

SUCCESSFULLY AGING. CHOICE OF LIFE OR LIFE THAT CHOICES?

PETRALIA MARIA CRISTINA¹, COCO MARINELLA², MACI TIZIANA³, MINISSALE CHIARA⁴, CONCETTA DE PASQUALE⁴, D'ORTO GIANLUCA⁴, MARIA SOFIA BASILE², DONATO EZIO⁵, MANIACI MARIO⁵, COMMODARI ELENA⁶, DI NUOVO SANTO⁶, PERCIAVALLE VINCENZO², DI CORRADO DONATELLA⁷, GUARNERA MARIA⁷, PIRRONE CONCETTA⁶, CASTELLANO SABRINA¹, PLATANIA SILVIA², RAMACI TIZIANA⁷, BELLOMO MARIA⁷, MAGGIO CLAUDIO⁴, SEHLI AMEL⁴, COCO LUCIO SALVATORE GIOVANNI⁴, NAPOLITANO SALVATORE⁸, ASCIONE ANTONIO⁸, PERCIAVALLE VALENTINA⁶, BUSCEMI ANDREA⁹.

¹Department of Biomedical and Biotechnological Sciences and Department of Educational Sciences, University of Catania - ²Department of Biomedical and Biotechnological Sciences, University of Catania - ³Department of Mental Health of ASP 3 in Catania - Alzheimer Center Psychogeriatrics - ⁴University of Catania - ⁵Virgin Active Catania - ⁶Department of Educational Sciences, University of Catania - ⁷Department of Human and Social Sciences, Kore University, Enna - ⁸Department Physical Education and Wellness, University of Naples "Parthenope" - ⁹Horus Cooperative Social, Ragusa

ABSTRACT

Introduction: Doing regular physical activity offers a great deal of positive physiological and psychological effects, such as a decrease in cardiovascular diseases, osteoporosis and hypertension.

Today, more than ever, physical activity is particularly relevant in people's life, as it can be seen by the great number of people who registers in gyms, and by the growing importance given to wellness/fitness and the striving to physical "perfection". It is known that a good perception of his own body allows the individual to positively influence his self-esteem, his self-efficacy and his mood.

There are not age limitations to enroll in sport clubs and in the last twenty years many seniors have begun to enroll in sport clubs and to frequent them assiduously.

Materials and methods: In the present research, we asked ourselves if for a sample of seniors, going regularly to a sport club is linked to a concept of health or to different variables

We went to a prestigious Sicilian gym and we documented ourselves about the age of the people enrolled in the structure; we examined a sample of seniors frequenting the structure both on personality and self-perception variables, and on the natural predisposition to confront emergencies (digit ratio).

Results: The Big Five -10 items show that the female group is more open to experience while the male sample shows higher values for consciousness and extroversion. 44% of the female sample and 52% of the male sample obtained mean self-efficacy values. Values obtained from the sample show a statistically relevant difference ($P < 0,0001$) between real figure and ideal figure; these values reveal that the sample is not satisfied of his body. Results obtained from the entire sample show a slight level of overweight with a BMI of 25.91 ($\pm 3,5$). While the ratio 2D: 4D is correlated for both groups conscientiously.

Conclusion: Results leads us to observe, firstly, the growing number of seniors enrolled at the gym, secondary, that the choice to frequent a sport club is mostly linked to an aesthetic canon imposed by modern society and not to a concept of health. To the question "Choice of life or life that choices?" that we asked ourselves at the beginning of this work we can answer with slight bitterness that often is the life that choices. In any age, mediatic conditioning is very strong; we should continue to make physical activity with the awareness that it represents life and health for our body, becoming sometimes a true elixir of life.

Keywords: sport, physical activity, digit ratio, personality.

DOI: 10.19193/0393-6384_2018_1_18

Received November 30, 2017; Accepted January 20, 2018

Introduction

Doing regular physical activity offers a great deal of positive physiological and psychological effects, such as a decrease in cardiovascular diseases, osteoporosis and hypertension⁽¹⁾.

Today, more than ever, physical activity is particularly relevant in people's life, as it can be seen by the great number of people who registers in gyms, the growing importance given to wellness/fitness and the striving to physical "perfection".

It is known that a good perception of his own body allows the individual to positively influence his self-esteem, his self-efficacy and his mood.

