>
<th>Spanish Dance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>48 (27.3%)</td>
<td>22 (12.5%)</td>
<td>57 (32.4%)</td>
<td>49 (27.8%)</td>
</tr>
<tr>
<td>% of girls with BMI of less than 17.5</td>
<td>20.8%</td>
<td>18.2%</td>
<td>8.8%</td>
<td>14.8%</td>
</tr>
</tbody>
</table>

Table 2: Description of the features unique to each of the four majors based on the information provided by the conservatories whose dancers participated in the study.

**Ballet:** More demanding in terms of uniform (leotard and tights). The pas de deux exercises require lifting and the current ideal aesthetic among ballet dancers is extreme thinness (Benn, 2001).

**Modern dance:** Teachers in this discipline are generally more flexible about what students wear. Creativity and the acceptance of different types of movement characterize this style. Improvisation is encouraged and the mirror is not used very often (in addition, modern dancers often are required to take ballet classes to improve their technique).

**Flamenco:** Shirts, shawls and accessories that cover the body are allowed. The demands of flamenco dance companies are apparently less rigorous in terms of the bodies of the dancers than other disciplines like ballet. At the conservatory, flamenco dancers often are required to take ballet classes to improve their technique.

**Spanish dance:** At the conservatories, the uniform was important for Spanish dance; girls wear leotards and tights to demonstrate the demanding bolera technique and jumps. Castanets are used and ballet techniques are also incorporated to this major.

Table 3: Significant differences among dancers with different majors based on the EAT-26 Items

<table>
<thead>
<tr>
<th>Items EAT-26</th>
<th>Kruskal Wallis</th>
<th>Mann Whitney</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) “Other people think that I am too thin.”</td>
<td>8.12</td>
<td>0.04*</td>
</tr>
<tr>
<td>[13]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) “I am preoccupied with the idea of having fat/cellulite on my body.” [14]</td>
<td>7.84</td>
<td>0.049*</td>
</tr>
<tr>
<td>(3) “I eat diet foods.” [17]</td>
<td>13.5</td>
<td>0.004**</td>
</tr>
<tr>
<td>(4) “I am dieting.” [23]</td>
<td>16.4</td>
<td>0.001**</td>
</tr>
<tr>
<td>(5) “I enjoy trying new rich foods.” [25]</td>
<td>7.91</td>
<td>0.049*</td>
</tr>
</tbody>
</table>

*p ≤ 0.05 ** p ≤ 0.01 a 1 = Ballet; 2 = Modern dance; 3 = Flamenco; 4 = Spanish dance

Table 4: Percentage of students by major who had a high, moderate or slight risk based on the EAT-26

<table>
<thead>
<tr>
<th></th>
<th>Slight (&lt;10)</th>
<th>Moderate (10-20)</th>
<th>High (≥20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ballet</td>
<td>58.3%</td>
<td>31.3%</td>
<td>10.4%</td>
</tr>
<tr>
<td>Modern dance</td>
<td>72.7%</td>
<td>22.7%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Flamenco</td>
<td>57.9%</td>
<td>29.8%</td>
<td>12.3%</td>
</tr>
<tr>
<td>Spanish dance</td>
<td>31.3%</td>
<td>16.3%</td>
<td>12.2%</td>
</tr>
<tr>
<td>Total</td>
<td>63.6%</td>
<td>25.6%</td>
<td>10.8%</td>
</tr>
</tbody>
</table>
Discussion and conclusions

According to the results of the BMI, people majoring in modern dance and ballet were the least likely to maintain the right weight for their age and height. In terms of percentages, 18.2% of modern dancers and 20.5% of ballet dancers are underweight.

Although 10.2% of ballet dancers display behaviors indicating a risk of developing an ED, this percentage is slightly higher among those who are majoring in flamenco (12.3%) and Spanish dance (12.2%).

The results support those of previous studies that have indicated a high risk of ED among ballet dancers (Nordin-Bates, 2011; Schluger, 2009). The unexpected finding was the high risk of ED among flamenco dancers. Perhaps in the future, it would be interesting to study whether having a higher BMI increases the risk of anomalous and unhealthy behaviors among flamenco dancers.

When the EAT-26 items were analyzed individually, the following anomalous behaviors were detected among ballet dancers: dieting, eating diet foods and the concern of having fat and/or cellulite on my body. There were significant differences when these responses were compared with dancers majoring in modern dance and Spanish dance.

