

Psychiatric Morbidity Among Egyptian Deaf Children

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ABSTRACT

In this study sixty children aged 3 - 6 comprising two equal groups of low and high socio-economic status were compared with their controls. Deaf children were statistically less socially mature on the Vienland social maturity scale and had lower I.Q's. on the Hisey Nibrasca test than their controls. Hyperactivity and antisocial behaviour were the most common symptoms on the parental scale for assessment of deviant behaviour. The different influential mechanisms responsible for these findings were discussed. There was no statistical difference between males and females. Follow up study after six months and after one year for the low socio-economic group showed significant improvement in deviant behaviour after one year.

INTRODUCTION

The term deafness is a blanket expression which includes all types of hearing difficulties, and that the consequences of deafness depend on a large number of variables of which the most important are probably the age of onset and degree of hearing loss (Denmark, 1969). It is important to differentiate those whose disability has preceded the acquisition of speech and language (prelingual or early profound deafness) from those whose deafness began later in life (post lingual or adventitious deafness).

Altshuler (1971) concluded that early profound deafness leads to developmental retardation by depriving the affected person not only of a wide range of general knowledge and experience but also of opportunities to develop language at the appropriate time and to experience the emotionality which is communicated through verbal expression and is so essential to normal personality development.

Cooper (1976) commented that hearing losses interfere with communication by altering the quantity and quality of both the informational and emotional content of verbal utterances and other auditory stimuli which are received. If such communications are so distorted by hearing loss that they are misperceived, it can be expected that responses will be inappropriate and will depend to some extent on the individual's own supposition as to their content, and influenced by mental associations derived from his own unique experience.

It is now well recognised that a child's emotional development, behaviour and reaction to his handicap may be more significant in determining whether he may be able to remain in the community and achieve a degree of independent functioning than the extent of the physical handicap itself.

The aim of this study is to test the hypothesis that there is a positive association between deafness and development of psychiatric disorders in Egyptian children. The second aim is to measure their social maturity and education ability in our community.

MATERIAL AND METHOD

All deaf children subjected to this work were between 3-6 years old. Group I were children of low socioeconomic standard and included 15 males and females. None had a history of institutionalization. Group II were of a higher socioeconomic class and included the same number of females and males. Controls for both groups were studied after being matched for the social class, age and sex.

Criteria of selection for our sample was — Degree of hearing loss not less than 80 D.b. — No history of special training or speech therapy — I.Q. not less than 80. Those below 80 were excluded from the sample to avoid the behavioural changes which are common below this intellectual level. All children were subjected to: clinical psychiatric evaluation, to neurological examination as well as to a special check list by using Rutter's parental scale in assessing the deviant behaviour in children. Then they were psychologically tested using :

1. Vienland social maturity scale : which has 89 items according to the age from birth to 15 years old.
2. Hiskey Nibraska of learning aptitude (this test was standardized for deaf and partially hearing Egyptian children). The instructions of this test may be given in mime form so that the test is entirely non-verbal in presentation. There are items such as analogies and classification which are similar to those of the usual verbal tests. It is an individual test and is time consuming. The tests has eight subtests for age between 3-10 years. They are bead patterns, memory for colour, picture identification, picture association, paper folding, visual attention span, block patterns, and completion of drawings.

The psychometric tests were repeated for deaf children of group I after 6 months and one year after being trained in a special school attached to the Ministry of Social Welfare. Group II were not followed up because their families prefferd private training at home.

RESULTS

On analysing our data, deaf children are less socially mature and their I.Q.'s are less than the control group. The data were statistically significant (Tables I, II, III & IV for both group I and II).

Tables V, VI show no statistical difference between boys and girls for both groups.

The parental scale for assessment of the deviant behaviour in children showed that hyperactivity was more common in all age groups than in the control groups. (Table VII). Excessive or exaggerated muscular activity is the commonest complaint in the clinical picture and includes some or all of the following associations, easy distractability, impulsiveness, low frustration tolerance and lack of inhibition. On the whole deaf children do not appear to be anxious and have a compliant smiling expression.

