Why do some children of short stature develop psychologically well while others have problems?

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Abstract

The present paper addresses the question: why do some children of short stature develop psychologically well while others have problems? Based on the work of Wallander and Varni, a model is presented to illustrate risk as well as resistance factors that are important for children of short stature.

It is suggested that important risk factors for the psychological adjustment of children of short stature are the child's satisfaction with its height and the aetiology of the short stature. Another possible risk factor is the tendency for people in the child's environment to treat the child as if he or she were younger than is actually the case. The most important risk factor, however, seems to be the psychosocial stress related to being teased or bullied due to the short stature. Important resistance factors for children of short stature might be the child's temperament, familial support and coping strategies.

It is concluded that an important aim for future research is, in a multi-disciplinary setting, to empirically test models of risk and resistance factors that are relevant for children of short stature.

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Introduction

Work on the psychological correlates of short stature has focused thus far almost exclusively on comparisons of groups of children with short stature with those of normal stature. While these studies have been informative, interpretation of the results has been made difficult by the presence of contradictory results. For example, some studies have found short stature to be related to psychological problems, while others have not. A second generation of studies, emanating from a risk factor model is needed to identify the individuals who will suffer due to their short stature and the areas of functioning most affected. In the present paper we will address the question: why do some children of short stature develop psychologically well while others have problems?

A model presented by Wallander and Varni (1) of child adjustment to paediatric chronic physical disorders will be used as a framework to illustrate risk as well as resistance factors in children of short stature (see Fig. 1). The risk factors they suggest are: disease/disability, functional independence and psychosocial stress. Resistance factors of importance might be: intrapersonal factors, social-ecological factors and stress processing.

Risk factors

Predictors of problems in psychological adaptation for children, judged either in terms of symptoms or lack

of competence, have been labelled risk factors. Risk factors often co-occur and multiple risk factors frequently prove to be more predictive of psychological outcomes than single risk factors (2). Accordingly, there can be great heterogeneity in the outcome among members of a risk group identified by only a single criterion such as short stature.

Disease/disability

In order to understand how disease and disability parameters can be risk factors for the psychological adjustment for children of short stature, the aetiology of the short stature is important. Children of short stature can be divided into different diagnostic groups such as idiopathic short stature, hormonal insufficiencies (either isolated growth hormone (GH) insufficiency or multiple pituitary hormonal deficiencies), chromosomal abnormalities, and bone disease. Excluding children with idiopathic short stature, all have additional medical complications, aside from the short stature, which can be assumed to further influence psychological adjustment. For example, the adjustment of children with GH insufficiency can be affected by both their short stature and their lack of GH (3). In a study by Erling (4), taller GH-insufficient boys benefitted more psychologically from GH treatment than shorter GH-insufficient boys. This positive treatment effect might be due to the fact that the

Figure 1 Wallander and Varni's conceptual model of child adjustment to paediatric chronic physical disorders. Boxes indicate risk factors, ovals indicate resistance factors. (Reprinted from (1) with permission from Blackwell Publishing Ltd.)

taller boys did not have the double burden of both GH insufficiency and extreme short stature.

Some studies have been performed that compare children of short stature with different aetiologies. A study by Haverkamp and Noeker (5) compared two diagnostic groups: children with GH insufficiency and children with achondroplasia. They found that children with GH deficiency were more stressed by problems in their relationships with their peers than children with achondroplasia, as rated by their parents. In a study of children with idiopathic short stature and children with GH insufficiency, the children's GH status was found to be related to the level of inhibition, with the more GH-insufficient children being more inhibited (3).

Yet another disease-related risk factor could be the severity of the short stature. The relationship between this factor and adjustment has been investigated in two studies. These studies showed, however, a lack of relationship between height deviation and psychological functioning (6, 7). In addition, Hunt *et al.* (8) found that it was not one's actual height but rather the personal satisfaction with one's height that was more closely associated with psychological outcomes.