The high percentage of people with a moderate and high risk of developing an ED justifies the need to design programs to promote healthy eating habits.

References


Flow in marathon runners before, during and after the competition

Manuel G. Jiménez-Torres, Débora Godoy-Izquierdo,
Department of Personality and Psychological Evaluation and Treatment. School of Psychology.
Group of Psychological Investigation of Health and Behavioral Medicine (CTS-267).
Universidad de Granada

María J. Ramírez, Estefanía Navarrón
Group of Psychological Investigation of Health and Behavioral Medicine (CTS-267).
Universidad de Granada

and Juan F. Godoy García,
Department of Personality and Psychological Evaluation and Treatment. School of Psychology.
Group of Psychological Investigation of Health and Behavioral Medicine (CTS-267).
Universidad de Granada(Spain)

Abstract:

Introduction: The flow experience encompasses a combination of subjective phenomena that people may experience when performing exercise, sports or other activities in daily life. Objective: To compare flow levels experienced before, during and after a remarkable athletic performance. Method: The study involved 153 running athletes aged between 19 and 70 years old. Flow episodes before, during and after their remembered best performance were assessed. Results: Significant differences were found for flow episodes experienced before, during and after the competition. The athletes experienced more frequently/deeper flow episodes during their best competition. Conclusions: Most of the core features of flow occur during the athletic activity and not before or after it. Most of the dimensions of the flow occur during athletic activity and not before or after such activity. Key words: flow, athletics, marathon, optimal experience, competition.

Received: 28/06/2013 Accepted: 23/10/2013

Introduction

Flow has been described as a state in which people forget about themselves and their concerns, getting totally absorbed in the task at hand and fully enjoying it. In this state, superlative performance seems like something natural and regular. Csikszentmihalyi (1990) listed nine component states of the flow experience: 1) challenge-skill balance, 2) merging of action and awareness, 3) clear, reachable goals 4) immediate and unambiguous feedback, 5) concentration on the task at hand, 6) paradox of control, 7) loss of self-consciousness, 8) transformation of time and 9) autotelic experience. Consistent evidence has been found for these nine component states (Jackson, 1992). Since these initial studies, numerous works have corroborated the existence of these extraordinary experiences and their positive influences on performance (Jackson and Csikszentmihalyi, 2002).

Objective

Our objective was to compare the flow episodes experienced before, during and after a remarkable athletic performance to determine the extent to which each of the nine component states occurred during each of these three periods.

Method

This study examined 153 marathon runners (88 men and 65 women; 57.50% and 42.5%, respectively) ages 19-70 (M = 39.69; DT= 9.93). On average, the participants practiced 6.76 hours weekly (DT= 4.83). The average number of years in the sport was 10.33 years (DT= 7.59). All of the participants competed in marathons regularly.

The flow experienced before, during and after remarkable athletic performances was evaluated with the standardized questionnaire Flow State Scale-2 (Jackson and Eklund, 2004), using one item per component. Each athlete was asked to recall and recreate his or her best competition and then to indicate how frequently he/she had experienced each of the nine component states of flow mentioned above (Annex 1) using a Likert-type scale from 1= never to 5= always.

Participants were asked to collaborate voluntarily in a study that was aimed at understanding the feelings that the athletes had experienced before, during and after their most remarkable athletic performances. The questionnaires were administered the day before the 2009 Seville Marathon. The organizers provided us with a booth at the Feria del Corredor where we were able to talk with runners as they passed by to pick up their number.
Results

We found significant differences in the total flow experienced before, during and after the sports performance remembered (Table 1). The greatest level of flow is experienced during. This was the case for all of the dimensions except for clear, reachable goals, where no significant differences were obtained. The before-during, during-after and before-after comparisons for both total flow and for each of their dimensions (Table 2) showed that total flow scores for before-during and during-after were significantly different; the highest levels of frequency/deepness of the experience appeared during the sports event. However, no differences were found when comparing the flow experiences before and after the athletic performance. When analyzing each component individuals, the same trends were generally seen. The one exception was the clear, reachable goals component, which showed no differences before or during the athletic performance. Similarly, no differences were found during or after athletic performance for clear, reachable goals, immediate and unambiguous feedback and autotelic experience or enjoyment. On the other hand, total concentration is highest in the period before the athletic performance than afterwards. In contrast, immediate and unambiguous feedback and enjoyment are more prevalent upon completing a race than before it.

