

# PRIMARY PREVENTION IN CHILD AND ADOLESCENT PSYCHIATRY — AN OVERVIEW

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## ABSTRACT

Although primary prevention has been a concern among child mental health professionals for many years, progress in the field has been slow and is fraught with conceptual and methodological difficulties. The aim of this paper is to provide an overview of the topic, highlight some of the more consistent findings, and make suggestions about future development. While it is now generally agreed that intensive primary prevention programmes targeting high risk pre-school children and starting early in the child's life can be effective, much less is known about programmes targeting older children. There is also growing evidence that the participation of the child alone in these programmes — without changing the social context with which the child is in touch everyday — is insufficient to produce sustained improvements. Further development in the field should be guided by a better understanding of the risks and protective mechanisms, and how these affect the child's outcome. In Hong Kong, where child psychiatric morbidity is comparable to that of the West and there are only limited treatment resources, primary prevention needs to be systematically developed as a matter of urgency.

**Key words:** *Child Psychiatry; Effectiveness; Primary Prevention; Protective Mechanisms*

## INTRODUCTION

It is now well recognised that the community prevalence of child and adolescent psychiatric disorders ranges between 15% and 20%, the commonest of which are disruptive behaviour disorders and emotional disorders. However, few of these children are known to either mental health or social work professionals — 1 in 10 in the Isle of Wight study<sup>1</sup> and 1 in 6 in the Ontario Child Health Study.<sup>2</sup> The remaining majority are not below 'case' level, and intervention is warranted. Many factors contribute to the discrepancy between those in need and those receiving help. The lack of resources is only one factor and, even if treatment for all those in need could be offered, not all children and their families would be willing to accept mental health services. Moreover, those willing to receive treatment may not be the most severely impaired.<sup>3</sup>

Once a disorder is established, there is a great deal of suffering for the child, the family, and others in the wider social context such as peers, teachers, and society in general. While promising treatment strategies, with at least demonstrable short-term benefits, are now accumulating for some disorders, it is also clear that not all children will respond.<sup>4,5</sup> Motivation of the family and the degree of psychopathology within the family are crucial factors for predicting continuation and success with treatment. Children do not grow out of their problems and it is well

known that continuities exist between childhood and adult psychopathologies, particularly for antisocial behaviours, conduct disorder,<sup>6</sup> and depression.<sup>7</sup> Rutter pointed out that continuities exist not only at the symptom level but also in the individual's style of dealing with life circumstances, which increase the risk of morbidity.<sup>6</sup> Nevertheless, continuities are not inevitable, and can be altered by subsequent positive experiences.

In light of these concerns, the possibility of preventing some of the more common disorders has been an issue with mental health professionals for many years. Unfortunately, progress in the field has been slow. Although much has been published on the topic, there are relatively few well-established findings. Reasons for the slow progress are the difficulties associated with the planning and evaluation of preventive research. Firstly, if primary prevention is defined as intervention before the onset of symptoms, the arbitrary nature of the thresholds for diagnosing some of the disorders makes it hard to distinguish between primary and secondary preventive efforts. Secondly, a programme's stated targets and goals may not be backed by sound theories, for although risk factors, and more recently, protective factors can be readily listed, the underlying mechanisms leading to dysfunction or protection are still poorly understood. When a programme is found to be effective, it may not be possible to work out which component contributed to the effectiveness.

Thirdly, the way in which a programme's effectiveness is measured requires careful deliberation. Who and what should be evaluated? How and when should evaluation take place? Changes in the child have traditionally been the target measurement, and presumed to be a direct result of the programme, but benefits felt by the parents or teachers may indirectly contribute to the outcome. If the criteria are too narrowly defined, they may not reflect the range of benefits, or alternatively, may have neglected important areas that have failed to produce a response. An example is that children who appear socially competent despite growing up in adverse circumstances may have significant emotional symptoms.<sup>8</sup> A multi-dimensional approach is therefore needed. The timing of the evaluation is also important — short-term gains for the child would be encouraging for the family and important in their own right, but the programmes' usefulness and cost-effectiveness become more convincing for professionals and policy makers when long-term benefits can be demonstrated. However, it is important to remember that, as children are developing individuals, any changes in a child could be a spontaneous result of changes in the environment. Conversely, the effects of a programme may not be observable until some time later. All these may further confound research findings. There is currently such a wide variation in content and approach among the many different programmes that comparisons of results across studies are difficult to make.