Functional independence

It is important for all children to become more independent of their parents and other care givers as they grow older. Failure to achieve this sense of autonomy (when growing older) can be a risk factor for normal psychological development. The children's experience of the level of independence in relation to care givers is obtained through comparison with other children of the same age. For the child of short stature there is a tendency for people in the environment to relate to the child according to size rather than chronological age, thus treating them as if they were younger. This 'juvenilisation' has been suggested as a risk factor for

psychological development (9). It might lead to lower expectations of these children than of their peers of normal size and of the same age. Immature reactions from children of short stature have been discussed as possible consequences of 'juvenilisation' and include the denial of the short stature (10) as well as acting as a clown or mascot and overcompensation through aggressive and demanding behaviour (11).

Short stature might be especially stressful for older children who are pubertal or close to puberty. The age-related psychological and social changes occurring at the time of puberty may be particularly stressful for children with a physical condition, such as short stature, that differentiates them from their peers. Accordingly, children of short stature have been found to be more distressed as they grow older (7, 12).

Psychosocial stress

Psychosocial stress caused by, for example, bullying and negative attitudes from their peers, is a risk factor for the psychological adjustment for children of short stature. Children of short stature have frequently been teased because of their short stature (6) and report having been bullied more often than other children (13). Interestingly, A Erling, C Lunde & CP Hwang (unpublished observations) found that the boys that perceived themselves to be of short stature (rather than those that actually were of short stature), had been bullied more often than other boys.

Another cause of psychosocial stress can be negative attitudes from others. The concept of heightism refers to both society's negative attitudes to short stature and to its positive attitudes to tall stature (14). Heightist attitudes have been found in several experimental studies examining the impact that a child's stature has on adults. Mothers rated, for instance, tall boys as more competent than average-sized and small boys (15). They also rated shorter girls as less able (particularly less independent) than average-sized or tall girls. Similar results were obtained in a study where the size of children was found to be a determinant of perceived age and adult care giving responses (16). The children were treated in a manner consistent with the age they appeared, rather than in a manner consistent with the age they actually were.

Resistance factors

Understanding why only some children are resilient in the face of adversity requires the identification of resistance factors. These factors help the child achieve positive psychological development despite the presence of risk factors that challenge adaptation or development (2). To our knowledge, there are no studies of the potential resistance factors for children of short stature. However, Wallander and Varni (1) suggest that intrapersonal resistance factors, social-ecological resistance

factors and the child's stress processing abilities are of importance for understanding adjustment in children with different physical disorders.

Intrapersonal factors

Intrapersonal resistance factors concern the child's personality. Temperamental characteristics, for example, may predispose children to certain patterns of behavioural adjustment or maladjustment (1). Very few studies have investigated how temperament may affect the adjustment of children who are in any way physically different. Varni *et al.* (17), however, found that the temperamental feature of greater emotionality predicted lesser social competence for children with limb deficiency. Intrapersonal factors that enhance a child's resistance to risk factors also include the child's competence, motivation and problem solving ability.

Social-ecological factors

Social-ecological factors relate to the family environment and to other social support systems. For parents of a child of short stature, the child's growth is often a focus of concern. How parents handle the situation differs. Children with supportive parents seem to be able to handle the risk factors related to short stature better. Many parents of children of short stature are also of short stature themselves. One may speculate that how they have coped with their own short stature influences how able they are to support their child.

Children's beliefs about their parent's appraisal of their own (i.e. the child's) body size have been found to be associated with self-esteem. Children who think their parents are satisfied with their body size have more positive self-esteem (18).

Although the few previous investigations of the social-ecological resistance factors for children with various physical disorders have typically focused on family support, non-familial perceived social support (such as support from the school) has also been found to be important in predicting the adjustment of children with chronic physical disorders (1).

Stress processing

Stress processing is a resistance factor referring to the appraisal of circumstances and events as well as the coping strategies used to manage these. The importance of children's appraisal of their situation can be illustrated by the importance of perceived physical appearance. The perception of the short stature – such as the perceived severity or the personal satisfaction with the short stature – seems to be more important than actual appearance for psychological outcomes ((8) and A Erling, C Lunde & CP Hwang (unpublished observations)).

