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POSSIBILITIES AND PERSPECTIVES OF HUMAN TYPOLOGIES TAKING INTO ACCOUNT IN DENTISTRY

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ABSTRACT

Introduction: Such sciences as differential physiology, differential psychology, differential anatomy and chemistry are developed greatly nowadays. They deal to human typologies. The scientific works big amount concerning dentistry in this aspect allows speaking about differentiated dentistry.

The aim: To assess control locus in the UMSA Ukrainian students dependently on their dominant extremity as well as to assess and to compare face asymmetry expression in the guys and girls from Egypt and Ukraine studying at different courses.

Materials and methods: 50 Ukrainian students from dental faculty different courses in the 1st series of the experiments, 18 girls and 18 guys from Egypt and Ukraine in the 2nd series. Methods: - determining the dominant extremity and control locus by survey; - computer modeling for facial expression assessment.

Results: 43 students (85%, p<0,01) independently on dominant extremity demonstrate control internal locus and only 7 people (comprising 15%, p<0,01), 6 people (90%, p<0,01) from which were left-handers and all ambidexters) – the external one. These were the 1st experimental series results. We received following results in the experiment second part. Faces of the students from Egypt, guys in bigger extent, were more asymmetrical. We were taking photos of the students and then were measuring longitudinal and transversal sizes of face right and left halves. 10 guys from Egypt (55,6%, p<0,01) and 5 girls from Ukraine (27,78%, p<0,01) were distinguished by bigger longitudinal and transversal sizes as well as looked less harmonic while coinciding the face left halves than the right ones that can be explained in part by primary usage of left side while masticating as well as left hand usage at writing (in part in the Egyptian guys).

Conclusions: We consider that our work can have significance in Maxillary-Facial and Plastic Surgery, Transplantology, Orthopedy, Prosthetic Dentistry, Neurology as well as Cosmetology and Psychology.

KEY WORDS: human typologies, differentiated dentistry, asymmetry

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INTRODUCTION

Such sciences as differential physiology, differential psychology, differential anatomy and chemistry [1] are developed greatly nowadays. They deal to human typologies and describe human physiological and pathological peculiarities separately on them as well as their influence on organism functioning at alive matter all organizational levels while speaking about personality individualization. Study individualization is described as one of prior approaches in Pedagogy. One can say about teachers types, one emphasizes necessity of pupils individual-typological distinguishing features maximal taking into account in a study process. Main typological aspects comprise: age, gender, gender-age, ethnic, ethnic-gender, ethnic-age, ethnic-gender-age, temperament, characterologic typologies and character accentuations, control locus (external and internal), behavioral strategies (defense and coping), interhemispherical asymmetry individual profile (left-handers real, hidden and unreal, right-handers and ambidexters), different constitutional and somatotype typologies, place of living (town/city or village) et cetera.

Maxillary-facial area as a whole and oral cavity in part are not an exception as for typologies influence on peculiarities of anatomy, histology, organs and tissues biochemistry, physiological and pathological processes course in them as well as individual morphological-functional peculiarities presence.

THE AIM

The aim: to assess control locus in the UMSA Ukrainian students dependently on their dominant extremity as well as to assess and to compare face asymmetry expression in the guys and girls from Egypt and Ukraine studying at different courses.

MATERIALS AND METHODS

OBJECTS

50 Ukrainian students from dental faculty different courses in the 1st series of the experiments, 18 girls and 18 guys from Egypt and Ukraine in the 2nd series.

METHODS

1) Determining the dominant extremity and control locus by survey. If a human being was thinking that God, case, other people et al. influence mostly on his Destiny his control locus was considered as the external one, if he himself – the internal one.

2) Computer modeling for facial expression assessment. Ukrainian Medical Stomatological Academy commission on bioethics allows the article given publishing and states about all bioethical norms fulfillment.

RESULTS AND DISCUSSION

43 students (85%, p<0,01) independently on dominant extremity demonstrate control internal locus and only 7 people (comprising 15%, p<0,01), 6 people (90%, p<0,01) from which were left-handers and all ambidexters) – the external one. These were the 1st experimental series results. We received following results in the 2nd experimental series. 10 guys from Egypt (55,6%, p<0,01) and 5 girls from Ukraine (27,78%, p<0,01) were distinguished by bigger longitudinal and transversal sizes as well as looked less harmonic while coinciding the face left halves than the right ones.

Ukrainian students started counting on their own forces in bigger extent nowadays according to the results received. Left-handers are less sure in their forces and possibilities are needed in other people support, in Belief to God. Ambidexters as well because it is often "difficult to choose which hemisphere and arm to work with" in one or another situation that is why they are closer to left-handers than to right-handers on the parameters assessed.

The results on facial asymmetry can be explained in part by primary usage of left side while masticating as well as left hand usage at writing (in part in the Egyptian guys).