The second common symptom was aggression usually shown as disobedience, physical aggressiveness, quarrelsomeness, vengefulness and

destructiveness. Antisocial behaviour was common especially their aggressive attitude towards other children whether elder or younger.

In our cases there was a family history of deafness in 8 cases of group I and four children in group II. Cerebrospinal meningitis ushered the onset of deafness in 7 children. Deafness followed middle ear disease, history of encephalitis, measles in 10 cases of group I and five cases of group II. There was no detectable cause in the remainder of cases.

Table VIII and IX indicate the follow up study for the low socio-economic group, after 6 months and one year respectively. Significant results are shown after one year only.

TABLE I GROUP I

Test	Deaf Children		Controls		T test
	M.	S.D.	M.	S.D.	
Social Maturity Test	77.54	13.46	82.69	4.98	2.75**
Hiskey N. Test	74	12.12	85	3.56	6.71**

TABLE II GROUP II

Test	Deaf Children		Controls		T test
	M.	S.D.	M.	S.D.	
Social Maturity Test	91.12	3.76	97	5.31	6.86**
Hiskey N. Test	89	3.70	99	6.81	9.9 **

TABLE III GROUPS I & II

Test	Deaf Children		Controls		T test
	M.	S.D.	M.	S.D.	
Social Maturity Test	77.54	13.46	91.2	3.76	7.51**
Hiskey N. Test	74	12.12	89	3.70	9.09**

** Statistically significant at 0.01 level.

TABLE IV
Controls in Both Group I & II

	Controls Group I		Controls Group II		T test
	M.	S.D.	M.	S.D.	
Social Maturity Test	82.69	4.98	97	5.31	15.23**
Hiskey N. Test	85	3.56	99	6.81	14 **

TABLE V
For Boys and Girls in Group I

Test	Deaf	Children	Deaf	Children	Controls		Controls	
	M.	S.D.	M.	S.D.	M.	S.D.	M.	S.D.
Social M. Test	75.4	2.76	76.68	3.9	82	5.13	83.5	5.1
Hiskey N. Test	74	3.24	73.24	2.26	85.88	2.96	84.6	4.08

TABLE VI
For Boys and Girls in Group II

Test	Deaf	Children	Deaf	Children	Controls		Controls	
	M.	S.D.	M.	S.D.	M.	S.D.	M.	S.D.
Social M. Test	89.36	4.59	90	2.04	101.7	7.14	101.44	7.11
Hiskey N. Test	89	2.08	88.46	4.34	101.46	6.45	99.51	6.42

TABLE VII

Parental Scale for Patients and Control Group I & II

	Deaf Group 1	Control Group I	Deaf Group II	Control Group II	Follow-up Group I after 2 y.
1. Motor-Restless	25xx	3	20xx	3	13
Cognitive-Fidgety	17xx	3	15x	5	6x
2. Mood-Temper tantrums	26xx	6	22xx	5	13x
Disorder-Irritability	22xx	5	20xx	5	10
— Worried	9	—	8x	—	8
— Miserable	1	—	—	—	—
— Fearful	15xx	—	10x	1	3x
— Fussy	14xx	1	10x	1	9
3. Habits — Bed Wetting	13	12	6	5	7
— Soiling	6x	1	2	2	1
— Eating difficulties	5	5	5	3	2
— Sleep difficulties	7	5	8	2	5
— Nail biting	2	2	3	1	2
— Twitches	—	—	1	—	—
— Thumb Sucking	7	5	5	2	5
4. Relationships — Not liked	9	—	7	1	5
— Solitary	—	—	2	1	—
5. Antisocial — Destructive	17x	3	15x	5	5x
— Fights	10x	1	9	—	5
— Disobedient	15x	4	10	6	10
— Steals	2	—	—	—	1
— Impulsive	10	1	13	—	9

x Significant P 0.05

xx Highly Significant P 0.01

TABLE VIII
Follow-up of Group I after 6 Months

Tests	First Testing		6 months		T test
	M.	S.D.	M.	S.D.	
Social Maturity	77.54	13.46	79.56	13.48	.18
Hiskey N. Test	74	12.12	77	12.46	.94

No Statistical Significance

TABLE IX
Follow-up of Group I after a Year

Tests	First Testing		1 year		T test
	M.	S.D.	M.	S.D.	
Social Maturity	77.54	13.46	83.59	4.99	2.79xx
Hiskey N. Test	74	12.12	86	3.86	6.83xx

xx Statistically significant at 0.01 level.

