On the significance of outcome studies: clinical relevance and research implications[1]

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Summary

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The paper draws attention to an emergent pan-theoretical model in child and adolescent mental health intervention, which gets its inspiration from a combination of biological, systems, cognitive-behavioural and psychodynamic perspectives, and which is at least for the moment, mostly implicit, to be inferred from attitudes rather than explicitly declared. It is most evident in the "how" of interventions rather than the "what". A characterisation of this implicit systemic model is offered, and its manifestations on treatment approaches taken as a whole are described.

Keywords: outcome research; developmental psychopathology; systemic models; prevention; psychosocial treatment; psychoanalysis; multi-component interventions

Zusammenfassung

Der Beitrag macht auf ein entstehendes pan-theoretisches Modell in der Kinder- und Jugend-psychiatrie aufmerksam. Dessen Inspirations-quelle ist eine Kombination von biologischen, System-, kognitiv-verhaltenstherapeutischen und psychodynamischen Perspektiven. Zumindest für den Augenblick kann es mehr implizit, von Haltungen abgeleitet, als explizit benannt werden. Es zeigt sich vor allem im «Wie» und weniger im «Was» von Interventionen. Eine Charakterisierung dieses impliziten systemischen Modells wird gegeben und seine Auswirkungen auf Behandlungsweisen als Ganzes werden beschrieben.

Schlüsselwörter: Therapieforschung; Entwicklungspsychopathologie; systemische Modelle; Prävention; psychosoziale Behandlung; Psychoanalyse; multifaktorielle Interventionen

The implicit systemic developmental model and its implications

It seems to us that there is an emergent pan-theoretical model in child and adolescent mental health intervention, which draws its inspiration from a combination of biological, systems, cognitive-behavioural and psychodynamic perspectives. While these sources are not inevitably acknowledged and are very rarely acknowledged simultaneously, they permeate the application of the developmental psychopathology framework to treatment interventions (e.g. Alexander et al. 1996; Cicchetti and Cohen 1995; Henggeler et al. 1998; Howard and Kendall 1996; Mash 1998; Sameroff 1995; Sameroff 1998). We believe that this approach is a response to the burgeoning research literature on the naturalistic and experimental treatment outcome of childhood mental disorder. This new approach appears to us to be, at least for the moment, mostly implicit, to be inferred from attitudes rather than explicitly declared. It is most evident in the "how" of interventions rather than the "what". It tends to guide the objectives of intervention strategies rather than the procedures of interventions themselves. It affects the scope and manner of service delivery rather than the content of the service. It reflects the active and immediate concerns of clinicians with clients, rather than their formal training and traditional attitudes. In the following section we review emergent themes from this review in the light of this model.

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First, the child is rarely viewed as an individual. Rather, problem behaviours, either of the child or at the family level, are formulated in terms of inter-related and inter-reacting response systems and sub-systems, which regulate the child's behaviour and which simultaneously exert a regulating influence upon others within the same system. This tendency is as evident in modern psychoanalytic perspectives (e.g. Hauser et al. 1984; Renik 1993) as in cognitive behavioural ones (Howard and Kendall 1996). The need to take an ecological approach is increasingly recognised, even when the focus is on a single aspect, such as the child's conduct problems, communication problems or learning difficulties. A quarter of a century's research in developmental psychopathology confirms that specific problem behaviours are likely to be the consequence of heterogeneous causal determinants, including the transactional interaction of biological predisposition with lived experience. It follows that the impact of an intervention cannot be assessed in terms of any single target variable, but a wide range of outcomes need to be considered including the impact of changes in one relationship (sub-system) upon other relationships within the same system (Emde and Robinson 2000). Family systems are dynamic rather than stable entities, with the child's dysfunction and family system interacting in ways which can often be difficult to predict.

Finally, family systems are developmental entities. They have a history which creates predispositions in relation to and expectations about the future. The past does not determine the present, but rather interacts with it. Thus the future can only be altered through addressing this interaction and not merely by addressing either the past or the present (Garbarino 1995).