Body image is not an innate structure, but an “highly dynamic structure, that depends on the maturity of nervous system, the psycho-emotional past, the sensory-motor perception level, the process made possible by the experience and the continuous postural and motoric learning; it works both on a conscious level and out of self-awareness, in privacy as in social space”⁽²⁾.

There are not age limitations to enroll in a sport club and in the last twenty years many seniors have begun to enroll in sport clubs and to frequent them assiduously.

In the present research, we asked ourselves if for a sample of seniors, going regularly to a sport club is linked to a concept of health or to different variables; to do this we chose to go to a sport structure considered a cult on the territory.

The question we ask is: “Choice of life or life that choices?”

Materials and methods

Data were collected on a sample of 300 volunteer sportsman member of the Virgin Active gym in Catania.

50 out of the 300 subjects became our sample, of which 25 males and 25 females with mean age of 60 years old (s.d.± 7,5).

Subjects underwent the administration of Big five short test, Self-efficacy Evaluations test, Silhouette Figure Body Images test, Digit ratio and Body Mass Index.

Big Five Short (BFQ)

It was used a reduced form of 10 item of BFQ⁽³⁾ to ease the test administration.

BFQ is a self-evaluation test of 5 personality traits: openness to experience, conscientiousness, extraversion, agreeableness and neuroticism.

Self-efficacy

To evaluate self-efficacy, it was used the Italian version (4) of “general perceived self-efficacy” test, developed by Schwarzer⁽⁵⁾.

The test aims to evaluate the optimistic beliefs that concern the capacity to confront a vast variety of stressful stimuli, managing to treat adequately challenging situations.

Silhouette Figure Body Images

Stunkard and collaborator introduced the stimulating silhouette as a self-evaluation measure of body dimension.

The standard management of Stunkard silhouette consist of asking participants to choose the image that resemble the most to their own and to choose another one that correspond to the one they would like to have (Figure 1).

This procedure provides three values: current size, desired size and a disparity evaluation (current/desired), which is interpreted as “body dissatisfaction measure”.

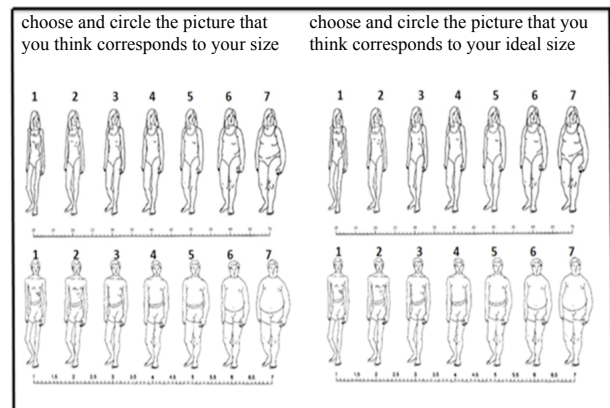


Figure 1: The figure shows the “Silhouette Figure Body Images Test”, the subject must select and circle the figure you think corresponds to your real size and then select and circle the figure you think corresponds to your ideal size.

Body Mass Index (BMI)

BMI allows to evaluate overweight and obesity related risks in adult subjects. BMI express the ratio between weight, stated in kg, and the square of the height, stated in meters, and represents an indirect index of adiposity.

Digit ratio

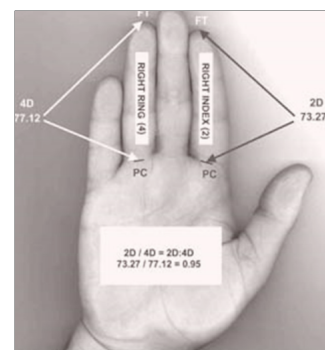


Figure 2: The figure shows the Method of the radio measuring digit. It should be made a photocopy of the right hand of the subject, then goes carried out the measurement of the second (2D) and fourth ditto (4D). Subsequently divide between 2D/4D.

Ratio between index finger and ring finger (2D: 4D) called digit ratio, is a useful instrument to evaluate testosterone levels which subjects have been exposed during intrauterine life. This level can influence behavior and in particular positive aggressiveness, meant as the capacity to confront rapidly and decisively difficulties and obstacles.

The hands of the subjects were photocopied and it was taken the measurement from metacarpal-phalanx crease to the tip of the finger⁽⁶⁻⁸⁾ (Figure 2)

Results

Big Five Short

Results from Big Five -10 item shows in both group positive values for conscientiousness, equal to 4.12 for the female sample and 4.28 for the male sample, and for openness to experience equal to 4.1 for the female sample and 3.4 for the male sample

The female sample shows more openness to experience whereas the male sample shows higher values for conscientiousness and extraversion.