DISCUSSION

In any child, psychological development is influenced by both the child's own temperamental and physical characteristics and by the environmental and social circumstances he encounters. The handicapped children have their own emotional disorders some of which are the result of their adaptation to their defect. Some are the result of family attitude whether over-protective or rejective. Again the child's handicap may bring about a sort of family crisis and this in turn has its repercussions on the child.

Myklebust (1964) in his study concluded that deaf patients showed greater emotional and personality maladjustment than normal. Rawson (1973), Coper et al. (1974), Mahaptra (1974) have drawn attention to the high frequency of psychiatric and psychosomatic illness.

The higher incidence of aggression in our deaf children may be a reaction to the rebellious attitude of normal children towards the unres-

ponsive uncooperative child. Again it may be the result of the emotional and/or social immaturity of the deaf, combined with their inability to express dissatisfaction or anger in the normal verbal way. So these feelings are physically displayed.

Remvig (1969), Denmark (1969 and Altshuler (1971) drew attention to the impulsive aggressive behaviour which occurs so frequently in these patients, regardless of the formal psychiatric diagnosis. Indeed, in most series, problems of behaviour and maladjustment apparently related to deafness were by far the commonest disorder encountered. Altshuler suggested that hearing as a vehicle of emotional expression, influences the formation of object relationships and in some way is necessary for the control of impulsivity and aggression during normal development. Temper tantrums and irritability were also common probably as a mechanism to act out the child's frustrations.

The feeding and sleeping problems were of no significance. Regressive behavioural changes in the form of thumb sucking, nail biting, more demanding attitude, clinging, enuresis and encopresis were not common.

On assessing the different social classes, no statistical significance was found between deaf children of high and low social classes as regards their psychiatric symptoms except for nocturnal enuresis. This may be due to negligence of toilet training habits in the lower social class than the conscientious higher social class. Another important finding in this study was the significant difference between the two social classes on one hand and the control group on other hand in both Vienland social, maturity test and Hiskey Nibraska test (Tables I & II) and between the two groups (Table III), denoting lower I.Q. and more social immaturity in deaf children. This may be explained by one or more of the three following possibilities :

1. Genetic predisposition associated with deafness.
2. The result of organic pathology leading to intellectual deterioration and deafness.
3. Social and sensory deprivation which is influential in both social classes and more influential in the low social class.

Children of poor social classes are more prone to chronic middle ear diseases, C.N.S. infection, complications of virus diseases as mumps or measles, toxic agents such as streptomycin and head injuries which are the commonest causes of deafness. Deafness can be inherited, consanguinity is common in the low social classes inspite of knowing that some members of the family are deaf and that they may have a deaf child.

Gaskill (1957) using the coloured matrices found a mean I.Q. of 97.9 with a standard deviation of 20.8. Kendoll (1957) found no significant difference at any age.

Murphy (1957) reported a reasonably normal distribution of I.Q.'s using W.I.S.C. Levine (1960) concluded from her experience that personality evaluation of deaf school-age children is better accomplished through clinical observation and case history than through formal testing.

The vast majority of our cases were found to be extrovert easy going, like to play in a group. They also showed over cleanliness, obstinancy and physical aggression and impulsivity in contradistinction to the view of Cattell (1970) on using a questionnaire. He described them as detached and aloof, sober and serious, shy and timid, careless over social rules, suspicious but also conscientious and shrewd.

