



VERTICAL SKELETAL MORPHOLOGY AND LOWER INCISOR POSITION AS FACTORS CONTRIBUTING TO ANTERIOR MANDIBULAR CROWDING

Tosheska-Spasova Natasha, Dzipunova Biljana, Stavreva Natasha, Simjanovska Ljuba, Spasov Zoran

Introduction: The incisor mandibular crowding is a discrepancy between the mesiodistal widths of the four permanent incisors and the available space in the alveolar process. IMC is not just a discrepancy between the size of the teeth and the arch, but a discrepancy between several variables.

Aim: To evaluate interrelation between the vertical skeletal morphology and lower incisor position as factors contributing to anterior mandibular crowding.

Material and method: Lateral cephalometric radiographs of 100 children with incisor mandibular crowding at the age of 9-12 years were evaluated. 25 angular and linear parameters were measured, as indicators of facial growth and parameters that locate the mandibular incisor position. To determine whether the grouping of the variables has a biological sense in their interrelationship and to the incisor mandibular crowding, the interrelation between the variables describing the vertical skeletal position and the variables describing the position of the mandibular incisors was determined.

Tab.1 Vertical skeletal variables

Variables	X	SD	Min	Max
N-S-Ar	122,8	6,29	111	136
S-Ar-Go	145,1	7,09	129	164
Ar-Go-Me	125	6,30	113	135
Ar-Go-N	54,3	4,39	45	65
N-Go-Me	74,4	4,79	65	83
N-S-Ar-Go-Me	393	16,53	354	421
S-Go/N-Me	63,3	5,09	54	75
N-Pg/FH	79,8	3,29	71	86
Y oska	63,7	3,40	56	72
FH/MP	32,7	5,09	22	41
N-Ba/Pt-Gn	88,7	3,43	80	96
Sna-Xi-Spm	46,7	4,69	37	57
Sna-Snp/MP	28,7	5,69	17	40
OcP/MP	16	4,18	7	26
SN/Go-Gn	35	5,80	23	45
N-Sna/Sna-Me	83,6	8,09	69	103

Tab.2 Mandibular incisor position variables

Variables	X	SD	Min	Max
li/FH	54,7	6,89	42	72
li/MP	92,8	6,09	80	105
li/A-Pg	22,2	4,79	12	32
li/NB	25,2	5,20	13	36
li-A-Pg	0,3	2,29	-4	5
li-N-Pg	2,2	3,16	-4	8
li-NB	4,4	2,09	0	8
li-NB/NB-Pg	3,4	2,61	-5	8
"Hold-2"	11,8	2,59	6	17

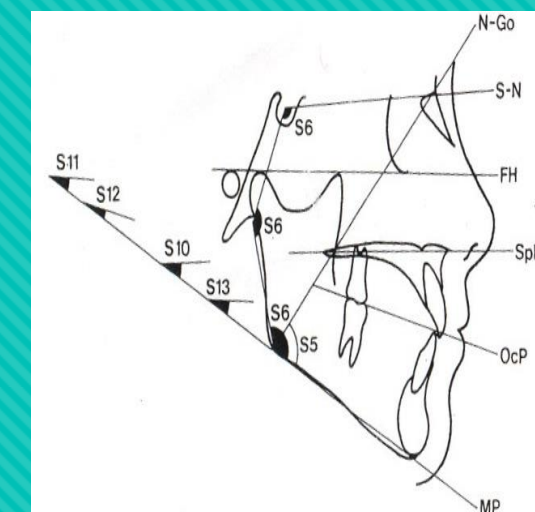


Fig.1 Variables with high factor loadings in Factor 1(F1)

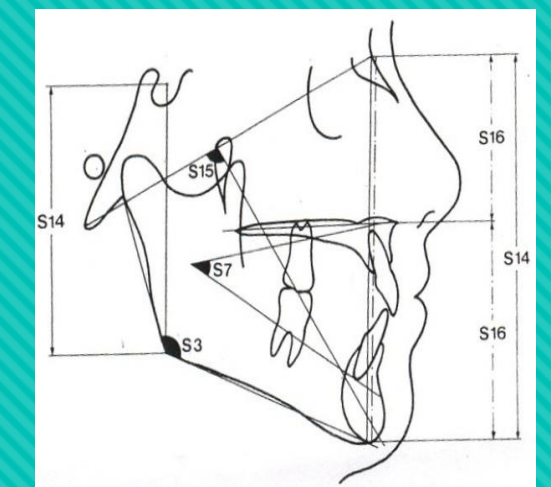


Fig.2 Variables with lower factor loadings in Factor 1(F1)

