Intelligence and Educational Performance of Children in Blind Schools by Condition

(This was part of the discussion chapter in thesis on childhood onset visual impairment/blindness, 1985-1987).

Jalili IK, 1987. First published on the web in 2005 http://Jalili.co.uk/bss/ch22.pdf)

Introduction

Evaluation of educational attainment using examination marks as a parameter was an offshoot study of the blind schools survey.(Jalili IK. http://jalili.co.uk /bss/covi.htm). It's objectives whether educational abilities of children with childhood onset visual impairment/blindness varied with the clinical condition.

The sample was, however, limited and bias resulted from the selection procedure whereby results made available for the study by some schools skewed towards the better performers. This by itself worked as an indicator for the IQ levels in these conditions by through abstention. The smallest cohort in proportion of their numbers is the congenital RC dystrophies (LCA.

Results

No gender differences in performances existed except marginally in humanities/history (Table 1). To the best of my knowledge no such aspect exists in the literature for comparison.

Gender	No.	Mean Total	Languages Arabic/English	Science / Maths	Arts/Craft	History	Sports
Males	43	66	66	66	75	71	76
Females	39	65	68	68	73	67	78

Table 1. Comparison of school performance by gender

Table 2 list the available school grades of 83 pupils (44 from the WB and 38 from the GS) and demo-nstrates a pattern where patients with certain conditions achieve higher academic achievements and vice versa.

The sample shows a whole range of educational abilities with the very bright and high performers, such as the patients with albinism and the syndromatic CRD in particular the type associated with AI. This also includes the 2 cases with CACR, one of whom is musically gifted. The rest of the CACR series are educationally subnormal. This is in contrast to the rod-cone types of retinal dystrophies, which score worse; the observations are supported by the clinical observations whereby this condition harbours a very high predominance of mental retardation.

Congenital glaucoma follows cone conditions. Congenital cataract cases are a mix of good and poor performers. It is interesting to note that all the CC associated with small eyes (8/20) performed better than the rest of the CC sample. Congenital cataract patients show a wider range of IQs but it is worth noting that all patients with small eyes (*n,*8/20) are educationally better that the rest of the sample.

The optic nerve group showed a disparity between the two syndromatic and acquired cases and the two post inflammatory/meningitis cases.

In the small eyes group, at the top came a male patient with rudimentary globe the second was the eldest of two sibs whose brother is educationally subnormal as seen from the marks. Both siblings suffer from a syndromatic type of microphthalmia associated with high myopia and cataract. The worst performer was a girl with anophthalmia.

Schools Marks in Blind Schools Pupils *								
Patients	**Sex**	**Age[a]**	**VA[b]**	**Subjects Means**				
				All [c]	**Lang[d]**	**Scien[e]**	**H'man[f]**	**Arts**
Hypopigmentation [g]								
ALB-05-1-2	M	5	3	96	90	95	100	100
ALB-07-1-1	M	10	1	89	75	89	91	95
ALB-08-1-2	F	12	2	85	80	88	85	83
Average hypopigmentation				89	82	91	92	93
Cone Disorders								
RD-CR-01-13-2	F	8	2	94	96	91	-	96
RD-CR-01-12-2	M	5	4	91	80	95	100	80
RD-CR-01-13-1	M	9	3	87	74	90	96	84
RD-CR-01-01-2	M	12	4	85	76	82	66	96
RD-CR-01-08-2	M	12	2	84	85	78	70	98
RD-CR-01-02-1	M	7	2	84	80	80	90	85
RD-CR-01-14-1	M	10	2	81	84	87	64	78
RD-CR-01-08-1	F	13	2	73	71	71	50	96
RD-CR-01-08-3	F	9	2	71	70	74	60	88
RD-CR-03-01-1	M	10	2	70	64	74	60	98
RD-CR-01-12-1	F	10	3	68	75	48	60	78
Cone Degeneration								
RD-CD-04-01-2	F	15	2	82	75	85	76	91
RD-CD-02-01-1	M	12	2	79	65	82	80	80
RD-CD-04-01-1	F	16	2	78	81	68	72	86
Achromatopsia								
RD-cRM-08-1-1	F	22	2	87	84	86	94	82