There are still many important differences between the content of different approaches to the treatment of childhood problems. Historically, the differences between psychosocial treatment approaches have been so great that in the 1970s a special US Congressional Inquiry was set up in order to establish if psychosocial treatments had any claim to efficacy at all. However, a clear sign of the emergent systemic perspective which embraces all these orientations, including the now powerful biological approach, is the high level of agreement upon the guiding principles of treatment interventions for children.

What are the manifestations of this implicit systemic model on treatment approaches taken as a whole? Following we list some of the key points.

The developmental framework and the merging of preventive and treatment approaches

Conceptualisations of childhood disturbance and treatment have increasingly attempted to formulate, elaborate, anticipate and modify the natural history of childhood disorders. Historically, child psychiatry has always had a considerable interest in the epidemiology of disorders (e.g. Rutter 1997; Sameroff 1998) and it is hardly surprising that as interest in treatment interventions has developed, it should build upon this tradition. Even more important perhaps, has been the emerging interest in developmental psychopathology as the organising discipline of child mental disorder (Cicchetti and Cohen 1995; Toth and Cicchetti 1999). Developmental psychopathology considers development as involving progressive reorganisations in response to changing environmental demands and conceptualises psychopathology as a breakdown of the child's and family's coping responses with demands for adaptation.

Developmental psychopathology has forced outcome investigators to compare the post-treatment development of treated children with those developing normally. In this way several treatment approaches which generated strong pre-post differences in measured behaviour were found to be wanting. For example, in one study of an integrated CBT for adolescents with ADHD, improvement following treatment was found in the majority of treated cases to fall short of substantial improvements when this was assessed against the functioning of normal children (Barkley et al. 1992). In studies of problem-solving training for children with disordered conduct, the majority of successfully treated children were still found to function outside of the norms for a non-clinical population one year after treatment termination (Kazdin et al. 1987). These considerations echo the child psychoanalyst Anna Freud's statement of aims for her intervention as returning the child to "the path of normal development" (Freud 1965). Clearly, interventions are increasingly judged against this developmental objective.

We have found developmental considerations to deeply permeate the outcomes literature. Developmental stage (normally rather inadequately assessed in terms of the child's chronological age) has been found to interact with the type of treatment. For example, a meta-analysis of CBT interventions found significantly larger effect sizes for adolescents (aged 11–13) than younger children (7–11 years) (Durlak et al. 1991). Similarly, medication effects depend on the child's biological capacity to metabolise specific pharmacological

agents and developmental pharmacokinetic and pharmacodynamic considerations are of great current concern (Vitiello and Jensen 1997). The review indicated that researchers increasingly attempt to adjust their intervention to the child's developmental stage (biological, social, cognitive and contextual). Maximising the effectiveness of both biological and psychosocial interventions will depend on the full integration of developmental findings with the treatment literature.

Inherent to the developmental perspective we have described is the possibility of prevention. A considerable number of longitudinal investigations have emphasised the consistency of certain abnormal patterns of behaviour across development. For example, an important reanalysis of the *New York Longitudinal Study* (Lerner et al. 1988) demonstrated that there were two separate dimensions of negative emotional behaviour present in children both at 1–6 years and 7–12 years. These were aggression (aggression, disobedience) and affect (anxiety, dissatisfaction, depression). The developmental stability was striking for both (autoregressive coefficients of 0.97 and 0.91 respectively). Aggression also predicted adolescent behaviour problems although affect did not. These findings, which are representative of many other studies, clearly imply the possibility of prevention. In reviewing the evaluation of some aspects of prevention it was striking to note the similarity between treatment strategies applied early (as part of prevention) and strategies implemented as part of tertiary treatment (e.g. problem solving skills training, parent training etc). A good example is provided by the work of the Conduct Problems Prevention Research Group (1997, August). Thus, the emerging developmental orientation organising treatment development appears to be bringing with it a merging of the preventative and treatment orientation. Risk factors for serious disorder, such as oppositional behaviour, are now seen as appropriate targets for prevention (National Institute of Mental Health, 1995).

