



Original Article

Investigation of anthropometric patterns in lip for individual men with autism in the Fars family based on analysis of photographic and cheiloscopy

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Abstract

Introduction: Autism spectrum disorder entails continuous failure in communication, social interaction, limited interests, and other behavioral symptoms. It is associated with multiple complications and problems and has a poor prognosis. Anthropometry is the science of measuring linear and angular dimensions of body limbs. Therefore, fingers anthropometry or lips print cheiloscopy can be used to identify individuals or to develop medical anthropology research.

Materials and Methods: In this study, 37 male children aged 3 to 18 years old with autism spectrum disorders whose diagnoses were approved by a psychiatrist and 43 healthy children from two Fars ethnic groups living in Mashhad were recruited. Anthropometric measures were measured for studying lips print. Pictures were transferred to a PC and Picture Manager Software was used to investigate each lip patterns. Then, each photo was divided into six districts (each lip into three zones). These areas include: upper right (UR), upper middle (UM), upper left (UL), lower right (LR), lower middle (LM), and lower left (LL). Data were analyzed through polynomial regression and ANOVA models by SPSS software.

Results: The most abundant lip patterns in the male population with Autism Spectrum Disorder in Fars ethnicity were complete branch pattern and reticular pattern.

Conclusion: It seems that lips print cheiloscopy can be used to identify individuals with autism spectrum disorders through more researches.

Keywords: Anthropometry, Autism, Cheiloscopy

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Introduction

Autism Spectrum Disorders (autistic) are a clinical diagnosis of persistent deficits in communication, social interactions, restricted interests and repetitive behaviors and other symptoms the behavior of others. The prevalence of this disorder in the past decade due to changes in the definition of the disorder (autism) from an apparent disorder to the spectrum of disease has increased. These disorders are usually in early childhood. The cause is not completely understood but the role of genetic, environmental and biochemical abnormalities have risen (1,2).

Children may be evaluated based on their social performance to its lowest level for moot (Mutism) and social isolation and the highest level that can be seen in older children who can face social interactions, but is different from the others that they are named active but odd (1-3).

Autism Spectrum Disorders have the long journey and unfavorable prognosis. The lifelong disorders and complications are numerous problems in the family and society. Almost two-thirds of adults with disability are severe and all his life completely dependent on family and individual institutions remain (1-3). In order to improve the quality of life of these, their severe and early treatment is more important prognostic (1-3).

Several studies on Autism Spectrum Disorders have been done about drug and non-pharmacological treatments. No effective and cure has not been

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identified and drug therapy is used only in reducing the symptom (1-4). Anthropometry is composed from two Greek words: Anthro and metric meaning human and measurement, respectively. Anthropometry is a branch of biometry that contains only human. The general concept of this science is obtaining and measurement of dimensions and body size (5,6).

The study development patterns and anthropometric characteristics lip at different ages gives us the criteria that can be used to repair various anomalies. Knowing the different anthropometric changes on the lips of all ages not only in the treatment plan, time and type of surgery it is helpful but in anticipation of the next change in the surgical area can also be effective. In addition to oral and maxillofacial surgery (orthognathic) standards specified soft tissue such as the lips is required. On the other hand research and development of lip morphology patterns may be important in biological anthropology studies. Since, anthropometric parameters on the basis of age, gender, geographic location and characteristics of different breeds of humans, since, anthropometric parameters on the basis of age, gender, geographic location and characteristics of different breeds of humans, anthropometric studies have to be done separately for each population by age and gender. Sometimes such research in medical knowledge could be important anthropometric (6).

Cheiloscopy from a Greek word cheilos and eskopein meaning lips and to see has been taken and the name that is given to the study of lip prints.

Cheiloscopy importance to the fact that lips print for each individual as a fingerprint, is unique (7).

In the past decade, studies lips print the attention of scientists as a new tool for human identification in social issues and has attracted criminal.

Lip print is including lines and normal gaps and grooves presence on the lips. They in the sixth week of fetal life to arise and do not change over time. So it can be used as a tool in forensic medicine. These prints after making some changes, such as trauma, inflammation and diseases such as herpes returned again to the first case. So the situation and form grooves do not change with environmental factors (8).

In 1960, Santos lip lines divided into two groups: simple and compound (9).

Tsuchihashi and Suzuki in the years 1968-1971 other studies done in a long time, which led to a new classification of lip prints were. By Category Tsuchihashi and Suzuki tracks divided into six districts (10). Complete vertical (I) partial vertical

(II), branch (III), crossover (IV), reticular pattern (V), irregular (V).