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RD-cRM-10-1-1	F	11	2	83	85	83	83	83
RD-cRM-03-1-2	F	10	2	69	79	67	66	75
Isolated Macular Degeneration and Vitreo retinopathy								
RD-MD-11-1-1	M	7	2	92	95	95	90	78
RD-MD-09-1-3	F	12	3	74	76	64	-	96
RD-VR-02-1-1	M	10	5	86	89	88	95	69
Cone rod Congenital Amaurosis								
CRCA-01-02-1	F	13	4	82	84	86	90	78
CRCA-02-03-2	F	17	3	67	60	-	57	73
CRCA-02-03-3	F	12	3	65	66	53	72	72
Average All the cone disorders				79	78	78	76	84
Acquired								
Control 13-1-1	M	9	1	88	80	85	-	96
ACQ-56-1-1-phth	M	15	2	82	85	77	89	74
ACQ-48-1-1-phth	F	16	1	73	67	79	64	80
ACQ-34-1-1	F	6	3	70	62	73	-	75
Average non genetic cases				77	73	79	77	81
Congenital Glaucoma								
CG-08-1-1	M	15	4	83	82	86	71	86
CG-06-1-2	F	7	4	80	90	65	-	72
CG-09-1-1	M	16	5	78	76	72	83	79
CG-23-1-1-phth	F	16	3	78	80	84	77	75
CG-07-1-1-cc	F	9	4	77	70	84	78	60
CG-09-1-2-cc	F	22	5	72	60	64	88	70
CG-12-1-1	M	12	4	71	60	71	55	75
CG-10-1-2-phth	M	12	5	70	69	56	67	74
CG-32-2-1-2	F	16	2	60	48	72	50	81
CG-26-1-4-cc	M	4	5	59	59	70	57	41

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CG-06-1-1	F	19	4	57	30	60	86	40
CG-10-1-1-cc	M	12	5	29	58	-	-	-
Average congenital glaucoma				68	64	70	71	67
Anterior Segment Dysgenesis (ASD)								
SD-01-1-2-mc_	F	12	3	69	75	66	67	69
ASD-01-1-1-mc_	M	18	3	65	64	54	47	86
ASD-01-1-3-mc_	M	9	3	63	48	65	58	80
Average ASD				65	70	68	71	66
Coloboma / Congenital Corneal Oedema								
CB-02-1-1-mc	F	15	2	68	65	69	65	71
CB-02-1-2-mc	M	11	3	72	68	75	50	87
CB-03-1-1	M	12	4	37	15	23	15	70
Average colobomas				56	63	62	67	62
CCO-01-1	F	20	3	51	53	41	43	61
Small Eyes								
MC-06-1-1	M	16	5	87	85	89	91	82
MC-12-1-2-CC	M	7	2	78	100	90	100	40
MC-11-1-1	F	9	5	40	22	36	41	54
MC-12-1-1-CC	M	6	4	32	30	29	40	-
Average small eyes				62	59	61	68	59
Congenital Cataract								
CC-04-2-1	F	13	2	82	84	84	77	73
CC-22-1-2-my	M	18	2	78	59	81	81	94
CC-05-2-3-mc	F	12	4	75	66	69	76	76
CC-05-2-4-mc	F	9	3	74	70	69	75	71
CC-05-2-1-mc	M	12	2	73	54	80	60	85
CC-05-2-2-mc	M	11	1	72	65	68	68	87
CC-08-1-1	F	10	2	72	60	73	75	82

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CC-23-1-1	M	15	2	52	21	51	34	67
CC-07-1-4	M	7	2	48	62	44	-	48
CC-19-1-1-dg	M	15	3	47	22	70	12	80
CC-30-3-1-mc	F	9	2	46	44	46	49	40
CC-30-2-2	M	9	2	44	40	43	49	45
CC-01-1-3	M	20	4	44	50	43	40	40
CC-28-1-1	M	9	4	43	42	43	44	47
CC-47-1-1-dg_vr	F	12	2	39	30	50	10	64
CC-18-1-1	F	12	5	36	25	32	44	43
CC-30-3-2-mc	M	3	4	34	25	38	-	40
CC-26-1-1-my	F	10	2	34	31	36	33	35
CC-26-1-2-my	M	8	2	32	41	21	-	42
CC-25-1-1	F	8	4	23	32	10	-	-
Average congenital cataract				54	47	55	52	61
Myopia								
MY-05-1-1	F	11	4	81	80	78	70	90
MY-09-1-1	M	13	1	75	78	65	60	82
MY-08-1-1-cc	M	5	2	49	50	48	50	50
Average myopia				67	69	64	60	74
Optic Nerve								
ON-12-1-1-sy	M	17	4	87	81	93	90	88
ON-14-1-1	M	11	4	78	66	79	79	78
ON-15-1-1	M	9	2	61	45	45	75	65
ON-17-1-1	M	17	4	30	20	26	-	35
Average optic nerve				65	53	60	81	67
Rod Disorders								
RD-RC-25-1-3	F	13	4	53	60	53	36	50
RD-RC-06-1-1	M	5	4	40	46	35	-	35

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Average rod disorders				44	53	44	36	43

[a] Age at examination [b] WHO visual categories [c] Average all subjects [d] Languages (Arabic and English) [e] Science subjects [f] Humanities [g] oculocutaneous albinism

Table 2. School Marks of 82 visually impaired pupils