The widening of treatment objectives and the emergent integration of therapies

Psychosocial interventions in particular, but perhaps also medical interventions, are changing their foci in line with the implicit systemic model. The change is perhaps clearest in the case of the evolution of behavioural treatments. These have moved from an approach firmly rooted in a positivistic learning theory approach that denied the importance of all processes beyond those entailed in classical and operant conditioning, to an orientation which at least implicitly (and sometimes explicitly, e.g. Howard and Kendall 1996; Meichenbaum 1997) recognises the importance of the child's and parents' feelings and thoughts (emotions and cognitions) as determinants of behaviour. This has quickly led to a broadening of CBT interventions to include disorders which were principally affective in nature (e.g. depression). More importantly, in our view, there is an increased concern among clinicians within this orientation with the emotional environment of the child. This includes communication patterns in the family (Gottman et al. 1997) which have thus far been the predominant concern of family therapists. A further example is the recognition of the importance of meta-cognitive controls in childhood disorders (Fonagy and Target 1996; Howard and Kendall 1996).

The clearest implication of the implicit systemic model is that treatment objectives cannot be restricted to the child's symptomatic distress. Early behavioural interventions were widely known for addressing problems in an extremely narrow way (e.g. specific anxieties) and measuring progress with highly reactive instruments (e.g. anxiety in terms of avoidance of a phobic stimulus). This approach does not fit with the emerging implicit systemic model. Our review illustrates how treatment approaches rooted in a cognitive behavioural tradition are increasingly aiming to influence the child's functioning within his or her family or peer group through the development of capacities, skills and competencies which might maintain improvements in social relationships (Hoagwood et al. 1996). Comparisons of the effectiveness of pharmacological preparations will also require more sensitive measures of outcome than the degree of symptomatic change can provide, otherwise specific drug effects will be difficult to establish.

In order to achieve this goal, interventions aimed at specific problems with the child often need to be supplemented by additional procedures aimed at improving family functioning. For example, parent training for conduct disordered children is more effective in the long term if a partner support component is added (Dadds et al. 1987). Similarly, adding a family component to a treatment which focuses on problem solving, emotion management, communication and interaction skills significantly enhances the effectiveness of treatment of children with anxiety problems (Barrett et al. 1996). The notion that childhood problems are best seen in terms of the interrelation of response systems implies that treatment goals must focus on the development of psychological capacities within the child and within the family

system that reduces dysfunction and improves adaptation in the long term. In Alan Kazdin's formulation (1997), the outcomes must include child and family functioning, as well as outcomes of social importance.

More generally, the shifts in treatment objectives have brought about something of an integration between psychosocial treatment approaches. This has not been in terms of the evolution of overarching theories, as some hoped (e.g. Goldfried 1995); nor has there been an integration of techniques as others had anticipated (e.g. Wachtel 1977; Wachtel 1987). Rather, there is an increasing agreement across orientations concerning the clinical priorities in approaching families with problems. Convergence in techniques may be expected to be a consequence of integration at the level of formulation of the clinical problem. We anticipate that it might become increasingly difficult to distinguish psychosocial approaches in future reviews. Perhaps the increasing specialisation of treatment packages is a reaction to a reduction in the heterogeneity of treatment orientations.

A clear implication of the emergent systemic model is that treatments need not occur within the traditional setting of clinics and consulting rooms. If it is recognised that the child's disorder is a function of numerous inter-related response systems, then it clearly follows that the range of treatment settings as well as treatment agents has in the past been unnecessarily restricted. Outcome studies increasingly demonstrate that the most effective places for treatment delivery may not be either the inpatient or the outpatient setting. The community (Cunningham et al. 1995), foster homes (Chamberlain 1998), the school (Kolvin et al. 1981; Olweus 1996), summer camps (Pelham et al. 1993), and homes (Patterson and Forgatch 1987) may be ideal contexts for intervention because of the unequivocal presence of the systemic pathogens in these environments. By the same token, the administrator of the intervention need not be the therapist. It may be peers (mentoring approaches), teachers (Hops and Walker 1988), parents (Forehand and Long 1988) or foster parents (Chamberlain 1998).