It is also necessary to bear in mind that preventive programmes may turn out to be harmful by undermining families' confidence and encouraging excessive reliance on external resources.<sup>9</sup> In programmes which target 'high risk' cases, screening instruments have to be both sensitive and specific — the labelling effect on the false positive cases, and the effects of non-intervention on the false negative cases may have important side-effects.

## **RISK AND PROTECTIVE FACTORS AND PRIMARY PREVENTION**

In describing primary prevention as intervention carried out prior to the emergence of symptoms, Bloom includes within this framework two separate but related concepts: disease prevention and health promotion.<sup>10</sup> In mental health terms, the former refers to the absence of psychological, emotional, behavioural, and social impairment, while the latter denotes social and psychological competence. While related, the two are not at opposite ends of the spectrum; a lack of dysfunction is not the same as well being. The approaches towards achieving them are also quite different. Prevention of dysfunction concerns identification and reduction of risks, while promotion of well being means building up strengths and competencies. Identification of risk and protective factors is therefore a prerequisite. Even more salient, however, is the understanding of the mechanisms leading to dysfunction or protection, and how they interact to influence the development of the child. While it makes logical sense that the basic goal of primary prevention is to reduce the number of risk factors and increase the number of protective factors, targeting

the underlying mechanisms would help focus a programme's approach and increase its effectiveness.

Risk factors, by definition, are those which increase the likelihood of a child developing a disorder. These factors include individual characteristics such as premature birth, perinatal complications, developmental delay, difficult temperament, chronic physical illnesses or disabilities, especially those involving the central nervous system, and family pathologies such as relationship problems among family members, impaired parenting practice, and parental mental illness. Social disadvantage, poor neighbourhood, and lack of support can also adversely affect children's development. While no one single factor predicts dysfunction, and the same risk factor may produce many different emotional and behavioural outcomes in different children, it is the interaction between individual vulnerabilities and environmental adversities which eventually lead to disadvantaged outcome. This interaction is bi-directional, so that the child and the environment influence and mutually reinforce each other. However, the exact mechanisms behind such interactions remain unclear.

Protective factors protect against adverse outcome *in the presence of risk factors*. A related concept is that of resilience, which has been defined as the capacity for healthy adaptation despite multiple adversities.<sup>11</sup> The individual is not born with resilience; it is the result of the interaction between favourable individual, familial, and social attributes. Three broad sets of protective factors are now well recognised, including personality features such as autonomy, positive self-esteem, and a positive social orientation; family characteristics such as cohesion, warmth, and an absence of discord; and the availability of external support systems that encourage and reinforce a child's ability to cope. The mechanisms underlying these protective functions are thought to involve:

- A reduction of the impact of risk by altering the child's appraisal of the risk situation, or by reducing the child's exposure to or involvement with the risk situation
- A reduction of the negative chain reactions subsequent to risk exposure
- The establishment and maintenance of self-esteem and self-efficacy
- Enhancing opportunities.<sup>12</sup>

An increasing amount of literature is now confirming the importance of a positive self-esteem for a person's psychological development. This suggests that it is protective to have a well-established sense of self-worth, as well as confidence and conviction that one can successfully cope with life's challenges. The development of these protective qualities are most strongly influenced by having secure and harmonious parent-child relationships (even when it is with just one parent), and having successful experiences in accomplishing tasks that are identified by the individuals to be important to them.<sup>12</sup> As neither self-esteem nor self-efficacy are static qualities, and they develop and are modified by ongoing interactions with the environment, so they are amenable to positive external influences throughout life. The building of meaningful interpersonal relationships or task

accomplishments can occur at any time during a person's life, and can change their life course onto a more adaptive path. Such possibilities for change open up opportunities for prevention.