Discussion and conclusion

In general, the results of this study could suggest that it is the sports activity itself which serves as an antecedent to flow, not another type of event that can occur immediately before or after. Thus, most of the flow components occur during the sports event and not before or after it. Only clear, reachable goals can also occur before the race begins, while pleasure-enjoyment and immediate and unambiguous feedback can continue after the race is finished.

The study also corroborated how difficult it is to organize a chronological sequence that integrates the nine flow components in a comprehensive model of this phenomenon.

Table 1: Comparison of the level of flow experienced before, during and after a great athletic performance

<table>
<thead>
<tr>
<th>Component</th>
<th>Period</th>
<th>M</th>
<th>DT</th>
<th>Rango</th>
<th>Chi-Square (Friedman’s Test)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total flow components</td>
<td>During</td>
<td>37.68</td>
<td>5.34</td>
<td>2.37</td>
<td>36.76</td>
<td>0.000**</td>
</tr>
<tr>
<td></td>
<td>Before</td>
<td>34.69</td>
<td>6.02</td>
<td>1.78</td>
<td></td>
<td>0.000**</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>34.67</td>
<td>5.95</td>
<td>1.85</td>
<td></td>
<td>0.000**</td>
</tr>
</tbody>
</table>

Comparisons (Wilcoxon test)

<table>
<thead>
<tr>
<th>Z</th>
<th>Before – During</th>
<th>After - During</th>
<th>After - Before</th>
</tr>
</thead>
<tbody>
<tr>
<td>-6.39</td>
<td>-5.18</td>
<td>-0.10</td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.918</td>
</tr>
</tbody>
</table>

* p< 0.05; ** p< 0.01

Table 2: A posteriori comparisons: before-during, during-after and before-after

<table>
<thead>
<tr>
<th>Component</th>
<th>Comparison</th>
<th>Z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Before-During</td>
<td>-6.39</td>
<td>0.000**</td>
</tr>
<tr>
<td></td>
<td>During-After</td>
<td>-5.18</td>
<td>0.000**</td>
</tr>
<tr>
<td></td>
<td>Before-After</td>
<td>-1.0</td>
<td>0.918</td>
</tr>
</tbody>
</table>

* p< 0.05; ** p< 0.01

However, studies like this one help us to understand how the different dimensions of flow can be organized in time, forming one or several Markov chains in which different flow episodes are likely to occur.

References


Acknowledgements

This research was supported with financial assistance provided to the Psychology of Health and Behavioral Medicine Research Group (CTS-0267) by the Council of Innovative, Science and Enterprise of the Andalusian government (Spain). We are grateful to all those who made this study possible.
Analysis of the needs for intervention in parents of young athletes

Macarena Lorenzo,
Gesalus (partner in the area of health of the Real Betis Balompié, SAD)
Universidad de Sevilla
Ana María López and Rosario Cubero
Universidad de Sevilla (Spain)

Abstract: The role of parents in sports initiation is essential for proper athletic and personal growth of children and adolescents who venture into the complicated world of sport and physical activity. Parents play an important role in the formation of the child’s personal characteristics. Therefore, the objective of this study is to analyze the needs for intervention with parents of young athletes. In the study 131 parents of sons/daughters who play football, basketball and gymnastics have participated. It has been administered a battery of questionnaires to measure cognitive and affective aspects, and those concerning guidelines and actions. The results show that it is necessary to intervene in the formation of parents to optimize the comprehensive sports development of their children. Among the areas for improvement there are included the establishment of goals and objectives, the negative feelings and feelings of indifference, the competition pressure, the transfer of responsibility and autonomy, the respect for significant others (other parents, coaches and referees) and conflict resolution.

Keywords: Parental educational behavior in sports, intervention with parents, intervention in sports.

Received: 18/06/2013 19/09/2013

Introduction

One of the main objectives of the youth system is to promote and provide integral development for young athletes. To achieve this, it is important to work with the principal agents involved in the athletic and integral development of young athletes—including parents (Smoll, 1991). The role of parents in sports initiation is essential for the proper athletic and personal growth of children and adolescents who venture into the complicated world of sport and physical activity (Ortín, 2009), as they play a very important role in the formation of the personal characteristics of the young athlete (Cruz, Boixadós, Torregrosa and Mimbreno, 1996; Romero, Garrido and Zagalaz, 2009).