There was rather big factic material collecting by dentists therapeutists, surgeons, orthodontists, prosthesists both children and the adult ones which is impossible to be given in the short article volume, that is why we will give only few examples.

Works with ethnic aspect are delt to dental implantology in Iran [2], cements applying in surgical dentistry [3; 4], multidisciplinary approach as for treating the patients with iatrogenies in dentistry [5], mutagenic effects of the agents commonly-used for pulp dissection [6], chemicals usage for the tooth root resorbtion treatment (the Iranian, Turkish and Italian dentists work) [7], global problem of fluorum level increase in water, fluorosis, caries, teeth loosing and their filling questions [8; 9], knowledge about preventive dental care in Iran [10], the questions of dental ethics maintaining in the dental investigations in Iran [11]; demonstrative dentistry in Iran [12]. Enamel surface irradiation with a laser with carbonic dioxide enforced fluorum capture that can be used for caries therapy [13]; if fluorum was placed without laser than carbonic laser action did not improve enamel resistance to caries [14].

Ethno-age aspect is paid much attention together with ethnic typological aspect: there exist data about insufficient control of infectional process by Iranian dentists and dental students in part [15]; much attention is paid to proving as much complete diagnostics and differential diagnostics of teeth fluorosis in the Iranian children as possible [16]; fluorification usage in the different-aged children and in adolescents as well as different specialists attitude to it in Iran [17]; teeth decay early restorative therapy preference in the 20-yeared Iranians [18]; knowledge about demonstrative dentistry in Tehran among the Shahid Beheshti university dental faculty students [19]; studying the fluorum content in milk for infants in Iran [20]; laser fluorescence and radiography which are considered as caries treatment informative diagnostic methods in the 7-13-yeared Iranian children [21]. Maxillary central incisives are injured with trauma in the Iranian schoolchildren in 84% of cases [22] agreed more to apply risk-associated preventive treatment (such a tendency is present in Iran) [23]; there was a difference in pain perception by the patients after tooth normal extraction dependently on the doctor gender [24]; Iranian women have more expressed fear at dental reception comparatively to men [25].

Next important typological aspect is ethno-gender-age there was teeth loosing congenital factors investigation in Iran taking into account the patients age and gender [26], while proposing in part to examine children elder than 12 years or elder than 13 years in another investigation [27]; also in Iran there was an assessment of teeth roots inclinations which were treated endodontically by students dentists from Mashhad [28]; congenitally-missing teeth distribution in Iran is 10,9% in permanent occlusion, the second mandibular pre-molars take the 1st position, then the maxillary ones without valuable difference in the 7-25-year both-gendered inhabitants [29]. Tooth caries is studied in typological aspects nowadays in the 10-12-year Tehranian children and it was demonstrated that girls have increased risk comparatively to boys [30]. Iranian boys have got teeth traumas higher risk comparatively to girls [31].

There is a description of constitution and somatotype typologies separately and in a complex with ethno-gender-age aspect in Iraq [32].

Locus of control belongs to important typological aspect which takes bigger and bigger attention of scientists in different countries both theoreticians and the clinicians. Dentistry does not represent an exception. Australian and Swedish dentists works are dedicated to anxiety and fear assessment at dental reception [33], separately the Australian ones [34]. Thus, ethnic aspect is assessed in a complex with control locus.

Control locus is also described in a complex with ethno-age aspect. For example it was assessed at caries and gingival problems before and after talks about dental health in the Indian students [35], in a complex with anxiety assessment in them [36], separately without anxiety assessment – in the Swedish adolescents [37].

Control locus is described together with ethno-gender-age typological aspect in the Spanish students with creating the dental fear index Spanish version [38], in the dentists students from India [39].

Behavioral strategies (coping and avoiding) belong to another important typological aspect study and taking into account of which is actual in dentistry. We found works about coping in the American patients at surgical preparation [40; 41].

American dentists assessed patterns of children coping with aversive dental treatment [42], Irish – at anesthesia at caries [43], thus while behavioral strategies description with ethno-age aspect.

It was established that 23% of left-handers suffer from dental diseases. Some literary data [44] demonstrate higher (approximately twice at statistically valuable difference) level of permanent incisives traumatizing among left-handers comparatively to right-handers among the 13-17-year old adolescents. Left-handers have significantly higher risk on dental trauma.

The planned scientific aims have been reached completely, we met only several similar works performed in UMSA Iranian and Ukrainian students but not the Egyptian ones, unfortunately we did not have approaches to modern computer technologies as they use in the USA, UK and other countries, we would like to continue such works performance in the students from other countries.

CONCLUSIONS

Nowadays one can speak about new science – differentiated dentistry – and use human typologies in different areas of theoretical and practical dentistry.