For many children of short stature it is important to find ways in which to cope with the stigmatisation

(e.g. being teased or bullied) related to stature. Kochenderfer and Ladd (19) studied how children cope with being bullied. They found that victimised children's responses to their peers' aggression were associated with reduced versus persistent victimisation. The strategy of 'having a friend help' was associated with reduced victimisation, whereas 'fighting back' was related to stable victimisation.

Adjustment and adaptation

Regarding the adjustment and adaptation of children of short stature, it is important to distinguish between, on the one hand, population-based studies and, on the other hand, studies with children referred to growth clinics. Only one population-based study has been performed examining the self-esteem of short children. Voss and collaborators found that children of short stature did not differ from controls in how they rated their self-esteem (20, 21). When this sample was studied again four years later, the same pattern was observed (22).

Most studies of children of short stature are based on samples recruited from growth clinics. As a consequence there is a risk for referral bias. Anxious parents, for instance, are more likely to seek medical advice for their children than other parents. Another potential bias may involve children with greater psychological problems who might be more likely to be referred for physical problems such as short stature because of increased parental concern (23). Studies of children referred to growth clinics show somewhat contradictory results: some have found problems while others have not. Several studies have found maladjustment of children of short stature referred to growth clinics. Children of short stature have been found to be more passive and more inhibited than children of normal stature (24). Parental ratings have also indicated behavioural difficulties especially somatic complaints and social withdrawal (25). Furthermore, more than the expected 2% (compared with a nonpsychiatric normative sample) of children of short stature have been reported to have behavioural problems (26).

In contrast to studies showing maladjustment, Theunissen *et al.* found that children with idiopathic short stature did not exhibit a lower health-related quality of life and self-esteem than the normal population, except within the domain of social functioning (27). Similar results have been obtained by Zimet *et al.* (7), who also failed to find any maladjustment in comparison with norms.

Discussion

Most previous studies of children of short stature have not focused on risk and resistance factors, but on the psychological adjustment of this group of children.

The contradictory results that have thus far been obtained concerning the psychological adjustment of children of short stature makes interpretation difficult. To understand why some children of short stature develop psychologically well while others have problems, the model proposed by Wallander and Varni (1) can be used. The risk and resistance factors they propose all seem relevant to children of short stature.

A crucial factor when studying the risk factor, disease/disability, is the aetiology of the short stature. All groups of children with short stature, excluding those with idiopathic short stature, have additional medical complications besides the short stature, and all can be assumed to influence their psychological adjustment. More homogeneous samples with respect to aetiology are needed in order to better understand the experiences of different groups of children with short stature.

Somewhat surprisingly, the severity of the short stature *per se* has not been found to be an important risk factor. It seems that the personal satisfaction with one's height rather than actual measured height is associated with psychological outcomes. The most important aspect of the risk factor, functional independence, is the tendency for people in the environment to relate to children of short stature according to size rather than chronological age, thus treating them as if they were younger. Furthermore, an important cause of psychosocial stress for children of short stature is whether or not they are teased or bullied as a result of their short stature.

The identification of risk factors in order to understand why some children of short stature develop psychologically well and others do not is insufficient on its own. Important resistance factors also need to be identified. This is an area of research that has thus far been lacking. For children of short stature, important resistance factors may be their temperament, familial support, and coping strategies.

An important aim for future research is to empirically test models of risk and resistance factors that are relevant for children of short stature. There has been a lack of studies enabling us to answer the important question: why do some children of short stature develop psychologically well while others have problems? In order to answer this question research concerning the psychological development of children who are of short stature needs to be performed with the cooperation of researchers from different disciplines. Ideally, so as to be truly multi-disciplinary, the research aims need to be defined and the findings of the research need to be interpreted by both medical and behavioural professionals working together.

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