Ultimately, the developmental outcome is a result of the interaction between risk and protective factors. This interaction has been conceptualised along three models:

- The *compensatory model*, in which risk and protective factors combine to predict competence
- The *challenge model*, which considers stress as having a 'steeling' or 'inoculation' effect as long as it is not excessive, so that the child is strengthened by a moderate amount of adversity
- The *protective factor model*, which suggests that protective factors modulate the impact of stress to influence outcome.<sup>13</sup>

However, more evidence is needed to clarify these mechanisms.

## WHEN SHOULD PRIMARY PREVENTION BE PERFORMED?

Influenced by the idea of early childhood as a 'critical period of development', a large number of the early programmes were devoted to early childhood, which is therefore also the period that has been most extensively studied. The assumption was that interventions performed during this period would lead to long-lasting positive effects. Subsequent experiences, however, questioned the adequacy of this 'inoculation model', and suggested that a 'nutritional model' might be more appropriate.<sup>14</sup> This alternative model emphasises the need to address deficits throughout the developmental stages in order to maintain improvements. A related discussion is about the 'dose effect', or the amount of intervention necessary to effect changes.<sup>15</sup> Support for the nutritional model and the dose effect was found in the Abecedarian project, which had two experimental periods, during early childhood and when the children were in elementary school.<sup>16</sup> By middle childhood, children whose academic performance benefited most were those who received intervention for both periods. Other researchers working with antisocial children also supported the notion that intervention needs to be sustained and tailored to suit the developmental stage of the children.<sup>17</sup>

Although maladjustment has a tendency to persist and there is ample justification for intervention to start early in a child's life, different stages of development present different risk situations and warrant intervention in their own right. Adolescence is now receiving increasing attention in this respect. At a time of marked physical and psychological maturation, adolescence holds many new opportunities and influences that challenge the adolescents' coping abilities, the outcome of which can either be positive in encouraging healthy development, or negative and increase the risk for later physical or psychological problems. It is well known that many at-risk behaviours and life-styles such as substance abuse, unprotected sexual activity, anti-social behaviours, leaving school, and running away from home have their onset during adolescence. Some types of clinical dysfunction such as

depression, suicide, and eating disorders also arise *de novo*. These factors point to adolescence being a period worthy of preventive efforts.

## WHAT KIND OF PROGRAMMES HAVE BEEN TRIED?

A variety of primary prevention programmes have been reported, each with their own target groups, objectives, and approaches. These programmes target different populations such as all the students in a school or only those considered to be at high risk. They may target different behaviours such as the parent-child relationship, social competence, or tendency for suicide. They may take place in different settings such as school-based, home-based, or centre-based, all with different resources and staff implications. The programmes may be educational, experiential, or supportive. Multiple combinations are possible, and the breadth of impact is variable.

Briefly outlined below are examples of some promising programmes, which are listed according to age group.

### PREGNANCY AND INFANCY PROGRAMMES

Pregnancy and infancy programmes start during early pregnancy and continue into the pre-school years. High-risk families are the main targets. The aim is to enhance the development of a positive parent-child relationship from the time the child is born. Activities range from advice, education, and social support to direct intervention. The programmes may be home-based, whereby the family is frequently visited by a nurse or home-visitor, or centre-based, in which the family attends a day centre and a variety of services are provided. Overall, there is evidence for long-term positive effects. One example is that by Olds *et al.* in which an intensive home-visitation programme was performed in a semi-rural community for a group of first time mothers who were either teenage, single, or of a low socio-economic group.<sup>18</sup> The subjects were recruited prior to the 30th week of gestation. The visits were aimed at educating the mothers about child development, encouraging informal support by family members and friends, and linking these families with other health and human services. Throughout, the mothers' strengths were emphasised. Positive effects were found 3 years later in those who were visited for 2 years when compared with the control and other experimental groups, and included fewer cases of child abuse and neglect, fewer accidents, and more provision of appropriate toys for the children. At the 15-year follow-up visit, the adolescent offspring of the visited families reported fewer antisocial behaviours and initiation into substance abuse compared with the control group.<sup>19</sup> Another similar project is the Yale Child Research Project, which targeted economically disadvantaged adolescent first-time mothers and their infants from birth to the age of 30 months.<sup>20</sup> The emphasis was on providing personalised and nurturing social support for these families in the form of regular home visits, and advice, day care and adequate medical services. Results at 5-year follow-up showed that these mothers