The mechanisms responsible for the psychiatric disorders are unlikely to be due to a single mechanism. There are many possible factors, one or more of them may be influential in causing psychopathology for the deaf :

- I) Personal factor : the influence of basic personality on psychological and social reactions.
- II) The more specific psychological effects of hearing impairment.
- III) Organic factors, the possibility of association of deafness with organic brain dysfunction which in turn greatly increases the susceptibility to psychiatric disorders (Rutter, 1970). In these children malfunction

of the brain seems more important than loss of function. Seidal et al. (1975) showed that children with organic brain conditions involving a lesion above the brain stem had a rate of psychiatric disorder several times more than children with chronic physical handicaps without brain pathology. The difference remained even after factors such as I.Q. level, visibility of handicap and degree of physical impairment had been taken into account.

- IV) Social factor, e.g. social rejection plays an important role in emotional disturbances in deaf children. The relationship between such social rejection and psychological development is complex and while rejection may adversely affect a child's emotional growth, he may equally be rejected just because of his undesirable behavioural characteristics (Jacob, 1968). Another social factor is that deaf children may be adversely influenced by the same kinds of family and social pathologies which can affect ordinary children as parental instability, unsatisfactory discipline and family discord leading to behaviour disturbance.

Again the mere presence of a handicapped child in the family may lead to disturbance in other members of the family, and this in turn will lead to parental neurosis which will initiate a vicious circle of psychopathology. Another social factor is social isolation, resulting primarily from the sensory defect which directly impedes communication and social interchange, but is also the inevitable consequence of social withdrawal which so frequently accompanies the feelings of inferiority and social inadequacy.

- V) Sensory deprivation : Disturbance of sensory input might well play an aetiological role in the genesis of mental illness, probably through its effect on arousal mechanism mediated through the reticular formation.

- VI) Another factor not of importance in our group is that most of deaf children are cared for in institutions for prolonged periods, emotional and behavioural disorders in these children may stem in part from the ill effects or the poor quality of institutional care.

Follow up study of group I after going to a special school for the deaf, could elicit significant statistical results after one year, but not after six months (Tables VIII & IX). The results were more specific for Hiskey Nibraska test, this means that their learning aptitude had improved a lot. Also parental scale for group I showed statistical improvement in both the motor cognitive, mood disorder and antisocial behavior items.

In our culture there is a great deal of controversy overplacement of hearing-impaired children into the educational system, much of which is extremely emotionally toned. There are boarding and day schools for deaf children. Preschool guidance for the family is needed because many parents do not like their children reasonable to believe that the child needs the family situation especially when very young. Many personality deviations which are secondary to hearing impairment are likely to be alleviated if guidance is given to the parents of such children and the problem of deafness is explained to them. If this is begun when the child is very young and they are able to establish some sort of communication with these developing babies, many personality difficulties need never arise. A balance has to be struck between a young child's need for its mother and its need for expert help; a balance which is not easy to determine. It depends so much on the degree of hearing impairment, the amount of help which can be given locally, the ability of the family to help the child, the social and emotional conditions within the home. Day provision can be accepted more easily and earlier than boarding provision as a general rule.

REFERENCES

- Altshuler, K.Z. (1971) Studies of the deaf relevance to psychiatric theory. *American J. of Psychlat.*, 127 : 1521-6.
- Cattell, R.B., Eber, H.W. and Tatsuoka, M.M. (1970) *Handbook for the Sixteen personality Factor Questionnaire* (16 P.F.), Ch. 14, P. 285. Windsor, England : Nefr publishing Company Ltd.
- Cooper, A.F., Curry A.R., Kay, D.W.R., Garside, R.F. and Roth, M. (1974) Hearing loss in paranoid and affective psychoses of the elderly. *Lancet*, ii : 851-4.