The moderation of the radical goals of treatment

A more subtle implication of the recognition of powerful biological and developmental determinants has been the moderation of some of the radical goals of psycho-social treatments. The early phase of the development of any novel treatment approach is characterised by a certain therapeutic optimism verging on grandiosity. This was certainly true for both psychoanalysis and behaviour therapy in their respective heydays. By contrast, modern cognitive behaviour therapists tend increasingly to focus on helping clients accept rather than control their thoughts and feelings (Jacobson and Christensen 1996). This trend is perhaps clearest in the cognitive behavioural approach to the treatment of schizophrenia (Rector and Beck 2001) which has not so far been extended to childhood psychosis. Nevertheless, we note that recent cognitive behavioural approaches to children with ADHD include helping parents accept their reactions to their child's condition, while also providing them with alternative coping strategies (Barkley 1997). The implicit systemic approach suggests that, in the case of a number of disorders which are at least partially irreversible as a consequence of the interaction between biological predisposition and the sensitivity of brain development to environmental influence during the early years, psycho-social interventions (like medical ones) for childhood mental disorder may be forced to abandon the implicit notion of cure in favour of the treatment goal of more balanced functioning of sub-systems within a systemic model. The relatively disappointing results of many trials which report long-term follow-ups speak eloquently to this issue.

The decline in generic therapies and the emergence of specialist treatments

Perhaps linked to the implicit assumption that developmental and situational demands may be quite specific at particular ages with particular groups in particular settings, there has been a decline in the popularity of generic therapies. Alongside this, there has been increased specialisation. Neither physical nor psycho-social treatment can be regarded as generically effective. Specific programmes based on particular principles are shown to be valid and useful with particular sub-groups within a diagnostic category. Statements such as "cognitive behaviour therapy is effective" are inherently suspect without accompanying specification of the particular permutation of techniques which were subjected to evaluation. This has major training implications as it can no longer be regarded to be adequate to offer training in the general principles of a particular brand name approach such as systemic family therapy, without also offering training in particular techniques

brought together to deliver a specific programme of intervention.

Here, of course, there may be major paradoxes. An individual whose generic training is in clinical psychology with a cognitive behavioural orientation may not be in the best position to deliver a specific cognitive behavioural programme. In fact, the evidence suggests the contrary. The therapists in multi-systemic therapy tend to be masters level clinicians with no training in approaches other than MST (Borduin 1999). At a recent meeting of the American Academy of Child and Adolescent Psychiatry two eminent cognitive behaviour therapists (David Brent and John Marsh) both informally expressed a preference for recruiting therapists with generic psychodynamic training for their trials in preference to individuals whose generic training was cognitive behavioural. Notwithstanding the anecdotal nature of such evidence, there is no doubt that the increasing specialisation of therapeutic programmes presents a major challenge for the continued training of child mental health professionals. Effective interventions appear to require comprehensive knowledge of the specific parameters of particular treatment interventions and particular clusters of problems.

Multicomponent interventions and multidisciplinary working

The recognition that problems are unlikely to have a single cause has brought treatment intervention with multiple components into the foreground. The so-called combined therapies include the integration of pharmacological and psycho-social treatments (Arnold et al. 1997; Piacentini and Graae 1997) as well as the combination of intervention strategies rooted in separate frames of reference, particularly systemic and cognitive behavioural (Henggeler et al. 1999). The dangers of such combined and multi-modal treatments have been eloquently outlined by Kazdin (1996).