Probably the given investigations on face asymmetry can have significance in Maxillary-Facial and Plastic Surgery, Transplantology, Orthopedy, Prosthetic Dentistry, Orthodonty, Neurology as well as Cosmetology and Psychology.

REFERENCES

- 1. Neumiller J. Differential chemistry (structure), mechanism of action, and pharmacology of GLP receptor agonists and DPP-4 inhibitors. J Am Pharm Assoc (2003). 2009; 1:16-29.
- 2. Agha-Hosseini F, Rohani B. Evaluation of the Effects of Dental Implants on Oral Lesions. J Contemp Dent Pract. 2015; 16(5):400-406.
- 3. Asgary S, Fazlyab M. Surgical Treatment of an Immature Short-Rooted Traumatized Incisor with and Extensive Apical Lesion Using CEM Cement. Iran Endod J. 2015; 10(2):148-151.
- Asgary S, Ehsani S. Periradicular surgery of human permanent teeth with calcium-enriched mixture cement. Iran Endod J. 2013; 8(3):140-144.
- Ramazani M, Asgary S, Zarenejad N et al. Interdisciplinary Approach for Management of iatrogenic Internal Root Resorption: A Case Report. Iran Endod J. 2016; 11(1):71-74.
- 6. Samiei M, Asgary S, Farajzadeh M et al. Investigating the mutagenic effects of three commonly used pulpotomy agents using the ames test. Adv Pharm Bull. 2015; 5(1):121-125.
- 7. Mohammadi Z, Cehreli Z, Shalavi S et al. Management of Root Resorption Using Chemical Agents: a Review. Iran Endod J. 2016; 11(1):1-7.
- Azami-Aghdash S, Ghojazadeh M, Pournaghi Azar F et al. Fluoride concentration of drinking waters and prevalence of fluorosis in Iran: a systematic review. J Dent Res Dent Clin Dent Prospects. 2013; 7(1):P.1-7.
- Taghipour N, Amini H, Mosaferi M et al. National and sub-national drinking water fluoride concentrations and prevalence of fluorosis and of decayed, missed and filled teeth in Iran from 1990 to 2015: a systematic review. Environ Sci Pollut Res Int. 2016; 23(6):5077-5098.
- 10. Ghasemi H, Murtomaa H, Torabzadeh H et al. Knowledge of the Attitudes towards Preventive Dental Care among Iranian Dentists. Eur J Dent. 2007; 1(4):222-229.
- 11. Alaeddini M, Etemad MS. A report on the significance of ethics in dental research in Iran. Journal of Dental Medicine. 2014;27(2):144-151.

- Navabi N, Shahravan A, Pourmonajem S et al. Knowledge and Use of Evidence-based Dentistry among Iranian Dentists. Sultan Qaboos Univ Med J. 2014; 14(2):223-230.
- 13. Bahrololoomi Z, Fotuhi Arkadani F, Sorouri M. In Vitro Comparison of the Effects of Diode Laser and CO2 Laser on Topical Fluoride Uptake in Primary Teeth. J Dent (Tehran). 2015; 12(8):585-591.
- 14. Bahrololoomi Z, Lotfian M. Effect of Diode Laser Irradiation Combined with Topical Fluoride on Enamel Microhardness of Primary Teeth. J Dent (Tehran). 2015; 12(2):85-89.
- 15. Khanghahi BM, Jamali Z, Pournaghi Azar F et al. Knowledge, Attitude, Practice, and Status of Infection Control among Iranian Dentists and Dental Students: A Systematic Review. J Dent Res Dent Clin Dent Prospects. 2013; 7(2): 55–60.
- 16. Sabokseir A, Golkari A, Sheiham A. Distinguishing between enamel fluorosis and other enamel defects in permanent teeth of children. PeerJ. 2016; 4: 1745.
- 17. Pakdamam A, Yarahmadi Z, Kharazifard MJ. Self-Reported Knowledge and Attitude of Dentists towards Prescription of Fluoride. J Dent (Tehran). 2015; 12(8):550-556.
- Ghasemi H, Murtomaa H, Torabzadeh H et al. Restorative treatment threshold reported by Iranian dentists. Community Dent Health. 2008; 25(3):185-190.
- 19. Sabounchi SS, Nouri M, Erfani N et al. Knowledge and attitude of dental faculty members towards evidence-based dentistry in Iran. Eur J Dent. 2013; 17 (3):127-137.
- Askarizade N, Pourzakariya Z, Najafpoor AH. Fluoride content of packaged milk and infant formulas in Tehran. Journal of Research in Dental Sciences. 2014; 11(2):108-111.
- Bahrololoomi Z, Ezoddini F, Halvani N. Comparison of Radiography Laser Fluorescence and Visual Examination for Diagnosing Incipient Occlusal Caries of Permanent First Molars. J Dent (Tehran). 2015; 12(5):324-332.
- Rouhani A, Movahhed T, Ghoddusi J et al. Anterior traumatic dental injuries in East Iranian school children. Iran Endod J. 2015; 10(1):35-38.
- 23. Ghasemi H, Murtomaa H, Torabzadeh H et al. Risk-based approach in preventive practice among Iranian dentists. Oral Health Prev Dent. 2008; 6(1):53-60.
- 24. Rasul HA. Evaluation of Pain response experienced by the patients after normal teeth extraction according to the operator genders. MDJ. 2013; 10(2):216-220.
- 25. Saatchi M, Abtahi M, Mohammadi G. The prevalence of dental anxiety and fear in patients referred to Isfahan Dental School, Iran. Dent Res J (Isfahan). 2015; 12(3):248-253.
- 26. Rakhshan V. Meta-analysis and systematic review of factors biasing the observed prevalence of congenitally missing teeth in permanent dentition excluding third molars. Prog Orthod. 2013; 14:33.
- Rakshan V, Rakshan H. Meta-analysis and systematic review of the number of non-syndromic congenitally missing permanent teeth per affected individual and its influencing factors. Eur J Orthod. 2016; 38(2):170-177.
- 28. Moradi S, Gharechani N. Evaluation of canal deviation in endodontically treated teeth by Mashhad dental students from April 2012 till April 2013. Journal of Mashhad Dental School. 2014; 38(1):53–60.
- 29. Sheikhi M, Sadeghi MA, Ghorbanizadeh S. Prevalence of congenitally missing permanent teeth in Iran. Dent Res J (Isfahan). 2012; 1:105-111.
- Almasi A, Rahimiforoushani A, Eshraghian MR et al. Effect of nutritional habits on dental caries in permanent dentition among schoolchildren aged 10-12 years: a zero-in-flated generalized poisson regression model approach. Iranian Journal of Public Health. 2016; 45 (3):353-361.