- Cooper, A.F., (1976) The pathology of deafness in the paranoid and affective psychoses of later life. *Journal of psychosomatic research*.
- Denmark, J.C., and Eldridge, R.W. (1969) Psychiatric services for the deaf. *Lancet*, **ii** : 259-62.
- Jacobs, J.F., and Pierce, M.L., (1968) The social position of retardates with brain damage and associated characteristics. *Exceptional child*, **34** : 677-781.
- Gaskill, P. (1957) In Ewing, A.W.G. (Ed.). *Educational Guidance and the Deaf Child*. London : Manchester University Press.
- Kendoll, D. (1957) In Ewing, A.W.G. (Ed.), *Educational Guidance and the Deaf Child*. London : Manchester University Press.
- Levine, E.S. (1960) *The psychology of Deafness*. New York : Columbia University Press.
- Mahapatra, S.B. (1974) Deafness and Mental Health : Psychiatric and psychosomatic illness in the deaf. *Acta psychiatrica Scandinavica*, **50** : 596-611.
- Murphy, K.P. (1957) In Ewing, A.W.G. (Ed.), *Educational Guidance and the Deaf Child*. London : Manchester University Press.
- Myklebust, H.R. (1964) *The Psychology of Deafness*. 2nd edition. New York : Grune and Stratton.
- Rawson, A. (1973) Deafness: Report of a departmental enquiry into the promotion of research. *DHSS Reports on Health and Social Subjects No. 4*. London : HMSO.
- Remvig, J. (1969) Deaf-mutism and psychiatry. *Acta psychiatrica Scandinavica*, Supplementum, **210** : 9-64.
- Rutter, M., Tizard, J. and Whitmore, K., (1970) *Education, Health and Behaviour*. London : Longmans, Green.
- Seidal, U.P., Chadwick, O.F.D., and Rutter, M. (1975) Psychology in physically disabled children develop. *Med. Child Neurol.*, **17** : 563.

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الموجز الأمراض النفسية في الأطفال الصم المصريين

أجريت هذه الدراسة على عينة تتكون من ٦٠ طفلاً أصماً تتراوح أعمارهم من ٣ - ٦ سنوات ، وقد قسمت العينة الى مجموعتين متساويتين في العدد احدهما ذات مستوى اقتصادي - اجتماعي عال والآخرى ذات مستوى منخفض ، وقورنت كل مجموعة مع العينة الضابطة المماثلة لها . ولقد أظهرت النتائج أن الأطفال الصم أقل من أطفال العينة الضابطة من حيث النضج الاجتماعي ونسب الذكاء كما ظهرت على اختبار هيسكلي نيبيراسكا ، ولقد كان النشاط المفرط والسلوك المضاد للمجتمع من الأعراض السائدة في الأطفال الصم والتي ظهرت على المقياس الوالدي لتقويم السلوك المنحرف . ولقد ناقش البحث الميكانيزمات المسؤولة عن هذه النتائج ، ولم تظهر أى فروق احصائية ذات دلالة بين الذكور والاناث . ولقد أظهر الجزء التتبعي من الدراسة للأطفال ذوى المستوى الاجتماعي المنخفض - لمدة ستة شهور ولدة عام - تحسناً ملحوظاً في السلوك المنحرف بعد عام من المتابعة .

ABSTRAIT

La Morbidité Psychiatrique parmi les Enfants Egyptien sourds

Dans cette étude, soixante enfants âgés de 3 à 6 comprenant deux groupes égaux, l'un status socio-économique inférieur et l'autre d'un status socio-économique élevé, ont été comparés avec un groupe contrôleur. Les enfants sourds ont été sur le plan statistique, moins socialement mûre suivant l'échelle de maturité sociale de Vienland et ont montré des QI inférieurs par le test de Hiskey Nibraska par rapport au groupe contrôleur. L'hyperactivité et le comportement antisocial ont été les symptômes les plus communs sur l'échelle parentale de l'évaluation du comportement délirant. Les différents mécanismes influents ont été discutés. Il n'y a pas eu de différence statistique entre les mâles et les femelles. La surveillance du groupe du status socio-économique élevé pour six mois et du second groupe pour un an a montré une amélioration significative sur le plan du comportement délirant.