had improved life circumstances, were self-supporting and more involved in their children's lives, and the children had better school adjustment and fewer misbehaviours than controls. The effects were sustained when reviewed 10 years later.<sup>21</sup> One major shortcoming of these two programmes was their small sample size. A cohort study with a larger sample size is that by the Houston Parent-Child Development Centre.<sup>22</sup> The programme targeted poor Mexican-American families with a 1-year old child, and offered 1 year of intensive home visiting when the child was 1 year old, followed by attendance at a day centre four mornings a week for a year when the child was 2 years old. The focus of the home-visits was to provide information about child development and parenting skills, and to use the home as a learning environment. In the second year, there were classes for the mothers on child management and family communication skills, while the children attended nursery school. A review 5 to 8 years later showed that the children in the intervention group performed better academically, and were rated by teachers to be less aggressive and hostile and more considerate when compared with controls<sup>23</sup>

Overall, findings suggest that intensive, multi-component home visiting programmes targeting the parent(s) and beginning prenatally or early in a child's life are beneficial for the social and behavioural development of children from severely deprived families.

## **PRE-SCHOOL**

The best known preventive programmes for this age group are a series of Headstart Compensatory Preschool Programmes that began in the 1960's in the USA.<sup>24</sup> These programmes are comprehensively packaged and target economically and educationally disadvantaged families and their pre-school children. The main aim is to enhance the overall development of the child, including physical growth, cognitive development, emotional and social competence, readiness for school, self-awareness, and parent-child relationship. They are multifaceted (e.g. centred-based, home visitation, parent training) with a strong emphasis on all aspects of parental involvement. High quality pre-schools are provided for the children. Many positive gains have been reported. While gains in IQ scores quickly diminished, the children in the programme showed better school adjustment and competence throughout the school years and a lower utilisation rate of special educational provisions and grade retention. Teachers remarked that they were more socially competent.<sup>25</sup> Better parent-child relationships were observed and, by adolescence, the intervention groups had lower rates of juvenile crimes and arrests, and fewer teen pregnancies. As adults, they had higher rates of employment, better earnings, and were more self-sufficient.<sup>26</sup> The exact mechanisms behind such far-reaching benefits remain to be disentangled, but are likely to be multiple, interactive, and beyond the simple analysis of data. One hypothesis is that the children in the programme were better prepared for school and had better adjustment at school entry, thus avoiding the 'failure trap' of being referred for special education or being retained in a grade. Another

possibility could be that the parents' involvement in the programme enabled them to feel more in control of their lives, resulting in a more positive attitude, which exerted a positive influence on their children

Despite their similar aims, these programmes are very heterogeneous in their content and approach, and target children and families with different risk profiles, making it difficult to directly compare across programmes. What is consistent, however, is that in multiply disadvantaged families, high-quality, multi-faceted preventive programmes enabling changes in the child, family, and the larger social context can be effective for enabling these children to become more competent and resilient during their development.

## **PRIMARY SCHOOL AGE**

Two types of programmes have been described for primary school age children. One is child-centred and classroom-based, built into the school curriculum and focusing on enhancement of social and academic competence. This programme targets specific areas such as effective education, interpersonal cognitive problem solving, social skills, assertiveness skills, and educational achievement.<sup>27</sup> While promising short-term gains in terms of skills acquisition have been demonstrated with some programmes, many of the results remain to be replicated. It is also not clear that behavioural changes follow these gains. The programmes' narrow focus and brevity could be a reason for their lack of effectiveness. Some newer programmes have adopted a multi-component and multi-year approach, and aim to reduce risks in the children's social environment. Initial results seem promising,<sup>28</sup> although replication using larger sample sizes, and the long-term effects have yet to be investigated.

A better-researched and more convincing model, which has been ongoing for the past 20 years, and attests to the importance of environmental influence, are the school ecology programmes. An example is the Yale New Haven Primary Prevention Project.<sup>29</sup> The aim is to provide a high quality school by changing the organisation and the environment of the school, so that a sense of community and direction for parents, staff, and students is engendered. This involves the collaboration of a school planning and management team, parent participation programme, and mental health team, catering to the specific educational needs of the children. The results showed better academic achievement, improved attendance (for both the students and staff), fewer behavioural problems, less staff turnover, and increased parent involvement in school activities. This model is now being replicated in many schools in the USA.

