EVALUATING A SET OF FACIAL EMOTIONAL EXPRESSIONS IN A SAMPLE OF PORTUGUESE CHILDREN AND ADOLESCENTS

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1. Introduction

Emotions and facial emotion recognition have been increasingly studied over the past years, reflecting their importance on human development and adjustment to the social environment. Individuals with deficits in the ability to accurately recognize emotions conveyed by the face experience several difficulties in communication and in social interaction which affect their daily living. As an example of this we can mention individuals with Autism Spectrum Disorders (Hughes, 2008; Lacava et al., 2007).

2. Aims

This study aims to test six stimuli representing the six primary cross-cultural emotions (happiness, sadness, fear, anger, disgust and surprise) defined by Ekman and Friesen (1975) using four adult models, of both sexes, selected from de Radboud Faces Database (RaFD, from Langner et al., 2010) on a group of typically developing Portuguese children and adolescents of both sexes. The need to use validated emotional stimuli in ongoing and future research with individuals with deficits on facial emotion recognition guided this study.

3. Method

Participants: we used a convenient sampling procedure, with 406 students aged between 7 and 18 years (M = 12.39, *DP* = 2.91) , 46% male and 54% female, from elementary and high schools from Porto District.
Materials: task of facial emotion recognition using Microsoft® Office Powerpoint® 2007 presenting models selected from the Radboud Faces Database (Table 1). A self-administered (confidential and anonymous) facial expressions questionnaire was used to assess emotional recognition.
Procedure: inter-judge agreement was performed to select the best 4 adult models (2 male and 2 female) from the Radboud Faces Database. The stimuli were administered in groups using a data-show. Each slide displayed two models of the same gender simultaneously presenting the same emotion. Participants were asked to recognize the emotion presented by the models and register the answer in the questionnaire. A forced-choice method based on six categories of response (the six basic emotions) was used for the recognition of the facial expressions. Before beginning the task, participants had three slides to practice in order to become familiar with the materials. Each emotion appeared two times during the task totalizing 12 stimuli.

4. Results

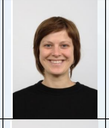
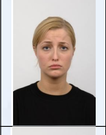
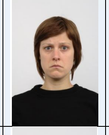
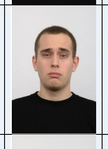
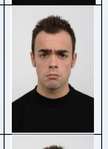
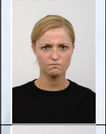
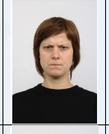
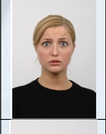
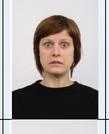
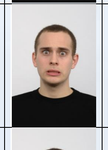
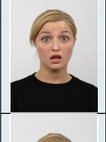
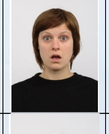
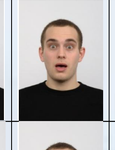
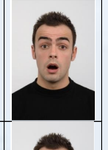
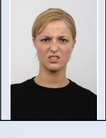
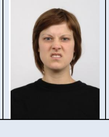
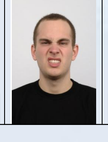
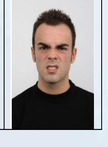
Emotions	Percentage of Agreement 0 correct	1 correct	2 correct	Models selected from the RaFD: Female Models		Male Models	
Happiness	0%	0.7%	**99.3%**				
Sadness	3.7%	23.6%	72.7%				
Anger	4.4%	21.9%	73.6%				
Fear	7.1%	28.1%	**64.8%**				
Surprise	1.5%	7.9%	90.6%				
Disgust	6.9%	20.2%	72.9%				

Table 1. Percentage of agreement between the chosen emotion and the correct emotion

The results show that all emotions were highly recognized by the participants. Happiness was the most easily recognized emotion (girls and boys equally recognized it). Fear was the least recognized. The majority of participants recognized each emotion on the two stimuli conveying it, and a small percentage only recognized one of the two stimuli (Table 1). There were gender differences statistically significant with girls better at recognizing Surprise, Sadness and Disgust and boys better at identifying Fear (Table 2, Fig. 1).

Emotions	Female	Male	Sig.
Happiness	100%	99.5%	.146
Sadness	**96%**	93%	.012
Anger	85%	84%	.533
Fear	76%	**77%**	.000
Surprise	**96%**	93%	.001
Disgust	**87%**	78%	.000

Table 2. Comparison of emotional recognition according to gender

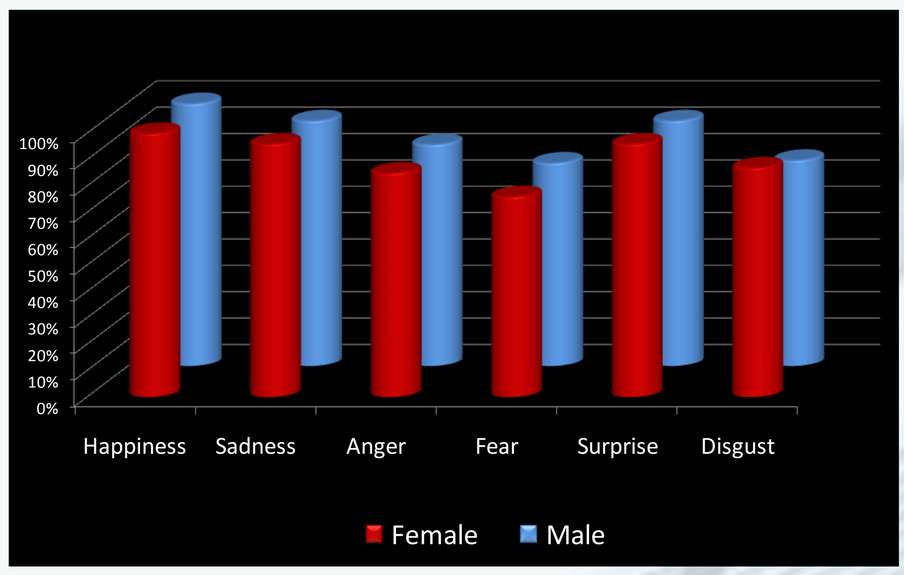


Figure 1 . Graphic comparison of emotional recognition according to gender

5. Conclusions

The results show that the stimuli were accurately recognized by the Portuguese participants and can be used to support several studies, particularly ongoing research with population with deficits on facial emotion recognition.

6. References

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