By Category Renaud tracks are classified into 10 types (Figure 1).

The types of tracks by category Renaud: complete vertical, B – incomplete vertical, C –complete bi-furcated, D – incomplete bi-furcated, E- complete branch, F- incomplete branched, G- reticular, H- X-form or comma, I- horizontal, J- Other forms (11). In 2014, the relationship between lip prints, fingerprints and blood group ABO was studied and no correlation lip line patterns, fingerprints and blood group were found (12). In 2013, a study was conducted on 100 patients with cancer in Nigeria and no significant differences were obtained with healthy subjects (8). The aim of this study was to evaluate anthropometric patterns lips of children with autism in the Fars tribes residing in Mashhad.

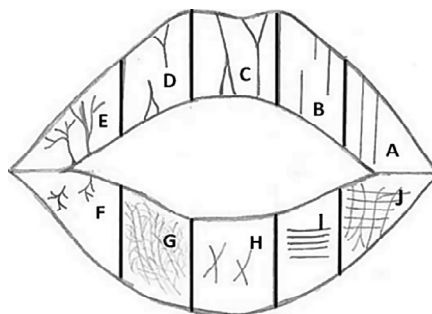


Figure 1. The types of tracks by category Renaud: complete vertical, B – incomplete vertical, C – complete bi-furcated, D – incomplete bi-furcated, E- complete branched, F- incomplete branched, G- reticular, H- X-form or comma, I- horizontal, J- Other forms

Materials and Methods

This study is a clinical trial field. Also, it been done cross. In this study, male children referred to special schools and clinics of Ibn-e-Sina Hospital and Children's Welfare dependents maintenance of autism and special education and autism spectrum disorders or private centers of Mashhad were autistic, and the selection criteria the study showed, were included in this study and given the limited study Fars ethnic, ethnicity also asked patients. Due to the absence of a similar article on this double-blind crossover on under studying design and also considering the number of patients available, the sample size in this pilot study on two groups of healthy (control) and patients.

The first group of 37 children and boys between the ages 3-18 years with a diagnosis of Autism Spectrum Disorders, which were confirmed by two

psychiatrists' specialized children, were selected and given the limited study Fars ethnic, ethnicity, and patients were also questioned.

The second group control through healthy subjects who were not diagnosed with the disorder as well as no having a sister or brother with them was confirmed, were selected randomly. The group included 43 children and adolescents in the age range of 3-18 years and was all ethnic gulfs. In this study, from a digital camera (Canon Powershotsx 150-20.1 Mega Pixel) were used to capture all complete-face photos (happened lips). For studying of lips prints, photos were transferred to a computer and using picture manager software, lips pattern were investigated. Then, each image was divided into six districts. The upper right (UR), upper middle (UM), upper left (UL), lower right (LR), lower middle (LM), and lower left (LL) (Figure 2). Each area was evaluated separately and frequency of each pattern in each area of between one type of lip pattern (complete horizontal, vertical partial, cross, branched, reticular, irregular), respectively, obtained (11) (Figures 3-6).