Objective: The objective of this study is to analyze the ideas and educational practices of parents on the sports development of their children and to detect needs for interventions when these practices could be improved.

Method

A total of 131 parents of children who play soccer, basketball and gymnastics participated in this study. The COPADE questionnaire was used (Lorenzo, 2012; Lorenzo, Cubero and López, 2012, 2013). This is a set of Likert-type tests (scales of 1 to 5) to measure parents’ attitudes towards the athletic activities of their children. Some of the aspects evaluated include cognitive variables like the reasons for doing sports; competition as a way to do better at the sport or to achieve results; the achievability of the parent’s expectations and goals; and satisfaction with the results obtained. There are also emotional variables (feelings associated with practice and competition) and guidelines and action variables (motivation, responsibility, autonomy, respect for significant others, communication and problem resolution).

The data were gathered with informed consent at the sports schools and clubs during training and at competitions. The test was self-taken with the researchers present. Data treatment consisted in a means comparison using the SPSS v.17.0 package.

Results

The analysis of means and standard deviation corresponding to the variables described above are shown on Table 1. Aspects requiring improvement (and therefore, intervention) are those variables with an average score of 3.5 or less. A score of less than 3.5 indicates that in terms of the aspects analyzed, the parents’ attitudes are poorly adjusted and could have a negative influence on the integral development of the young athletes.

With regards to the cognitive contents, the variables requiring improvement proved to be encouraging success and prioritizing results in sports competition over the process. In terms of the emotional variables, the intervention needs were negative feelings and indifference. Finally, the guideline and action variables that need improvement are pressure during competition, excessive control, disrespect for significant others and the authoritarian and permissive problem resolution styles.

Contact information:
Macarena Lorenzo
Ciudad Deportiva Luis del Sol
Avenida de Italia S/N. 41012, Sevilla. Spain
Tel.: +34 954233213
psicologia@realbetisbalompie.es
Discussion and conclusions

The results show that parents require interventions in order to optimize the integral development and sports progress of athlete sons and daughters.

The results associated with encouraging success indicate that parents expect their children to be professionally successful at their sport, setting goals and objectives that turn out to be unattainable by their children. Similarly, they prioritize results in a competition as opposed to valuing the positive elements of the sports process itself or the integral development of the young athletes. It would thus be necessary to work on the negative feelings that parents experience about the suffering or lack of enthusiasm that often appear in sports in order to analyze how these feelings arise and give them effective coping strategies.

On the other hand, the aspects that were highlighted when parents were asked about specific guidelines or actions include excessive pressure to win and disrespect for referees, judges, trainers and even for other parents. These attitudes mean not respecting the actions and decisions of those responsible for the sport and they are often accompanied by critical comments, offensive gestures, insults and arguments with the other agents involved in the sports development of the young athletes. These parental behaviors on the sports field are generally associated with actions at home such as excessive parental control over the children’s preparation of their sports gear and parental planning of sports schedules, norms and healthy living habits. These behaviors, in turn, can lead to a lack of autonomy and responsibility among their children. Finally, this behavior is also reflected in authoritarian and/or permissive parenting styles that complicate healthy conflict resolution and the learning of effective strategies among children.

References


Motives for exercising among young adults with a moderately positive body image

María J. Ramírez, Dra. Débora Godoy-Izquierdo, Dra. Mª Luisa Vázquez, Raquel Lara, Estefanía Navarrón, Mercedes Vélez, Ana B. Padial, Mª Belén Sánchez, Ana Beltrán and Dr. Manuel G. Jiménez-Torres
Grupo de Investigación Psicología de la Salud y Medicina Conductual (CTS-267), Facultad de Psicología. Universidad de Granada (Spain)

Abstract:
Background: People engage in exercise and sports due to several reasons, depending on factors such as age, sex and health or fitness status. These motives include enhancing health and fitness status, improving appearance and body image or enjoying in leisure time. Aims & Methods: Grounded in Self-Determination Theory (SDT), this study explored motives for exercising in healthy men and women 18 to 40 years old who were regular exercisers and held a moderately positive body image. They voluntarily completed an online survey on their exercise practice, body image and motives for exercising. Results: Contrary to previous SDT-based empirical findings, appearance improvement emerged as an important motive for exercising, and it was more frequently mentioned than health&fun-related motives by the whole sample and by subsamples of men and women and younger and older young adults. Conclusions: Given that appearance management-related motives may have both positive and undesired outcomes on exercise behaviour and personal well-being, they should be carefully reviewed with women and men in their young adulthood who are exercise intenders, beginners or regular exercisers. Keywords: appearance, health, exercise, motivation, Self-Determination Theory.