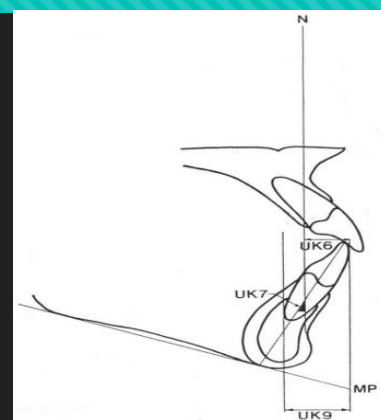


Fig.3 Variables with high factor loadings in Factor 2(F2)

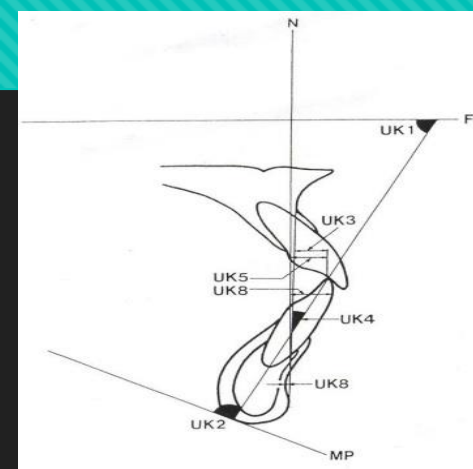


Fig.4 Variables with lower factor loadings in Factor 2(F2)

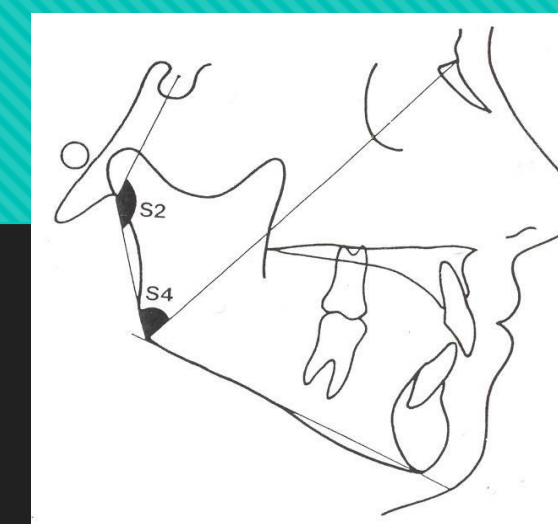


Fig.5 Variables in Factor 3(F3)

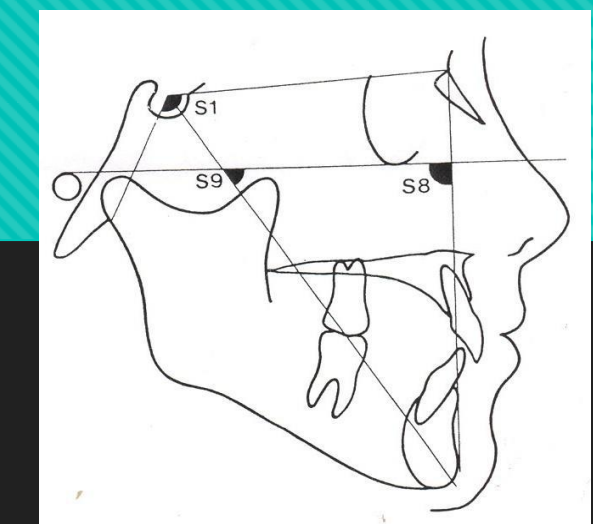


Fig.6 Variables with high and lower factor loadings in Factor 4(F4)

Conclusions: The selected variables are in interrelation within each individual factor, but not between the factors themselves. There are four major factors: vertical skeletal morphology, position of mandibular incisors in relation to genial morphology, position and morphology of the mandibular ramus and mandibular position in relation to the cranial basal structure. IMC manifests itself in a variety of skeletal morphology, independent of the position of the mandibular incisors.