ORIGINAL ARTICLE

Mentally Subnormal Children: Probable Causes, Backgrounds, and Preventive Aspects

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ABSTRACT A prospective study on 71 students in a special school for mentally subnormal functioning children in Jakarta was reviewed by physical examination, psychometric evaluation interviews and home visits. In the majority (87.5%) the IQ ranged from 70 to 90 Units (Wechsler scale). Of the 71 children, 47 (65.6 %) had somatic or biomedical known factors as etiology, while the other 24 (34.4%) were probably of sociocultural origin. This was surprising, since although the children had mentally subnormal intellectual functioning, the biomedical factors still played a high toll for it. Sociocultural factors, found out on home visits, such as unfavorable reproductive pattern of mothers, maternal deprivation, unwanted pregnancies, overprotective attitude, broken homes etc. were identified. For prevention, strengthening of the MCH care and family planning will be of utmost importance. **[Paediatr Indones 1995;35:194-199]**

Introduction

Mentally subnormal children may cause public health, social welfare and education problems to the affected child as well as to its nearby surrounding. The extent of problems are so complicated that care, treatment and management should be performed in integrated, interdisciplinary, intersectoral, and interprogram manners.[1] In the case of mentally subnormal functioning children those problems will arise especially during school age.[1,2]

It is predicted that in the future as a consequence of the rapid globalization process, population problems etc., the problems of handicap (including children with mentally subnormal intellectual capacity), will magnify tremendously. Approximately 10% of the occurrence of handicap belongs to the children population.[3-5]

The aim of this study was to find out the probable causes and backgrounds of mentally subnormal children and measures to be taken for its prevention.

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Methods

This study was conducted prospectively on students of a special school for subnormal mentally functioning children in Jakarta in year 1987. The method consisted of physical and routine laboratory examination, interviews with parents at school using specially designed questionnaires which can be completed by parents afterward. When indicated home visits were made.

The questionnaires included items to detect dangerous and hazardous events during the child's growth and development starting prenatally, among others, history of pregnancy (was the child term, preterm, or post term), wanted or unwanted, had there been attempts made to abort the pregnancy, taking excessive medicines or traditional drugs, was it on doctor's or midwife's consent, history of radiation, was the food intake adequate (proteins, vegetables,vitamins, etc.), had there been physical trauma (falls, collision etc.), serious illness, hemorrhage. History of delivery (normal or difficult delivery; spontaneous or instrumental or cesarian section), previous bleeds, early rupture of membranes. Baby's condition right after birth & perinatal history (immediate baby cry, cyanosis, jaundice, fits etc). Post natal history (underfive's feeding; growth; development; immunization, basic and booster; illnesses, what age; accidents/injuries; seizures).

Results and Discussion

There were all in all 71 out of 84 students included in this study.

Table 1. Distribution of children by age at school enrollment

Age (years)	No	Percentage
6 -	32	45.0
9 -	21	29.6
12 - 18	18	25.4
Total	71	100.0

More than half of the children (39 or 55.0 %) had their enrollment at this school at a later age namely 9-18 years. This might be due to the fact that parents are usually first trying and taxing their children in regular schools before admitting to themselves that something is wrong with their child's mental capacity and then at long last enrolling the child to a special school.[5,7]

Table 2. Distribution of children by sex

Sex	No	Percentage
Boy	41	57.8
Girl	30	42.2
Total	71	100.0

The children consisted of 41 boys (57.8 %) and 30 girls (42.2 %). Other investigators found a sex ratio of 65 % males and 35 % females. It is said to be always a male preponderance.[1,5]

Most of the children (42 or 87.5 %) belonged to the subnormal group al- though indeed there were 4 children (8.3 %) that were in the category of mild mental retardation

The overall fathers' education revealed to be higher then the overall mothers'

education; namely, 71% of fathers had had higher education versus 76.7% of mothers having had only senior and junior high education.

Table 3. Distribution of children by intelligent quotient

IQ (Unit)	No	Percentage
> 90	2	4.2
90 -	20	41.7
80 -	22	45.8
≤ 70	4	8.3
Total	71	100.0

Table 4. Distribution of father and mother by education level

Education	Father		Mother	
Higher education	No	Percentage	No	Percentage
	49	58.0		20.3
Senior high	14	13.0	41	59.4
Junior high	6	20.3	12	17.6
Elementary	6	8.7	2	3.0
No schooling	-	-	-	-

The order of hazards were attempts to abort, followed by bleeding, undernutrition and accidental trauma/injury, etc.

Table 7 obviously revealed that 24 children (22.9%) had had seizures as probable etiologic factors of their conditions.