## **ADOLESCENCE**

The most widely used programmes for adolescence are school-based and implemented as part of the ordinary school curriculum. Some have the general aim of enhancing social competence by teaching a diverse set of skills such as coping and problem-solving skills, self-control, and communication and assertiveness training. Others target specific problems such as substance abuse, teen pregnancy, or antisocial

behaviours by combining the teaching of these skills with imparting specific knowledge about at-risk behaviours to effect attitude and behavioural change.<sup>30</sup> All of these programmes have shown promising results, with beneficial short-term effects, although their wider applicability in terms of the prevention of clinical dysfunction is less well studied. It is also clear that programmes that are solely educational in nature are not effective, while the teaching of a set of general competence-building skills alone does not prevent specific at-risk behaviours.

Another approach involves placing adolescents in roles and activities that are personally meaningful, such as volunteer work. This either occurs on its own, or in conjunction with other competence-building programmes.<sup>31</sup> The aim is to foster an awareness of commitment and a sense of self-worth. There are suggestions that when these activities are coupled with classroom-based discussions about developmental tasks faced by adolescents, lower rates of behavioural problems are reported.

Overall, primary prevention in adolescence is a relatively new experience and more thorough evaluation of the impact of intervention programmes is required.

## COMMUNITY PROGRAMMES

The aim of community programmes is to increase the protective qualities of the community and reduce the opportunities for antisocial behaviours. Jones and Offord have demonstrated positive effects with the provision of recreational activities in an impoverished public housing complex.<sup>32</sup> Some communities may run time-limited small-group programmes for children and adolescents with specific risks such as those of divorced parents, or bereavement. These programmes usually aim to alleviate negative feelings and teach the children skills to enhance their adaptive abilities. Positive effects have been documented.<sup>33</sup>

## CONCLUSION

There is now little doubt that primary prevention programmes produce positive results, both in the short and long terms. Many factors influence and contribute to their effectiveness, ranging from family and child characteristics, level of risk, intensity of the intervention, content and format of the programmes, and experience and commitment of the professionals involved in the programme.

While research is still needed, some important directions have emerged. First, long lasting benefits can be achieved from well-designed programmes. For early infancy and the pre-school years, successful programmes tend to be intensive (lasting 2 to 5 years) and consist of multiple components. Empowering the mother, addressing the parent-child relationship and child management techniques, and the provision of high quality pre-schools are key qualities. For programmes targeting school-aged children, there is increasing evidence to suggest that multi-year, multi-component programmes that involve people who make up the child's social environment such as peers, parents, and teachers, is

important. Teaching the children appropriate skills without changing the environment with which they come into contact every day limits their effectiveness. Experience has also found that programmes based solely on education and advice do not work, whether they target parents or children. Offering practical and emotional support for parents and providing experiential encounters for children are important.

Secondly, interventions are likely to be more effective if they are provided in the form of 'booster shots'. Studies have found that although the functioning of high-risk children is better than that of controls after an intervention programme, it remains far below that of low-risk children, and below acceptable levels. Booster programmes addressing the children's developmental needs at different stages can provide ongoing support and further improve the outcome.

All the research programmes described above have methodological flaws such as small sample sizes and high attrition rates, making generalisation difficult. Replication of findings is needed for the results of some of these programmes to be more convincing.

It is now 3 decades after the time when primary prevention gathered momentum from the Headstart Programmes in the USA. A heterogeneous range of programmes with varying degrees of effectiveness have been developed. Nevertheless, the underlying mechanisms for their effectiveness and critical components of these programmes remain to be identified. In the current climate of limited resources, answers to these questions are needed in order to maximise the effectiveness and benefits of these programmes.

In Hong Kong, primary preventive interventions have yet to be systematically performed and evaluated. Given that child psychiatric morbidity in Hong Kong is comparable to that of the West, coupled with the paucity of treatment services and the impact of psychiatric stigma, primary prevention must be emphasised and established if the mental health of our children and adolescents is to be assured.

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