

BEST PRACTICE MODELS

BEST PRACTICE MODELS for Prevention of Mental Disorders

[1] Universal Programs

- a) Safety, housing, food, welfare
- b) Family functioning, parenting and Pro-social functioning (Human Capital)
- c) Education to potential
- d) Reduction of toxic factors
 - i Biological factors
 - ii Psychological and social factors

[1 d i] Reduction of toxic factors of a biological nature

The biological factors predisposing to mental health disorders were sub grouped into the endogenous genetic and chromosomal disorders and the exogenous causes such as very low birth weight, poor nutrition, lead and similar poisonings, brain injuries from trauma and infections like measles, rubella, syphilis and HIV, and pre-natal toxicity such as foetal alcohol syndrome and effects of other drugs including cigarette smoke. Many of the latter are avoidable and preventive measures are included in general health and welfare.

Best practice prevention of endogenous causes needs an educated anticipatory enquiry. A family history of genetic abnormalities justifies reproductive genetic carrier screening for three commonly inherited genetic conditions: cystic fibrosis (CF), fragile X syndrome (FXS) and spinal muscular atrophy (SMA). Less commonly inherited conditions may be detectable by clinical genomic sequencing (either exome sequencing or whole genome sequencing (WGS)). Such testing can avoid many abnormalities.

Prenatal screening by maternal serum testing or by non-invasive prenatal test (NIPT) of blood DNA can identify many abnormalities. Where indicated, this can be followed by prenatal diagnostic testing through chorionic villus sampling (CVS) or amniocentesis.

Best practice secondary prevention of adverse consequences of genetic disorders is achieved by post-natal heel-prick blood spot testing, as routinely undertaken by the Maternal & Child Health Service. This may be additionally supported by specialist paediatric assessment and appropriate investigations when there are indications of other inborn errors of metabolism or mitochondrial disorders.

Best practice prevention of exogenous causes requires a range of robust universal public health measures together with high quality specialist paediatric medical care. The public health measures are outlined in PE1di. Of particular importance are the public education programs aimed at reducing exposure to drugs and alcohol and promoting positive parenting and social inclusion. The role of paediatric care is central to promoting healthy lifestyle and managing illnesses.

Perinatal testing

Perinatal testing of all babies has been undertaken for many years and successfully prevented brain damage in large numbers of children. The present battery of tests identifies about 25 rare disorders for many of which early identification and treatment may prevent lifelong disability. The blood screening tests are funded by the Department of Health, undertaken by the Victorian Clinical Genetics Service of the Murdoch Children's Research Institute at Melbourne's Royal Children's Hospital. This is particularly cost-effective compared to the costs of lifelong disability. The list is available on the VCGS website.

Paediatric disorders

Very low birth weight, nutritional disorders, and brain toxicities such as lead and alcohol are factors assessed by paediatricians. Transmitted infections such as syphilis and HIV, and chromosomal and genetic disorders such as Fragile-X syndrome, also require early diagnosis to minimise damaging effects.

Public Health universal measures to prevent these disorders include Regulations regarding poisons, immunizations, food quality, and education regarding toxicities such as drugs and alcohol.

Additional information is provided about brain injury in PE3a i, about developmental disorders in PE3a ii, drug and alcohol abuse in PE3a iii, and public information campaigns in PE9a ii.

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