- Azami-Aghdash S, Ebadifard Azar F, Rezapour A et al. Prevalence, etiology, and types of dental trauma in children and adolescents: systematic review and meta-analysis. Med J Islam Repub Iran. 2015;29(4):234.
- 32. Ahmed HMA, Ali FA. Dental archs dimensions, forms and the relation to facial types in a sample of Iraqi adults with skeletal and dental class I normal occlusion. Journal of Baghdad college of dentistry. 2012; 24(1):99-107.
- Wide Boman U, Armfield JM, Carlsson SG et al. Translation and psychometric properties of the Swedish version of the Index of Dental Anxiety and Fear (IDAF-4C+). Eur J Oral Sci. 2015; 123(6):453-459.
- Armfield JM. Development and psychometric evaluation of the Index of Dental Anxiety and Fear (IDAF-4C+). Psychol Assess. 2010; 22(2):279-287.
- 35. Potdar S, Lakshminarayan N, Goud Reddy N. Relationship of locus of control with plaque and gingival status before and after oral health education in a group of college students an experimental study. Int J Dent Hyg. 2015; 13 (1):42-48.
- 36. Acharya S, Sangam DK. Dental anxiety and its relationship with selfperceived health locus of control among Indian dental students. Oral Health Prev Dent. 2010; 8(1):9-14.
- Őstberg AL, Abrahamsson KH. Oral health locus of control in a Swedish adolescent population. Acta Odontol Scand. 2013; 71(1):249-255.
- Carrillo-Diaz M, Crego A, Armfield JM et al. Adaptation and psychometric properties of the Spanish version of the Index of Dental Anxiety and Fear (IDAF-4C+). Oral Health Prev Dent. 2012; 10(4): 327-337.
- 39. Acharya S. Professionalization and its effect on health locus of control among Indian dental students. J Dent Educ. 2008; 110-115.

- 40. Litt MD, Nye C, Shafer D. Preparation for oral surgery: evaluating elements of coping. J Behav Med. 1995; 18(5): 435-439.
- 41. Litt MD, Nye C, Shafer D. Coping with oral surgery by self-efficacy enhancement and perceptions of control. J Dent Res. 1993; 72(8):1237-1243.
- 42. Miller SM, Roussi P, Caputo GC et al. Patterns of children's coping with an aversive dental treatment. Health Psychol. 1995; 14(3):236-246.
- 43. Carlson P, Freeman R. Dental caries, age and anxiety: factors influencing sedation choice for children attending for emergency dental care. Community Dent Oral Epidemiol. 2001; 29(1): 30-36.
- Sandalli N, Cildir S, Gulen N. Clinical investigation of traumatic injuries in Yeditepe University, Turkey during the last 3 years. Dental Traumatology. 2005; 21(4):188-194.

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According to the order of the Authorship

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The Authors declare no conflict of interest

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