Table 5. Antenatal hazardous conditions of mother (N=71)

Risk	No	Percentage (out of 71)
Less gestational period	1	1.0
Undernutrition	6	5.8
Attempts to abort	8	7.6
Bleeding	7	6.7
Accidental trauma/injury	5	4.8
Serious illness/toxemia	2	1.9
Overgestation	2	1.9

Table 6. Hazardous condition at delivery

Risks	No	Percentage (out of 71)
Difficult labor, spontaneous	11	10.2
Difficult labor, instrumental	2	1.8
Difficult labor, mother died	1	0.9
Bleeding	1	0.9
Cesarean section	6	5.4

Table 7. Postnatal hazards

Hazards	No	Percentage
Accidental trauma/injury	6	5.7
First five years undernutrition	8	7.2
Seizures	24	22.9
Long lasting illness	14	13.3

Table 8 revealed that out of the 71 children 24 or 33.8 % had single somatic factors as obvious probable etiology out of which 8 or 33.3 % were convulsions. The

other 47 children (66.2 %) had multiple somatic factors as etiology out of which belonged the other 16 children with convulsions.

Table 8. Single somatic factors as probable etiologic factor

Single somatic factor	No	Percentage
Convulsions	8	33.3
Others	16	66.7
Total	24	100.0

Table 9. Distribution of etiologic factors by period of life

Period of life	No	Percentage
Antenatal (complications of pregnancy & delivery)	38	50.5
Post natal	33	49.5

Many authors are of the opinion that making investigations to find out the etiologic factors of children with subnormal mental functioning and mild mental retardation is a very difficult task and that a single causative condition very seldom constitutes the only causative agent.[1,6]

Table 10. Distribution of children number of somatic factor

Number of somatic cause	No	Percentage
Single somatic	24	33.8
Multiple somatic	30	42.3
Unknown somatic	17	29.9

Table 11. Distribution of studied children by somatic - nonsomatic cause

Cause	No	Percentage
Somatic/biomedic	47	65.6
Non somatic/socio-cultural	24	34.4
Total	71	100.0

A large enough number (47 or 65.6%) had somatic or biomedical identifiable causative factors while only 24 children (34.4%) were found probably with socio-cultural backgrounds as cause. This finding was different from what was found in the US.[6]

Table 12. Distribution of mildly retarded and mentally subnormal children by general cause in different studies

Cause	MMR study (1)	This study	USA (6)
Somatic/biomedic (definite)	74.0 %	65.6 %	
Socio-cultural (indefinite)	26.0 %	34.4 %	100.0 %

MMR : mild mental retardation

This table reveals that very different from what was found in USA[6] where so to say all mild mentally retarded children were of socio-cultural origin and in general none have biomedical or somatic causative factors, in this study even in the mentally subnormal studied children where the mental capacity is higher than in mild mental retardation there were still quite a large percentage namely 65.6% of cases with biomedic/somatic factors that

actually were preventable.

This same table also shows that the less the deficiency in mental capacity, like in this study the more subtle the etiologic factors were to be found namely 34.4% versus 26.0% as was found in the study in 1978 on mild mentally retarded children.[1]

In this study on the 17 cases where no somatic factors at all could be found as probable etiologic factors, home visits were made so as to know in more detail probable socio-cultural factors which could have acted as probable cause of the child's condition with the following results.

Table 13. Socio-cultural factors as probable causative factors in studied children

Socio-culture factors	No
Reproductive pattern:	
close birth interval	4
high parity	2
too young/old age of mother when giving birth	2
Unwanted pregnancy	4
Maternal deprivation:	
busy mother	5
reared by others (no mother substitute)	6
Overprotection	6
Broken home	2
Long-term hospitalization	1

Table 12 shows that there were quite many convincing family backgrounds that could very reasonably be the probable causative agent of socio-cultural origin.

Preventive aspect

Having reviewed all the data of this study it may be concluded that the preventive aspects of mentally subnormal children prerequisitely includes endeavors to strengthen MCH (mother and child) care and family planning in the sense:

1. to hinder somatic/biomedic factors as causative agents of mentally subnormal children, antenatal, natal, and postnatally including surveillance of underfive's growth and development
2. MCH service should be competent to act as forepost in detecting mentally subnormal functioning cases
3. enhancing of family planning measures thus improving the mother's reproductive pattern and schooling so as to thoroughly fulfill the child's basic needs so that a complete physical, mental, and social well-being will be achieved.[8]

Conclusions

Out of this study conclusions as follows can be made:

- Most studied children were indeed mentally functioning at the subnormal category
- A great part of the probable etiologic factors still belonged to the somatic or biomedic factors
- Socio-cultural factors as probable etiologic factor, though subtle, were also identified and found in a fairly large number.
- For preventive measures strengthening of integrated MCH care and Family Planning services was considered a must.

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