Self-efficacy

44% of the female sample and 52% of the male sample obtained mean self-efficacy values.

Whereas 20% of the female sample and 10% of the male sample shows high self-efficacy.

Finally, 36% of the female sample and 38% of the male sample shows demand for attentions.

Silhouette Figure Body Images Test

Values obtained from the sample show a statistically relevant difference ($P < 0,0001$) between real figure and ideal figure; these values reveal that the sample is not satisfied of his body.

Figure 3 shows how values obtained from the entire sample present a statistically relevant difference between real figure, equal to 4,8 ($\pm 1,06$), and ideal figure, equal to 3,5 ($\pm 0,83$).

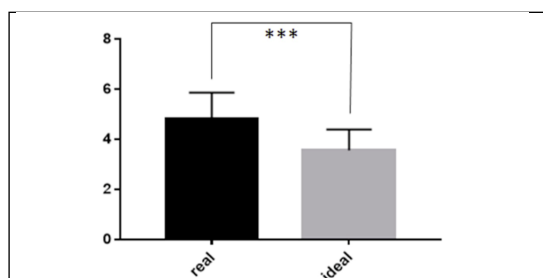


Figure 3: The figure shows the results obtained from the “Silhouette Figure Body Images test” from the whole sample. Values are expressed as mean and show a significant difference between the real image and the ideal image.

In figure 4 we analyzed data discriminating them by gender. Female sample obtained a score of 5 ($\pm 0,95$) for the perception of real figure and a score of 3,6 ($\pm 0,91$) for the idea figure; this means women would like to have one size and a half less.

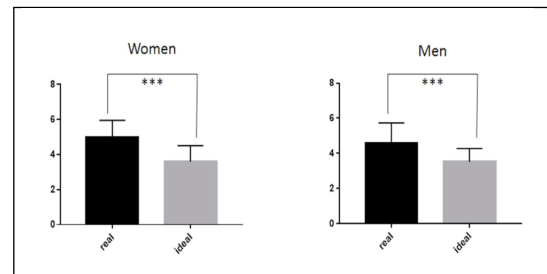


Figure 4: The figure shows the results obtained from the “Silhouette Figure Body Images test” in relation to gender. Values are expressed as mean and show a significant difference between the real image and the ideal image in both genders.

Male sample obtained a score of 4,5 ($\pm 1,16$) for the perception of real figure and a score of 3,5 ($\pm 0,74$) for the idea figure; this means women would like to have one size less.

Body Mass Index

Results obtained from the entire sample show a slight level of overweight with a BMI of 25,91 ($\pm 3,5$).

Discriminating data by gender, we observe that the female sample has a BMI of 24,78 ($\pm 3,5$), this means women have a regular weight, whereas the male sample has a BMI of 27,25 ($\pm 3,2$), that means men are overweight.

Digit ratio

Figure 5 shows that the ratio 2D:4D is correlated for both groups with conscientiousness.

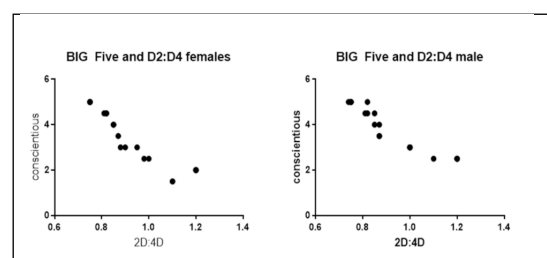


Figure 5: The figure shows the results obtained from the correlation between the digit ratio and the conscience variable of the Big Five. It is observed a correlation between the 2D rapport: 4D and conscientious variable.

Discussion and conclusion

Taking care of the body aims not only health but also an exterior image that reflects beauty stan-

dards; according to psychology, the perception of the body establishes the identity of the individual and influence self-esteem and mood⁽⁹⁻¹²⁾.

Fallon & Hausenblas⁽²⁰⁾ observed that information from media negatively affects the perception of the ideal body, with significant repercussions on the female sample on mood, although they have noted that physical activity is rarely capable of mitigating this influence while maintaining it pervasive⁽²¹⁻²⁹⁾.