Received: 25/06/2013 Accepted: 18/10/2013

We explored the motives for regular active behaviour among exercisers with a moderately positive body image. According to previous research, we expected that participants reported both appearance- and health&leisure-related motives.

Methods
Participants: After signing an informed consent, 157 Spanish, 18 to 40 years old (M= 25.85, SD= 5.45; 66.9% women), healthy adults voluntarily participated. They were regular exercisers (at least 1-2 times/week, 30 minutes/session, moderate intensity) and held a moderately positive body image (M= 7.96, SD= 2.66, in a 1-15 point scale; participants with extreme self-perceptions were excluded from the analysis).

Measures & Procedure: Participants completed an online assessment protocol (Ramírez et al., in press) including questions on their 1) exercise practice, including type, weekly frequency, session duration and intensity of practice (Prichard & Tiggemann, 2011; Buckworth et al., 2010; Inglewed & Markland, 2008; Moreno et al., 2007; Rodriguez-Romo et al., 2009; Sebire et al., 2009; Thogersen-Ntouman & Ntoumanis, 2006; Vartanian et al., 2012).

Contact information:
María J. Ramírez;
Universidad de Granada.
Campus Universitario de Cartuja, 18071. Granada (Spain)
Tel.: (+34) 958 242331, Fax: (+34) 958 243749
mariaps@correo.ugr.es
Results

Among the motives for regularly exercising reported by the participants, those related with enjoyment, health and appearance control were referred to; on the contrary, social engagement motives were less reported (Table 1). When the motives were grouped into body image-related and health and leisure-related motives, 62.4% of participants chose all the motives concerning appearance control, while 45.2% chose all the motives concerning health and enjoyment. Both men and women and younger and older young participants reported more frequently motives related to appearance management than to health and enjoyment (Table 1). Moreover, men (51.9%) and older (50.6%) participants chose more frequently all the health & leisure-related motives than women (41.9%) and younger (39.2%) participants.

Discussion

Supporting previous findings, participants reported motives corresponding to intrinsic, identified and introjected motivational regulations but, contrary to most research, they demonstrated higher levels of body image-related reasons for exercising than other type, as others have also informed (e.g., Buckworth et al. 2007, study 1; Rodríguez-Romo et al., 2009).

As some have previously noted, holding controlled motivations is not necessarily problematic, motivationally speaking, as long as self-determined regulations are also held or the former shift to an autonomous form of motivational regulation (Texeira et al., 2012). Consequently, appearance management-related motives may have a positive impact on exercise behaviour in terms of initiation, adherence and outcomes. Nonetheless, they also can lead to undesired outcomes such as lower adherence and dropout (Ingledew & Markland, 2008) or excessive exercise behaviour (Fortier & Farrell, 2009), as well as body image concerns and disordered eating behaviour (Vartanian et al., 2012). Thus, motives related to body image should be reviewed carefully with intenders, beginners and regular exercisers, particularly, although not only, with young and middle-age women (Texeira et al., 2012).

On the contrary, social engagement-related motives were the less reported, as other have also found (Ingledew & Markland, 2008; Moreno et al., 2007).

Despite the limitations of our study, our findings have important derived practical applications for promoting exercise behaviour. The SDT suggests that, in order to promote behavioural change in the case of healthy behaviours, it is core to endorse more intrinsic motivation and other forms of autonomous motivational regulation, as well as to ensure the satisfaction of basic psychological needs of autonomy, competence and relatedness (Ryan et al, 2008; Teixeira et al., 2012; Wilson et al., 2008). Appearance-related motives may enhance the adoption (i.e., initiation and maintenance).

Table 1: Motives for exercising reported by younger (18-26 yr. old) and older young (27-40 yr. old) men and women. † The higher the score, the lower importance conceded to each motive.