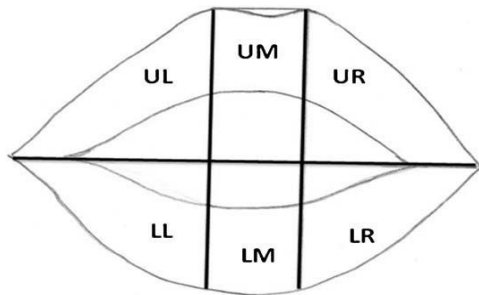


Figure 2. Portrait of evaluation identified six areas related to human lips

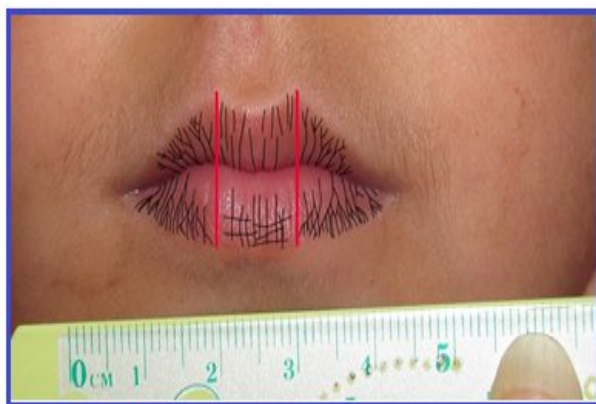


Figure 3. Pictures patterns of lip lines for 5 years old male with both autism

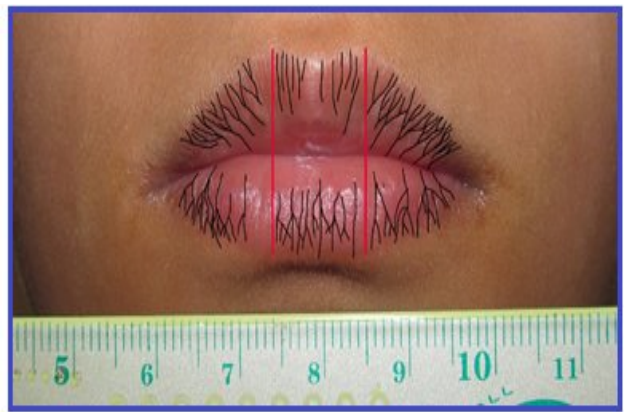


Figure 4. Pictures patterns of lip lines for 14 years old male with both autism



Figure 5. Pictures patterns of lip lines for 8 years old male healthy

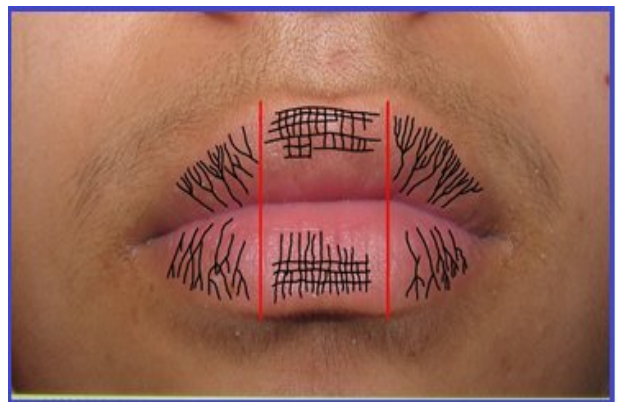


Figure 6. Pictures patterns of lip lines for 15 years old male healthy

Results

After transferring pictures to a computer and investigating by picture manager software, patterns of each lip were studied.

In the upper right (UR) complete branch pattern among patients 69 percent and among healthy people is 3.5%, which represents a huge difference.

In the upper-middle area (UM) reticular pattern in 70.2% of patients and among healthy individuals is 15.4 percent, which represents a huge difference.

In the upper left (UL) complete branch pattern in among patients 71.6% and among healthy individuals is zero , which shows the large difference.

In the lower right (LR) complete branch pattern between patients and healthy subjects is 81.7% and 63.7% percent, that represents the difference is not very large.

In the lower middle area (LM) vertical pattern among patients 6.4% percent and among healthy individuals is 39 percent , which indicates the large difference.

In the lower left area (LL) complete branch pattern between patients and healthy subjects 85.7% and 46.3%, that is shows the large difference.

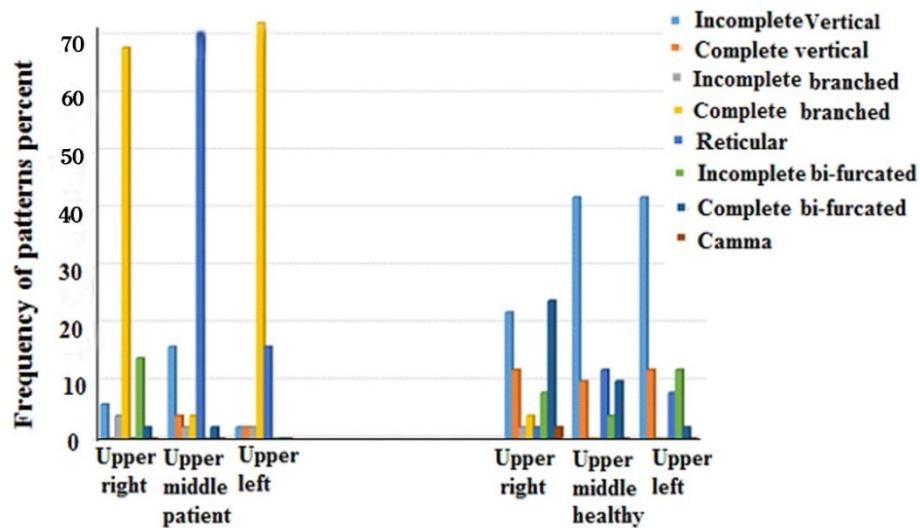


Chart 1. Bar graph comparing abundance patterns upper lip lines between healthy and patient groups