The incessant images of perfect bodies to which we are exposed today, influence the perception that men and women have of their body; this results in an incentive to improve their own figure that leads to a continuous sport practice that doesn't have age limits.

The data revealed from this research can confirm that the number of seniors enrolling in sport clubs is considerably growing⁽¹³⁻¹⁹⁾.

An interesting data is represented by the female sample, that despite being completely healthy does not accept himself and desires to enhance his image.

Similar results were obtained from Bruijn et al.⁽³⁰⁾ and Kern⁽³¹⁾ who observed that extroversion, neuroticism and conscience traits positively correlated with the practice of sport activity while those of openness to experience, friendship and psychoticism resulted negatively correlated.

To the question "Choice of life or life that choices?" that we asked ourselves at the beginning of this work we can answer with slight bitterness that often is the life that choices⁽²⁰⁻²⁷⁾. In any age, mediatic conditioning is very strong; we should continue to make physical activity with the awareness that it represents life and health for our body, becoming sometimes a true elixir of life.

References

- 1) Bouchard C, Shephard RJ, Stephens T. Physical activity, fitness, and health. Human Kinetics Publishers. 1993.
- 2) Schilder P. The image and appearance of the human body : studies in the constructive energies of the psyche. New York, N.Y.: International Universities Press, ©1950.
- 3) Gosling SD, Rentfrow PJ, Swann WB. A very brief measure of the Big-Five personality domains. *Journal of Research in Personality* 2003; 37: 504-528.
- 4) Santo Di Nuovo, Paola Magnano. Competenze trasversali e scelte formative. Strumenti per valutare metacognizione, motivazione, interessi e abilità sociali nella continuità tra livelli scolastici. Erickson. 2013. ISBN: 9788859001546.
- 5) Schwarzer, R. Self-efficacy: Thought control of action. Washington, DC: Hemisphere. Ed. 1992.
- 6) Paul SN, Kato BS, Hunkin JL, Vivekanandan S, Spector TD. The big finger: the second to fourth digit ratio is a predictor of sporting ability in women. *Br J Sports Med* 2006; 40(12): 981-3.
- 7) Perciavalle V, Di Corrado D, Petralia MC, Gurrisi L, Massimino S, Coco M. The second-to-fourth digit ratio correlates with aggressive behavior in professional soccer players. *Mol Med Rep* 2013; 7 (6): 1733-1738.
- 8) Coco M, Fiore AS, Perciavalle V, Maci T, Petralia MC, Perciavalle V. Stress exposure and postural control in young females. *Mol Med Rep* 2015; 11(3): 2135-40.
- 9) Coco M. The brain behaves as a muscle? *Neurol Sci* 2017; 16. doi: 10.1007/s10072-017-3014-6.
- 10) Perciavalle V, Blandini M, Fecarotta P, Buscemi A, Di Corrado D, Bertolo L, Fichera F, Coco M. The role of deep breathing on stress. *Neurol Sci* 2017; 38(3): 451-458.
- 11) Perciavalle V, Di Corrado D, Scuto C, Perciavalle V, Coco M. Anthropometrics related to the performance of a sample of male swimmers. *Percept Mot Skills* 2014; 118 (3): 940-950.
- 12) Coco M, Di Corrado D, Calogero RA, Perciavalle V, Maci T, Perciavalle V. Attentional processes and blood lactate levels. *Brain Res* 2009; (11) 1302: 205-11.
- 13) Coco M, Alagona G, Perciavalle V, Rapisarda G, Costanzo E, Perciavalle V. Brainstem excitability is not influenced by blood lactate levels. *Somatosens Mot Res* 2013; 30 (2): 90-95.
- 14) Perciavalle V, Di Corrado D, Scuto C, Perciavalle V, Coco M. Attention and blood lactate levels in equestrians performing show jumping. *Percept Mot Skills* 2014; 118 (3): 733-745.
- 15) Coco M, Alagona G, Perciavalle V, Cavallari P, Caronni A, Perciavalle V. Changes in cortical excitability and blood lactate after a fatiguing hand-grip exercise. *Somatosens Mot Res* 2014; 31 (1): 35-39.
- 16) Alagona G, Maci T, Petralia MC, Costanzo E, Perciavalle V, Coco M, Perciavalle V. Attentional processes during submaximal exercises. *Somatosens Mot Res* 2014; 31 (1): 1-6.
- 17) Perciavalle V, Maci T, Perciavalle V, Massimino S, Coco M. Working memory and blood lactate levels. *Neurol Sci* 2015; 36 (11): 2129-2136.
- 18) Perciavalle V, Alagona G, De Maria G, Rapisarda G, Costanzo E, Perciavalle V, Coco M. Somatosensory evoked potentials and blood lactate level. *Neurol Sci* 2015; 36 (9): 1597-1601.
- 19) Coco M, Perciavalle V, Cavallari P, Perciavalle V. Effects of an Exhaustive Exercise on Motor Skill Learning and on the Excitability of Primary Motor Cortex and Supplementary Motor Area. *Medicine (Baltimore)* 2016; 95(11): e2978. doi: 10.1097/MD.0000000000002978.
- 20) Fallon EA, Hausenblas HA. Media images of the "ideal" female body: can acute exercise moderate their psychological impact? *Body Image*. 2005; 2(1): 62-73.
- 21) Waller BF, Hawley DA, Clark MA, Pless JE. Incidence of sudden athletic deaths between 1985 and 1990 in Marion County, Indiana. *Clin Cardiol*. 1992; 15(11): 851-8.
- 22) Alagona G, Coco M, Rapisarda G, Costanzo E, Maci T, Restivo D, Mauerger A, Perciavalle V. Changes of blood