<table>
<thead>
<tr>
<th>Motives</th>
<th>Sample</th>
<th>Sample</th>
<th>Sample</th>
<th>Young</th>
<th>Older</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=157</td>
<td>N=105</td>
<td>N=52</td>
<td>N=74</td>
<td>N=83</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>M† (sd)</td>
<td>M (sd)</td>
<td>M (sd)</td>
<td>M (sd)</td>
<td>M (sd)</td>
</tr>
<tr>
<td>1 Muscle development and toning</td>
<td>84,1</td>
<td>79,0</td>
<td>94,2</td>
<td>79,7</td>
<td>88,0</td>
</tr>
<tr>
<td></td>
<td>0,16(0,37)</td>
<td>0,21(0,41)</td>
<td>0,06(0,24)</td>
<td>0,20(0,40)</td>
<td>0,12(0,33)</td>
</tr>
<tr>
<td>2 Weight management and loss</td>
<td>77,1</td>
<td>80,0</td>
<td>71,2</td>
<td>77,0</td>
<td>77,1</td>
</tr>
<tr>
<td></td>
<td>0,23(0,42)</td>
<td>0,20(0,40)</td>
<td>0,29(0,46)</td>
<td>0,23(0,42)</td>
<td>0,23(0,42)</td>
</tr>
<tr>
<td>3 Appearance improvement</td>
<td>91,1</td>
<td>91,4</td>
<td>90,4</td>
<td>95,9</td>
<td>86,7</td>
</tr>
<tr>
<td></td>
<td>0,09(0,29)</td>
<td>0,09(0,28)</td>
<td>0,10(0,30)</td>
<td>0,04(0,20)</td>
<td>0,13(0,34)</td>
</tr>
<tr>
<td>4 Health protection and improvement</td>
<td>93,6</td>
<td>93,3</td>
<td>94,2</td>
<td>87,8</td>
<td>98,8</td>
</tr>
<tr>
<td></td>
<td>0,06(0,24)</td>
<td>0,07(0,25)</td>
<td>0,06(0,24)</td>
<td>0,12(0,33)</td>
<td>0,01(0,11)</td>
</tr>
<tr>
<td>5 Doing something enjoyable you like</td>
<td>77,7</td>
<td>72,4</td>
<td>88,5</td>
<td>75,7</td>
<td>79,5</td>
</tr>
<tr>
<td></td>
<td>0,22(0,42)</td>
<td>0,28(0,45)</td>
<td>0,12(0,32)</td>
<td>0,24(0,43)</td>
<td>0,20(0,41)</td>
</tr>
<tr>
<td>6 To be with or to meet people</td>
<td>51,0</td>
<td>45,7</td>
<td>61,5</td>
<td>45,9</td>
<td>55,4</td>
</tr>
<tr>
<td></td>
<td>0,49(0,50)</td>
<td>0,54(0,50)</td>
<td>0,38(0,49)</td>
<td>0,54(0,50)</td>
<td>0,45(0,50)</td>
</tr>
<tr>
<td>7 Mood enhancement</td>
<td>85,4</td>
<td>86,7</td>
<td>82,7</td>
<td>81,1</td>
<td>89,2</td>
</tr>
<tr>
<td></td>
<td>0,15(0,35)</td>
<td>0,13(0,34)</td>
<td>0,17(0,38)</td>
<td>0,19(0,39)</td>
<td>0,11(0,31)</td>
</tr>
<tr>
<td>Appearance Motives 1,2 &amp; 3</td>
<td>62,4</td>
<td>61,9</td>
<td>63,5</td>
<td>60,8</td>
<td>63,9</td>
</tr>
<tr>
<td></td>
<td>0,16(0,23)</td>
<td>0,17(0,24)</td>
<td>0,15(0,21)</td>
<td>0,16(0,22)</td>
<td>0,16(0,23)</td>
</tr>
<tr>
<td>Health &amp; Leisure Motives 4,5,6 &amp; 7</td>
<td>45,2</td>
<td>41,9</td>
<td>51,9</td>
<td>39,2</td>
<td>50,6</td>
</tr>
<tr>
<td></td>
<td>0,23(0,26)</td>
<td>0,25(0,26)</td>
<td>0,18(0,24)</td>
<td>0,27(0,28)</td>
<td>0,19(0,23)</td>
</tr>
</tbody>
</table>
of active behaviour, along with health & enjoyment motives, when they all become autonomous, self-determined forms or behaviour regulation.

References


Acknowledgments

This research was supported with financial assistance provided to the "Psicología de la Salud & Medicina Conductual" Research Group (CTS-0267) by the Consejería de Innovación, Ciencia y Empresa, Junta de Andalucía (Spain). We are grateful to all those who made this study possible.