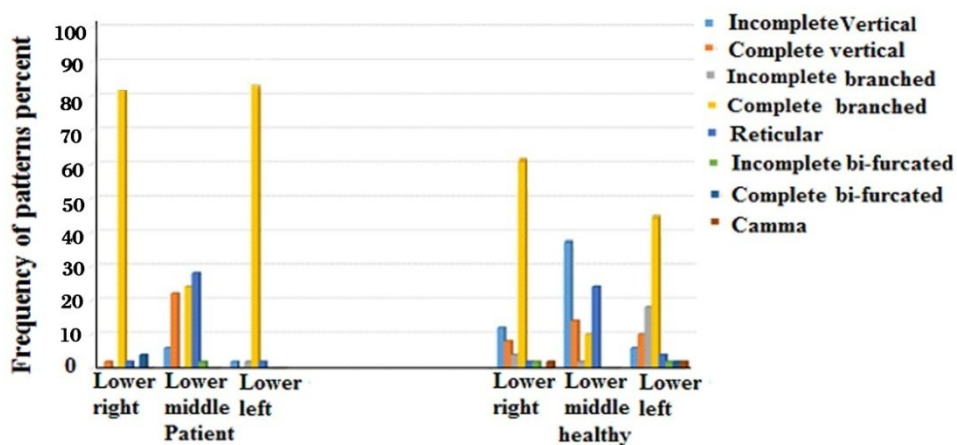


Chart 2. Bar graph comparing abundance patterns lower lip lines between healthy and patient groups

Discussion

In the past decades, studies lips print (Cheiloscopy) the attention of scientists as a new tool for human

identification in social issues and has attracted criminal. The patterns in the sixth week of fetal life create and do not change with passing of time. So it

can be used as a tool in forensic medicine. The prints, after making some changes, such as trauma, inflammation and diseases like herpes come back again to the first case. So, the situation and form grooves do not change with environmental factors (8).

It seems so far in Iran and anywhere in the world about the determination of a study in patients with autism do not lip lines. In the Fars studied population suffering autism residing in Mashhad, most patterns related to type of complete-branch and reticular and the lowest type were related to comma and horizontal patterns based on charts 1-2.

Domyaty and et al in 2010, lip print pattern on women and men of Medina studied and confirmed that Lip lines are unique to each individual. This study included 540 females and 426 males aged 40-18 years and 13 twin and 19 families that they were from different ages, indicating that: Lip lines for each individual are unique. Different lip pattern among various family members was diagnosed. In identical twins were record non-identical lips printing patterns.

In this study, patterns were investigated based on Renaud category. The most common type of pattern in women J (horizontal) was reported. The results of the present study in comparison with the above results that ,the most common pattern is related to the type of branch and reticular, was different (13).

A study in 2013 was conducted by Uduak Umana and et al on 100 patients with cancer in Nigeria. The aim of this study was to investigation lip print in patients with cancer. Dermatoglyph has proved to be an important tool for the diagnosis of diseases and genetic disorders. Since the lip print is unique, like a fingerprint can be used as a genetic marker useful in

some congenital diseases and clinical practices. In the cases of above cancer, a lip print in a high percentage (62.4%) of the branch was found that it match with present study (8).

A study to identify people by Sharma and et al in 2012, in order to compare Cheiloscopy and Palatoscopy was conducted. This study was done on 100 dental students (50 males and 50 females). Type I (vertical), I '(Vertical incomplete) and irregular pattern (V) were the most common pattern among reticular women (IV) and among men, respectively that , The results of the present study was to some extent not inconsistent with above results. There was no significant difference between the both of men and women in palate lines. This study shows that both of print lips and palate lines are unique but lip print is a more reliable method for determining gender (14).

Conclusion

To investigate lips dimensions in Fars people with autism compared between the two groups of patients and healthy, the most common pattern of lips lines in people with autism pattern, branch and reticular patterns was reported. It is hoped that in the future similar projects, to complete lip anthropometric database of Fars nations in Iran, extensive statistical societies in each of the ethnic Turkic, Baluchi, Kurdish and other types of diseases be prepared to be considered a diagnostic method.

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