- lactate levels after repetitive transcranial magnetic stimulation, *Neuroscience Letters* 2009; 450: 111-113.
- 23) Perciavalle V, Marchetta NS, Giustiniani S, Borbone C, Perciavalle V, Petralia MC, Buscemi A, Coco M (corresponding author). Attentive processes, blood lactate and CrossFit®. *Phys Sportsmed* 2016; 44(4): 403-406.
- 24) Coco M, Alagona G, Perciavalle V, Cicirata V, Perciavalle V. Spinal cord excitability is not influenced by elevated blood lactate levels. *Somatosensory and Motor Research* 2011; 28(1-2): 19-24.
- 25) Coco M, Alagona G, Perciavalle Va, Rapisarda G, Costanzo E, Perciavalle V. Brainstem excitability is not influenced by blood lactate levels. *Somatosens Mot Res.* 2013 Mar 6.
- 26) Perciavalle V, Alagona G, Maci T, Petralia MC, Costanzo E, Perciavalle V, Coco M. Attentional processes during submaximal exercises. *Somatosens Mot Res.* 2013 Jun 5.
- 27) Buscemi A, Rapisarda A, Platania S, Maida F, Brancati D, Petralia MC, Di Nuovo S, Giustiniani S, Caldarella L, Blandino MG, Grillo G, Barbagallo G, Coco O, Perciavalle Va, Perciavalle Vi, Armenia G, Coco M. The woman in pregnancy: body care by knowing of alternative medicine. *Acta Medica Mediterranea* 2016; 32: 953.
- 28) Mijatovic S, Maksimovic-Ivanic D, Timotijevic G, Miljkovic D, Donia M, Libra M, Coco M, McCubrey J, Al-Abed Y, Korac A, Stosic-Grujicic S, Nicoletti F. Induction of atypical caspase-independent apoptotic-like cell death of mouse mammary tumor TA3Ha cells in vitro and reduction of their lethality in vivo by the novel chemotherapeutic agent GIT-27NO, *Free Radical Biology & Medicine* 2010; 15; 8(8): 1090-9.
- 29) Donia M, Mangano K, Fagone P, De Pasquale R, Dinotta F, Coco M, Padron J, Al-Abed Y, Lombardo GA, Maksimovic-Ivanic D, Mijatovic S, Zocca MB, Perciavalle V, Stosic-Grujicic S, Nicoletti F. Unique antineoplastic profile of Saquinavir-NO, a novel NO-derivative of the protease inhibitor Saquinavir, on the in vitro and in vivo tumor formation of A375 human melanoma cells. *Oncol Rep* 2012; 28(2): 682-8.
- 30) de Bruijn GJ, de Groot R, van den Putte B, Rhodes R. Conscientiousness, extroversion, and action control: comparing moderate and vigorous physical activity. *J Sport Exerc Psychol.* 2009 Dec; 31(6): 724-42.
- 31) Kern L. Relationship between exercise dependence and big five personality. *Encephale.* 2010; 36(3): 212-8.

Corresponding author

MARINELLA COCO
marinella.coco@unict.it

Department of Biomedical and Biotechnological Sciences
University of Catania
(Italy)