In the course of this review, we were frequently confronted with the multi-disciplinary character of many formulations and interventions. This was clear across most of the disorders scrutinised. The interconnected influences of physical, behavioural, educational and social factors are clear in the treatment of ADHD, anxiety disorders (e.g. Piacentini and Graae 1997), childhood depression (e.g. Kazdin and Marciano 1998), disorders of conduct (e.g. Kazdin, in press 2001) and in the case of children with chronic physical illnesses (e.g. Johnson and Rodrigue 1997).

The multi-disciplinary perspective is notable both at the level of formulation and the level of treatment delivery. It is notable that a wide range of professionals are, and arguably need to be, involved in the delivery of mental health services to children and adolescents. Moderators of treatment outcome frequently include learning disabilities implying the need for the involvement of educators. Both diagnostic considerations and effective use of drug treatments call for the involvement of child psychiatrists and paediatricians. A wide range of child mental health specialists have been shown to be helpful in delivering well-designed cognitive behavioural programmes (nurses, psychologists, social workers) although psychologists and child psychiatrists appear to play a key role in both designing and evaluating these interventions (e.g. Kazdin 1998). Many treatment programmes, particularly notably multi-systemic therapy (e.g. Borduin 1999), demonstrate the importance of attending to the social needs of families with children or adolescents with mental disorder, clearly identifying a need for social work involvement. A reinforcement of the emphasis on inter-disciplinary work is one of the key implications of this review.

The chronic care model

It follows from the general systemic formulation of childhood disorders that brief treatments can only have limited effects. The dynamic systems in which children and adolescents with mental disorders live will tend to return to states of equilibrium which frequently rekindle the dysfunctional behaviours of the child. This problem has increasingly been recognised by those designing innovative intervention programmes. Kazdin (1997), for example, proposed that disorders such as ADHD and early onset conduct disorder may require continuing care in much the same way that juvenile onset diabetes mellitus requires continuous administration of insulin. The necessity for interventions of greater intensity is more readily recognised in the case of disorders with great manifest severity such as childhood autism. The psycho-social intervention models that can titrate long-term interventions in an economic way have not yet been developed and represent a challenge for the future. Unfortunately, the emphasis on short-term interventions that followed the radical and optimistic agenda of early behavioural intervention has to some degree immunised funders against considering long-term treatments, particularly long-term and relatively intensive treatments. Equally per-

tinent and similarly under-developed is the "dental care" model suggested by Kazdin, whereby children and their families with chronic disorders are seen for regular check-ups on a six monthly basis. Treatment is offered on an as-needed basis as emerging developmental issues highlight new aspects of the child's and the family's problems.

Sensitivity to contextual effects and individual differences

The implicit systemic developmental model has focused the attention of researchers on individual differences in the manifestation of childhood disorder and the need to take these into consideration as moderators of the effectiveness of treatments. For example, the systemic perspective helped highlight the key role played by parental psychopathology (maternal depression, parental substance misuse, marital conflict, abnormal parental attributional styles and parenting attitudes, etc.) in determining treatment outcome (e.g. Brent et al. 1999; Dadds et al. 1987; Frick et al. 1992). As all interventions with children rely extensively on the involvement of family members (from seeking professional help for the child, through administering medication, to acting as agents of change in parent training programmes), it is clear that the presence of mental disorder in family members could strongly impact on the likelihood of achieving successful treatment results. The successful treatment of the parent's disorder may be an essential precondition of the child benefiting from treatment. In one study, of parent training for children with ADHD, children with ADHD mothers were found to benefit more if the mother's ADHD was medicated as part of the treatment (Evans et al. 1994).

Similarly gender and cultural issues come to the fore within the systemic approach. For example, with regard to parent training there have been a number of suggestions that the parenting values of specific ethnic groups should be considered in designing these programmes (Forehand and Kotchick 1996; Iwamasa 1996). Evidently, parenting values will be quite different according to socio-economic status, religious beliefs, as well as ethnic groups. Similarly, the recognition that the treatment of pathology exists within a system has drawn attention to cultural issues concerning gender. To give just one example, as we have seen gender differences are marked in the development of disruptive behaviour. Anxiety is closely connected to disruptive behaviour problems in girls but not in boys (Zahn-Waxler et al. 1995) and girls show a higher incidence of comorbid disorders (Zahn-Waxler 1993). Further, while boys tend not to be upset by aggressive social exchanges, girls report high levels of distress (Crick 1995). While boys express anger directly, girls tend to do so indirectly, via verbal insults, gossip, tattling, ostracism, threatening to withdraw friendship and so on (Crick et al. 1996). Findings such as these imply that treatment interventions for conduct problems may need to be modified according to both race and gender.

User empowerment

In conducting this review, we have become aware of an increasing concern on the part of clinicians and researchers with the views of the families and the children who participate in evaluations. In our view it follows from the increased sensitivity to systemic and contextual factors in both the causation and remediation of childhood abnormality that the model of service delivery should move away from one focused on the "mental health expert" to one oriented towards achieving a collaborative relationship between the child, the family and the clinician. Models reviewed when considering treatments for conduct problems (e.g. Henggeler et al. 1994; Webster-Stratton and Herbert 1994) provide good examples of this collaborative decision-making perspective on the treatment of childhood disorders. It seems to us that within the implicit systemic framework, treatment strategies are applied as part of a flexible and collaborative enterprise jointly undertaken by the clinician and the family which enables the treatment to evolve, given certain generic strategies inherent to the approach, with the, at least partial, participation of the client in decision making and full sensitivity to the varying needs of the family at different treatment phases.

This more flexible approach presents a new problem for evaluation. While on the one hand we recognise that treatments are unlikely to be effective without this kind of flexibility, we are also cognisant of the risk of compromising the standardisation of treatment administration which is essential in outcomes research. We see flexibility and standardisation as in opposition only at particular phases of treatment development. As a treatment approach matures decision processes can become increasingly explicit. The decision-tree (algorithm) approach frequently adopted in pharmacological trials is an example of this. Nevertheless, the need for flexibility brings with it a need for more detailed explication of decision-

making processes than has perhaps been the case in the past. If user empowerment is an essential precondition to effective treatment, and we believe this to be the case, the development of explicitly stated algorithms for psycho-social treatments should be considered a priority.

Conclusion

Based on our review we have arrived at a number of assumptions and attributes which we believe increasingly characterise treatment research in the field of child and adolescent mental health. These are:

(1) The commitment to a coherent and consistent theoretical framework to guide practice which links models of pathology and treatment at least at the conceptual level. (2) The recognition of the multiple causation of childhood disorder (although different orientations might privilege different levels of such an analysis). (3) The recognition of the importance of bi-directional (reciprocal) influences. (4) The recognition of the importance of neurobiological processes and that both drugs and psycho-social treatments can achieve changes by changing the brain. (5) The recognition that a unique emphasis on either past (distal) or present (proximal) factors is inadequate. (6) The recognition that adequate assessment must include information concerning development, knowledge of the population of children showing similar problems (incidence, prevalence, biological factors, system parameters). (7) Reliance on a multi-method approach in assessment and treatment. (8) Commitment to the comprehensive evaluation of outcomes. (9) A dialectic between an ideographic emphasis and a population-based approach. (10) The involvement of the family in the treatment. (11) The recognition of the importance of both emotions and cognitions in both causation and treatment. (12) The recognition of the need to develop operational rules (manuals) for the implementation of treatments. (13) The use of techniques specific to client groups and to developmental stages (e.g. preschool, adolescence). (14) The recognition of the key role played by social interactional processes between therapist and clients as part of treatment. (15) A wish to explore the biological, psychological and interpersonal processes that generate change. (16) A concern with the generalisation of outcomes both across settings and across time. (17) The recognition of the need for measures of change across a number of domains. (18) A concern with the experience of users of services. (19) A concern with the wider social context of the families, including cultural factors.

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